



Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

JUL - 3 2012



Mr. John Kieling, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Subject: Transmittal of CBFO Responses to NMED Comments on Recertification
Audit A-12-03 of the Advance Mixed Waste Treatment Project

Dear Mr. Kieling:

This letter transmits Carlsbad Field Office (CBFO) responses to New Mexico Environment Department (NMED) comments on Recertification Audit A-12-03 of the Advance Mixed Waste Treatment Project, as well as the revised audit report (Appendix A) and revised C6-1 and C6-4 checklists (Appendix B) and additional procedures (Appendix C). The final audit report and applicable C6 checklists were revised to address issues identified in a letter from the NMED dated May 2, 2012.

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

If you have any questions, please contact Mr. Randy Unger, Director of the Office of Quality Assurance, at (575) 234-7065.

Sincerely,


Jose R. Franco, Manager
Carlsbad Field Office

Enclosure



Mr. John Kieling

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JUL - 3 2012

cc: w/o enclosure

E. Ziemianski, CBFO	* ED
R. Unger, CBFO	ED
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N. Castaneda, CBFO	ED
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cc: w/enclosure

WIPP Operating Record	ED
CBFO QA File	
CBFO M&RC	

*ED denotes electronic distribution

**RESPONSES TO NMED COMMENTS ON THE ADVANCED MIXED WASTE
TREATMENT PROJECT (AMWTP) FINAL AUDIT REPORT A-12-03**

1. *Question 12 of the C6 Checklist indicates that the citations given, MP-TRUW-8.9, S. 3.1 and MP-TRUW-8.11, S.3.2 answers the question. The NMED reviewer could not find any language that references of the following: liquids in volumes, U134, untreated liquids, non-radioactive pyrophoric materials, hazardous wastes not occurring as co-contaminants, wastes incompatible with backfill, and wastes containing explosives or compressed gases. Therefore, the citations given do not satisfactorily answer the question. The checklist should also cite MP-TRUW-8.2, S. C-1c for completeness.*

Response: Revised C6-1 checklist questions 12 and 12a to reference MP-TRUW-8.9, S. 1.0 and 3.1.1, and MP-TRUW-8.2, S. C-1c. AMWTP procedure MP-TRUW-8.9, S. 3.1.1 instructs the Site Project Manager (SPM) to perform a data review and validation using the applicable SPM checklist referenced in section 3.1.1. The SPM checklists contain the applicable information specified in C6-1 checklist questions 12 and 12a. In addition, the SPM answers questions as to whether the waste is consistent with the Acceptable Knowledge (AK) summary. The AK summary addresses the referenced subject.

2. *Question 12a of the C6 Checklist indicates that the citations given, MP-TRUW-8.9, S. 3.1 and MP-TRUW-8.11, S. 3.2 answers the question. The NMED reviewer could not find any language that references the following: wastes with PCBs; wastes with EPA Hazardous Waste Numbers D001, D002, and D003; waste that was ever managed as high-level waste and wastes from tanks as specified in Table C-8; any waste container from a waste stream (or waste stream lot) which has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream; and any waste container from a waste stream which has not been preceded by an appropriate, certified Waste Stream Profile Form. Therefore, the citations given do not satisfactorily answer the question. The checklist should also cite MP-TRUW-8.2, S. C-1c for completeness.*

Response: Revised C6-1 checklist questions 12 and 12a to reference MP-TRUW-8.9, S. 1.0 and 3.1.1, and MP-TRUW-8.2, S. C-1c. AMWTP procedure MP-TRUW-8.9, S. 3.1.1 instructs the SPM to perform a data review and validation using the applicable SPM checklist referenced in section 3.1.1. The SPM checklists contain the applicable information specified in C6-1 checklist questions 12 and 12a. In addition, the SPM answers questions as to whether the waste is consistent with the AK summary. The AK summary addresses the referenced subject.

3. *Questions 4b, 26, 144, 301, 304, 304a, and 313 of the C6 Checklists indicate that sections within procedure, INST-FOI-22 answers the question. This procedure was omitted from the Audit Report in both hardcopy and electronic.*

Response: Procedure INST-FOI-22 has been added to the revised audit report Table of Audited Documents, Attachment 4, and an electronic and hardcopy of the procedure are enclosed.

4. *Questions 44 and 45 of the C6 Checklist indicate that the citation given, MP-TRUW-8.2, S. C3-12 answers the question. This citation is incorrect and the correct citation is MP-TRUW-8.2, S. C3-13.*

Response: Revised C6-1 checklist questions 44 and 45 to reference MP-TRUW-8.2, S. C3-13.

5. *Question 51a of the C6 Checklist is in need of an explanation in the comments column of the checklist as to why the other columns (Location, Adequate? Y/N (Why?), Item Reviewed, and Adequate? Y/N) were given "N/A".*

Response: Added the following comment in the comments section for C6-1 checklist question 51a: "AMWTP does not composite samples."

6. *Question 148 of the C6 Checklist indicates that the citation given, LST-RTQP-03-IM, S. 2.0-Matrix Page 14 of 14 answers the question. This procedure was omitted from the audit report in both hardcopy and electronic.*

Response: Procedure LST-RTQP-03-IM has been added to the revised audit report Table of Audited Documents, Attachment 4, and an electronic and hardcopy of the procedure are enclosed.

7. *Questions 182 and 231 of the C6 Checklist indicate that the citation given, MP-TRUW-8.25, S. 3.2 & 3.3 answers the question. The procedure was omitted from the Audit Report electronically.*

Response: An electronic copy of procedure MP-TRUW-8.25 is enclosed.

8. *Question 222 of the C6 Checklist indicates that the citation given, MP-TRUW-8.11, S. 4.8.3 answers the question. S. 4.8.3 does not exist in the procedure.*

Response: Revised C6-4 checklist to reference MP-TRUW-8.11, S. 3.2.13.1.1 and 3.2.13.1.2.

Appendix A
Revised A-12-03 Final Audit Report

U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

REVISED FINAL AUDIT REPORT

OF THE

ADVANCED MIXED WASTE TREATMENT PROJECT

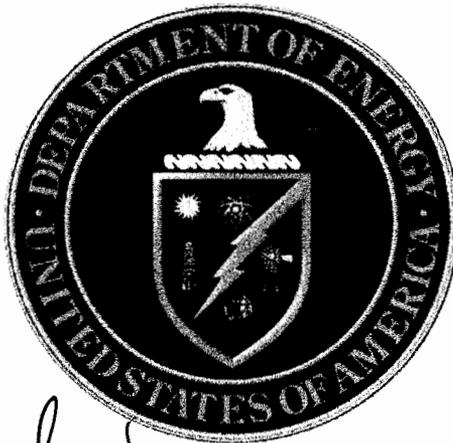
TRU WASTE CHARACTERIZATION AND CERTIFICATION

ACTIVITIES

IDAHO FALLS, IDAHO

AUDIT NUMBER A-12-03

November 1 - 3, 2011



Prepared by:

P. Martinez

Porf Martinez, CTAC
Audit Team Leader

Date:

6/21/12

Approved by:

R. Unger

Randy Unger, CBEO
Quality Assurance Director

Date:

2/8/12

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Recertification Audit A-12-03 was conducted to evaluate the adequacy, implementation, and effectiveness of Advanced Mixed Waste Treatment Project (AMWTP) transuranic (TRU) waste characterization activities performed at the Idaho National Laboratory (INL) relative to the requirements detailed in the *CBFO Quality Assurance Program Document (QAPD)*, the *Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP) Waste Analysis Plan (WAP)*, and the *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WAC)*.

The audit was performed at the INL and AMWTP facilities in Idaho Falls, Idaho, November 1 through 3, 2011. The audit team concluded that overall, the AMWTP technical and WAP-related quality assurance (QA) elements, as applicable to the audited activities, were adequate in addressing upper-tier requirements. The audit team concluded that overall, the defined AMWTP QA and technical programs for contact-handled (CH) Summary Category Group (SCG) S3000 homogeneous solids and CH SCG S5000 debris waste were being satisfactorily implemented in accordance with the QAPD, the HWFP WAP, and the WAC, and were effective in achieving the desired results. The audit team also evaluated a new visual examination process for characterizing S3000 homogeneous solids in the waste treatment facility.

No conditions adverse to quality were identified during the audit. One WAP-related Observation was identified during the audit, and one WAP-related Recommendation was offered for Management consideration as described in section 7.

2.0 SCOPE AND PURPOSE

2.1 Scope

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

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

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

The following QA elements were audited, as required by the HWFP Attachment C6-1 Checklist:

- Personnel Qualification and Training
- Nonconformances
- Records

The following CBFO waste characterization technical elements were audited, in accordance with the CBFO QAPD, the HWFP WAP, and the WAC, for CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste:

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

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

- *CBFO Quality Assurance Program Document*, DOE/CBFO-94-1012
- Hazardous Waste Facility Permit, Waste Isolation Pilot Plant, EPA No. NM4890139088-TSDF, the New Mexico Environment Department
- *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*, DOE/WIPP-02-3122

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

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

2.2 Purpose

Audit A-12-03 was conducted to assess the level of AMWTP compliance to the CBFO QAPD, the HWFP WAP, and the WAC requirements for waste characterization activities related to the certification of CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Courtland Fesmire	CBFO Management QA Representative
Porf Martinez	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Jack Walsh	Auditor, CTAC
Katie Martin	Auditor, CTAC

Cindi Castillo	Auditor, CTAC
Norm Frank	Auditor, CTAC
Charlie Riggs	Auditor, CTAC
Earl Bradford	Auditor, CTAC
Margie Martinez	Auditor, CTAC
Priscilla Martinez	Auditor, CTAC
Paul Gomez	Technical Specialist, CTAC
Dick Blauvelt	Technical Specialist, CTAC
BJ Verret	Technical Specialist, CTAC
Rhett Bradford	Technical Specialist, CTAC

OBSERVERS

Steve Holmes	New Mexico Environment Department (NMED)
Ricardo Maestas	NMED
Connie Walker	NMED Contractor
Norma Castaneda	CBFO Office of the National TRU Program
Thomas Morgan	CBFO Office of the National TRU Program
Kenneth Licklitter	CBFO Office of the National TRU Program
Dorothy Gill	U.S. Environmental Protection Agency (EPA)
Bruce LaRue	Idaho Department of Environmental Quality
Pete Johansen	Idaho Department of Environmental Quality

4.0 AUDIT PARTICIPANTS

The individuals at the INL and AMWTP facilities who were contacted during the audit are identified in Attachment 1. A pre-audit meeting was held in the INL Engineering Research Office Building, main conference room, in Idaho Falls, Idaho, on November 1, 2011. Daily meetings were held with AMWTP Management and staff to discuss the previous day's issues and potential deficiencies. The audit was concluded with a post-audit meeting held in Building EDF-259, conference room WMF-1613, of the AMWTP Energy Drive Facilities in Idaho Falls, Idaho, on November 3, 2011.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

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

The audit team concluded that the applicable AMWTP TRU waste characterization activities, as described in the associated AMWTP implementing procedures, are

satisfactory in meeting upper-tier requirements. Attachment 2 contains a list of personnel contacted during the audit by area. Attachment 3 contains the objective evidence compiled during the audit. Attachment 4 is the table of audited documents. Attachment 5 is a list of processes and equipment evaluated during the audit. Attachment 6 is the procedure revision matrix. Details of audit activities are described below.

5.2 General

5.2.1 Results of Previous Audits

The results of CBFO recertification Audit A-10-24 of AMWTP were examined. No conditions adverse to quality (CAQ) were issued as a result of the referenced audit.

5.2.2 Changes in Programs or Operations

A contract transition occurred for the management and operations (M&O) contractor from Bechtel, BWXT Idaho (BBWI) to the Idaho Treatment Group (ITG), a performance based contract, on October 1, 2011. ITG also acquired the solids analytical lab (SAL) contract. The SAL is evaluated by the CBFO during the INL Labs certification audit and is not in the scope of this audit.

5.2.3 New Programs or Activities Being Implemented

A new VE process for characterizing CH SCG S3000 homogeneous solids waste has been implemented for the south boxline in the waste treatment facility, building WMF-676. The previous process for solids treatment was conducted in the treatment tent in building WMF-628. Procedure INST-FOI-22, *Visual Examination of S3000 Waste in the Facility*, is the new operating procedure used for this process.

5.2.4 Changes in Key Personnel

Due to the contract change, the following key personnel changes have occurred:

- President/General Manager changed from Jeff Mousseau to Richard Raaz, President and Project Manager
- Waste Program Manager changed from Enrique Torres to David Haar
- TRU Programs Manager changed from Enrique Torres to Sue Peterman
- QA Manger changed from Tom Fallon to Elvin Dumas
- Training Manager changed from Ralph Hartline to Mike Parrish

5.3 HWFP WAP-Related Quality Assurance Activities

The audit team evaluated the QA elements for personnel qualification and training, records, and nonconformances to applicable upper-tier requirements. The methods used to select objective evidence are discussed, the objective evidence used to assess compliance with the HWFP WAP is cited briefly (and in detail on the checklists), and the

results of the assessment are provided. The evaluation results for each area audited are described below.

5.3.1 Personnel Qualification and Training

The audit team conducted interviews with responsible personnel in the AMWTP Training Department and reviewed the following implementing procedures to determine the degree to which the procedures adequately address upper-tier requirements: MP-RTQP-14.4, Rev. 17, *Personnel Qualification and Certification*; MP-RTQP-14.6, Rev. 6, *Job Analysis*; MP-RTQP-14.16, Rev. 5, *Training Program Evaluation*; MP-RTQP-14.19, Rev. 5, *Training Records Administration*; and LST-RTQP-03-IM, Rev. 0, *WIPP Training Requirements Implementation Matrix*.

Personnel training records associated with VE, RTR, HSG, SS&A, AK, and site project management were examined to verify implementation of associated requirements and to verify that personnel performing characterization activities are appropriately qualified. The audit team examined qualification and requalification checklists/packages, RTR container demonstration forms, and required reading documentation. A random sampling of documentation for qualified VE operators who received waste stream training for AK RPT-TRUW-83, Revision 1, and AK RPT-TRUW-88, Revision 0, was reviewed. The waste stream training was verified and objective evidence demonstrated that these operators were trained or instructed in specific waste generating practices, typical packaging configurations, and waste material parameters, as required by the HWFP WAP. No concerns were identified during the audit.

The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for personnel qualification and training are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.2 Nonconformances

The audit team conducted interviews with representatives of the AMWTP QA Program. AMWTP procedure MP-Q&SI-5.4, Rev. 20, *Identification of Nonconforming Conditions*, was reviewed to determine the degree to which the procedure adequately addresses upper-tier requirements. Randomly selected nonconformance reports (NCRs) were evaluated to ensure that nonconformances were appropriately documented, resolved, and tracked through closure. The selected NCRs were reviewed to ensure that AMWTP was appropriately documenting and reporting WAP-related nonconformances (identified at the site project management level) to CBFO as required. No concerns were identified during the audit.

The procedure reviewed and objective evidence assembled and evaluated during the audit concluded that the applicable requirements for control of nonconformances are adequately established for compliance with upper-tier requirements and are effectively implemented.

5.3.3 Records

The audit team evaluated the adequacy of AMWTP procedure MP-DOCS-18.2, Rev. 14, *Records Management*, with respect to the requirements of the HWFP WAP and determined that the procedure contains adequate flow-down of upper-tier requirements.

The audit team interviewed records management personnel and observed activities to determine if AMWTP record storage methods were in compliance with procedural requirements. Documents such as record coordinator designation and training, records transmittals, and records indexes were reviewed during the evaluation. The audit team observed records management activities at the records center. No concerns were identified during the audit.

The documents reviewed and evaluated during the audit provided evidence that the applicable requirements for records management are adequately established, satisfactorily implemented, and effective.

5.3.4 Transportation

The audit team conducted interviews with AMWTP waste certification officials (WCOs) and reviewed AMWTP implementing procedure MP-TRUW-8.12, Rev. 22, *Waste Receipt and Shipping Inspection*, relative to transportation requirements, to determine the degree to which the procedure adequately addresses HWFP Attachment C6-1 transportation requirements.

The audit team evaluated shipping documentation and verified that the generator/storage site accurately completed the EPA Hazardous Waste Manifest as required, including the container-specific information, and the shipment documentation was included within the shipment package. No concerns were identified during the audit.

The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for transportation are adequately established for compliance with HWFP Attachment C6-1 transportation requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.5 WWIS/WDS

The audit team conducted interviews with responsible personnel and reviewed AMWTP implementing procedure MP-TRUW-8.5, Rev. 25, *TRU Waste Certification*, relative to WWIS/WDS data entry, to determine the degree to which the procedure adequately addresses HWFP Attachment C6-1 WWIS/WDS requirements.

The audit team reviewed documentation of WWIS/WDS access requests and requests for removal from WWIS/WDS access for AMWTP WCO personnel. The audit team determined that appropriate personnel have been granted access to WWIS/WDS and

are adequately trained in WWIS/WDS operations. Access control to WWIS/WDS applications is established using AMWTP user identification and passwords for network/server access and WWIS/WDS assigned access user names and passwords.

The audit team observed data entry and uploading to the WDS Offsite Shipping Module (OSM) and reviewed selected documentation packages to provide objective evidence of data entry into the WWIS/WDS certification module and the OSM. The audit team determined that WCOs properly enter data directly into WWIS/WDS characterization and certification modules. Data entry is properly performed to complete characterization data and submit it for certification. No concerns were identified during the audit.

The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for WWIS/WDS are adequately established for compliance with HWFP Attachment C6-1 WWIS/WDS requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4 Technical Activities

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

5.4.1 Table C6-1, WAP Checklist

The audit was performed to assess AMWTP's ability to manage and perform TRU waste characterization and certification activities for CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste. The C6-1 WAP checklist addresses general program requirements from an overall management perspective. The general requirements checklist addresses technical requirements and QA programmatic requirements that, when collectively implemented, ensure effective overall management of TRU waste characterization and certification activities. Requirements are integrated into controlled documents that will ensure the waste characterization strategy as defined in the WAP is accomplished and documented in accordance with controlled processes and procedures.

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

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

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

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

Objective evidence was reviewed to ensure project-level activities were adequately performed to support waste characterization. BDRs were evaluated based on project-level requirements for SS&A, HSG S&A, RTR, and VE for CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste. The random selection requirements for HSG were evaluated, along with the associated BDRs. In addition, procedures and objective evidence were reviewed to ensure that AMWTP could adequately perform data reconciliation and properly prepare a WSPF. The audit team reviewed AMWTP procedures MP-TRUW-8.14, Rev. 12, *Preparation of Waste Stream Profile Forms*; MP-TRUW-8.8, Rev. 31, *Level I Data Validation*; and MP-TRUW-8.9, Rev. 24, *Level II Data Validation*.

Objective evidence was reviewed to determine the adequacy of the site project management V&V procedures. The flow of data from the point of generation to inclusion in the WSPF for each characterization technique was reviewed to ensure that all applicable requirements were captured in the site operating procedures.

A review was performed on the CH SCG S5000 debris and CH SCG S3000 homogeneous solids WSPF/Characterization Information Summary (CIS) for BNINW216 First/Second Stage Sludge Solids Sampling Plan, Lot 21. The review included the random sample selection, with two addenda, for BNINW216 First/Second Stage Sludge Solids Sampling Plan, and BNINW216 First/Second Stage Sludge Solids Sampling Report with CIS. The random sample selection for the debris waste stream BN510.1 Boxline lot 1 and lot 2 was provided for review. To aid in the review process the Site Project Manager (SPM) utilized AK documents for the waste reviewed, including AK summary reports for waste streams BNINW216, BNINW218, BN835, BN510, BN004, BN836, BN222, BN510.1, and BN600.

The project-level data V&V process was evaluated by reviewing the following BDRs:

Radiography (RTR)

RTR11-00086 RTR11-00149 RTR11-00158

Visual Examination (VE)

VEB11-00579 VEB11-00853 VEB11-00760

Solids

SSC11-00004 SSC11-00009 SSG11-00005 SSG11-00006
ALD11024V ALD11024S ALD11024N ALD11024M

Headspace Gas (HSG)

HS110-00018 HS111-00010 HS111-00012

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

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

The audit team evaluated the AMWTP's ability to characterize CH SCG S3000 homogeneous solids waste and CH SCG S4000 soils/gravel waste using the solids sampling methods of coring and obtaining representative grab samples. The AMWTP has the capability to sample both CH SCG S3000 homogeneous solids waste and CH SCG S4000 soils/gravel wastes. The audit team evaluated the following solids sampling procedures: MP-TRUW-8.17, Rev. 7, *Co-Located Core Sampling Control Charts*; INST-OI-16, Rev. 37, *Drum Coring Operations*; MP-TRUW-8.34, Rev. 6, *WIPP Sample Transfers*; INST-OI-73, Rev. 10, *Manual Drum Coring Operations*; INST-OI-75, Rev. 8, *Container-in-Container Sampling*; MP-TRUW-8.8, Rev. 31, *Level I Data Validation*; LST-RTQP-03-IM, Rev. 0, *WIPP Training Requirements Implementation Matrix*. The solids sampling procedures were found to be adequate in meeting HWFP requirements.

AMWTP solids sampling activities were evaluated by examining two BDRs: SSC11-00002 and SSG11-00006. Container-in-container sampling operations were observed during this audit. The audit team toured building WMF-634 Coring Facility and examined coring tools and storage of sampling equipment and samples. The audit team reviewed training records for solids sampling operators to verify that their required training and qualifications had been achieved and are current. Equipment blank records were audited, sample tags were checked, custody seals were examined, and control charts were verified.

The AMWTP performs its own SCG S3000 solids sampling and performs SCG S4000 soils/gravel waste sampling for other generator sites. The AMWTP retains responsibility

for the accuracy and completeness of SCG S3000 BDRs by performing project-level data V&V. Solids analysis was not evaluated as part of this audit. The AMWTP utilizes the services of the INL analytical laboratory for analysis of solids samples. The INL laboratory program is audited and approved by CBFO and is currently qualified and certified. No concerns were identified in this area during the audit.

Overall, solids and soils/gravel sampling activities were determined to be adequate in addressing the requirements of the WAP, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.3 Table C6-3, Acceptable Knowledge Checklist

The audit team evaluated the AK process for characterizing CH SCG S5000 debris and CH SCG S3000 homogeneous solids wastes. For the evaluation, the audit team used the WAP C6 checklists, primarily checklist C6-3, as a guide for demonstration of HWFP compliance and also examined compliance with the WIPP WAC. Three waste streams were examined during the audit including S5000 mixed waste debris stream BN510.1, the new supercompacted debris waste stream (RPT-TRUW-83, *Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)*); a new polychlorinated biphenyl (PCB) contaminated debris stream from operations in Bldg 676 where the supercompactor is housed (RPT-TRUW-88, *Acceptable Knowledge Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600)*); and an S3000 mixed waste solids stream BNINW216, First and Second Stage Sludge from Rocky Flats Environmental Technology Site (RPT-TRUW-09, *Acceptable Knowledge Summary for First/Second Stage Sludge (BNINW216)*). The new supercompacted stream was developed when feedstock to the process from the Hanford site was introduced, which resulted in the addition of several new Resource Conservation and Recovery Act (RCRA) hazardous waste numbers.

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

In addition to the respective AK summary reports for these streams (RPT-TRUW-83, Rev. 1, RPT-TRUW-88, Rev. 0, and RPT-TRUW-09, Rev. 7), WAP-required and/or supporting information from AK upper-tier documents was reviewed by the audit team including RPT-TRUW-06, *AMWTP TRU Waste Management Acceptable Knowledge Elements (AK Baseline Report for AMWTP Generated Waste)*; RPT-TRUW-56, *Acceptable Knowledge Document for INL Stored Transuranic Waste-Rocky Flats Plant Waste*; RPT-TRUW-12, *AMWTP Waste Stream Designations*; RPT-TRUW-07,

Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge; and RPT-TRUW-05, Waste Matrix Code Reference Manual.

A total of five drums were tracked for the WAP-required traceability exercise. These included two drums from the BNINW216 waste stream, one of which was part of the latest solids sampling and analysis lot; two drums from the supercompacted waste stream BN510.1, both from distinct HSG sampling and analysis lots for the boxline process in the AMWTP facility; and one drum from HSG sampling and analysis lot 1 for the BN600 debris stream. In addition to reviewing HSG and SS&A BDRs, the relevant VE and RTR characterization BDRs were also examined. The audit team also compiled traceability data from active and historic waste container databases.

For each of the three waste streams reviewed, the WAP Compliance Tracking Table was completed by the generators and reviewed during the audit. As a result, document change requests (DCRs) were prepared and submitted for two of the three waste streams along with a DCR for AK procedure MP-TRUW-8.13, *Collection, Review, and Management of Acceptable Knowledge Documentation*, to address site-specific and/or state-enforced agreements in the assignment of hazardous waste numbers (HWNs). These Tracking Tables and DCRs are attached to the final report submitted to NMED in keeping with the agreement established between NMED and CBFO at the Oak Ridge Audit in February, 2011. The audit team recommends that AMWTP revise the affected AK documentation to incorporate changes to ensure compliance with the December 2010 WAP requirements. See section 7.2, Recommendation 1.

Overall, the acceptable knowledge process was determined to be adequate in addressing the requirements of the WAP and the WAC as applicable, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.4 Table C6-4, Headspace Gas Checklist

The audit team reviewed AMWTP implementing procedures MP-TRUW-8.8, Rev. 31, *Level I Data Validation*; INST-OI-43, Rev. 20, *HGAS Sampling and Analysis Operations*; INST-OI-45, Rev. 16, *Drum Filter Installation*; and INST-OI-50, Rev. 13, *WMF-615 Filter Insertion Operations*, relative to HSG sampling activities, to determine the degree to which procedures adequately address upper-tier requirements.

The audit team evaluated AMWTP operations for HSG sampling and analysis using an automated online sampling and analytical system with gas chromatography/mass spectrometry (GC/MS) and gas chromatography/thermal conductivity detector (GC/TCD). HSG sampling and analysis operations were evaluated by observing sampling and analysis operations, examining the equipment, conducting personnel interviews, and reviewing an HGAS BDR. BDR HS111-00018 was examined and found satisfactory. Successful participation in the latest PDP, Cycle 25A, was verified. Determination of method detection limits (MDL) and performance and accuracy (P&A) studies; laboratory logbooks; standard gas certifications; and the current WIPP approved equipment were audited and found to be compliant. Measuring and test equipment (M&TE) was audited and found to be acceptable. Training and qualification

of individuals performing sampling was confirmed to be acceptable to the AMWTP program. No concerns were identified during the audit.

Overall, HSG sampling activities were determined to be adequate in addressing upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.5 Table C6-5, Radiography Checklist

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

The audit team reviewed AMWTP procedures MP-TRUW-8.8, Rev. 31, *Level I Data Validation*; INST-OI-81, Rev. 8, *Real-Time Radiography Operations (for WIPP Certification of Boxes)*; and INST-OI-12, Rev. 47, *Real-Time Radiography Operations (Drum)*, to determine their adequacy in addressing upper-tier requirements. The results of the review determined that the procedures adequately address requirements.

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

The audit team evaluated RTR operations in Building 634. RTR operations for scan of container number 10352728 was observed using RTR Unit 101 for S3000 solid waste. The audit team also examined RTR operational log entries for both RTR Units 101 and 106, verifying logbook entries were logged correctly and reviewed by the facility shift supervisor as required. Both units are in the same area and had the required equipment.

The audit team examined the following RTR BDRs:

RTR11-00050	RTR11-00160	RTR11-00208
RTR11-00235	RTR11-00262	RTR11-00319

During the review of the audio/video media recording of the radiography, the audit team identified one concern. During RTR characterization scans, RTR operators need to clearly and audibly identify the contents of the container. Auditors observed that the audio/video media recording of the radiography examinations may not be loud enough to verify that the RTR operator is characterizing 100% of the waste container. If not corrected, this practice may result in a condition adverse to quality. See section 7.2, Observation 1.

The procedure reviews, field observations, and document reviews provided evidence that the applicable requirements for characterizing S3000 homogeneous solids and S5000 debris waste using the RTR process are adequately established for compliance

with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.6 Table C6-6, Visual Examination Checklist

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

The audit team reviewed procedures MP-TRUW-8.8, Rev. 31, *Level I Data Validation*; INST-OI-34, Rev. 25, *Non-Facility Visual Examination Operations*; INST-FOI-17, Rev. 23, *Facility Visual Examination Operations*; INST-FOI-22, Rev. 0, FC-3, *Visual Examination of S3000 Waste in the Facility*; and LST-RTQP-03-IM, Rev. 0, *WIPP Training Requirements Implementation Matrix*, to determine their adequacy in addressing upper-tier requirements. The results of the review determined that the procedures adequately address requirements.

AMWTP uses the two-operator VE characterization method in which VE is performed by two qualified operators who examine the waste and place it into containers. AMWTP is performing VE for the Box Line Visual Examination (VEB) for S5000 debris waste and Visual Examination Sludge Closure (VSC) for the initial certification of S3000 solids waste.

The audit team conducted interviews with VE operators and reviewed training files. The audit team evaluated VE operations in Building WMF-676. VE operations for container number 10426237 were observed being performed in the North Box Line for S5000 debris waste. VE operations for container number 10417997 in the South Box Line for S3000 solid waste were also observed. The audit team also examined VE operational logbook entries for both box lines and verified entries were logged correctly and reviewed by the facility shift supervisor as required.

The audit team examined the following VE BDRs:

VEB10-00880	VEB11-00449	VEB11-00850
VSC11-00011	VSC11-00015	VSC11-00017

The audit team examined training records for VE operators/independent technical reviewers (ITRs) and SPMs and confirmed the appointment of six AMWTP VE experts (VEEs). The audit team verified that VE operators, ITRs, and SPMs were appropriately qualified as required. During the review of the training files the audit team identified one non-WAP-related recommendation as described in the interim audit report issued November 30, 2011.

The procedure reviews, field observations, and document reviews provided evidence that the applicable requirements for characterizing S3000 homogeneous solids and S5000 debris waste using the visual examination process is adequately established for

compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

6.0 CORRECTIVE ACTIONS, OBSERVATIONS, AND RECOMMENDATIONS

6.1 Corrective Action Reports

During the audit, the audit team may identify conditions adverse to quality (CAQs) and document such conditions on Corrective Action Reports (CARs).

Condition Adverse to Quality (CAQ) – Term used in reference to failures, malfunctions, deficiencies, defective items, and nonconformances.

Significant Condition Adverse to Quality – A condition which, if uncorrected, could have a serious effect on safety, operability, waste confinement, TRU waste site certification, compliance demonstration, or the effective implementation of the Quality Assurance (QA) program.

No CARs were issued during this audit.

6.2 Deficiencies Corrected During the Audit

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

CAQ – Term used in reference to failures, malfunctions, deficiencies, defective items, and nonconformances.

Significant CAQ – A condition which, if uncorrected, could have a serious effect on safety, operability, waste confinement, TRU waste site certification, compliance demonstration, or the effective implementation of the QA program.

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

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

(isolated), and one or two individuals that have not completed a reading assignment.

No CAQs were corrected during this audit.

7.0 SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS

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

Observation – A condition that, if not controlled, could result in a CAQ.

Recommendation – Suggestion that is directed toward identifying opportunities for improvement and enhancing methods of implementing requirements.

Once a determination is made, the audit team member, in conjunction with the ATL, categorizes the condition appropriately.

7.1 Observations

The following Observation was identified during the audit.

Observation 1

During the review of the audio/video media recording of the radiography, the audit team identified the following concern. During RTR characterization scans, RTR operators need to clearly and audibly identify the contents of the container. Auditors observed that the audio/video media recording of the radiography examinations may not be loud enough to verify that the RTR operator is characterizing 100% of the waste container. If not corrected, this practice may result in a condition adverse to quality.

7.2 Recommendations

One Recommendation was provided to AMWTP Management as a result of the audit.

Recommendation 1

The audit team recommends that AMWTP revise the affected AK documentation to ensure compliance with the December 2010 WAP requirements. The audit team reviewed three waste streams. The WAP Compliance Tracking Table, developed in an agreement established between NMED and CBFO at the Oak Ridge Audit in February, 2011, was completed by the generators and reviewed during the audit. As a result, DCRs were prepared and were submitted for two of the three waste streams along with a DCR for AK procedure MP-TRUW-8.13, *Collection, Review, and Management of Acceptable Knowledge Documentation*, to address site-specific and/or state-enforced agreements in the assignment of HWNs. These tracking tables and DCRs are attached to the final report.

8.0 LIST OF ATTACHMENTS

- Attachment 1: Personnel Contacted During the Audit
- Attachment 2: Personnel Contacted During the Audit by Area
- Attachment 3: Objective Evidence
- Attachment 4: Table of Audited Documents
- Attachment 5: List of Processes and Equipment Reviewed
- Attachment 6: Procedure Revision Matrix

PERSONNEL CONTACTED DURING THE AUDIT

PERSONNEL CONTACTED DURING AUDIT A-12-03				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Angel Aguinaga	ITG Coring and Solids Sampling SME		X	
Jade M. Anderson	ITG Software Lead	X	X	X
Travis Baldwin	ITG Radiological Technician		X	
Conley Beebe	ITG Coring Operator		X	
Dave Becker	ITG Shift Supervisor		X	
Keri Brashier	ITG Procurement Specialist		X	
Gail Brown	ITG Document Control Manager	X	X	X
F. Dave Butler	ITG Training Specialist	X	X	X
George Byram	ITG SPM Lead	X	X	X
Norma Castaneda	CBFO NTP Observer	X	X	X
Steve Carpenter	ITG AKE	X	X	X
John Cummings	ITG RTR Operator		X	
John Cunningham	ITG VE Operator		X	
Ken Downs	ITG VE Operator		X	
Elvin Dumas	ITG QA Manager	X	X	X
Reese Evans	ITG Coring Operator		X	
Courtland Fesmire	CBFO QA Representative	X	X	
Dorothy Gill	EPA Observer	X	X	
John Godak	ITG System Engineer		X	
Ted Griffin	ITG Nuclear Facility Manager			X
David Haar	ITG Waste Programs Manager	X	X	X
Jermaine Hagen	ITG VE Operator		X	
Rod Harrison	ITG Procurement Manager	X	X	
Jared Hawley	ITG Production Support	X	X	

PERSONNEL CONTACTED DURING AUDIT A-12-03				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Jason Hayne	ITG RTR SME	X	X	X
Steve Holmes	NMED Observer	X	X	X
J. M. Jackson	ITG Production Manager			X
Nolan Jacobs	ITG NDA Operator		X	
Jeff Jensen	ITG Engineer		X	X
Pete Johansen	Idaho DEQ Observer	X	X	
Shawn Jordon	ITG RTR Operator		X	
Nancy Kirk	ITG AKE		X	
Karl Kolbert	ITG System Engineer		X	
Bruce LaRue	Idaho DEQ Observer	X	X	X
Denise Lee	ITG RTR ITR	X	X	
Kenneth Licklitter	CBFO NTP Observer	X	X	
Ricardo Maestas	NMED Observer	X	X	X
Michael Martin	ITG Training Lead	X		
Stormie McCurdy	ITG WCO		X	
Thomas Morgan	CBFO NTP Observer	X	X	
Randall C. Morris	ITG AKE		X	
William J. Muirhead	ITG IT Manager	X	X	X
John Nicklas	ITG HSGS Chemist	X	X	X
Casey Nielson	ITG Supply Chain Inspector		X	
Seth Oldham	ITG HSG Operator		X	
Michael Parrish	ITG Training Manager	X	X	
Sue Peterman	TRU Programs Manager	X	X	X
R. P. Raaz	ITG Project Manager	X		X
Scott Raish	ITG Business Manager			X
Cesar Rojas	ITG HSGS Chemist	X		X

PERSONNEL CONTACTED DURING AUDIT A-12-03				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Stephanie Rudolph	ITG M&TE Custodian		X	
Kaye Ryman	ITG WCO		X	
Eric Schweinsberg	ITG SPM	X	X	X
Richard Scott	ITG VE Operator		X	
James Seamans	ITG NDA SME	X	X	X
Jake Shuman	ITG Supply Chain inspector		X	
Jim Simonds	ITG Contracts and Records Manager	X		X
Michael Sorenson	ITG VEE			X
C. A. Stepzinski	ITG Characterization and Waste Handling Manager		X	
Matthew Storms	ITG WDS SME		X	
David Summers	ITG Coring Operator		X	
Jeremy Szabo	ITG Waste Management Lead		X	
Cindy Tieg	ITR RTR Operator		X	
Gina Tedford	ITG SPM Audit Lead	X	X	X
Steve Turner	ITG NDA Systems Engineer		X	
Tim Venniman	ITG AKE		X	
Connie Walker	NMED Observer		X	
L. J. Walker	ITG VEE	X	X	X
Sherri Walker	Records SME	X	X	X
Jerry Wells	DOE-ID Project Manager	X		X
Andy Wood	ITG VE Operator		X	

PERSONNEL CONTACTED DURING THE AUDIT BY SUBJECT AREA

Personnel Qualification and Training	F. Dave Butler Michael Parrish
Control of Nonconforming Items	Elvin Dumas
Records	Gail Brown Sherrie Walker
Sample Control	John Nicklas Cesar Rojas C. A. Stepzinski Angel Aguinaga David Summers Seth Oldham
Waste Certification/Project Level Data V&V	George Byram Gina Tedford Sue Peterman
Solids Sampling and Analysis	John Nicklas Cesar Rojas C. A. Stepzinski Angel Aguinaga David Summers Seth Oldham Conley Beebe
Acceptable Knowledge	Steve Carpenter Carolyn Abbott Micky Johnson Nancy Kirk Whitney St. Michel
Headspace Gas Sampling and Analysis	John Nicklas Cesar Rojas Seth Oldham
Real-Time Radiography	Denise Lee Sue Peterman Jason Hayne Shawn Jordan Cindy Tiegs John Cummings
Visual Examination	LJ Walker Ken Downs Richard Scott Andy Wood John Cunningham Jermaine Hagen Travis Baldwin
WIPP Waste Information System (WWIS Data Entry)	Matthew Storms Stormy McCurdy Kaye Ryman

**OBJECTIVE EVIDENCE
IS LOCATED
IN BOXES**

Table of Audited Documents

NUMBER	PROCEDURE NUMBER	TITLE
1.	CI-IDA-NDA-0035	Calibration Verification & Confirmation Procedure for the Integrated Waste Assay (IWAS) at AMWTP, Canberra Industries
2.	CI-IDA-NDA-0055	Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems, Canberra Industries
3.	RPT-TRUW-03	Drum Assay Technical Review Report
4.	INST-CD&M-11.1.2	Facility Modification Proposal Preparation
5.	INST-CD&M-11.2.1	Software Version Control
6.	INST-CD&M-11.2.2	Software Inventory Classification
7.	INST-CD&M-11.2.3	System Data Change Requests
8.	INST-CMNT-10.14.1	Testing In-Plant and Process Instrumentation
9.	INST-CMNT-10.5.1	Calibration and Control of Measuring and Test Equipment
10.	INST-FOI-01	In-Plant Drum Assay Operations
11.	INST-FOI-17	Facility Visual Examination Operations
12.	INST-FOI-20	Supercompactor and Post-Compaction Operations
13.	INST-FOI-22	Visual Examination of S3000 Waste in the Facility
13.14.	INST-OI-09	Retrieval Inspection Station Operations
14.15.	INST-OI-11	Waste Container Handling
15.16.	INST-OI-12	Real-Time Radiography Operations (Drum)
16.17.	INST-OI-14	Drum Assay Operations
17.18.	INST-OI-16	Drum Coring Operations
18.19.	INST-OI-34	Non-Facility Visual Examination Operations
19.20.	INST-OI-43	HGAS Sampling and Analysis Operations
20.21.	INST-OI-45	Drum Vent Filter Installation
21.22.	INST-OI-50	WMF-615 Filter Insertion Operations
22.23.	INST-OI-73	Manual Drum Coring
23.24.	INST-OI-75	Container-in-container Sampling
24.25.	INST-OI-81	Real-Time Radiography Operations (WIPP Certification of Boxes)
25.26.	INST-TRUW-8.1.1	Drum Assay Post Maintenance Calibration & Verification
27.	LST-RTQP-03-IM	WIPP Training Requirements Implementation Matrix
26.28.	MP-CD&M-11.1	Change Control (Facility)
27.29.	MP-CD&M-11.2	Software Quality Assurance
28.30.	MP-CMNT-10.14	In-Plant and Process Instrumentation Testing Program
29.31.	MP-CMNT-10.5	Measuring and Test Equipment Program
30.32.	MP-DOCS-18.1	Developing Written Work Instructions
31.33.	MP-DOCS-18.2	Records Management
32.34.	MP-DOCS-18.3	Developing Management Procedures
33.35.	MP-DOCS-18.4	Document Control
34.36.	MP-M&IA-17.1	Management Assessment
35.37.	MP-M&IA-17.2	Independent Assessments
36.38.	MP-M&IA-17.3	Quality Assurance Surveillance
37.39.	MP-PCMT-15.1	Acquisition of Material and Services
38.40.	MP-PCMT-15.21	Material Management
39.41.	MP-Q&SI-5.1	Investigation & Root Cause Analysis
40.42.	MP-Q&SI-5.3	Corrective Action
41.43.	MP-Q&SI-5.4	Identification of Nonconforming Conditions
42.44.	MP-Q&SI-5.6	Graded Approach
43.45.	MP-Q&SI-5.8	Qualifying Supply Chain Inspectors, Auditors, Lead Auditors and Technical Specialists
44.46.	MP-RTQP-14.16	Training Program Evaluation

NUMBER	PROCEDURE NUMBER	TITLE
45.47.	MP-RTQP-14.19	Training Records Administration
46.48.	MP-RTQP-14.20	Training Implementation Matrix (TIM)
47.49.	MP-RTQP-14.4	Personnel Qualification and Certification
48.50.	MP-RTQP-14.6	Job Analysis
49.51.	MP-TRUW-8.1	Certification Plan for INL Transuranic Waste
50.52.	MP-TRUW-8.2	Quality Assurance Project Plan (QAPjP)
51.53.	MP-TRUW-8.5	TRU Waste Certification (Includes OSM)
52.54.	MP-TRUW 8.8	Level I Data Validation
53.55.	MP-TRUW 8.9	Level II Data Validation
54.56.	MP-TRUW 8.11	Data Reconciliation
55.57.	MP-TRUW 8.12	Waste Receipt and Shipping Inspection
56.58.	MP-TRUW 8.13	Collection, Review, and Management of Acceptable Knowledge Documentation
57.59.	MP-TRUW 8.14	Preparation of Waste Stream Profile Forms
58.60.	MP-TRUW 8.17	Co-located Core Sampling Control Charts
59.61.	MP-TRUW 8.25	Random Selection of Containers for HSG and Solids Sampling and Analysis
60.62.	MP-TRUW 8.26	Reports to Management
61.63.	MP-TRUW 8.34	WIPP Sample Transfers

Process and Equipment Reviewed

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
NEW PROCESSES OR EQUIPMENT				
NONE				
PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT				
The following processes and equipment were evaluated during CBFO Audit A-10-24				
Headspace Gas (HSG)				
9HG4	Procedure – INST-OI-43 Description – CTI Headspace Gas Sampling System – Unit 001	Solids (S3000) Debris (S5000)	YES	N/A
Solids Sampling				
9DC1	Drum Coring Procedures – INST-OI-16 and INST-OI-73 (<i>Manual Drum Coring Operation</i>) and INST-OI-75 Description – Drum Coring and Sample Collection System	Solids (S3000) Soils/Gravel (S4000)	YES	N/A
Nondestructive Assay (NDA)				
9DA1	Procedure – INST-OI-14 Description – Canberra Drum Assay System Z-211-102	Solids (S3000) Debris (S5000)	N/A	Yes
9DA2	Procedure – INST-OI-14 Description – Canberra Drum Assay System Z-211-103	Solids (S3000) Debris (S5000)	N/A	Yes
9DA3	Procedure – INST-FOI-01 Description – Canberra Drum Assay System Z-390-100	Debris (S5000)	N/A	Yes
9DA4	Procedure – INST-FOI-01 Description – Canberra Drum Assay System Z-390-101	Debris (S5000)	N/A	Yes

Process and Equipment Reviewed

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
Nondestructive Examination (NDE)				
9RR1	Procedure – INST-OI-12 and INST-OI-81 Description – Real-Time Radiography (RTR) System	Solids (S3000) Debris (S5000)	YES	YES
9RR2	Procedure – INST-OI-12 and INST-OI-81 Description – Real-Time Radiography System	Solids (S3000) Debris (S5000)	YES	YES
Visual Examination				
9VE2	Visual Examination Procedure – INST-OI-34 Description – Visual Examination (in lieu of RTR) (VEC)	Solids (S3000) Debris (S5000)	YES	YES
9VE3	Visual Examination Procedure – INST-OI-34 Description – Newly Generated Waste Visual Examination Closure (VNC)	Solids (S3000) Debris (S5000)	YES	YES
9VE5	Visual Examination Procedure – INST-FOI-17 Description – Visual Examination (in lieu of RTR) (VEC)	Debris (S5000)	YES	YES
9VE6	Visual Examination Procedure – INST-FOI-17 Description – Newly Generated Waste Visual Examination Closure (VNC)	Debris (S5000)	YES	YES

Process and Equipment Reviewed

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
9VE7	Visual Examination Procedure – INST-FOI-17 Description – Box Line Visual Examination (VEB) – Box to drum repackaging	Debris (S5000)	YES	YES
9VE8	Visual Examination Procedure – INST-FOI-17 Description – Box Line Visual Examination (VEB) – Drum to new drum repackaging	Debris (S5000)	YES	YES
9VE10	Visual Examination Procedure – INST-OI-34 Description – Box Line Visual Examination (VEB) – Drum to new drum repackaging	Solids (S3000) Debris (S5000)	YES	YES

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
Quality and Safety Improvement					
1	MP-Q&SI-5.1	Investigation and Root Cause Analysis	Rev. 8	Rev. 8	No revision since Audit A-10-24
2	MP-Q&SI-5.3	Corrective Action	Rev. 10	Rev. 11	Rev. 11 - DCR-9280. Incorporated allowance in Section 3.2 for the use of the NCR reporting process for ORPS events that are equipment failure related, aligning with MP-COPS-9.6 and QA program intent. Incorporated DOCS-BLUESHEET-05 and updates for periodic review. Changed NTS to NNSS.
3	MP-Q&SI-5.4	Identification of Nonconforming Conditions	Rev. 19	Rev. 20	Rev. 20 - DCR-9873. Periodic review and update. Reference Action Items 56147 and 58550.
4	MP-Q&SI-5.6	Graded Approach	Rev. 3	Rev. 3	No revision since Audit A-10-24
5	MP-Q&SI-5.8	Qualifying Supply Chain Inspectors, Auditors, Lead Auditors, and Technical Specialists	Rev. 7	Rev. 7	No revision since Audit A-10-24
TRU Management					
6	MP-TRUW-8.1	Certification Plan for INL Transuranic Waste	Rev. 19	Rev. 21	<p>Rev. 20 - DCR-9709. Incorporate the WIPP Waste Acceptance Criteria, Rev. 7.0. Revision 7.0 incorporates extensive editorial changes and includes renumbering of the pages, renumbering of the references to correspond with the order of their appearance in the document, alignment of the cited sections of the WIPP Hazardous Waste Permit Renewal, renumbering of the tables, reformatting the table addressing 239Pu FGE limits for payload containers to minimize the use of footnotes, numerous punctuation and grammatical changes, addition/deletion of acronyms, updates to Internet links, and minor text changes for the purposes of clarification, including the incorporation of a statement in Section 3.1.4.1 that Appendices F and G specify the methodologies used to quantify the waste component limits of interest to EPA. Also added a statement in Sections 3.1 and 4.1 that the WIPP Waste Information System (WWIS) database is a subsystem of the Waste Data System (WDS).</p> <p>Rev. 21 - DCR-10200. Incorporated the WIPP Waste Acceptance Criteria, Revision 7.1 and 7.2. Revision 7.1 incorporates editorial changes. These changes include changes in terminology to mirror the WCPIP, the incorporation of clarification text in Sections 3.0 and A.6.1 as recommended by the U.S.</p>

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
					<p>Environmental Protection Agency, the reformatting of bullet lists and table footnote fonts to improve readability, and the correction of typographical errors. This document does not address the editorial changes that align Section 4.2.5 with the radiation dose equivalent dose rate requirements from the Remote-Handled (RH) TRU Waste Characterization Program Implementation Plan (WCP/IP) or the clarifications addressed in Section 4.0 as the AMWTP does not ship RH waste.</p> <p>Revision 7.2 incorporates the requirements for the TRUPACT-III and SLB2. References have been updated to include the Certificate of Compliance and the Transuranic Waste Authorized Methods for Payload Control for the TRUPACT-III. Other changes include updates to the list of acronyms, glossary, and Table A-1.</p>
7	INST-TRUW-8.1.1	Drum Assay Post-Maintenance Calibration and Verification	Rev. 11	Rev. 11	No revision since Audit A-10-24
8	MP-TRUW-8.2	Quality Assurance Project Plan	Rev. 13	Rev. 15	<p>Rev. 14 - DCR-9605. Incorporate the new WIPP Hazardous Waste Permit Renewal structure (attachments and sections from B to C and modules to parts/subparts), revise the definitions of <i>waste stream</i> and <i>ITR</i>, delete (cis)1, 2-dichloroethylene, clarify the RTR training drum VEE training, RTR independent replicate scan and oversight functions, and AK.</p> <p>Rev. 15- DCR-10191. Incorporate the Class 2 PMR to add the TRUPACT-III and Standard Large Box 2. Also incorporated editorial comments from the Class 1 permit notification dated 07/11/2011.</p>
9	MP-TRUW-8.5	TRU Waste Certification	Rev. 25	Rev. 25	No revision since Audit A-10-24
10	MP-TRUW-8.8	Level I Data Validation	Rev. 29	Rev. 31	<p>Rev. 30 - DCR-9635. Incorporate the WIPP Permit Renewal.</p> <p>Rev. 31 - DCR-10152. Various revisions to address CAR 61367 and to address sludge processing in AMWTF.</p>
11	MP-TRUW-8.9	Level II Data Validation	Rev. 22	Rev. 24	<p>Rev. 23- DCR-9556. As part of AI 52095, moved "batch data report" information out of Section 3.0 to Section 4.0, Definition.</p> <p>Rev. 24 -</p>

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
12	MP-TRUW-8.11	Data Reconciliation	Rev. 17	Rev. 22	<p>Rev. 18 - DCR-9009. Added RPT-TRUW-83 to step.</p> <p>Rev. 19 - DCR-9612. Changed references from "B3-2 through B3-9" to "C3-2 through C3-9" to implement the new numbering sequence from the new WIPP Permit Renewal.</p> <p>Rev. 20 - DCR-9643. Revert content back to same as approved in revision 18 as changes identified for revision 19 must be held until MP-TRUW-8.2, Rev. 14 is issued.</p> <p>Rev. 21 - DCR-9649. Changed references from "B3-2 through B3-9" to "C3-2 through C3-9" to implement the new numbering sequence from the new WIPP Permit Renewal and change the definition of a waste stream.</p> <p>Rev. 22 - DCR-9777. Changes were made to satisfy CAR#57571, AI#59136 and CAR#57569.</p>
13	MP-TRUW-8.12	Waste Receipt and Shipping Inspection	Rev. 22	Rev. 22	No revision since Audit A-10-24
14	MP-TRUW-8.13	Collection, Review, and Management of Acceptable Knowledge Documentation	Rev. 21	Rev. 23	<p>Rev. 22 - DCR-9633. Revised to incorporate WIPP WAP permit renewal changes. Updated sections throughout for consistency with AK documentation and to clarify content of AK reports. Updated Section 3.1 to reflect use of the AK Database. Updated Section 4.0 to reflect forms included WSP package submittals. Deleted Appendix F and renumbered Appendix H to become Appendix F.</p> <p>Rev. 23 - DCR-9799. Steps 3.2.6 and 3.2.6.1 revised to clarify WIPP-WAP and WAC requirements for additional/supplemental AK documentation.</p>
15	MP-TRUW-8.14	Preparation of Waste Stream Profile Forms	Rev. 11	Rev. 12	Rev. 12 – DCR-9637. Revised Sections 3.1, 3.3, and 4.0 to incorporate WIPP WAP permit renewal changes. Updated Section 4.0 to reflect forms included in WSP package submittals. Also made editorial changes.
16	MP-TRUW-8.17	Co-Located Core Sampling Control Charts	Rev. 7	Rev. 7	No revision since Audit A-10-24
17	MP-TRUW-8.25	Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis	Rev. 17	Rev. 18	Rev. 18 - DCR-9648. Incorporated changes to implement the WIPP Permit Renewal.
18	MP-TRUW-8.26	Reports to Management	Rev. 5	Rev. 5	No revision since Audit A-10-24
19	MP-TRUW-8.34	WIPP Sample Transfers	Rev. 6	Rev. 6	No revision since Audit A-10-24

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
20	CI-IDA-NDA-0035	Calibration Verification & Confirmation Procedure for the Integrated Waste Assay System (IWAS) at AMWTP Canberra Industries	Rev. 3	Rev. 3	No revision since Audit A-10-24
21	CI-IDA-NDA-0055	Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems (IWAS) for the Characterization of TRU Drums at the AMWTP Canberra Industries	Rev. 1	Rev. 1	No revision since Audit A-10-24
Conduct of Maintenance					
22	MP-CMNT-10.5	Measuring and Test Equipment Program	Rev. 8	Rev. 9	Rev. 9 - DCR-9340. Made various changes for clarity and consistency.
23	INST-CMNT-10.5.1	Calibration and Control of Measuring and Test Equipment	Rev. 10	Rev. 11	Rev. 11 - DCR-9341. Clarified the use of the "shipper" throughout the document.
24	MP-CMNT-10.14	In-Plant and Process Instrumentation Testing Program	Rev. 5	Rev. 5	No revision since Audit A-10-24
25	INST-CMNT-10.14.1	Testing In-Plant and Process Instrumentation	Rev. 7	Rev. 7	No revision since Audit A-10-24
Control of Design and Modification					
26	MP-CD&M-11.1	Change Control	Rev. 8	Rev. 8	No revision since Audit A-10-24
27	INST-CD&M-11.1.2	Facility Modification Proposal Preparation	Rev. 10	Rev. 11	Rev. 11 - DCR-9575. Incorporated document to resolve CARs 54791 and 54318.
28	MP-CD&M-11.2	Software Quality Assurance	Rev. 15	Rev. 16	Rev. 16 - DCR-9934. Changes made to resolve AI-59403 associated with CAR-56882.
29	INST-CD&M-11.2.1	Software Version Control	Rev. 7	Rev. 7	No revision since Audit A-10-24
30	INST-CD&M-11.2.2	Software Inventory Classification	Rev. 8	Rev. 9	Rev. 9 - DCR-9691. Revised to add five new codes to Appendix A, to formalize the use of LST-PAIT-02, and to make certain minor editorial corrections.
31	INST-CD&M-11.2.3	System Data Change Request	Rev. 5	Rev. 5	No revision since Audit A-10-24
Training and Qualification					
32	MP-RTQP-14.4	Personnel Qualification and Certification	Rev. 16	Rev. 17	Rev. 17 - DCR-9886. Minor change to add note to Step 3.5.2 that clarifies the requirements of DOE O 5480.20A.
33	MP-RTQP-14.6	Job Analysis	Rev. 6	Rev. 6	No revision since Audit A-10-24
34	MP-RTQP-14.16	Training Program Evaluation	Rev. 5	Rev. 5	No revision since Audit A-10-24
35	MP-RTQP-14.19	Training Records Administration	Rev. 5	Rev. 5	No revision since Audit A-10-24
36	MP-RTQP-14.20	Training Implementation Matrix	Rev. 8	Rev. 8	No revision since Audit A-10-24

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
Procurement					
37	MP-PCMT-15.1	Acquisition of Material and Services	Rev. 10	Rev. 11	Rev. 11 - DCR-9579. Revised to close CARs 53728, 54546, and 54556 (AI 54941). Created new Form-2011 and renamed Form-1948. Created new Appendix I for commercial grade designation. Separated emergency procurement steps into Section 3.10. Revised for readability and document flow.
38	MP-PCMT-15.21	Material Management	Rev. 6	Rev. 6	No revision since Audit A-10-24
Management and Independent Assessments					
39	MP-M&IA-17.1	Management Assessment	Rev. 10	Rev. 10	No revision since Audit A-10-24
40	MP-M&IA-17.2	Independent Assessment	Rev. 8	Rev. 9	Rev. 9 - DCR-9600. Changes made to implement corrective action for CAR 55228, Action Item 55525, to define the independent assessment requirements of DOE O 450.1A for assessment of the Environmental Management System to meet the internal audit requirement of ISO 14001:2004 (E).
41	MP-M&IA-17.3	Quality Assurance Surveillance	Rev. 7	Rev. 7	No revision since Audit A-10-24
Documents and Records					
42	MP-DOCS-18.1	Developing Written Work Instructions	Rev. 11	Rev. 12	Rev. 12 - DCR-9782. Revise to require incorporation of hazard assessment results into INSTs, update cover page examples, refine definitions for controlled activity and general use, and add that P&Ls/ Pre-Reqs, and steps must within the control of the performer to implement.
43	MP-DOCS-18.2	Records Management	Rev. 13	Rev. 14	Rev. 14 - DCR-10355. Revised to incorporate Form-2034; to capture new record types; to create new record categorizations and disposition types for ACL Lab records; and various editorial changes as documented on the DCR.
44	MP-DOCS-18.3	Developing Management Procedures	Rev. 7	Rev. 7	No revision since Audit A-10-24
45	MP-DOCS-18.4	Document Control	Rev. 30	Rev. 34	Rev. 31 – DCR-9515. Revised to add descriptions/definitions to document types in Appendix B (AI 53393), remove controlled copy responsibilities from SS, add review requirements for policies and various clarifications in Appendix A, and rewrite Section 3.11 to capture process for submitting AK documents to CBFO. Rev. 32 – DCR-9739. Corrective Action for CAR 54018 to formalize new Temporary Operating Instruction (TOI) process.

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
					<p>Rev. 33 – DCR-9875. Revised to strengthen the FC process with respect to requirement steps for CAR 57986 and revise Appendix A per various requests.</p> <p>Rev. 34 - DCR-10185. Revised to incorporate DOCS-BLUESHEET-08, Analytical Chemistry Laboratory (ACL) procedure process and requirements, PORC review of operational instructions, change of validation types, expanding bluesheet definition to include transition specific changes, and updated Appendix A, Minimum Reviews.</p>
Retrieval and Characterization					
46	INST-OI-09	Retrieval Enclosure Waste Container Extraction	Rev. 36	Rev. 42	<p>Rev. 40 – DCR=9367. Incorporate changes regarding containers with small breaches. Incorporate FC-1 to make permanent.</p> <p>Rev. 41 – DCR-9657. Incorporate FC-1 to make permanent.</p> <p>Rev. 42 – DCR-10219. Complete rewrite to reflect the WTS inspection station methods used in the creating and tracking retrieved waste containers in the TSA-RE.</p> <p>Rev. 42 FC-1 – DCR 10377. Change made as a result of MSA findings, so that procedure can be performed correctly, and to identify additional container types used.</p>
47	INST-OI-11	Waste Container Handling	Rev. 39	Rev. 44	<p>Rev. 40 – DCR-9488. Incorporated changes due to Class 1 permit modification.</p> <p>Rev. 41 – DCR-9704. Added additional IDC changes to table. Made editorial changes to update reference titles and documents that have been superseded.</p> <p>Rev. 42 – DCR-9959. Deleted Form-2017 references (no longer needed), corrected the incompatible IDCs in the table(s); added steps for clarification for half-spacers or half-plywood sheets; and Long-term Order 2011-006 changes. Also made editorial to add the performer for the pre-job and post-job review steps.</p> <p>Rev. 43 – DCR-10093. Changes to allow storage of pyrophoric materials in WMF-610 and the Type I and Type IIs, added new columns to tables for interim storage for cargo containers for macro encapsulation and 100-/110-gal drums, new section for toaster cover installation, and to implement CWRs from RPT-NFCS-15, SF-1, and SF-2, Implements 2011 annual DSA changes</p> <p>Rev. 43 FC-1 – DCR-10319. Added new step 4.1.7.4 to Notify the PSM.</p> <p>Rev. 44 – DCR-10352. Incorporated FC-1 DCR-10319 change, made step number changes, added wording to incorporate changes to EDF-0266.</p>

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
48	INST-OI-12	Real-Time Radiography Operations (Drum)	Rev. 44	Rev. 47	<p>Rev. 45 – DCR-9494. Incorporated FCs 1 through 5 (DCRs-9451; 9517; 9534; 9543; 9549) as permanent.</p> <p>Rev. 45 FC-1 - DCR-9560. Incorporated changes to allow operators to restore programs required to perform an audio/video recording; delete appendix B, add reference to “or eSOMS equivalent” when referencing Form-1374.; update kV values where appropriate.</p> <p>Rev. 46 - DCR-9676. Incorporate Revision 45 FC-1 (DCR-9560) and the WIPP Permit Renewal.</p> <p>Rev. 47 - DCR-10137. Changed to Controlled Activity. Updated steps and notes to match operational changes. Added clarification to reduce duplicate NCRs and to minimize rework. Resolves CAR 54805.</p>
49	INST-OI-14	Drum Assay Operations	Rev. 25	Rev. 27	<p>Rev. 26 – DCR-9816. Incorporate field changes from DCRs-9548,-9751 and implement Action C from LCO 3.2, Annual TSR update.</p> <p>Rev. 27 - DCR-10198. Changed use type to “Controlled Activity” (AI# 60419).</p>
50	INST-OI-16	Drum Coring Operations	Rev. 34	Rev. 37	<p>Rev. 35 – DCR-9595. Added Qualified Operations Technician or Characterization Shift Supervisor to Section 2.0 under Authorized Individual.</p> <p>Rev. 36 – DCR 9714. Changes to incorporate Data Quality requirements, provide further direction and clarification, improve process flow, implement SCR 4090, and incorporate annual TSR update by removing the word “previously.”</p> <p>Rev. 37 – DCR-I 0084. Made changes throughout the document in order to appropriately convert from General Use to Controlled Activity use-type. Removed some antiquated steps (e.g., VE section).</p> <p>Rev. 37 FC-1 – DCR – Changes needed to support changes to trip blank volumes. Delete steps that are duplicated and performed in other steps.</p>
51	INST-OI-34	Non-Facility Visual Examination Operations	Rev. 22	Rev. 25	<p>Rev. 23 - DCR-9584. Incorporated the WIPP Renewal Request and Waste Acceptance Criteria changes.</p> <p>Rev. 23 FC-1 - DCR-9717. Add Form-1900, AMWTP Offsite Waste Stream Profile, as information resource.</p> <p>Rev. 24 - DCR-9773. Added additional IDCs to Exhibit 14.</p> <p>Rev. 24 FC-1 - DCR-9979. Changes needed for WTS functionality.</p>

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
					Rev. 25 - DCR-10073. Incorporated field change 1 (DCR-9979) and deleted IDC RF-095 to provide consistency with RPT-ESH-014.
52	INST-OI-43	HGAS Sampling and Analysis Operations	Rev. 18	Rev. 20	Rev. 19 – DCR-9481. Incorporated DCR-9194 to make field change permanent. Rev. 20 - DCR 9647. Incorporated the WIPP Permit Renewal.
53	INST-OI-45	Drum Filter Installation	Rev. 12	Rev. 16	Rev. 13 – DCR-9500. Incorporated DCR-9212 to make field change permanent. Rev. 14 – DCR 9836. Annual TSR update, remove word “previously.” Rev. 15 – DCR 9982 – Revised to add instruction for changing out gloves and to redesignate as Controlled Activity.” Rev. 16 – DCR-10331. DCR-10331. Changed step 4.3.2 per CAR 63176, added roll down references for Hazard Assessment implementing steps. Rev. 16 FC-1 – DCR-10442. Revised to delete Step 3.2.6, and remove DS-220-001 and, in step 3.2.7.
54	INST-OI-50	WMF-615 Filter Insertion Operations	Rev. 11	Rev. 13	Rev. 12 – DCR-9745. Added new Step 3.2.10.1 and changed “HOMED” to “AT FULLY RAISED” in Step 4.2.15.2. Rev. 12 FC-1 - DCR-10062. Changed glove inspection and frequencies in Step 3.2.10.1 from 12 to 18 months. Rev. 13 - DCR-10170. CAR 63176, AI 54815. This DCR supersedes the changes made by FC-1, DCR-10062. Added steps to prevent venting roaster oxide containers. Added section for responding to a breached DVF survey station glove and for damaged or expired DVF survey station glove change-out.
55	INST-OI-73	Manual Drum Coring Operations	Rev. 7	Rev. 10	Rev. 8 – DCR-9699. Added Qualified Operations Technician or Characterization Shift Supervisor to Section 2.0 under Authorized Individual. Rev. 9 – DCR 9839. Annual TSR update, remove word “previously.” Made changes needed for STS offsite shipment. Rev. 10 – DCR-10109. Made changes throughout the document in order to appropriately convert from General Use to Controlled Activity use-type. Removed some antiquated steps (e.g., VE section). Rev. 10 FC-1 – DCR-10284, change needed for new laboratory requirements for trip blanks.

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
56	INST-OI-75	Container-in-Container Sampling	Rev. 4	Rev. 8	<p>Rev. 5 – DCR-9552. Incorporated DCR-9511, operational requirements and changes to clarify procedure.</p> <p>Rev. 6 – DCR-9700. Added Qualified Operations Technician or Characterization Shift Supervisor to Section 2.0 under Authorized Individual.</p> <p>Rev. 7 – DCR-9856. Changes to include VE in operations, allow OTs to skip steps relating to sampling, and add requirements for additional samples taken,</p> <p>Rev. 8 - DCR 10201. Changed use type to “Controlled Activity” and corrected title for INST-OT-24.</p> <p>Rev. 8 FC-1 – DCR-10279, changes to required trip blank volumes, delete duplicated steps, move steps to proper location in document.</p> <p>Rev. 8 FC-2 – DCR 10390. Insert sub-step to allow OT to overpack a drum if needed.</p>
57	INST-OI-81	Real-Time Radiography Operations (for WIPP Certification of Boxes)	Rev. 6	Rev. 8	<p>Rev. 7 – DCR-9497. Incorporated FC-1 (DCR-9454) and FC-2 (DCR-9568). Incorporate the new WIPP Hazardous Waste Permit language changes. Also corrected inconsistencies in FCs compared to OI-12 FCs.</p> <p>Rev. 8 - DCR-10139. Changed to Controlled Activity. Updated steps and notes to match operational changes. Added clarification to reduce NCRs and to minimize rework. Resolves CAR 54805.</p>
Treatment Facility					
58	INST-FOI-01	In-Plant Drum Assay Operations	Rev. 19	Rev. 22	<p>Rev. 20 - DCR-9608. Incorporated LCO-3.2 action 3 (new) regarding putting check containers in SUSPENSION MODE as part of the 2010 annual update to the TSR.</p> <p>Rev. 21 - DCR-10046. Changed procedure to a controlled activity, made changes that allow for manual control of devices during operations, made other changes to clarify and allow procedure to flow better, and changes per CAR 56882 and also CAR 60557.</p> <p>Rev. 22 - DCR-10274. Added step to be consistent with other procedures. Added new LCO for dust accumulation per CAR 63656.</p>

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
59	INST-FOI-17	Facility Visual Examination Operations	Rev. 19	Rev. 23	<p>Rev. 20 – DCR-9583. Incorporated the WIPP Renewal Request and Waste Acceptance Criteria changes.</p> <p>Rev. 21 - DCR-9776. Added additional IDCs to Appendix B.</p> <p>Rev. 22 - DCR-9956. Removed word “previously” as part of annual TSR update to SAC 5.2.7.</p> <p>Rev. 22 FC-1 - DCR-9981. Delete F8 function form certain sections.</p> <p>Rev. 22 FC-2 - DCR-9989. Removed Controlled Activity designator.</p> <p>Rev. 23 - DCR-10094. Incorporate FC-1 and FC-2 (DCRs-9989, 9981). Deleted IDC RF-095 from Unknowns to provide consistency with RPT-ESH-014.</p>
60	INST-FOI-20	Supercompactor and Post-Compaction Operations	Rev. 30 FC-2	Rev. 34	<p>Rev. 31 – DCR 9135. Incorporated changes from field change DCR-9235 and 9251.</p> <p>Rev. 31 FC-1 – DCR-9726. Added bag out step for when liquids are not present and clarification to Step 4.6.3.</p> <p>Rev. 31 FC-2 – DCR-9850. Incorporated new IDC changes to support SDCR-2255.</p> <p>Rev. 32 – DCR-9622. Due to the rewrite of this procedure, FC-1 (dcr-9726) no longer applies. Incorporated FC-2 IDC changes per DCR-9850. Rewrite to update per the evolved process with WTS and ICS downloads, and added a new section for introduction of non-fissile maintenance items/tools into the Supercompactor glovebox.</p> <p>Rev. 33 – DCR-9922. Implement SAC and LCO wording changes from TSR annual update.</p> <p>Rev. 33 TFC-1 – DCR-10033. Implement 238Pu controls.</p> <p>Rev. 33 FC-1 - DCR-10128. Made TFC-1 permanent (DCR-10033).</p> <p>Rev. 34 – DCR-10032. Incorporated FC-1 (DCR-10033). Changed to Controlled Activity (AI 60418). Added drum inspection criteria, removed reference to INST-OI-23, relocated steps to abnormal section, and simplified squeezant handling during crit cleanout.</p> <p>Rev. 34 FC-1 – DCR-10272. Provide means to move maintenance Item into supercompactor Glovebox.</p>

Appendix B
Redlined C6 Checklists

**Revised Table C6-1 Waste Analysis Plan (WAP) Checklist
AMWTP Recertification Audit A-12-03**

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

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
WASTE STREAM IDENTIFICATION						
1	Does the generator/storage site define "waste stream" as waste material generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents? (Attachment C Section C-0a)	MP-TRUW-8.13, S. 3.3.5 (Note above) & 4.0	Y	AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7 (AK-3)	Y	
2	Are procedures in place to ensure that the generator/storage site assigns one of the Summary Category Groups (S3000-homogeneous solids, S4000-soils/gravel, S5000-debris waste) to each waste stream? (Section C-1b)	MP-TRUW-8.13, App. B, S. I.C (a) MP-TRUW-8.14, S. 3.1.6	Y	AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.2.7 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.2.7 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.2.7 (AK-3) Waste Stream Profile Form and attachments for waste stream BN510.1 (AK-8) Waste Stream Profile Form and attachments for waste stream BN600 (AK-9) Waste Stream Profile Form and attachments for waste stream BNINW216 (AK-10)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
3	Are procedures in place to ensure that the generator/storage site assigns Waste Matrix Code Groups (e.g., solidified inorganics, solidified organics, salt waste, soils, combustible waste, filters, graphite, heterogeneous debris waste, inorganic nonmetal waste, lead/cadmium metal, uncategorized metal) to each waste stream? (Section C-0a)	MP-TRUW-8.13, App. B, S. I.C.(b) MP-TRUW-8.14, S. 3.1.6	Y	AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.2.8 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.2.8 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.2.8 (AK-3) Waste Stream Profile Form and attachments for waste stream BN510.1 (AK-8) Waste Stream Profile Form and attachments for waste stream BN600 (AK-9) Waste Stream Profile Form and attachments for waste stream BNINW216 (AK-10)	Y	
4	Are procedures in place to ensure that the generator/storage site assigns a Waste Stream WIPP Identifier (ID) to each waste stream? (Section C3-12b(1))	MP-TRUW-8.14, S. 3.1.6	Y	Waste Stream Profile Form and attachments for waste stream BN510.1 (AK-8) Waste Stream Profile Form and attachments for waste stream BN600 (AK-9) Waste Stream Profile Form and attachments for waste stream BNINW216 (AK-10)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
4a	<p>Are procedures in place for generator/storage sites to submit an AK Sufficiency Determination (Determination Request) to the Permittees to meet all or part of the waste characterization requirements including:</p> <ul style="list-style-type: none"> All information specified in Permit Attachment C4, Section C4-3d Identification of relevant hazardous constituents, and correctly identifies all toxicity characteristic and listed hazardous waste numbers All hazardous waste number assignments must be substantiated by supporting data and, if not, whether this lack of substantiation compromises the interpretation Resolution of data discrepancies between different AK sources must be technically correct and documented The AK Summary includes all the identification of waste material parameter weights by percentage of the material in the waste stream, and determinations are technically correct All prohibited items specified in the TSDf-WAC should be addressed, and conclusions drawn are technically adequate and substantiated by supporting information If the AK record includes process control information specified in Permit Attachment C4, Section C4-3b, the information should include procedures, waste manifests, or other documentation demonstrating that the controls were adequate and sufficient. The site must provide the supporting information necessary to substantiate technical conclusions within the Determination Request, and this information must be correctly interpreted. <p>(Section C-0b, Section C4-3d)</p>	MP-TRUW-8.13, S. 3.6	Y	N/A	N/A	The generator is not seeking an AK Sufficiency Determination for the waste streams that were audited.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
4b	If a generator/storage site does not submit a Determination Request or if the Determination Request is not approved, are procedures in place for the generator/storage site to perform radiography or VE on 100% of the containers in a waste stream and chemical sampling and analysis on a representative sample of the waste stream using headspace gas sampling and analysis (for debris waste) or solids sampling and analysis (for homogeneous solid or soil/gravel waste) as specified in Permit Attachments C1 and C2? (Section C-0b)	MP-TRUW-8.2, S. C-0b MP-TRUW-8.9, S. 2.0 MP-TRUW-8.11 (All) MP-TRUW-8.13, S. 3.6 INST-FOI-17, (All) INST-FOI-22, (All) INST-OI-34, (All) INST-FOI-20, (All) INST-OI-12, (All) INST-OI-81, (All)	Y	<u>RTR BDRs:</u> RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1) <u>VE BDRs:</u> VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2) <u>HSG BDRs:</u> HS110-00018 HS111-00010 HS111-00012 (GEN-3) <u>SS BDRs:</u> SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4) Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline, Lot 1-SPC-014-10 Subsequent Headspace Gas Random Sample Selection for BN510.1 Boxline Lot 2-SPC-015-10 Addendum to Headspace Gas Random Sample Selection Memorandum Lot 1 of BN600, AMWTP WMF-676 PCB Contaminated Debris WS-SPC-005-11 (GEN-5)	Y	The generator is not seeking an AK Sufficiency Determination for the waste streams that were audited.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Solids Sampling Plan for BNINW216, Lot 21-SPC- 006-11 Addendum to Solids Sampling Plan for BNINW216 Lot 21-SPC- 007-11 Addendum to Solids Sampling Plan for BNINW216 Lot 21-SPC- 008-11 (GEN-6)		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
4c	Are procedures in place to ensure that the generator/storage sites complete a Waste Stream Profile Form (WSPF) and Characterization Information Summary (CIS) as specified in Permit Attachment C3, Sections C3-12b(1) and C3-12b(2)? (Section C-0c)	MP-TRUW-8.14, S. 3.1 & 3.2	Y	Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
5	Are procedures in place to ensure that the generator/storage site divides waste streams into waste stream lots if all of the waste within a waste stream is not accessible for sampling and analysis, as required, at one time? If so, is the division of waste streams into waste stream lots based on staging, transportation and handling issues? (Section C-1a)	MP-TRUW-8.11, S. 3.1 MP-TRUW-8.14, S. 4.0	Y	Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)	Y	
6	Are procedures in place to ensure that the generator/storage site assigns EPA hazardous waste numbers associated with the waste? If so, do these assigned EPA hazardous waste numbers correspond to the permitted EPA hazardous waste numbers in Table C-9? Are there any assigned EPA hazardous waste numbers that are not permitted EPA hazardous waste numbers on the Table C-9? If so, did the generator/storage site reject the waste for shipment to and disposal at WIPP? Did the generator assign a state hazardous waste codes or numbers? If so, is it assigned to waste that is permitted at WIPP? (Section C-1b)	MP-TRUW-8.13, S. 3.5.2	Y	AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.7, Table 3 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.7, Tables 2 & 4 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.6 (AK-3)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
Z	<p>Are procedures in place to ensure that Summary Category Groups are defined as follows:</p> <p>S3000- Homogeneous solids are solid material, inorganic process residues, inorganic sludges, salt waste, and pyrochemical salt waste excluding soils, that do not meet NMED criteria for classification as debris and are at least 50 percent by volume homogeneous solids or comprise the majority of the waste stream</p> <p>S4000- Waste streams that are at least 50 percent by volume soil/gravel, or comprise the majority of the waste stream</p> <p>S5000- Waste streams that are at least 50 percent volume materials that meet the NMED criteria for debris, or comprise the majority matrix of materials. The criteria for debris are solid materials intended for disposal that exceed 2.36 inch particle size and is a manufactured object, plant or animal matter, or natural geologic material. Particles smaller than 2.36 inches in size may be considered debris if the debris is a manufactured object and if it is not a particle of S3000 or S4000 material. (Section C-0a)</p>	MP-TRUW-8.13, S. 4.0	Y	<p>AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.2.7 (AK-1)</p> <p>AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.2.7 (AK-2)</p> <p>AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.2.7 (AK-3)</p> <p>Waste Stream Profile Form and attachments for waste stream BN510.1 (AK-8)</p> <p>Waste Stream Profile Form and attachments for waste stream BN600 (AK-9)</p> <p>Waste Stream Profile Form and attachments for waste stream BNINW216 (AK-10)</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
8	<p>Does the generator/storage facility have procedures in place to ensure that the following waste characterization parameters will be obtained:</p> <ul style="list-style-type: none"> Determination whether TRU mixed waste streams comply with the applicable provisions of the TSDF-WAC Determination whether TRU mixed wastes exhibit a hazardous characteristic per 20.4.1.200 NMAC (incorporating 40 CFR 261 Subpart C) Determination whether TRU mixed wastes are listed per 20.4.1.200 NMAC (incorporating 40 CFR 261 Subpart D) Estimation of waste material parameter weights <p>(Section C-2)</p>	<p>Bullet 1: MP-TRUW-8.13, S. 3.3.7, 3.5.6 & 3.5.3 INST-FOI-17 (All) MP-Q&SI-5.4 (All)</p> <p>Bullets 2&3: MP-TRUW-8.13, S. 3.5.2</p> <p>Bullet 4: MP-TRUW-8.13, S. 3.5.1.6 & Appendix B, S. I.M MP-TRUW-8.9, S. 1.0, 3.1 & 3.2 MP-TRUW-8.13, S. 3.5</p>	<p>Bullets 1 – 4: Y</p>	<p>Bullet 1: AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.6, 1.7.2.1, 1.7.2.2, 1.7.2.3 & 1.7.2.5 p21 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.6, 1.7.2.2, 1.7.2.3, 1.7.2.4 & 1.8 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.5, 1.6.2.1.1, 1.6.2.1.2, 1.6.2.1.3 & 1.6.2.3 (AK-3) Waste Matrix Code Reference Manual RPT-TRUW-05 (AK-4) NCRs for prohibited items (AK-27) VEB10-00908 (AK-37) VEB11-00204 (AK-38) VEB10-00905 (AK-39) VEB10-00907 (AK-40) VEB11-00205 (AK-41) VEB11-00207 (AK-42)</p> <p>Bullets 2&3: AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.2.7 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.2.7 (AK-2)</p>	<p>Bullets 1 – 4: Y</p>	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				<p>AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.2.7 (AK-3)</p> <p>Bullet 4:</p> <p>AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.4.5 & Table 2 (AK-1)</p> <p>AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.4.5 & Table 3 (AK-2)</p> <p>AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.4.5, Table 1-3 (AK-3)</p> <p>Waste Material Parameter Weight Estimate memos for waste streams BN510.1, BN600 and BNINW216 (AK-31)</p> <p><u>RTR BDRs:</u> RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1)</p> <p><u>VE BDRs:</u> VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2)</p>		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				<p><u>HSG BDRs:</u> HS110-00018 HS111-00010 HS111-00012 (GEN-3)</p> <p><u>SS BDRs:</u> SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4)</p> <p>Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)</p>		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
<u>9</u>	Are procedures in place to ensure that waste streams identified to contain incompatible materials or materials incompatible with waste containers cannot be shipped unless treated to remove the incompatibility? (Section C-1c)	MP-TRUW-8.13, S. 3.3.7 & 3.5.6 INST-FOI-17, (All) MP-Q&SI-5.4 (All)	Y	NCRs for prohibited items (AK-27) VEB10-00908 (AK-37) VEB11-00204 (AK-38) VEB10-00905 (AK-39) VEB10-00907 (AK-40) VEB11-00205 (AK-41) VEB11-00207 (AK-42) Example of "electronic hold" on waste container (AK-34) "Hold" Tag (AK-30)	Y	
<u>10</u>	Are procedures in place to ensure that the generator/storage site uses acceptable knowledge and, as necessary, headspace-gas sampling and analysis, radiography, (visual examination), and homogeneous waste sampling and analysis as specified in Table C-5? (Section C-3)	MP-TRUW-8.13, S. 3.5 & 3.8 (Notes 1-4) MP-TRUW-8.9, S. 1.0	Y	AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7 (AK-3) Traceability drum BDRs <u>VE BDRs:</u> VEB10-00908 (AK-37) VEB11-00204 (AK-38) VEB10-00905 (AK-39) VEB10-00907 (AK-40) VEB11-00205 (AK-41) VEB11-00207 (AK-42) <u>RTR BDRs:</u> RTR11-00310 (AK-35) RTR11-00081 (AK-36) <u>HSG BDRs:</u> HSG110-00021 (AK-43) HSG111-00010 (AK-44) HSG111-00009 (AK-45)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				<p><u>SS BDRs:</u> SSC11-00004 (AK-46) ALD11024V (AK-47) ALD11024S (AK-48) ALD11024M (AK-49) ALD11024N (AK-50)</p> <p><u>RTR BDRs:</u> RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1)</p> <p><u>VE BDRs:</u> VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2)</p> <p><u>HSG BDRs:</u> HS110-00018 HS111-00010 HS111-00012 (GEN-3)</p> <p><u>SS BDRs:</u> SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4)</p> <p>Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic</p>		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
UNACCEPTABLE WASTE						
12	<p>Are procedures in place to ensure that the generator/storage site ensures, through administrative and operational procedures and characterization techniques, that waste containers do not include the following unacceptable waste:</p> <ul style="list-style-type: none"> liquid waste is not acceptable at WIPP. Liquid in the quantities delineated below is acceptable <ul style="list-style-type: none"> Observable liquid shall be no more than 1 percent by volume of the outermost container at the time of radiography or visual examination Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited Containers with Hazardous Waste number U134 assigned shall have no observable liquid Overpacking the outermost container that was examined during radiography or visual examination or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits non-radionuclide pyrophoric materials hazardous wastes not occurring as co-contaminants with TRU wastes (non-mixed hazardous wastes) wastes incompatible with backfill, seal and panel closures materials, container and packaging materials, shipping container materials, or other wastes wastes containing explosives or compressed gases (continued below) 	<p>MP-TRUW-8.9, <u>S. 1.0 & 3.1.1</u> MP-TRUW-8.11, <u>S. 3.2</u> <u>MP-TRUW-8.2,</u> <u>S. C-1c</u></p>	Y	<p><u>RTR BDRs:</u> RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1)</p> <p><u>VE BDRs:</u> VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2)</p> <p><u>HSG BDRs:</u> HS110-00018 HS111-00010 HS111-00012 (GEN-3)</p> <p><u>SS BDRs:</u> SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4)</p> <p>Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
12a	<ul style="list-style-type: none"> wastes with polychlorinated biphenyls (PCBs) not authorized under an EPA PCB waste disposal authorization wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (EPA Hazardous Waste Numbers of D001, D002, or D003) waste that has ever been managed as high-level waste and waste from tanks specified in Table C-8, unless specifically approved through a Class 3 permit modification any waste container from a waste stream (or waste stream lot) which has not undergone either radiographic or visual examination of a statistically representative subpopulation of the wastes stream in each shipment pursuant to Permit Attachment C7 any waste container from a waste stream which has not been preceded by an appropriate, certified Waste Stream Profile Form (see Section C-1d) <p>(Section C-1c)</p>	<p>MP-TRUW-8.9, <u>S. 1.0 & 3.1.1</u> MP-TRUW-8.11, <u>S. 3.2</u> <u>MP-TRUW-8.2,</u> <u>S. C-1c</u></p>	Y	<p>RTR BDRs: RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1)</p> <p>VE BDRs: VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2)</p> <p>HSG BDRs: HS110-00018 HS111-00010 HS111-00012 (GEN-3)</p> <p>SS BDRs: SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4)</p> <p>Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)		
WASTE ACCEPTANCE CONTROL						
14	Are procedures in place to ensure that the generator/storage site uses a Waste Stream Profile Form (WSPF) which includes, at a minimum, the information indicated on the attached WSPF found in Figure C-1 and a Characterization Information Summary (CIS) prior to waste disposal at the WIPP? (Section C-1d)	MP-TRUW-8.14, S. 3.1 & 3.2	Y	Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
16	Are procedures in place to ensure that additional WSPFs are provided to WIPP and NMED for waste streams or portions of waste streams that are reclassified based upon waste characterization information? (Section C-1d)	MP-TRUW-8.14, S. 3.1	Y	N/A	N/A	No reclassifications have been made.
16a	Are criteria in place to determine the specific circumstances under which a WSPF is revised versus when a new WSPF is required? (Section C-1d)	MP-TRUW-8.14, S. 3.3	Y	Waste Stream Profile Form and attachments for waste stream BN510.1 (AK-8)	Y	A new waste stream and WSPF were created when Hanford waste was added to the feedstock to the supercompactor process and new HWNs were added to those previously assigned.
LABORATORY QUALIFICATION						
17	Are procedures in place to ensure that the generator/storage site conduct analyses using laboratories that are qualified through participation in the Performance Demonstration Program (PDP) for headspace gas sampling and analysis, and PDP homogeneous waste sampling and analysis? (Section C-3a(3))	MP-TRUW-8.8 S. 3.4.8.15 INST-OI-43, S. 4.0 & Table 3	Y	PDP approval memo 5/31/11 (HSG-2)	Y	AMWTP only performs sampling for solids. Solids analysis is performed by INL/CCP and PDP participation is verified under a separate audit.
18	Are procedures in place to ensure that the generator/storage sites conduct analyses using laboratories that implement the analytical methods through laboratory-documented standard operating procedures (SOPs) that ensure that analytical QAOs are met? (Section C-3a(3))	INST-OI-43, (All)	Y	<u>HSG BDR:</u> HS111-00018 (HSG-1)	Y	AMWTP only performs solids sampling. Solids analysis is performed by INL/CCP.
19	Are procedures in place to ensure that documented laboratory QA/QC programs include the following: <ul style="list-style-type: none"> • Facility organization • List of equipment/instrumentation • Operating procedures • Laboratory QA/QC procedures • Quality assurance review • Laboratory records management (Section C-4a(4))	INST-OI-43, (All) MP-TRUW-8.2, S. B-0 & C-4a(4) MP-TRUW-8.8, S. 3.4	Y	<u>HSG BDR:</u> HS111-00018 (HSG-1)	Y	AMWTP only performs solids sampling. Solids analysis is performed by INL/CCP. HS BDR contains all info except Facility Organization. Interview with HSG SME 11/1/11.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
GENERAL SAMPLING AND ANALYTICAL REQUIREMENTS						
20	<p>Are procedures in place to ensure that headspace gas sampling and analysis shall be used to:</p> <ul style="list-style-type: none"> Determine the types and concentrations of VOCs in the void volume of waste containers VOC constituents shall be compared to those assigned by Acceptable Knowledge <p>(Section C-3a(1))</p>	<p>MP-TRUW-8.11, S. 3.2.7</p> <p>INST-OI-43, (All)</p>	Y	<p>HSG BDRs: HS110-00018 HS111-00010 HS111-00012 (GEN-3)</p> <p>Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
22	Are procedures in place to ensure that compounds not on the list of target analytes are reported as tentatively identified compounds (TICs) and that the TIC will be added to the target analyte list if it appears in the 20.4.1.200 NMAC (incorporating 40 CFR 261) Appendix VIII list and if they are reported in 25% of the waste containers sampled from a given waste stream? (Section C-3a(1))	MP-TRUW-8.11, S. 3.2.13 MP-TRUW-8.8 S. 3.4.7.4 & NOTE 4 INST-OI-43, Table 2, Footnote f	Y	HSG BDRs: HS110-00018 HS111-00010 HS111-00012 (GEN-3) HS111-00018 (HSG-1) Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
23	Are procedures in place to ensure that a randomly selected set of samples will be collected through core sampling or other EPA approved sampling from the population of waste containers for homogeneous and soil/gravel waste streams? Are procedures in place that a sufficient number of samples are collected to evaluate the toxicity characteristic of a waste stream at a 90 percent Upper Confidence limit as specified in Attachment C2? (Section C-3a(2))	MP-TRUW-8.11, S. 3.2.9 MP-TRUW-8.25, S. 3.4, 3.5 & 3.6 INST-OI-16, (All) INST-OI-73, (All) INST-OI-75, (All)	Y	<u>SS BDRs:</u> SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4) Solids Sampling Plan for BNINW216, Lot 21-SPC-006-11 Addendum to Solids Sampling Plan for BNINW216 Lot 21-SPC-007-11 Addendum to Solids Sampling Plan for BNINW216 Lot 21-SPC-008-11 (GEN-6) <u>SS BDRs:</u> SSC11-00002 (SOL-1) SSG11-00006 (SOL-2)	Y	
24	Are procedures in place to ensure that total analyses or TCLP of VOCs, SVOCs, and RCRA-regulated metals are performed on all core samples to determine if the waste exhibits a toxicity characteristic? (Section C-3a(2))	N/A	N/A	N/A	N/A	AMWTP only performs solids sampling. Solids analysis is performed by INL/CCP.
25	Are procedures in place to ensure that Acceptable Knowledge is used in waste characterization activities to delineate TRU mixed waste streams, to assess whether TRU mixed wastes comply with the TSDF-WAC, to assess whether TRU mixed waste exhibits a hazardous characteristic (20.4.1.200 NMAC, incorporating 40 CFR 261 Subpart C), and to assess whether TRU wastes are listed (20.4.1.200 NMAC, incorporating 40 CFR 261 Subpart D), and to estimate waste material parameter weights? (Section C-3b)	MP-TRUW-8.13, S. 3.3.5, 3.3.7, 3.5.6 & 3.5.3 INST-FOI-17, (All) MP-TRUW-8.13, S. 3.5.2, 3.5.1.6 & Appendix B, S. I.M	Y	AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.2 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.2 (AK-2) AK Summary for First/Second Stage	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.2 (AK-3) AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.6, 1.7.2.1, 1.7.2.2, 1.7.2.3 & 1.7.2.5 p21 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.6, 1.7.2.2, 1.7.2.3, 1.7.2.4 & 1.8 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.5, 1.6.2.1.1, 1.6.2.1.2, 1.6.2.1.3 & 1.6.2.3 (AK-3) Waste Matrix Code Reference Manual RPT-TRUW-05 (AK-4) NCRs for prohibited items (AK-27) VEB10-00908 (AK-37) VEB11-00204 (AK-38) VEB10-00905 (AK-39) VEB10-00907 (AK-40) VEB11-00205 (AK-41) VEB11-00207 (AK-42) AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S.		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				1.2.7 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.2.7 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.2.7 (AK-3) AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.4.5 & Table 2 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.4.5 & Table 3 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.4.5, Table 1-3 (AK-3) Waste Material Parameter Weight Estimate memos for waste streams BN510.1, BN600 and BNINW216 (AK-31)		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
26	<p>Are procedures in place to ensure that radiography and/or visual examination are used as necessary to:</p> <ul style="list-style-type: none"> Examine a waste container to determine the physical form Identify observable liquid in excess of TSDF-WAC limits and containerized gases Verify the physical form matches the waste stream description <p>(Section C-3c)</p>	INST-FOI-17, S. 1.0 INST-OI-34, S. 1.0 INST-FOI-22, S. 1.0 INST-OI-12, S. 1.0 INST-OI-81, S. 1.0	Y	<u>VE BDRs:</u> VEB10-00880 VEB11-00850 VEB11-00449 VSC11-00011 VSC11-00015 VSC11-00017 (VE-1) <u>RTR BDRs:</u> RTR11-00050 RTR11-00160 RTR11-00208 RTR11-00235 RTR11-00262 RTR11-00319 (RTR-1)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
<u>27</u>	<p>Are procedures in place to ensure that the following characterization activities shall occur for newly generated wastes:</p> <ul style="list-style-type: none"> • Acceptable Knowledge for all wastes, with sampling and analysis as necessary to augment AK including; <ul style="list-style-type: none"> - Either visual examination during packaging or radiography (or VE in lieu of radiography) after packaging for all waste containers, ensuring this occurs prior to any treatment designed to supercompact waste - Headspace gas analysis for randomly selected containers, except for qualifying waste containers belonging to LANL sealed sources waste streams - Total VOC, SVOC, and Metals analyses for a selected number of homogeneous solids and soil/gravel waste containers as specified in Attachment C2 - Evaluation of any TICs found in headspace gas and totals analyses <p>(Section C-3d(1))</p>	<p>MP-TRUW-8.13, S. 3.5 & 3.8 (Notes 1-4)</p> <p>MP-TRUW-8.11, S. 3.2</p> <p>INST-FOI-17, S. 4.2 & 4.5</p> <p>INST-OI-34, S. 4.2</p>	Y	<p>AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1 (AK-1)</p> <p>VEB10-00908 (AK-37) VEB11-00204 (AK-38) VEB10-00905 (AK-39) VEB10-00907 (AK-40) VEB11-00205 (AK-41) VEB11-00207 (AK-42) HSG110-00021 (AK-43) HSG111-00009 (AK-45)</p> <p>HSG Random Container selection Memos for BN510.1 Lots 1&2 (AK-22)</p> <p>HSG Summary reports for BN510.1 Lots 1&2 (AK-23)</p> <p>Data Reconciliation reports for BN510.1 (AK-26)</p> <p>Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				(BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)		
27a	Are procedures in place to ensure that the visual examination during packaging for all waste containers includes the documentation of packaging configuration, type and number of filters, and rigid liner vent hole presence and diameter necessary to determine the appropriate DAC in accordance with Permit Attachment C1, Section C1-1? (Section C-3d(1))	INST-FOI-17, S. 4.2, 4.5 & 4.7 INST-OI-34, S. 4.5 & 4.6	Y	VE BDRs: VEB10-00880 VEB11-00850 VEB11-00449 VSC11-00011 VSC11-00015 VSC11-00017 (VE-1)	Y	
28	Are procedures in place to ensure that the following characterization activities shall occur for retrievably stored wastes: <ul style="list-style-type: none"> • Acceptable Knowledge for all wastes, with sampling and analysis as necessary to augment AK including; <ul style="list-style-type: none"> - Visual examination or radiography for all waste containers - Headspace gas analysis for randomly selected containers except for qualifying waste containers belonging to LANL sealed sources waste streams - Total VOC, SVOC, and Metals analyses for a statistically selected number of homogeneous solids and soil/gravel waste containers as specified in Attachment C2 - Evaluation of any TICs found in headspace gas and totals analyses (Section C-3d(2))	MP-TRUW-8.13, S. 3.5 & 3.8 (Notes 1-4) MP-TRUW-8.11, S. 3.2	Y	AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7 (AK-3) RTR11-00310 (AK-35) RTR11-00081 (AK-36) HSG111-00010 (AK-44) SSC11-00004 (AK-46) ALD11024V (AK-47) ALD11024S (AK-48) ALD11024M (AK-49) ALD11024N (AK-50) HSG Random Container selection memo for waste stream BN600 Lot 1 (AK-22)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				HSG Summary report for waste stream BN600 Lot 1 (AK-23) SS&A Random Container Selection memo for waste stream BNINW216 lot 21 (AK-24) Solids S&A Summary Report for waste stream BNINW216 lot 21 (AK-25) Data Reconciliation Reports for waste stream BNINW216 (AK-26) Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
DATA GENERATION, VERIFICATION, VALIDATION, DOCUMENTATION, AND QUALITY ASSURANCE						
30	<p>Are procedures in place to ensure that the following Data Quality Objectives are met:</p> <ul style="list-style-type: none"> Use Acceptable Knowledge to delineate TRU mixed waste streams, assess whether TRU mixed wastes comply with the applicable requirements of the TSDF-WAC, assess whether TRU mixed wastes exhibit a hazardous characteristic, assess whether TRU mixed wastes are listed and to estimate waste material parameter weights Use Headspace gas sampling and analysis, as necessary, to identify and quantify VOCs in waste containers to resolve the assignment of EPA hazardous waste numbers Perform totals analyses of homogeneous solids and soils/gravel wastes to establish if the waste is hazardous based on the toxicity characteristics levels in 20.4.1.200 NMAC through a comparison of the upper confidence limits (UCL₉₀) of the mean concentrations to resolve the assignment of hazardous waste numbers Use radiography or visual examination to determine physical waste form, the absence of prohibited items, and additional waste characterization techniques that may be used based on Summary Category Groups <p>(Section C-4a(1))</p>	<p>MP-TRUW-8.13, S. 3.3.5, 3.3.7, 3.5.6 & 3.5.3 INST-FOI-17, (All) MP-TRUW-8.13, S. 3.5.2 MP-TRUW-8.13, S. 3.5.1.6 & Appendix B, S. I.M MP-TRUW-8.11, S. 3.2</p>	Y	<p>Bullet 1: AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.2 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.2 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.2 (AK-3) AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.6, 1.7.2.1, 1.7.2.2, 1.7.2.3 & 1.7.2.5 p21 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.6, 1.7.2.2, 1.7.2.3, 1.7.2.4 & 1.8 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.5, 1.6.2.1.1, 1.6.2.1.2, 1.6.2.1.3 & 1.6.2.3 (AK-3)</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Waste Matrix Code Reference Manual RPT-TRUW-05 (AK-4) NCRs for prohibited items (AK-27) VEB10-00908 (AK-37) VEB11-00204 (AK-38) VEB10-00905 (AK-39) VEB10-00907 (AK-40) VEB11-00205 (AK-41) VEB11-00207 (AK-42) Bullets 2 & 3: AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.2.7 (AK-1) AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.2.7 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.2.7 (AK-3) Bullet 4: AK Summary for Supercompacted Debris Stream BN510.1, RPT-TRUW-83, Rev. 1, S. 1.4.5 & Table 2 (AK-1)		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				AK Summary for AMWTP WMF-676 PCB Contaminated Debris BN600, RPT-TRUW-88, Rev. 0, S. 1.4.5 & Table 3 (AK-2) AK Summary for First/Second Stage Sludge BNINW216, RPT-TRUW-09, Rev. 7, S. 1.4.5, Table 1-3 (AK-3) Waste Material Parameter Weight Estimate memos for waste streams BN510.1, BN600 and BNINW216 (AK-31) <u>RTR BDRs:</u> RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1) <u>VE BDRs:</u> VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2) <u>HSG BDRs:</u> HS110-00018 HS111-00010 HS111-00012 (GEN-3)		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				SS BDRs: SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4) Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
31	<p>Are procedures in place to ensure that the following Quality Assurance Objectives are adequately defined and assessed for each characterization method:</p> <ul style="list-style-type: none"> Precision as a measure of the mutual agreement among multiple measurements. Accuracy as the degree of agreement between a measurement result and a true or known value. Completeness is a measure of the amount of valid data obtained from a method compared to the total amount of data obtained that is expressed as a percentage. Comparability is the degree to which one data set can be compared to another data set. Representativeness as an expression of the degree to which data represent characteristics of a population. <p>(Section C-4a(2))</p>	<p>MP-TRUW-8.8, S. 3.4.5.7 & 3.4.8.13 (Precision/Accuracy), S. 3.4.5.5 & 3.4.8.13 (Precision/Accuracy);</p> <p>INST-OI-43, S. 5.0 & Table 2 (completeness)</p> <p>MP-TRUW-8.8, S. 3.4 (comparability & representativeness);</p> <p>MP-TRUW-8.8, S. 3.5.3.14, 3.2.4.10, & 3.1.3.13</p>	Y	<p><u>HSG BDRs:</u> HS111-00018 (HSG-1)</p> <p><u>SS BDRs:</u> SSC11-00002 (SOL-1) SSG11-00006 (SOL-2)</p> <p><u>VE BDRs:</u> VEB10-00880 VEB11-00850 VEB11-00449 VSC11-00011 VSC11-00015 VSC11-00017 (VE-1)</p> <p><u>RTR BDRs:</u> RTR11-00050 RTR11-00160 RTR11-00208 RTR11-00235 RTR11-00262 RTR11-00319 (RTR-1)</p>	Y	Completeness calculated at PL for HSG

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
32	<p>With respect to data generation, are procedures in place to ensure that the generator/storage site's waste characterization program meets the following general requirements:</p> <ul style="list-style-type: none"> Analytical data packages and batch data reports must be reported accurately in a pre-approved format, must be maintained in permanent files, and must be traceable? All data must receive a technical review by another qualified analyst or the technical supervisor, and the laboratory QA officer? <p>(Section C3-10a)</p>	<p>INST-OI-43, S. 4.0</p> <p>MP-TRUW-8.8, S. 3.1, 3.2, 3.4, & 3.5</p> <p>INST-OI-16, S. 4.22</p> <p>INST-OI-73, S. 4.22</p> <p>INST-OI-75, S. 4.14</p>	Y	<p><u>HSG BDRs:</u> HS111-00018 (HSG-1)</p> <p><u>SS BDRs:</u> SSC11-00002 (SOL-1) SSG11-00006 (SOL-2)</p> <p><u>VE BDRs:</u> VEB10-00880 VEB11-00850 VEB11-00449 VSC11-00011 VSC11-00015 VSC11-00017 (VE-1)</p> <p><u>RTR BDRs:</u> RTR11-00050 RTR11-00160 RTR11-00208 RTR11-00235 RTR11-00262 RTR11-00319 (RTR-1)</p>	Y	Technical supervisor and QA review no longer required.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
33	Are procedures in place to ensure that the generator/storage site performs validation of waste characterization data for each waste container? (Section C-4)	MP-TRUW-8.9, (All) MP-TRUW-8.8, (All)	Y	<p><u>RTR BDRs:</u> RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1)</p> <p><u>VE BDRs:</u> VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2)</p> <p><u>HSG BDRs:</u> HS110-00018 HS111-00010 HS111-00012 (GEN-3)</p> <p><u>SS BDRs:</u> SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4)</p> <p><u>HSG BDR:</u> HS111-00018 (HSG-1)</p> <p><u>SS BDRs:</u> SSC11-00002 (SOL-1) SSG11-00006 (SOL-2)</p> <p><u>VE BDRs:</u> VEB10-00880 VEB11-00850 VEB11-00449 VSC11-00011 VSC11-00015 VSC11-00017 (VE-1)</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				<u>RTR BDRs:</u> RTR11-00050 RTR11-00160 RTR11-00208 RTR11-00235 RTR11-00262 RTR11-00319 (RTR-1)		
34	Are procedures in place to ensure that the generator/storage site has a pre-approved format for reporting waste characterization data? (Section C-4a(4))	MP-TRUW-8.9, (All) MP-TRUW-8.8, (All) INST-OI-43, S. 4.8 INST-OI-16, S. 4.22 INST-OI-73, S. 4.22 INST-OI-75, S. 4.14	Y	<u>RTR BDRs:</u> RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1) <u>VE BDRs:</u> VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2) <u>HSG BDRs:</u> HS110-00018 HS111-00010 HS111-00012 (GEN-3) <u>SS BDRs:</u> SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4) <u>HSG BDR:</u> HS111-00018 (HSG-1) <u>SS BDRs:</u> SSC11-00002 (SOL-1) SSG11-00006 (SOL-2)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				VE BDRs: VEB10-00880 VEB11-00850 VEB11-00449 VSC11-00011 VSC11-00015 VSC11-00017 (VE-1) RTR BDRs: RTR11-00050 RTR11-00160 RTR11-00208 RTR11-00235 RTR11-00262 RTR11-00319 (RTR-1)		
35	Are procedures in place to ensure that the generator/storage site prepares analytical, testing, and sampling batch data reports to meet the requirements of their own site-specific QAPjP and/or SOPs? (Section C-4a(4))	MP-TRUW-8.9, (All) INST-OI-43, S. 4.8 MP-TRUW-8.8, (All) INST-OI-16, S. 4.22 INST-OI-73, S. 4.22 INST-OI-75, S. 4.14	Y	RTR BDRs: RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1) VE BDRs: VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2) HSG BDRs: HS110-00018 HS111-00010 HS111-00012 (GEN-3) SS BDRs: SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				<u>HSG BDR:</u> HS111-00018 (HSG-1) <u>SS BDRs:</u> SSC11-00002 (SOL-1) SSG11-00006 (SOL-2) <u>VE BDRs:</u> VEB10-00880 VEB11-00850 VEB11-00449 VSC11-00011 VSC11-00015 VSC11-00017 (VE-1) <u>RTR BDRs:</u> RTR11-00050 RTR11-00160 RTR11-00208 RTR11-00235 RTR11-00262 RTR11-00319 (RTR-1)		

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
36	<p>Are procedures in place to ensure that all raw data is collected and managed at the data generation level in accordance with the following criteria:</p> <ul style="list-style-type: none"> All raw data shall be signed and dated in reproducible ink by the individual collecting the data, or signed and dated using electronic signatures All data shall be recorded clearly, legibly, and accurately in field and laboratory records and include all applicable sample identification numbers All changes to original data shall be lined out, initialed, and dated by the individual making the change. Original data may not be obliterated or otherwise be made unreadable All data shall be transferred and reduced from field and laboratory records completely and accurately All field and laboratory records shall be maintained as specified in Table C-6 of Attachment C Data shall be organized into standard reporting formats for reporting purposes. All electronic and video data must be stored to ensure that waste container, sample and QC data are readily retrievable <p>(Section C3-10a)</p>	<p>MP-TRUW-8.8, S. 3.1, 3.2, 3.4.8.17, 3.5.3.20 & App. C</p> <p>INST-OI-16, S. 4.11.50.7</p> <p>INST-OI-73, S. 4.16.5</p> <p>INST-OI-75, S. 4.4.10.3</p>	Y	<p><u>HSG BDR:</u> HS111-00018 (HSG-1)</p> <p><u>SS BDRs:</u> SSC11-00002 (SOL-1) SSG11-00006 (SOL-2)</p> <p><u>VE BDRs:</u> VEB10-00880 VEB11-00850 VEB11-00449 VSC11-00011 VSC11-00015 VSC11-00017 (VE-1)</p> <p><u>RTR BDRs:</u> RTR11-00050 RTR11-00160 RTR11-00208 RTR11-00235 RTR11-00262 RTR11-00319 (RTR-1)</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
37	<p>Are procedures in place to ensure that 100 % of batch data reports are subject to independent technical review by an individual qualified to review the data who was not involved in the generation or recording of the data under review. The reviewer shall release the data through signature with an associated review checklist prior to characterization of the associated waste and shipment to the WIPP.</p> <p>The review shall ensure the following, as applicable:</p> <ul style="list-style-type: none"> Data generation and reduction were conducted according to the methods used and reported in the proper units and significant figures Calculations have been verified by a valid calculation program, a spot check of verified calculation programs, and/or a 100 percent check of all hand calculations The data have been reviewed for transcription errors The testing, sampling, and analytical QA documentation for BDRs is complete and includes, as applicable, raw data, DAC and equilibrium calculations and times, calculation records, chain of custody forms, calibration records, QC sample results and copies or originals of gas canister sample tags. All QC sample results are within established control limits, and if not, the data has been appropriately qualified Reporting flags were assigned correctly Sample holding times and preservation requirements were met, or exceptions documented Radiography tapes are reviewed on a waste container basis at a minimum of once per testing batch or once per day of operation, whichever is less frequent. The radiography tape will be reviewed against the data on the radiography form to ensure that data are complete and correct Field sampling records are complete QAOs have been met <p>(Section C3-10a(1))</p>	MP-TRUW-8.8, S. 3.1, 3.2, 3.4, 3.5 & App. C	Y	<p><u>HSG BDRs:</u> HS111-00018 (HSG-1)</p> <p><u>SS BDRs:</u> SSC11-00002 (SOL-1) SSG11-00006 (SOL-2)</p> <p><u>VE BDRs:</u> VEB10-00880 VEB11-00850 VEB11-00449 VSC11-00011 VSC11-00015 VSC11-00017 (VE-1)</p> <p><u>RTR BDRs:</u> RTR11-00050 RTR11-00160 RTR11-00208 RTR11-00235 RTR11-00262 RTR11-00319 (RTR-1)</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
40	<p>Are procedures in place to ensure that 100 percent of all batch data reports receive a Site Project Manager signature release with an associated review checklist prior to characterization of the associated waste and shipment to the WIPP. This release shall ensure the following:</p> <ul style="list-style-type: none"> The Site Project Manager or designee shall determine the validity of the drum age criteria (DAC) assignment made at the data generation level based upon an assessment of the data collection and evaluation necessary to make the assignment. Testing batch QC checks were properly performed. Radiography data are complete and acceptable based on evidence of videotape review of one waste container per day or once per testing batch, whichever is less frequent Sampling batch QC checks were properly performed, and meet the established QAOs and are within established data usability criteria Analytical batch QC checks were properly performed and meet the established QAOs and are within established data usability criteria Online batch QC checks were properly performed and meet the established QAOs and are within established data usability criteria Proper procedures were followed to ensure representative samples of headspace gas and homogeneous solids and soil/gravel were taken Data generation level independent technical review, validation, and verification have been performed as evidenced by the completed review checklists and appropriate signature releases. Independent technical reviewers were not involved in the generation or recording of the data under review. Batch Data review checklists are complete Batch Data Reports are complete and data properly reported Verify that data are within established data assessment criteria and meet all applicable QAOs <p>(Section C3-10(b)(1))</p>	MP-TRUW-8.9, (All)	Y	<p><u>RTR BDRs:</u> RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1)</p> <p><u>VE BDRs:</u> VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2)</p> <p><u>HSG BDRs:</u> HS110-00018 HS111-00010 HS111-00012 (GEN-3)</p> <p><u>SS BDRs:</u> SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4)</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
42	Are procedures in place to ensure that a repeat of the data review process at the data generation level will be performed on a minimum of one randomly chosen waste container every quarter to determine if the verification and validation is performed according to documented procedures? (Section C3-10b)	MP-TRUW-8.9, S. 3.4	Y	AMWTP TRU Programs Fourth Quarter 2010 NDA 52387, First Quarter 2011 VE 58676, Second Quarter 2011 HSG 62989, Third Quarter 2011 RTR 63993 (GEN-8)	Y	
43	Are procedures in place and checklists are available to prepare a Site Project Manager (SPM) Summary and a Data Validation Summary (the summaries may be in the same document)? The SPM Summary includes a validation checklist for each batch that is of sufficient detail to document all aspects of a batch data report that could affect data quality. The Data Validation Summary must identify each Batch Data Report reviewed, describe how the validation was performed, identify all problems, and identify all acceptable and unacceptable data. Summaries must include release signatures. (Section C3-10b(2))	MP-TRUW-8.9, S. 3.0 & 3.1	Y	<u>RTR BDRs:</u> RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1) <u>VE BDRs:</u> VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2) <u>HSG BDRs:</u> HS110-00018 HS111-00010 HS111-00012 (GEN-3) <u>SS BDRs:</u> SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
44	Are procedures in place to ensure that non-administrative, WAP-related nonconformances first identified at the site project manager level are reported to the Permittees within seven calendar days of identification, that nonconformance reports are prepared within 30 calendar days, and that corrective action is implemented prior to waste shipment? (Section C3-13)	MP-TRUW-8.2, S. C3-13 2 MP-Q&SI-5.4, S. 3.4.2	Y	NCRs: 62175 55904 63356 63842 64816 62174 64033 55907 (GEN-9)	Y	
45	Are procedures in place to ensure that any waste container for which a nonconformance report (NCR) has been written will not be shipped to the WIPP facility unless the condition that led to the NCR for that container is appropriately identified, reconciled, corrected, and documented? Are nonconformance reports prepared for nonconformances identified? Are nonconformances identified and tracked, and does the Site Project Manager oversee the nonconformance report process? (Section C3-13)	MP-TRUW-8.2, S. C3-13 2 MP-Q&SI-5.4, (All)	Y	NCRs: 62175 55904 63356 63842 64816 62174 64033 55907 (GEN-9)	Y	
SAMPLE CONTROL						
46	Are procedures in place to ensure that the site's sample handling and control program includes the following: <ul style="list-style-type: none"> • Field documentation of samples including point of origin, date of sample, container identification, sample type, analysis requested, and chain-of-custody (COC) number? • Proper labeling and/or tagging including proper sample numbering, sample identification, sample date, sampling conditions, and analysis requested? • COC record including name of sample relinquisher, sample receiver, and date and time of sample transfer? and • Proper sample handling and preservation? (Section C-4a(3))	INST-OI-16, S. 4.15 & 4.16 INST-OI-73, S. 4.14, 4.15 & 4.16 INST-OI-75, S. 4.6, 4.7 & 4.8	Y	<u>SS BDRs:</u> SSC11-00002 (SOL-1) SSG11-00006 (SOL-2)	Y	AMWTP uses on-line sampling and analysis for HSG, samples are not transferred or stored.
47	Are procedures in place to ensure that the site's QAPJP or site-specific procedures includes COC forms to control the sample from the point of origin to the final analysis result reporting? (Section C-4a(3))	INST-OI-16, S. 4.15 & 4.16 INST-OI-73, S. 4.14, 4.15 & 4.16 INST-OI-75, S. 4.6, 4.7 & 4.8	Y	<u>SS BDRs:</u> SSC11-00002 (SOL-1) SSG11-00006 (SOL-2)	Y	AMWTP uses on-line sampling and analysis for HSG, samples are not transferred or stored.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
DATA TRANSMITTAL						
48	Are procedures in place to ensure that the generator/storage site transmits data by hard copy or electronic copy from the data generation level to the site project level? If electronic, does the generator/site have a hard copy available on demand? (Section C-4a(6))	MP-TRUW-8.9, S. 3.1	Y	<u>RTR BDRs:</u> RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1) <u>VE BDRs:</u> VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2) <u>HSG BDRs:</u> HS110-00018 HS111-00010 HS111-00012 (GEN-3) <u>SS BDRs:</u> SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4)	Y	
50	Are procedures in place to ensure that the generator/storage site inputs the data into the WWIS manually or electronically? (Section C-4a(6))	MP-TRUW-8.5, S. 3.0	Y	Waste Certification Data Entry Form (WCDEF) for containers BN10424483 BN10403899 (GEN-10)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
51	Are procedures in place to ensure that the generator/storage site enters the data into the WWIS in the exact format required by the database? (Section C-4a(6))	MP-TRUW-8.5, S.3.0	Y	Waste Certification Data Entry Form (WCDEF) for containers BN10424483 BN10403899 (GEN-10) Reconciliation with Data Quality objectives for WSPF BN510.1.31 BN510.1.22 (GEN-11)	Y	
51a	Are procedures in place to ensure that if a container was part of a composite headspace gas sample, the analytical results from the composite sample must be assigned as the container headspace gas data results, including associated TICs, for every waste container associated with the composite sample in the WWIS? (Section C3-12b(4))	N/A	N/A	N/A	N/A	<u>AMWTP does not composite samples.</u>
52	Are procedures in place to ensure all of the data presented on Table C-7 of the Permit is transmitted to the WWIS? (Table C-7)	MP-TRUW-8.5, S. 3.0	Y	AMWTP CH-TRU Waste Certification Document for container BN10424905 (GEN-12)	Y	
RECORDS AND RECORD MANAGEMENT						
55	Are procedures in place to ensure that the generator/storage site's hard copy and/or electronic data reports follow the Permittees' format requirements? (Section C-4a(4))	MP-TRUW-8.9, S. 3.1	Y	RTR BDRs: RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1) VE BDRs: VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2) HSG BDRs: HS110-00018 HS111-00010 HS111-00012 (GEN-3)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				SS BDRs: SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4)		
56	<p>Are procedures in place to ensure that hard copy or electronic Waste Stream Profile Form will include the following:</p> <ul style="list-style-type: none"> • Generator/storage site name • Generator/storage site EPA ID • Date of audit report approval by NMED (if obtained) • Original generator of waste stream • Whether waste is Contact-Handled or Remote-Handled • Waste Stream WIPP Identification Number • Summary Category Group • Waste Matrix Code Group • Waste Material Parameter Weight Estimates per unit of waste • Waste stream name • A description of the waste stream • Applicable EPA hazardous waste codes numbers • Applicable TRUCON codes • A listing of acceptable knowledge documentation used to identify the waste stream • The waste characterization procedures used and the reference and date of the procedure • Certification signature of Site Project Manager, name, title, and date signed <p>(Section C3-12b(1))</p>	MP-TRUW-8.14, S. 3.1 & Form 1195	Y	Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
56a	<p>Are procedures in place to ensure that hard copy or electronic Characterization Information Summary will include the following:</p> <ul style="list-style-type: none"> Data reconciliation with DQOs Headspace gas summary data listing the identification numbers of samples used in the statistical reduction, the maximum, mean, standard deviation, UCL₉₀, RTL, and associated EPA hazardous waste numbers that must be applied to the waste stream. Total metal, VOC, and SVOC analytical results for homogeneous solids and soil/gravel (if applicable). TIC listing and evaluation. Radiography and visual examination summary to document that all prohibited items are absent in the waste (if applicable). A complete listing of all container identification numbers used to generate the Waste Stream Profile Form, cross-referenced to each Batch Data Report. Complete AK summary, including stream name and number, point of generation, waste stream volume (current and projected), generation dates, TRUCON codes, Summary Category Group, Waste Matrix Code(s) and Waste Matrix Code Group, other TWBIR information, waste stream description, areas of operation, generating processes, RCRA determinations, radionuclide information, all references used to generate the AK summary, and any other information required by Permit Attachment C4, Section C4-2b. Method for determining Waste Material Parameter Weights per unit of waste. List of any AK Sufficiency Determinations requested for the waste stream. Certification through acceptable knowledge or testing and/or analysis that any waste assigned the hazardous waste number of U134 (hydrofluoric acid) no longer exhibits the characteristic of corrosivity. This is verified by ensuring that no liquid is present in U134 waste. A justification for the selection of radiography and/or VE as an appropriate method of characterizing the waste. <p>(Section C3-12b(2))</p>	MP-TRUW-8.14, S. 3.1.3, 3.1.4 & 3.1.5	Y	Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
56b	Are procedures in place to assure that ongoing container characterization results are cross referenced to Batch Data Reports? (Section C3-12b)	MP-TRUW-8.14, S. 3.1.3.4	Y	Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
58	Are procedures in place to ensure that project level reports are compiled into Characterization Information Summaries? (Section C3-12b)	MP-TRUW-8.14, S. 3.1.3	Y	Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
59	Are procedures in place to ensure that the generator/storage site uses forms for data reporting that are pre-approved forms in site-specific documentation? (Section C3-12)	MP-TRUW-8.8, S. 3.1, 3.2, 3.4, 3.5 & App. C INST-OI-43, S. 4.8 INST-OI-16, S. 4.22 INST-OI-73, S. 4.22 INST-OI-75, S. 4.14	Y	<u>HSG BDR:</u> HS111-00018 (HSG-1) <u>SS BDRs:</u> SSC11-00002 (SOL-1) SSG11-00006 (SOL-2) <u>VE BDRs:</u> VEB10-00880 VEB11-00850 VEB11-00449 VSC11-00011 VSC11-00015 VSC11-00017 (VE-1) <u>RTR BDRs:</u> RTR11-00050 RTR11-00160 RTR11-00208 RTR11-00235 RTR11-00262 RTR11-00319 (RTR-1)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
60	Are procedures in place to ensure that the generator/storage site's site project manager submits to the WIPP facility a summary of the waste stream information and reconciliation with data quality objectives (DQOs) once a waste stream is characterized? (Section C-4a(6))	MP-TRUW-8.14, S. 3.1.10	Y	Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
61	Are procedures in place to ensure that the generator/storage site project office completes a WSPF based on the Batch Data Reports? (C3-12b)	MP-TRUW-8.14, S. 3.1	Y	<u>RTR BDRs:</u> RTR11-00086 RTR11-00149 RTR11-00158 (GEN-1) <u>VE BDRs:</u> VEB11-00579 VEB11-00760 VEB11-00853 (GEN-2) <u>HSG BDRs:</u> HS110-00018 HS111-00010 HS111-00012 (GEN-3) <u>SS BDRs:</u> SSC11-00004 ALD11024V ALD11024S ALD11024N ALD11024M SSC11-00009 SSG11-00005 SSG11-00006 (GEN-4) Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)		
62	Are procedures in place to ensure that the generator/storage Site Project Manager submits the WSPF to the Permittees for DOE's approval along with the accompanying Characterization Information Summary for that waste stream? (Section C-4a(6))	MP-TRUW-8.14, S. 3.1.10	Y	Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
63	Are procedures in place to ensure that the generator/storage site maintains records related to waste characterization sampling and analysis activities in the testing, sampling or analytical facilities files, or site project files for those facilities located on-site? (Section C-4a(7))	MP-TRUW-8.2, S. C-4a(7)	Y	RIDS – Description of the process MP-DOCS-18.2, Appendix B, Records categories, classifications, disposition, and retention matrix (GEN-13)	Y	
64	Are procedures in place to ensure that the appropriate documented training and indoctrination is performed for all individuals and that procedures are documented in site specific QAPjPs and procedures? (Section C3-14)	MP-RTQP-14.4, (All) MP-TRUW-8.2, S. C3-14 LST-RTQP-03- IM, S. 2.0	Y	Qualification records for selected AMWTP operators/personnel. (GEN-14) Site Project Manager Qualification Cards (GEN-15)	Y	
65	Are procedures in place to ensure that the generator/storage site requires contract waste analytical facilities to forward testing, sampling and analytical records along with testing, sampling and analytical batch data reports to the site project office for inclusion in the sites project files? (Section C-4a(7))	N/A	N/A	N/A	N/A	Solids analysis is performed by the INL Analytical Laboratory, which CBFO has previously certified. The analytical laboratory was not in the scope of this audit.
66	Are procedures in place to ensure that the generator/storage site has an appropriate records inventory and disposition schedule (RIDS) or equivalent that was prepared and approved by appropriate site personnel? (Section C-4a(7))	MP-TRUW-8.2, S. C-4a(7) MP-DOCS-18.2, (All)	Y	RIDS – Description of the process MP-DOCS-18.2, Appendix B, Records categories, classifications, disposition, and retention matrix (GEN-13)	Y	
67	Are procedures in place to ensure that the generator/storage site maintains all records relevant to an enforcement action, regardless of disposition, until they are no longer needed for enforcement action, and then dispositioned per the approved RIDS? (Section C-4a(7))	MP-DOCS-18.2, (All)	Y	RIDS – Description of the process MP-DOCS-18.2, Appendix B, Records categories, classifications, disposition, and retention matrix (GEN-13)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
68	<p>Are procedures in place to ensure that the generator/storage site maintains records that are designated as Lifetime Records for the life of the waste characterization program plus six years or that the records have been transferred to the WIPP Records Archive facility?</p> <p>Lifetime Records include:</p> <ul style="list-style-type: none"> • Field sampling data forms, • Field and laboratory COC forms, • Test facility and laboratory Batch Data Reports, • Waste Stream Characterization Package, • Sampling plans, • Data reduction, validation, and reporting documentation, • Acceptable knowledge documentation, • WSPF and Characterization Information Summary <p>(Section C-4a(7), Table C-6)</p>	<p>MP-TRUW-8.2, S. C-4a(7)</p> <p>MP-DOCS-18.2, S. 3.6.4.1, 4.0, & App. B</p>	Y	<p>RIDS – Description of the process</p> <p>MP-DOCS-18.2, Appendix B, Records categories, classifications, disposition, and retention matrix</p> <p>(GEN-13)</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
69	<p>Are procedures in place to ensure that the generator/storage site maintains records that are designated as Non-Permanent Records for ten years from the date of record generation, and then dispositioned according per the approved RIDS or transferred to the WIPP Records Archive facility?</p> <p>Non-Permanent Records include:</p> <ul style="list-style-type: none"> • Nonconformance documentation, • Variance documentation, • Assessment documentation, • Gas canister tags, • Methods performance documentation, • PDP documentation, • Sampling equipment certifications, • Calculations and related software documentation, • Training/qualification documentation, • QAPjP documentation (all revisions), • Calibration documentation, • Analytical raw data, • Procurement documentation, • QA procedures (all revisions), • Technical implementing procedures (all revisions), and • Audio/video recording (radiography, visual, etc.). <p>(Section C-4a(7), Table C-6)</p>	<p>MP-TRUW-8.2, S. C-4a(7)</p> <p>MP-DOCS-18.2, App. B</p>	Y	<p>RIDS – Description of the process</p> <p>MP-DOCS-18.2, Appendix B, Records categories, classifications, disposition, and retention matrix</p> <p>(GEN-13)</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
70	Are procedures in place to ensure that the generator/storage site has raw data that is identifiable and legible, and provides documentary evidence of quality? (Section C-4a(7))	MP-TRUW-8.8, S. 3.1, 3.2, 3.4, 3.5 & App. C INST-OI-43, S. 4.8 INST-OI-16, S. 4.22 INST-OI-73, S. 4.22 INST-OI-75, S. 4.14	Y	<u>HSG BDRs:</u> HS111-00018 (HSG-1) <u>SS BDRs:</u> SSC11-00002 (SOL-1) SSG11-00006 (SOL-2) <u>VE BDRs:</u> VEB10-00880 VEB11-00850 VEB11-00449 VSC11-00011 VSC11-00015 VSC11-00017 (VE-1) <u>RTR BDRs:</u> RTR11-00050 RTR11-00160 RTR11-00208 RTR11-00235 RTR11-00262 RTR11-00319 (RTR-1)	Y	
71	Are procedures in place to ensure that if the generator/storage site ceases to operate, that all records be transferred before closeout? (Section C-4a(7))	MP-TRUW-8.2, S. C-4a(7)	Y	N/A	N/A	The AMWTP is still in operations, however, should work cease, records will be transmitted in WIPP in accordance with MP-DOCS-18.2.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
SHIPMENT						
72	<p>Are procedures in place to ensure that the generator/storage site accurately completes an EPA Hazardous Waste Manifest prior to shipping the waste to WIPP that contains the following information:</p> <ul style="list-style-type: none"> • Generator/storage site name and EPA ID • Generator/storage site contact name and phone number • Quantity of waste • List of up to six state and/or federal hazardous waste numbers in each line item • Listing of all container IDS • Signature of authorized generator representative <p>(Section C-5b)</p>	MP-TRUW-8.12, S. 3.3.6 - 3.3.21	Y	Uniform Hazardous Waste Manifest 000793203GBF shipment package (GEN-20)	Y	
73	<p>Are procedures in place to ensure that the generator/storage site accurately completes the following container specific information:</p> <ul style="list-style-type: none"> • Waste stream identification number • List of hazardous waste numbers per container • Certification data • Shipping data <p>(Section C-5b)</p>	MP-TRUW-8.12, S. 3.3.6 - 3.3.21	Y	Uniform Hazardous Waste Manifest 000793203GBF shipment package (GEN-20)	Y	

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

**Revised Table C6-4 Headspace Gas Checklist
AMWTP Recertification Audit A-12-03**

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Headspace Gas Checklist

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
HEADSPACE GAS SAMPLING FREQUENCY						
182	Are procedures in place to ensure that randomly selected retrievably stored and newly generated waste containers will undergo headspace gas sampling and analysis as required to augment AK? (Section C-3a)	MP-TRUW-8.25, S. 3.2 & 3.3	Y	<u>HSG BDRs:</u> HS110-00018 HS111-00010 HS111-00012 (GEN-3) HS111-00018 (HSG-1) Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline, Lot 1-SPC-014-10 Subsequent Headspace Gas Random Sample Selection for BN510.1 Boxline Lot 2-SPC-015-10 Addendum to Headspace Gas Rando Sample Selection Memorandum Lot 1 of BN600, AMWTP WMF-676 PCB Contaminated Debris WS-SPC-005-11 (GEN-5)	Y	
183	Are procedures in place to ensure that randomly selected containers will be allowed to equilibrate to sampling room temperature for 72 hours prior to sampling (18° C or higher) and that the drum ages specified in accordance with Section C1-1a(1) are met? All information necessary to determine drum age criteria must be determined, including but not limited to: <ul style="list-style-type: none"> • Scenario Determination • Packaging Configuration • Filter Diffusivity • Liner/Lid Opening Diameter (Section C1-1a)	INST-OI-43, S. 3.1.1, 3.1.11, 4.4.1.1.2, 4.5.3, & App. E MP-TRUW-8.8, S. 3.4.4 & App. A	Y	<u>HSG BDR:</u> HS111-00018, p. 75 & 26 (HSG-1)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
HEADSPACE GAS SAMPLING GENERAL REQUIREMENTS						
184	Are procedures in place to ensure all containers of waste are vented through filters to ensure that gases are adequately vented preventing over pressurization or development of conditions that would lead to the development of ignitable, corrosive, reactive, or other characteristic waste? (Section C-1c)	INST-OI-43, S. 4.5.2 INST-OI-45, (All) INST-OI-50, (All)	Y	HSG BDR: HS111-00018, p. 26 (HSG-1)	Y	
186	Are procedures in place to ensure that the following gas sample container and holding time requirements are met: <ul style="list-style-type: none"> • The minimum sample volume for VOC. sample collection is 250 mL. (Note: a single 100 mL sample may be collected if the headspace is limited) • Holding temperatures shall be between 0° C and 40°C (Table C1-1)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
187	Are procedures in place to ensure that all sampling is performed in an appropriate radiation containment area? (Section C1-1a)	INST-OI-43, S. 4.4.1.3 INST-OI-11, (All)	Y	Walkthrough of sampling area on 11/1/11 in Bldg WMF-634	Y	
188	Are procedures in place to ensure that headspace gases is analyzed for the analytes listed in Table C3-2 of the Attachment C3? (Section C1-1a(1))	INST-OI-43, S. 4.0 & App. A Table 2	Y	HSG BDR: HS111-00018, p. 15 - 25 (HSG-1)	Y	
189	Are procedures in place to ensure that all headspace gas analyses utilize either SUMMA® or equivalent canisters or on-line integrated sampling/analysis systems? (Section C1-1a(1))	INST-OI-43, S. 4.0	Y	Walkthrough on 11/1/11 verified use of online sampling/analysis system.	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
MANIFOLD SAMPLING						
190	<p>Are procedures, processes, and equipment in place to ensure that the following sampling procedures are implemented:</p> <ul style="list-style-type: none"> The sampling equipment is leak checked and cleaned upon first use and as needed The manifold and sample canisters are evacuated to 0.1 mm Hg prior to sample collection Cleaned and evacuated sample canisters are attached to the evacuated manifold before the manifold inlet valve is opened The manifold inlet valve is attached to a changeable filter connected to either a side port needle sampling head capable of forming an airtight seal (for penetrating a filter or rigid poly liner when necessary), a drum punch sampling head capable of forming an airtight seal (capable of punching through the metal lid of a drum while maintaining an airtight seal for sampling through the drum lid), or a sampling head with an airtight fitting for sampling through a pipe overpack container filter vent hole. Refer to Section C1-1a(4) for descriptions of these sampling heads. Field blanks are collected using samples of room air collected in the sampling area in the immediate vicinity of the waste container. <i>(Note: field blanks for SUMMA canisters are collected directly into the canister without the use of the manifold.)</i> Manifold equipped with purge assembly that allows QC samples to be collected through all sampling components that affect compliance with QAOs The manifold internal volume is calculated and documented in a field logbook The total volume of headspace gas collected is calculated by adding the canister volume and internal manifold volume and should be less than 10 percent of the available headspace volume when a volume estimate is available <p>(Section C1-1a(2))</p>	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
191	<p>Are procedures, processes, and equipment in place to ensure that the following manifold sample side conditions are met:</p> <ul style="list-style-type: none"> The sampling head forms a leak-tight connection with the sampling manifold A flexible hose allowing movement from the purge assembly to the waste container Pressure sensors that are pneumatically connected to the manifold and must be able to measure absolute pressure from 0.05 mm Hg to 1000 mm Hg with a resolution of that must be 0.01 mm Hg at 0.05 mm of Hg. The pressure sensors shall have an operating range of 15°C to 40°C. Sufficient canister ports shall be available to allow simultaneous collection of headspace gas samples and duplicates for VOC analysis. Ports not occupied with sample canisters require a plug to prevent ambient air from entering the system Ports shall have VCR fittings for connection to the sample canisters to prevent degradation of the fitting on the canister and manifold. Sample canisters are leak-free, stainless steel pressure vessels, with a Cr-NiO SUMMA® passivated interior surface or canisters with equivalently inert surfaces, bellows valve, and a pressure/vacuum gauge. All canisters shall have VCR fittings to sampling and analytical equipment The pressure/vacuum gauge must be mounted on each manifold and shall be helium-leak tested to 1.5×10^{-7} cc/s, have all stainless steel construction, and be capable of operating at temperatures to 125°C 	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
191a	<ul style="list-style-type: none"> A dry vacuum pump capable of reducing the manifold pressure to 0.05 mm Hg. (Note: If an oil vacuum pump is used precautions such as a molecular sieve or cryogenic trap shall be used to prevent diffusion of oil vapors back into the manifold) A minimum distance between the needle and the valve that isolates the pump from the manifold in order to minimize the dead volume in the manifold. If real time equipment blanks are not available, the manifold shall be equipped with an OVA capable of detecting all analytes listed in Table C3-2 and is capable of measuring total VOC concentrations below the lowest headspace gas PRQL <p>(Section C1-1a(2))</p>	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
192	<p>Are procedures, processes, and equipment in place to ensure that the following manifold standard side conditions are met:</p> <ul style="list-style-type: none"> A cylinder of compressed zero air, helium, argon, or nitrogen that is hydrocarbon and CO₂ free air (only hydrocarbon and CO₂-free gases required for FTIRS) and certified by the manufacturer to contain less than one ppm VOCs. The gas is used to clean the manifold between samples and to provide gas for the collection of equipment and on-line blanks <p><i>(Note: a zero air or nitrogen generator may be used, provided a sample of air is collected and found to contain less than 1 ppm total VOCs and the air is humidified)</i></p> <ul style="list-style-type: none"> Cylinders of reference gas with known concentrations of analytes from Table C3-2 certified by the manufacturer to provide gases for evaluating the accuracy of the headspace gas sampling process All cylinders of reference gases and zero air shall be connected to flow regulating devices A humidifier filled with ASTM Type I or II water, connected, and opened to the standard side of the manifold between the compressed gas cylinders and the purge assembly shall be used, if the Fourier Transform Infrared System (FTIRS) is not used. No humidifier if the FTIRS is used <i>(Note: Compressed gas may include water vapor between 1000 and 10000 ppmv in lieu of a humidifier)</i> The humidifier is off-line during system evacuation to prevent manifold flooding 	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
192a	<ul style="list-style-type: none"> A purge assembly that allows the sampling head to be connected to the standard side of the manifold. A flow indicating device or pressure regulator that is connected downstream of the purge assembly to monitor the flow rate or pressure of gases through the purge assembly to ensure that excess flow is available to prevent ambient air from contaminating the QC samples and allow sample of gas from the compress gas cylinders to be collected near ambient pressure. <p>(Section C1-1a(2))</p>	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
193	<p>Do procedures ensure that NIST Certified (or equivalent) ambient pressure sensors maintained in the sampling area must have a sufficient measurement range for the expected ambient barometric pressures and a resolution shall be 1.0 mm Hg or less?</p> <p>(Section C1-1a(2))</p>	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
194	Do procedures ensure that the NIST traceable (or equivalent) temperature sensor in the sampling location shall have a sufficient measurement range for the ambient temperatures (18 to 50EC)? (Section C1-1a(2))	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
DIRECT CANISTER SAMPLING						
195	<p>Are procedures, processes, and equipment in place to ensure that the following operating conditions are in place for direct canister sampling:</p> <ul style="list-style-type: none"> • Canisters are evacuated to 0.1 mm Hg prior to use and attached to a changeable filter connected to the sampling head • Sampling heads are capable of either punching through the metal lid of the drums while maintaining an airtight seal for sampling through the drum lid, penetrating a filter or the septum in the orifice of a self-tapping screw, or maintaining an airtight seal for sampling through a pipe overpack container filter vent hole. • Field duplicates are collected in the same manner and at the same time and using the same type of sampling apparatus as used for headspace gas sample collection. • Field blanks shall be samples of room air collected in the immediate vicinity of the waste drum sampling area prior to removal of the drum lid. • Equipment blanks and field reference standards shall be collected using a purge assembly equivalent to the standard side of the manifold • Less than 10 percent of the headspace is withdrawn when a headspace estimate is available <i>(Note: The total volume withdrawn is can be determined by adding the canister volume and the internal volume of the sampling head)</i> • Each sample canister is shall be equipped with a pressure/vacuum gauge capable of indicating leaks and sample collection volumes. The gauge shall be helium leak tested to 1.5×10^{-7} cc/s, have all stainless steel construction and be capable of tolerating temperatures to 125° C • Summa® canisters or equivalent are used to collect samples <p>(Section C1-1a(3))</p>	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
SAMPLING HEADS UNDER DRUM LIDS: SAMPLING THROUGH A CARBON FILTER						
196	<p>Are procedures, process, and equipment adequate to ensure that samples collected through a filter meet the following requirements:</p> <ul style="list-style-type: none"> The lid of the drum's 90-mil rigid poly liner shall contain a hole for venting to the drum That non-vented drums are not sampled until an internal nonconformance report is prepared, submitted, and resolved in order to obtain a representative sample The filter shall be sealed to prevent outside air from entering the drum The sampling head for collecting drum headspace gas shall consist of a side-port needle, a filter to prevent particle contamination of the sample, and an adapter to connect the side-port needle to the filter The sampling head is cleaned or replaced after each use The housing of the filter shall allow insertion of the sampling needle through the filter element or a sampling port with septum that bypasses the filter element into the drum headspace The side port needle shall be used to reduce the potential for plugging The purge assembly shall be modified for compatibility with the side port needle. <p>(Section C1-1a(4)(i))</p>	<p>Bullets 1 & 2: INST-OI-43, S. 1.0, 4.4.2.5.5 & App. E</p> <p>Bullet 3: INST-OI-43, S. 4.5.4- 4.5.7</p> <p>Bullets 4-8: INST-OI-43, App. C</p>	Bullets 1-8: Y	<p>Bullets 1-8: <u>HSG BDR:</u> HS111-00018 (HSG-1)</p>	Bullets 1-8: Y	<p>Walkthrough on 11/1/11 verified presence of all required components and processes.</p> <p>Interview on 11/2/11 verified drums without vented liners are not sampled. Demo 11/2/11.</p>
SAMPLING HEADS UNDER DRUM LIDS: SAMPLING THROUGH THE DRUM LID						
197	<p>Are procedures in place to establish the criteria for sampling through the drum lid as opposed to sampling through a filter?</p> <p>(Section C1-1a(4)(ii))</p>	N/A	N/A	N/A	N/A	AMWTP only samples through sample ports or filters.
197a	<p>If sampling through a pipe overpack container filter vent hole with an airtight device is used, are procedures in place to ensure that a sampling head with an airtight seal for sampling through a pipe overpack container filter vent hole are available?</p> <p>(Section C1-1a(4)(iii))</p>	N/A	N/A	N/A	N/A	AMWTP only samples through sample ports or filters.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
197b	<p>If sampling through a pipe overpack container filter vent hole is used, are the following criteria met:</p> <ul style="list-style-type: none"> The seal between the pipe overpack container surface and sampling apparatus shall be designed to minimize intrusion of ambient air. The filter shall be replaced as quickly as is practicable with the airtight sampling apparatus to ensure that a representative sample can be taken. All components of the sampling system that come into contact with sample gases shall be cleaned according to requirements for direct canister sampling or manifold sampling, whichever is appropriate, prior to sample collection. Equipment blanks and field reference standards shall be collected through all the components of the sampling system that contact the headspace-gas sample. During sampling, openings in the pipe overpack container shall be sealed to prevent outside air from entering the container. A flow-indicating device shall be connected to sampling system and operated according to the direct canister or manifold sampling requirements, as appropriate. <p>(Section C1-1a(4)(iii))</p>	N/A	N/A	N/A	N/A	AMWTP only samples through sample ports or filters.
197c	<p>If sampling through a pipe overpack container filter vent hole is used, are the following criteria met?</p> <ul style="list-style-type: none"> The site has documentation that demonstrates that they have determined through testing the appropriate length of time for exchanging the filter with the sampling device to assure representative samples are collected. <p>(Section C1-1a(4)(iii))</p>	N/A	N/A	N/A	N/A	AMWTP only samples through sample ports or filters.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
198	<p>Are procedures, process, and equipment adequate to ensure that samples collected through the drum lid by punching meet the following requirements:</p> <ul style="list-style-type: none"> The lid of the drum's 90-mil rigid poly liner shall contain a hole for venting to the drum. If the DAC for Scenario 1 is met, a sample may be collected from inside the 90-mil rigid poly liner. If headspace gas samples are collected from the drum headspace prior to venting the 90-mil rigid poly liner, the sample is not acceptable and a nonconformance report shall be prepared, submitted, and resolved. The drum lid shall be breached using a punch that forms an airtight seal between the drum lid and the manifold or canister The seal between the drum lid and the sampling head shall be designed to minimize the intrusion of ambient air All components of the sampling system that come in contact with sample gases shall be purged with humidified zero air, nitrogen, or helium prior to sample collection Equipment blanks and field reference standards shall be collected through all components of the punch that contact the headspace gas sample Pressure shall be applied to the punch until the drum lid has been breached Provisions shall be made to relieve excessive drum pressure increases during drum punch operations; potential pressure increases may occur during sealing of the drum punch to the drum lid The filter is sealed to prevent outside air from entering the drum <p>(Section C1-1a(4)(ii))</p>	N/A	N/A	N/A	N/A	AMWTP only samples through sample ports or filters.
198a	<ul style="list-style-type: none"> A flow indicating device or pressure regulator to verify flow of gases shall be pneumatically connected to the drum punch and operated in the same manner as the flow indicating device Equipment are used to secure the drum punch sampling system to the drum lid If the headspace gas sample is not taken at the time of drum punching, the presence and diameter of the rigid liner vent hole is documented during the punching operation for use in determining an appropriate Scenario 2 DAC. <p>(Section C1-1a(4)(ii))</p>	N/A	N/A	N/A	N/A	AMWTP only samples through sample ports or filters.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
QUALITY CONTROL SAMPLE COLLECTION						
199	<p>Are procedures in place to ensure that the following QC sample requirements are met:</p> <ul style="list-style-type: none"> Field QC samples are collected on per sample batch basis for manifold and direct canister sampling. A sampling batch is defined as up to 20 samples collected within 14 days of the first sample Field samples are collected and analyzed on a per on-line batch basis for on-line sampling/analysis systems. An on-line batch is defined as the number of headspace gas samples that are collected within a 12 hour period from the same on-line integrated analysis system For the manifold sampling method, field blanks, equipment blanks, field duplicates, and field reference samples are collected prior to sample collection on a per sampling batch basis or one per day, whichever is more frequent For the direct canister sampling method field blanks and field duplicates are collected on a per sampling batch basis prior to sample collection; while equipment blanks and field reference samples are collected after equipment purchase, cleaning, and assembly 	<p>Bullet 1: N/A Bullet 2: INST-OI-43, S. 5.0 Bullets 3 & 4: N/A</p>	<p>Bullets 1,3 & 4 N/A Bullet 2: Y</p>	<p>Bullets 1, 3 & 4 N/A Bullet 2: Examined HSG BDR: HS111-00018, p. 7 – 25 (HSG-1)</p>	<p>Bullets 1,3 & 4 N/A Bullet 2: Y</p>	<p>1st, 3rd, and 4th Bullets: N/A since AMWTP uses on-line systems.</p>
199a	<ul style="list-style-type: none"> For the On-line sampling method, field blanks, equipment blanks, field duplicates, and field reference samples are collected on a per on-line batch basis. <i>(Note: The on-line blank replaces the laboratory and equipment blanks, the on-line duplicate replaces the field duplicate and the laboratory duplicate, and the on-line sample control replace the field reference standard and the laboratory control sample.)</i> <p>(Section C1-1b, C1-1b(1), C1-1b(2), C1-1b(3), C1-1b(4))</p>	<p>INST-OI-43, S. 5.0 & App. A Table 3</p>	<p>Y</p>	<p>Examined HSG BDR: HS111-00018, p. 7 – 15 (HSG-1)</p>	<p>Y</p>	
200	<p>Do procedures adequately assign the Site Project QA Officer with the responsibility of monitoring field QC results and initiate the nonconformance report process in the event the following acceptance criteria are not met or sample collection frequencies are not met:</p> <ul style="list-style-type: none"> Field and equipment blanks shall be less than 3 times the detection limits specified in Table C3-2 and equipment blank results determined by FTIR shall be less than the PRQL specified in Table C3-2 (Section C1-1b(1) and C1-1b(2)) Field reference standards shall have a recovery of between 70 and 130% (Table C1-3) Field Duplicates shall have an RPD of less than or equal to 25 <p>(C1-1b(4); Table C1-3)</p>	<p>MP-TRUW-8.9, S. 3.1 & Form 1400</p>	<p>Y</p>	<p>HSG BDRs: HS110-00018 HS111-00010 HS111-00012 (GEN-3)</p>	<p>Y</p>	<p>AMWTP does not utilize FTIR instruments.</p> <p>Field Reference Standards are not used for on-line headspace gas systems.</p>

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
201	<p>Are procedures in place to ensure that field reference standards meet the following criteria:</p> <ul style="list-style-type: none"> Field reference standards shall contain a minimum of 6 analytes listed in Table C3-2 at a range of between 10 and 100 ppmv and at concentrations greater than the MDL Field reference standards shall be traceable to a nationally recognized standard, if available If commercial gases are used, they shall be accompanied by a Certificate of Analysis and all field reference standards are traceable to certificates. Commercial gases are not used past the manufacturer specified shelf life. Field reference samples are submitted blind to the laboratory at a frequency of one per sampling batch. (Note: Field reference standards may be discontinued for direct canister method if QAO accuracy objectives are met) <p>(Section C1-1b(3))</p>	<p>Bullets 1- 4: INST-OI-43, S. 5.0 Bullet 5: N/A</p>	Y	Examined HSG BDR: HS111-00018, p. 71 (HSG-1)	Y	<p>Bullet 5 is N/A since AMWTP uses on-line systems.</p> <p>AMWTP analyzes Online Control Samples instead of Field Reference Standards since they operate an online sampling and analysis system.</p>
202	<p>Are procedures in place to ensure that field duplicate samples are collected sequentially and in accordance with Table C1-1?</p> <p>(Section C1-1b(4))</p>	<p>INST-OI-43, S. 4.4.7 NOTE, 4.4.7.3.13, 5.0, App. A Tables 3, 14 & 15 (duplicates)</p>	Y	Examined HSG BDR: HS111-00018, p. 15 (HSG-1)	Y	<p>Demo of sampling 11/2/11.</p>

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
SAMPLE EQUIPMENT TESTING, INSPECTION AND MAINTENANCE						
203	<p>Are procedures in place to ensure that sample containers are cleaned in accordance with the following specifications:</p> <ul style="list-style-type: none"> All sampling components that contact sample gases are constructed of inert materials such as stainless steel or Teflon□ The sampling manifold and canisters are properly cleaned and leak checked prior to each sampling event in accordance to or equivalent with TO-14A or TO-15 methodology SUMMA® canisters or equivalent are cleaned on an equipment cleaning batch basis. An equipment cleaning batch is defined as the number of canisters that can be cleaned together at one time using the same cleaning method The cleaning system consists of an optional oven and a vacuum manifold which uses a dry vacuum pump or a cryogenic trap backed by an oil sealed pump Prior to cleaning a 24 hour leak check shall be performed (+/- 2 psig) on all canisters Canisters that shall be checked for leaks, repaired, and reprocessed One canister per equipment cleaning batch is filled with humid zero air or humid high purity nitrogen and analyzed for VOCs A batch is considered clean if VOC concentrations are less than 3 times the MDLs specified in Table C3-2 Certified leak-free canisters are evacuated to 0.1 mm Hg or less for storage Canister cleaning certification documentation is available at the cleaning facility and the cleaning facility initiates canister tags. <p>(Section C1-1c, C1-1c(1))</p>	N/A	N/A	N/A	N/A	AMWTP uses on-line systems.
204	<p>Are procedures in place to ensure that manifold pressure sensors and ambient air temperature sensors are certified prior to initial use and annually using NIST traceable standards? In addition OVAs if used shall be calibrated daily using known calibration gases and the balance of the OVA calibration is consistent with the manifold purge gas?</p> <p>(Section C1-1d)</p>	INST-OI-43, App. C	Y	Verified sensors TI-221-001A, cal due 6/26/12; TIC-221-001A, cal due 6/26/12; PI-221-001A, cal due 6/30/12; VG-221-001A, cal due 6/30/12 during walkthrough 11/1/11.	Y	OVAs not used.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
205	<p>Are procedures in place to ensure that sampling equipment are cleaned and leak checked using the following specifications:</p> <ul style="list-style-type: none"> Surfaces of all sampling equipment that will come in contact with sample gases are thoroughly inspected and cleaned prior to assembly Manifolds and sampling heads shall be purged with humidified zero air, nitrogen, or helium and leak checked after assembly The cleaning shall be repeated if routine system cleaning is inadequate Manifolds and sampling heads which are reused shall be cleaned and leak checked according to procedures in the EPA's Compendium Method TO-14A or TO-15 after sample collection, field duplicate collection, field blank collection, and after the additional cleaning require for field reference samples. All manifold ports shall be capped or closed with valves (sample canisters may be attached as well) Manifolds are cleaned by heating the sample side of the manifold to 150 EC and periodically evacuated and flushed with humidified zero air, nitrogen, or helium Manifolds not in use are demonstrated as clean before storage with a positive pressure of humidified zero air, nitrogen, or helium gas in the sampling and standard sides Sampling is suspended when the analysis of an equipment blank indicated the if VOC limits have been exceeded or if a leak test fails Sampling systems are cleaned after field reference standard collection by installing a gas tight connector in place of the sampling head, between the flexible hose and purge assembly. This allows the sample and standard side to be flushed with humidified zero air, nitrogen, or helium in conjunction with heated pneumatic lines Needles, airtight fitting or seal, adapters, and filters are cleaned in accordance with the EPA Method TO-14A or TO-15 procedures. Sample heads shall be discarded or cleaned according to Method TO-15. In addition, the needle, the airtight fitting and seal, and the filter should be purged with zero air, nitrogen, or helium and capped for storage <p>(Section C1-1c(2) , Section C1-1c(3), Section C1-1c(4), and Section C1-1c(5))</p>	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
SAMPLE HANDLING AND CUSTODY						
207	<p>Do formats for field logs and custody records specify documentation of the following information:</p> <ul style="list-style-type: none"> • Name of sampling facility • Waste container identification number • Sample identification number of each sample referenced to waste container • Sample matrix • Time and date of sample collection • Type/number and size of sample container(s) • Method of sample preservation • Requested analyses • Sampler(s) name through signature • Signatures of custodians relinquishing and receiving custody of samples including date and time of transfer until time of final disposition • Analytical laboratory • Off-site shipping information (date, time, shipper, mode, air bill or lading number) <p>(Section C1-5)</p>	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
208	<p>Are procedures are in place to ensure that samples and sampling equipment are identified with unique identification numbers?</p> <p>(Section C1-5)</p>	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
209	Do sample tags or labels contain the following information: <ul style="list-style-type: none"> • Sample Description • Ambient temperature and pressure • Sample identification number • Analyses requested • Date/Time of collection • QC Designation (if applicable) • Sampler's initials and organization (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
210	All sampling equipment, canisters, and samples are identified with unique identification numbers that are traceable to equipment cleaning batches? (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
211	Are procedures in place to ensure samples are sealed with intact custody seals and that one or more of the following custody conditions are met: <ul style="list-style-type: none"> • It is in the possession of an authorized individual • It is in the view of an authorized individual, after being in the possession of that individual • It was in the possession of an authorized individual and access to the sample was controlled by locking or placement of signed custody seals that prevent undetected access • It is in a designated secure area, such as a controlled access location with complete documentation of personnel access or a radiological containment area (hot cell or glove box) (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
212	Are procedures in place to ensure that discrepant sample information, indications of damage, or indications of tampering are documented? (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
214	Are procedures in place to ensure that sample custody is maintained until the sample is released by the site project manager or expended? (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
215	Are procedures in place to ensure that SUMMA canisters are packaged to prevent damage to the pressure gauge or associated connections by packaging in metal boxes with separate compartments or cardboard boxes with foam inserts? (Section C1-6)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
216	Are procedures in place to ensure that samples are packaged to prevent damage to the sample container and maintain preservation temperature? (Section C1-6)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
217	Are procedures in place to ensure that adequate cold packs are included in the DOT approved sample shipping container to ensure that all temperature requirements are met? (Section C1-6)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
218	Are procedures in place to ensure that sample COC forms are secured for shipment to the inside of the sealed or locked shipping container lid and that samples and shipping containers are affixed with tamper proof seals or devices? (Section C1-6)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
219	Are procedures in place to ensure that an appropriate blank sample is included with each shipment container to detect any VOC cross-contamination? (Section C1-6)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
LABORATORY OPERATIONS						
220	<p>Are procedures in place to ensure that all VOC analyses are evaluated using the following criteria:</p> <ul style="list-style-type: none"> Precision is assessed by analyzing of laboratory duplicates, Laboratory Control Sample (LCS), and PDP blind-audit samples in comparison to Table C3-2 Accuracy is as %R shall be assessed by analyzing LCS samples and PDP blind audit samples in comparison to criteria in Table C3-3 MDLs are expressed in nanograms for VOCs and must be less than or equal to those listed in Table 3-2 Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. A composited sample is treated as one sample for the purposes of completeness, because only one sample is run through the analytical instrument Comparability shall be achieved through the use of standardized methods, traceable standards by requiring successful participation in the PDP program Representativeness will be achieved by collecting sufficient numbers of samples using clean sampling equipment that does not introduce sample bias. All method detection limits and program required detection limits shall be less than the Program Required Detection Limits listed in Table C3-2 and the detection limit study procedures shall be documented in laboratory SOPs. In addition, the laboratory shall demonstrate that they are capable of meeting the Program Required Detection Limits by analyzing at least one calibration standard below the PRQL <p>(Section C3-5)</p>	<p>Bullets 1 & 2: INST-OI-43, S. 4.4.7.3.18, 5.0, App. A Tables 2, 3, 14 & 15 (DUP)</p> <p>S. 4.4.4.2, 5.0, Tables 3, 14 & 15 (OCS)</p> <p>S. 4.4.2.1, 4.5.9, 4.5.22 & App. A Table 3 (PDP)</p> <p>Bullet 3: INST-OI-43, S. 4.8.5.2, App. A Table 2, App. B Equation (5)</p> <p>Bullet 4: INST-OI-43, S. 5.0</p> <p>Bullet 5: INST-OI-43, (All)</p> <p>Bullet 6: INST-OI-43, (All)</p> <p>Bullet 7: INST-OI-43, S. 5.0 (PRQL defined) & App. A Table 2</p>	Y	<p>Bullets 1 & 2: HS111-00018, p. 9 - 12 (HSG-1) PDP Approval Memo 5/31/11 (HSG-2)</p> <p>Bullet 3: MDL/MPS study (HSG-3) ICAL Study (HSG-4)</p> <p>Bullet 4: HS111-00018, p. 7 – 25 (HSG-1)</p> <p>Bullet 5: HS111-00018, p. 70 – 74 (HSG-1) PDP Approval Memo 5/31/11 (HSG-2)</p> <p>Bullet 6: HS111-00018, p. 7 – 25 (HSG-1)</p> <p>Bullet 7: MDL/MPS study (HSG-3) ICAL Study (HSG-4)</p>	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
221	Are procedures in place to ensure that only laboratories that are qualified through participation in the Performance Demonstration Program are eligible to analyze waste samples? (Section C-3a(3))	MP-TRUW-8.8, S. 3.4.8.15 INST-OI-43, App. A, Table 3	Y	PDP Approval Memo 5/31/11 (HSG-2)	Y	
222	Are procedures in place to ensure that Tentatively Identified Compounds shall be added to the target compound list if they are reported in 25% of the waste containers sampled from a given waste stream and if they appear in the 20 NMAC 4.1.200 (incorporating 40 CFR .261) Appendix VIII list? (Section C-3a(1))	MP-TRUW-8.11, S. 4.8.33.2.13.1.1 & 3.2.13.1.2	Y	HSG BDRs: HS110-00018 HS111-00010 HS111-00012 (GEN-3)	Y	
222a	Are procedures documented to ensure that the following criteria are met with regard to the recognition and reporting of TICs for GC/MS Methods for headspace gas sampling: <ul style="list-style-type: none"> • Relative intensities of major ions in the reference spectrum (ions greater than 10% of the most abundant ion) should be present in the sample spectrum. • The relative intensities of the major ions should agree within √ 20 percent. • Molecular ions present in the reference spectrum should be present in the sample spectrum. • Ions present in the sample spectrum but not in the reference spectrum should be reviewed for possible background contamination or presence of coeluting compounds. • Ions present in the reference spectrum but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting peaks. • The reference spectra used for identifying TICs shall include, at minimum, all of the available spectra for compounds that appear in the 20.4.1.200 NMAC (incorporating 40 CFR Part 261) Appendix VIII list. The reference spectra may be limited to VOCs when analyzing headspace gas samples. • TICs for headspace gas analyses that are performed through FTIR analyses shall be identified in accordance with the specifications of SW-846 Method 8410. (Section C3-1)	INST-OI-43, S. 4.8.3 & MP-TRUW-8.8, S. 3.4.7	Y	HSG BDR: HS111-00018 (HSG-1)	Y	Interviewed lead operator on 11/1/11 on how TICs are identified and reported.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
222b	<p>Are procedures in place to assure that TICs are reported as part of the analytical batch data reports for GC/MS Methods in accordance with the following minimum criteria:</p> <ul style="list-style-type: none"> a TIC in an individual container headspace gas or solids sample shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 10% of the area of the nearest internal standard. a TIC in a composited headspace gas sample that contains 2 to 5 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 2% of the area of the nearest internal standard. a TIC in a composited headspace gas sample that contains 6 to 10 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 1% of the area of the nearest internal standard. a TIC in a composited headspace gas sample that contains 11 to 20 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 0.5% of the area of the nearest internal standard. <p>(Section C3-1)</p>	INST-OI-43, S. 4.8.3 MP-TRUW-8.8, S. 3.4.7	Y	HSG BDR: HS111-00018 (HSG-1)	Y	AMWTP does not composite samples. Interviewed lead operator on 11/1/11 on how TICs are identified and reported.
QUALITY ASSURANCE OBJECTIVES						
224	Are procedures in place to ensure that the precision of the headspace gas sampling and analysis must be assessed by the sequential collection of field duplicates for manifold sampling operations or simultaneous collection of field duplicates for direct canister sampling operations for VOCs? (Section C3-2)	INST-OI-43, S. 4.4.7 NOTE, 5.0, Tables 2, 3, 14 & 15 (DUP)	Y	HSG BDR: HS111-00018, p. 15 & 18 (HSG-1)	Y	
225	Are procedures in place to ensure that corrective action will be taken if the duplicate RPD exceeds 25% for any analyte found greater than the PRQL in both of the duplicate samples? (Section C3-2)	MP-TRUW-8.9, S. 3.1 & Form 1400	Y	HSG BDRs: HS110-00018 HS111-00010 HS111-00012 (GEN-3)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
226	Are procedures in place to ensure that the accuracy of headspace gas sampling is assessed through the collection of field reference standards and at a frequency of one field response standard for every 20 containers sampled or per sampling batch and through the collection of equipment blanks at the frequency of one for every equipment cleaning batch ? (Section C3-2)	INST-OI-43: S. 4.2.1.2.1 Bullet 2, 5.0, Tables 3, 12, 14 & 15 (EB) S. 4.3.1.8, 4.4.4.2, 5.0, App. A Tables 3 & 14 (OCS) MP-TRUW-8.8, S. 3.4.5.5 (OCS), 3.4.5.6 (Blanks)	Y	<u>HSG BDR:</u> HS111-00018, p. 9 – 12 (HSG-1)	Y	OCS takes the place of FRS for online sampling and analysis.
227	Are procedures in place to ensure that corrective actions are taken if the field reference standard is less than 70% recovery or greater than 130% and that if the blank concentration for any blank exceeds 3 times the MDL listings in Table B3-2? (Section C3-2)	INST-OI-43: S. 5.0, Tables 14 & 15 (EB) S. 4.3.1.8, 4.4.4.2, 5.0, App. A Tables 3 & 14 (OCS) MP-TRUW-8.8, S. 3.4.5.5 (OCS), 3.4.5.6 (Blanks) & Form 1400 MP-TRUW-8.9, S. 3.1 & Form 1400	Y	<u>HSG BDRs:</u> HS111-00018, p. 9 – 12 (HSG-1) HS110-00018 HS111-00010 HS111-00012 (GEN-3)	Y	Interview with operator and lead operator on 11/1-3/11 verified compliance. FRS is not used on the on-line systems.

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
228	Are procedures in place to ensure that sampling completeness shall be expressed as the number of valid samples collected as a percent of the total number of samples collected for each waste stream, where a valid sample is defined as a sample collected in accordance with approved sampling methods and the drum was properly prepared for sampling? (Section C3-2)	MP-TRUW-8.11, S. 3.2.14	Y	HSG BDRs: HS110-00018 HS111-00010 HS111-00012 (GEN-3) Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7) Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline, Lot 1-SPC-014-10 Subsequent Headspace Gas Random Sample Selection for BN510.1 Boxline Lot 2-SPC-015-10 Addendum to Headspace Gas Rando Sample Selection Memorandum	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
				Lot 1 of BN600, AMWTP WMF-676 PCB Contaminated Debris WS-SPC-005-11 (GEN-5)		
229	Are procedures in place to ensure that the minimum sampling completeness percentage for any waste stream is 90 percent? (Section C3-2)	MP-TRUW-8.11, S. 3.2.14	Y	Acceptable Knowledge (AK) Summary for First/Second Stage Sludge (BNINW216) with Sampling Report for Lot 21 and CIS; AK Summary for Building 374 Sludge (BNINW218); AK Summary for Solidified Acid/Caustic Waste (BN835); AK Summary for Supercompacted Debris Waste (BN510); AK Summary for Special Setups Wastes (BN004); AK Summary for Cemented Sludge (BN836); AK Summary for Solidified Plutonium Recovery Incinerator Waste (BN510.1); AK Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600) (GEN-7)	Y	

	WAP Requirement ¹ AMWTP Audit A-12-03 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
230	Are procedures in place to ensure that sample comparability is assured through the use and application of uniform procedures and equipment and application of data usability criteria, and that corrective action is taken if the uniform procedures and equipment are not used without approved and justified deviations? (Section C3-2)	INST-OI-43, (All)	Y	<u>HSG BDR:</u> HS111-00018 (HSG-1)	Y	
231	Are procedures in place to ensure that sample representativeness is maintained? (Section C3-2)	MP-TRUW-8.25 S. 3.1	Y	<u>HSG BDR:</u> HS111-00018 (HSG-1)	Y	

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



DOCUMENT CHANGE REQUEST (DCR)


Steve Ford
 9/12/11
 Form-1001
 Rev. 30
 Effective: 12/22/10
 Page 1

Implementing Document: MP-DOCS-18.4

Document ID: **INST-FOI-22** Current Revision ID: 0 FC-1 DCR No: 10417

1. Document Title: Visual Examination of S3000 Waste in the Facility

2. Requester: L J Walker Phone: 6574 S #:(Required) 901454

3. Type of Action: Create Revise Field Change Supersede Suspend Cancel

4. Proposed Action: Additional changes are listed on continuation page(s).

Item	Page No./Section/Zone	Description	Justification
1	4.2.41	Delete this step (and renumber rest of section)	Move to section 4.3 as a substep for 4.3.29
2	4.3.23	Move step and perform after 4.3.21	Supports data flow
3	4.3.29.1	New substep: Select "Sludge Liner" from the "Packaging Materials" table and enter 1 for the quantity.	Capture the liner as packaging in the closure section
4	4.4.41	Delete this step (and renumber rest of section)	Move to section 4.5 as a substep for 4.5.29
5	Note before 4.4.43	Last sentence should read... This is added as a waste item by volume or waste item by weight (inorganic material).	absorbent is normally added as waste item by volume
6	4.5.23	Move step and perform after 4.5.21	Supports data flow
7	4.5.29.1	New substep: Select "Sludge Liner" from the "Packaging Materials" table and enter 1 for the quantity.	Capture the liner as packaging in the closure section

5. Field Change: N/A Permanent? Temporary? If temporary, duration/expiration date: _____
 Refer to instructions in MP-DOCS-18.4, Section 3.6, for processing. Completion of Blocks 11 and 14 is required.

Criticality Safety Approval: THANE BELANDER [Signature] 9-10-11
 Print Signature PER TELECOM Date

NFM Approval: CLINT SASSBA [Signature] 9-10-11
 Print Signature PER TELECOM Date

Plant Manager Acknowledgement: MJS
 Initials

NOTE: If the proposed FC necessitates a WTS software change, the FC must be stopped and a revision initiated.

Is this INST listed on LST-PAIT-01? Yes No If YES, a review by WTS personnel is required (use review and approval space in Block 9).

THIS BLOCK SHOULD BE CHECKED NO 9-10-11

6. Minor Change? Yes No (If yes, proceed per instructions.) N/A for Field Changes



DOCUMENT CHANGE REQUEST (DCR)

Form-1001
Rev. 30
Effective: 12/22/10

Page 2

Implementing Document: MP-DOCS-18.4

Document ID:	INST-FOI-22	Current Revision ID:	0 FC-1	DCR No:	10417																																																																				
<p>7. Document Owner Proposal Approval: <input type="checkbox"/> Accepted <input type="checkbox"/> Rejected Printed Name: <u>Jeremy Hamton</u></p> <p>If accepted, does this change Introduce Any Safety Hazards that have not previously been identified? <input type="checkbox"/> Yes <input type="checkbox"/> No (Hazard Assessments are found on the AMWTP Home Page under Documentation.) If Yes, complete a Hazard Assessment in accordance with INST-COPS-9.18.4, Hazard Assessment, and attach a copy of the completed Form-1444, Hazard Assessment Record Sheet.</p> <p>Is a Facility Modification Proposal (FMP) being processed that may be related to this document revision? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, list FMP # _____.</p> <p>Is this document listed on LST-PAIT-01? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If YES, a review by WTS personnel is required. (Use space provided for review and approval in Block 9)</p> <p>If this change must coincide with a software/PVCS change, provide SDCR or SCR # _____ and implementation Date: _____</p> <p>If rejected, indicate the reason: Use Block 17 if more room is needed</p> <p style="text-align: right;">Owner Signature: <u>[Signature]</u> BRETT STACEY <u>PER TELECOM Date: <u>9-10-11</u></u></p>																																																																									
<p>8. Does this action qualify as a PERIODIC REVIEW? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If YES, provide new Periodic Review due date: _____</p>																																																																									
<p>9. Reviewers: (Refer to MP-DOCS-18.4, Appendix A, Document Review and Approval Matrix) <input type="checkbox"/> N/A for minor change only</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Discipline</th> <th rowspan="2">Printed Name</th> <th rowspan="2">Signature or Method of Concurrence</th> <th rowspan="2">Date</th> <th colspan="2">Comments?</th> </tr> <tr> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td colspan="6" style="text-align: center; vertical-align: middle;">N/A</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>						Discipline	Printed Name	Signature or Method of Concurrence	Date	Comments?		Yes	No	N/A																																																											
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<p>10. Validation: Is this an instructional procedure (INST)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A (for Minor Change, FC, and FC Gap Reviews)</p> <p>Is this a Form/Checklist used in conjunction with a revised INST? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A (for Minor Changes)</p> <p>Is this a Form/Checklist that independently directs work? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A (for Minor Changes)</p> <p>If any of the above are Yes, indicate procedure validation method and attach Form-1002, Procedure Validation Request: <input type="checkbox"/> Limited Field Use <input type="checkbox"/> Walk Down <input type="checkbox"/> Tabletop Was the validation listed above a <input type="checkbox"/> Complete validation or a <input type="checkbox"/> Partial validation?</p>																																																																									
<p>11a WIPP-Related Documents:</p> <p>a. If this document is NEW, should it be added to LST-Q&SI-01 per the Quality Assurance and SPM review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No / N/A</p> <p>b. If this document is NOT NEW, is it listed in LST-Q&SI-01? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No / N/A</p> <p>c. If already listed in LST-Q&SI-01, do these changes require CBFO review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Site Project Manager (SPM): Printed Name: <u>ERIC SCHWEINSBERG</u></p> <p>Signature (indicating review and approval): <u>[Signature]</u> ERIC SCHWEINSBERG <u>PER TELECOM</u> Date: <u>9-10-11</u></p>																																																																									



DOCUMENT CHANGE REQUEST (DCR)

Form-1001
Rev. 30
Effective: 12/22/10
Page 3

Implementing Document: MP-DOCS-18.4

Document ID: INST-FOI-22	Current Revision ID:	0 FC-1	DCR No:	10417
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11b NNSS LLW/MLLW-Related Documents: N/A for Minor Change

a. If this document is **NEW**, should it be added to LST-LLW-03? Yes No/N/A

b. If this document is **NOT NEW**, is it currently listed in LST-LLW-03? Yes No/N/A

NNSS Waste Certification Official (WCO) Approval: Printed Name: N/A

Signature (indicating review and approval): N/A Date: 11/1

12. RCRA: Are there any regulatory/permit impacts? Yes No N/A for Minor Change or FC

Evaluator Printed Name: N/A Signature: N/A Date: N/A

13. Training Requirements Determination: N/A for Field Change

Document owner initials are required, indicating approval of the option selected below.

- This is a minor change or strictly incorporation of approved FCs. Training Department review not required.
- This change affects informational and non-implementing documents (i.e., RPT, PLN, etc.). The document owner will ensure that any operating and training requirements will be flowed down to implementing procedures. Training Department review not required.
- This change to an implementing document does not introduce or change technical content that will require personnel to acquire new knowledge or to develop new skills to implement the change. Qualification packages, training objectives, or examination questions do not need to be changed.
- This change to an implementing document does introduce or change technical content that will require personnel to acquire new knowledge, complete new training requirements, or develop new skills to implement the change. Qualification packages, training objectives, or examination questions will need to be changed. Enter TrackWise AI number (from Form-1010) - _____.
- The formal training described in the TrackWise AI above **MUST BE COMPLETED PRIOR TO** procedure issuance.

Required only for Numbers 3 – 5:

Training Specialist Printed Name: N/A

Signature: N/A Date: N/A

14. USQ Evaluation: To be completed by a USQ Evaluator in accordance with MP-NSPC-3.2, Unreviewed Safety Question Process.

A USQ **DOES NOT EXIST** based upon the results of an approved USQ evaluator review or USQ determination.

A USQ **EXISTS** based upon the results of an approved USQ determination.

Note: This change to this document cannot be issued as long as a USQ exists.

USQ Evaluator Review Number: 65671

USQ Determination Number: N/A 64385 *8/9/12/11*

USQ Evaluator Name: JOHN MASLONIS Signature: John Maslonis Date: 9-12-11



DOCUMENT CHANGE REQUEST (DCR)

Form-1001
Rev. 30
Effective: 12/22/10

Page 4

Implementing Document: MP-DOCS-18.4

Document ID:	INST-FOI-22	Current Revision ID:	0 FC-1	DCR No:	10417
15. Effective Date and Time: After considering all impacts and implementation activities noted in Blocks 13, 14, 16, and 17, establish an effective date and time for the document: (If time is left blank, default time is 12:01am.)				9/12/11	9:30
				Date	Time 10:00
If document is a Temporary Operating Instruction (TOI), establish an expiration date, not to exceed 14 calendar days.				<i>n/a</i>	
				Date	Time
16. Other Documents and related forms affected by this action: -	<i>none identified</i>				
17. Comments:	<i>none</i>				
18. Final Approval (Document Owner):	<p>Is a <u>Required Read</u> needed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, is it needed BEFORE this document is issued? <input type="checkbox"/> Yes <input type="checkbox"/> No If needed before, initial indicating that an IMMEDIATE READ has been initiated per MP-COPS-9.12. _____ If not needed before, initial indicating that a regular required read has been initiated per MP-COPS-9.12. _____</p> <p>Is a <u>Tailgate Briefing</u> needed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, comply with MP-RTQP-14.11, Section 3.4, Delivery of Training. Is the training required BEFORE this revision is implemented? <input type="checkbox"/> Yes <input type="checkbox"/> No/N/A If YES, obtain TrackWise AI# _____</p> <p>Does this document action require DOE-ID review and approval? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Refer to MP-DOCS-18.4, Appendix C.)</p> <p><i>Final document approval and signature indicates correct reviewers have been involved, the validation completed (if applicable), no pending USQ or RCRA actions exist, and confirms acknowledgement, verification, and accountability for ensuring that CBFO approval has been received prior to issuing this document if so required per Block 11.</i></p> <p>Printed Name: <u>Jeremy Hampton</u> Signature: <u>[Signature]</u> Date: <u>9-12-11</u></p>				
19. Document released and controlled copies have been transmitted for use:	Name: <u>S. Walker</u> Signature: <u>[Signature]</u> Date: <u>9/12/11</u>			New Revision ID <u>0 FC-2</u>	
20. Controlled Hard Copy Distribution (If distribution is the same as the previous revision enter "Same as Previous")					
Controlled Copy Location	Controlled Copy Location	Controlled Copy Location	Controlled Copy Location		
		<i>Same As Previous</i>			

Delete/discard next page if not needed and do not include instructions in the case file



DOCUMENT CHANGE REQUEST (DCR)

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SEP 08 2011

Form-1001 Rev. 30 Effective: 12/22/10

Page 1

Ans'd CO

Implementing Document: MP-DOCS-18.4

ORIGINAL

RECORD CD 9/8/11

Document ID: INST-FOI-22 Current Revision ID: 0 DCR No: 10381

1. Document Title: Visual Examination of S3000 Waste in the Facility

2. Requester: M. Brugger Phone: 6494 S #: (Required) 103053

3. Type of Action: Create Revise Field Change Supersede Suspend Cancel

4. Proposed Action: Additional changes are listed on continuation page(s).

Item	Page No./Section/Zone	Description	Justification
1	4.2.41 and 4.4.41	Initial CAP sludge liner. Change "Waste Items by Weight" to "Packaging Materials".	Editorial correction on initial caps. Correction to liner designation: the liner is determined to be packaging, not waste material.
2	New Step 4.3.5	Insert: Select the "Operator 2" field and press the F9 key.	Instructional gap.
3	New Step 4.3.5.1	Insert: Select the name of the second visual examiner. (And renumber remainder of section)	Instructional gap.
4	New Step 4.5.5	Insert: Select the "Operator 2" field and press the F9 key.	Instructional gap.
5	New Step 4.5.1	Insert: Select the name of the second visual examiner. (And renumber remainder of section)	Instructional gap.

5. Field Change: N/A Permanent? Temporary? If temporary, duration/expiration date: _____
Refer to instructions in MP-DOCS-18.4, Section 3.6, for processing. Completion of Blocks 11 and 14 is required.

Criticality Safety Approval: R.L. Moore Print [Signature] Signature 9-7-11 Date
per email

NFM Approval: C.E. Sisson Print [Signature] Signature 9-7-11 Date
per email

Plant Manager Acknowledgement: [Signature] Initials per email
telcom

NOTE: If the proposed FC necessitates a WTS software change, the FC must be stopped and a revision initiated.

Is this INST listed on LST-PAIT-01? Yes No If YES, a review by WTS personnel is required (use review and approval space in Block 9).

6. Minor Change? Yes No (If yes, proceed per instructions.) N/A for Field Changes



DOCUMENT CHANGE REQUEST (DCR)

Form-1001 Rev. 30 Effective: 12/22/10 Page 3

Implementing Document: MP-DOCS-18.4

Document ID: INST-FOI-22 Current Revision ID: 0 DCR No: 10381

11b NNSS LLW/MLLW-Related Documents: [] N/A for Minor Change
a. If this document is NEW, should it be added to LST-LLW-03? [] Yes [x] No/N/A
b. If this document is NOT NEW, is it currently listed in LST-LLW-03? [] Yes [x] No/N/A
NNSS Waste Certification Official (WCO) Approval: Printed Name: Alan Hunt and Mike Griffin
Signature (indicating review and approval): [Signature] Date: 9/7/11

12. RCRA: Are there any regulatory/permit impacts? [] Yes [] No [x] N/A for Minor Change or FC
Evaluator Printed Name: na Signature: N/A Date: na

13. Training Requirements Determination: [x] N/A for Field Change
Document owner initials are required, indicating approval of the option selected below.
1. [] This is a minor change or strictly incorporation of approved FCs. Training Department review not required.
2. [] This change affects informational and non-implementing documents (i.e., RPT, PLN, etc.). The document owner will ensure that any operating and training requirements will be flowed down to implementing procedures. Training Department review not required.
3. [] This change to an implementing document does not introduce or change technical content that will require personnel to acquire new knowledge or to develop new skills to implement the change. Qualification packages, training objectives, or examination questions do not need to be changed.
4. [] This change to an implementing document does introduce or change technical content that will require personnel to acquire new knowledge, complete new training requirements, or develop new skills to implement the change. Qualification packages, training objectives, or examination questions will need to be changed. Enter TrackWise AI number (from Form-1010) -
5. [] The formal training described in the TrackWise AI above MUST BE COMPLETED PRIOR TO procedure issuance.
Required only for Numbers 3 - 5:
Training Specialist Printed Name: N/A
Signature: na Date: na

14. USQ Evaluation: To be completed by a USQ Evaluator in accordance with MP-NSPC-3.2, Unreviewed Safety Question Process.
[x] A USQ DOES NOT EXIST based upon the results of an approved USQ evaluator review or USQ determination.
[] A USQ EXISTS based upon the results of an approved USQ determination.
Note: This change to this document cannot be issued as long as a USQ exists.
USQ Evaluator Review Number: 65524
USQ Determination Number: 64385
USQ Evaluator Name: Brian Warner Signature: per attached Date: 9/8/11
John Masulonis



DOCUMENT CHANGE REQUEST (DCR)

Form-1001
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Effective: 12/22/10
Page 4

Implementing Document: MP-DOCS-18.4

Document ID:	INST-FOI-22	Current Revision ID:	0	DCR No:	10381
15. Effective Date and Time: After considering all impacts and implementation activities noted in Blocks 13, 14, 16, and 17, establish an effective date and time for the document: (If time is left blank, default time is 12:01am.)				9/8/11	11000 hrs
				Date	Time
	If document is a Temporary Operating Instruction (TOI), establish an expiration date, not to exceed 14 calendar days.			—	—
				Date	Time
16. Other Documents and related forms affected by this action:	none				
17. Comments:	none received 9:08am 9/8/11				
18. Final Approval (Document Owner):	<p>Is a Required Read needed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, is it needed BEFORE this document is issued? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If needed before, initial indicating that an IMMEDIATE READ has been initiated per MP-COPS-9.12. N/A If not needed before, initial indicating that a regular required read has been initiated per MP-COPS-9.12. N/A</p> <p>Is a Tailgate Briefing needed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, comply with MP-RTQP-14.11, Section 3.4, Delivery of Training. N/A Is the training required BEFORE this revision is implemented? <input type="checkbox"/> Yes <input type="checkbox"/> No/N/A If YES, obtain TrackWise AI# N/A</p> <p>Does this document action require DOE-ID review and approval? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Refer to MP-DOCS-18.4, Appendix C.)</p> <p><i>Final document approval and signature indicates correct reviewers have been involved, the validation completed (if applicable), no pending USQ or RCRA actions exist, and confirms acknowledgement, verification, and accountability for ensuring that CBFO approval has been received prior to issuing this document if so required per Block 11.</i></p> <p>Printed Name: <u>Brett Stacy</u> Signature: <u>[Signature]</u> Date: <u>9/8/11</u></p>				
19. Document released and controlled copies have been transmitted for use:	Name: <u>Cameron Diaz</u> Signature: <u>[Signature]</u>			New Revision ID	<u>0 FC-1</u>
				Date:	<u>9/8/11</u>
20. Controlled Hard Copy Distribution (If distribution is the same as the previous revision enter "Same as Previous")					
Controlled Copy Location	Controlled Copy Location	Controlled Copy Location	Controlled Copy Location		
Same as Previous					

Delete/discard next page if not needed and do not include instructions in the case file

AMWTP INSTRUCTION		
INST-FOI-22, Rev. 0	Issued: 8/11/11	Effective: 8/11/11 @ 1200 Hrs.
Visual Examination of S3000 Waste in the Facility		

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 Appendix A – Revision LogA1

AMWTP INSTRUCTION		
INST-FOI-22, Rev. 0	Issued: 8/11/11	Effective: 8/11/11 @ 1200 Hrs.
Visual Examination of S3000 Waste in the Facility		

1.0 PURPOSE/SCOPE

This instruction contains direction for performing visual examination of RF-003, RF-743, and S3000 waste, and resulting BN-600 as a *secondary waste* (see def.) in WMF-676, in accordance with the Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan, applicable Resource Conservation and Recovery Act (RCRA) requirements, WIPP Contact-Handled Waste Acceptance Criteria, and CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC).

The scope of this document includes 1) verifying the physical form of the waste; 2) preventing the shipment of prohibited items to WIPP; 3) confirming that the waste matches the waste matrix code assigned to a waste *container* (see def.); and 4) confirming that the waste matches the *waste stream* (see def.) description, as these pertain to RF-003 and RF-743 waste being transferred to Central Characterization Project (CCP) for certification, and resulting BN-600 waste consisting of the original packaging.

This instruction applies to all personnel performing required VE and as required by any work control documents used in conjunction with this instruction and Hazard Assessment HA-F-017, the hazard assessment for this document and INST-FOI-17, Facility Examination Operations.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Visual Examiner (displayed in Waste Tracking System [WTS] as Operator 1 and Operator 2)	<ul style="list-style-type: none"> Unless otherwise specified, performs characterization examinations in accordance with this instruction.
Shift Supervisor (SS)	<ul style="list-style-type: none"> Performs post-job reviews.
Visual Examination Expert (VEE)	<ul style="list-style-type: none"> Supports VE as appropriate and maintains responsibility for the overall direction and implementation of the VE at the facility.

AMWTP INSTRUCTION		
INST-FOI-22, Rev. 0	Issued: 8/11/11	Effective: 8/11/11 @ 1200 Hrs.
Visual Examination of S3000 Waste in the Facility		

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

- 3.1.1 Chemical constituents in a payload container shall conform to the lists of allowable materials in Tables 4.3-1 through 4.3-8 of the CCP CH-TRAMPAC.

(CCP-PO-003)

- 3.1.2 The total quantity of the trace chemicals/materials (less than 1 wt%) for materials not listed in Tables 4.3-1 through 4.3-8 of the CCP CH-TRAMPAC shall be restricted to less than 5 wt%.

(CCP-PO-003)

- 3.1.3 The AMWTP organic set-ups waste stream (*organic homogeneous solids*, see def.) is contaminated with polychlorinated biphenyls (PCBs). Polychlorinated biphenyl wastes are regulated under the Toxic Substance Control Act (TSCA). Waste Isolation Pilot Plant is prohibited from receiving TSCA-regulated wastes containing *liquids* (see def.). Specifically, there shall be no liquids in TSCA-regulated waste containers.

(RPT-TRUW-78; 40 CFR 761)

3.2 Prerequisites

NOTE: *Environmental Compliance and Regulatory Affairs (EC&RA) startup approval can be via e-mail and is an initial one-time requirement. Once approval is provided, further requests for approval are not needed.*

- 3.2.1 Prior to the initial startup of operations with waste material, written authority to start has been received from the EC&RA manager.
- 3.2.2 Personnel performing VE are qualified in accordance with QP-VE-0001, Visual Examiner.
- 3.2.3 A VE expert (VEE) is available for support of the VE activities.
- 3.2.4 A pre-job brief has been performed in accordance with MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews, as directed by the SS prior to performing work in this procedure.

AMWTP INSTRUCTION		
INST-FOI-22, Rev. 0	Issued: 8/11/11	Effective: 8/11/11 @ 1200 Hrs.
Visual Examination of S3000 Waste in the Facility		

4.0 INSTRUCTIONS

4.1 General Instructions

NOTE 1: *The steps in each section may be performed out of sequence or performed concurrently with other steps as needed during the VE.*

NOTE 2: *Data changes or rework and requisite approvals are made by the individual(s) who originally collected that data OR by an equally qualified individual(s) authorized to change or rework data.*

4.1.1 Ensure that all prerequisites have been met.

4.1.2 **IF** at any point during the examination, a condition that could be adverse to the quality of the data is observed,
THEN suspend operations,
AND contact the SS and VEE for guidance.

4.1.3 Observe the following:

- Prohibited and nonconforming non-liquid items and containerized liquids are segregated from the waste stream
- Uncontainerized liquid is treated prior to initiating VE.

(HWMA/RCRA Permit; 40 CFR 761)

4.1.4 Log on to WTS.

4.1.5 **GO TO** the appropriate section from the following table based on the task to be performed,
THEN RETURN TO this step if further activities will be performed.

Task	Section to Perform
Visual Examination of S3000 Waste	4.2
Visual Examination of S3000 Waste Closure	4.3
Visual Examination of BN-600 Waste	4.4
Visual Examination of BN-600 Waste Closure	4.5
Post-Job Review	4.6

AMWTP INSTRUCTION		
INST-FOI-22, Rev. 0	Issued: 8/11/11	Effective: 8/11/11 @ 1200 Hrs.
Visual Examination of S3000 Waste in the Facility		

4.2 Visual Examination of S3000 Waste

NOTE 1: *The inventory data is summarized to the container during VE of S3000 waste (see def.) closure when the waste container is full or ready to be processed.*

NOTE 2: *A VEE may provide direction to assist in the VE. Any guidance or direction from the VEE related to the examination is documented in the "Visual Exam Comment" field.*

(MP-TRUW-8.1)

4.2.1 Access the following screen in WTS, if necessary:

- A. Facility
- B. Visual Examination
- C. VE Sludge.

4.2.2 Enter the liner ID number in the "Liner ID" field, as applicable.

4.2.3 Select the "Destination" field and press the F9 key.

4.2.3.1 Select "PSD."

4.2.4 **IF** the correct procedure and revision are **NOT** displayed, **THEN** perform the following:

4.2.4.1 Enter a comment in the "General" tab "Visual Exam Comment" field that the examination was performed to the current procedure and revision and provide the correct data.

4.2.4.2 Contact the SS to update the procedure and revision in WTS.

4.2.5 Select the "Filled Liner Weight" field and enter the estimated weight of the filled liner.

4.2.6 Select the "Equipment ID" field.

4.2.6.1 Ensure FAC-VSC is displayed in the "Equipment ID" field (see Exhibit 4, Visual Examination Equipment IDs).

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- 4.2.7 Select the “Waste Activity” field and select “Box Line Sludge.”
- 4.2.8 Ensure that the name of “Operator 1” (the first visual examiner) is displayed.
- 4.2.9 Select the “Operator 2” field and press the F9 key.
- 4.2.9.1 Select the name of the second visual examiner.
- 4.2.10 Ensure the following data is entered or displayed, as applicable:
- Liner ID number
 - Destination
 - Filled liner weight
 - Equipment ID as “FAC-VSC”
 - Waste activity and description (if applicable)
 - Correct procedure and revision
 - Operator 1 and Operator 2 names.
- 4.2.11 Select the “IDC” field and press the F9 key.
- 4.2.11.1 Select RF-003 or RF-743, as appropriate, for the waste item.
- 4.2.12 Select the “Closure Method” field and select “No Bags.”
- NOTE:** *The notation of the items in the following step is not a WIPP requirement. However, the presence of any of these, when applicable, is entered into the “Visual Exam Comment” field.*
- 4.2.13 **IF** any of the following items are present in the waste, **THEN** select the “General” tab and enter the data in the “Visual Exam Comment” field:
- Etiological agents (i.e., blood, medical waste)
 - Radioactive sealed sources (i.e., radiation instrument check sources, smoke detectors)

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- Animal carcasses
- Asbestos.

(HWMA/RCRA Permit; 40 CFR 761)

4.2.14 Select the “Source Container” tab.

4.2.14.1 Ensure the “Is there a source container?” field is populated “Yes.”

4.2.14.2 Select the first available “Source Container ID” field and enter the source container ID number.

4.2.14.2.1 Press the “Enter” key.

4.2.14.3 Ensure that the correct location and item description code (IDC) are displayed for the source container.

4.2.14.4 **IF** adding additional source container(s),
THEN REPEAT Steps 4.2.14.2 through 4.2.14.3.

NOTE 1: *S3000 or other waste not meeting any acceptance criterion or requirement for shipment to WIPP is prohibited from undergoing VE.*

NOTE 2: *Nonconformance reports are initiated in INST-FOI-38, Drum Import/Export Glovebox Operations, and INST-FOI-39, Processing Sludge Drums in the South Box Line, as required for nonconforming items or conditions.*

4.2.15 **IF** at any point in time the waste presented for VE does **NOT** meet WIPP acceptance requirements,
THEN STOP
AND notify the SS and VEE.

4.2.15.1 **WHEN** acceptance requirements have been satisfied,
THEN proceed with examination.

4.2.16 Ensure that the two visual examiners who witnessed the packaging of the waste approve the data forms or packaging records attesting to the contents of the waste container.

(MP-TRUW-8.2)

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4.2.17 Verify the absence of prohibited items and conditions (as listed in Exhibit 3, List of Prohibited Items) as the waste is presented for examination.

4.2.17.1 **WHEN** this verification is complete,
THEN proceed with completion of the WTS form.

(MP-TRUW-8.1; CCP-PO-003; HWMA/RCRA Permit)

4.2.18 During the examination, describe all the contents of the waste, clearly identifying all discernible waste items, *packaging materials* (see def.), and waste material parameters to provide an inventory list in WTS (see Exhibit 1, Waste Material Parameter Description).

(MP-TRUW-8.1)

NOTE: *Many of the WTS entries are performed by selecting "Yes" or "No," and accompanied by a comment field to the right of the entry. Selections of "Yes" are accompanied by an appropriate comment describing the item(s). Additional space may be used in the "Visual Exam Comment" field. The exceptions to this rule are the responses to the sharp objects questions.*

4.2.19 Select the "Liquid" tab.

NOTE: *The selection of a "No" response in the "Liquids present?" field will render the remainder of the "Liquids" fields inactive. Under this condition, these fields will be set by WTS to standard default values.*

4.2.20 Select "No" in the "Liquids present?" field.

4.2.21 Select the "Contents 1" tab.

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003)

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NOTE 1: *The selection of “No” in response to the “Sharp Objects?” question will cause the “Are Sharp Objects Protected?” field to auto-populate a “Yes” response.*

NOTE 2: *In accordance with Exhibit 3, the “Sharp Objects?” subject field includes heavy items that are not blocked or braced.*

4.2.22 **IF** sharp objects are **NOT** present,
THEN select “No” in the “Sharp Objects?” field.

4.2.22.1 Ensure the “Are Sharp Objects Protected?” field populates “Yes.”

4.2.23 **IF** sharp or heavy non-braced objects that present a puncture hazard to the drum are present,
THEN select “Yes” in the “Sharp Objects?” field.

NOTE: *Sharp or non-braced objects are treated through payload overpack as implemented through the task list.*

4.2.24 Select “Yes” in the “Are Sharp Objects Protected?” field.

4.2.25 Select “No” in the “Prohibited compressed gas present?” field.

NOTE: *Mercury in a liquid form is prohibited S3000 PCB waste.*

(HWMA/RCRA Permit)

4.2.26 Select “No” in the “Mercury Contaminated >1,000 ppm” field.

4.2.27 Select “No” in the “Explosives present?” field.

4.2.28 **WHEN** no liquid is observed,
THEN select “Yes (acceptable)” in the “PCBs present?” field.

4.2.28.1 Enter a description of the non-prohibited PCBs in the comment field.

NOTE: *The estimated weight for PCB mass is the estimated net weight of the final container and is updated when the final weight is obtained at closure.*

4.2.29 Select the “PCB Mass” field, and enter the estimated weight from the “Filled Liner Weight” field.

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- 4.2.30 Select “No” in the “Pyrophorics present?” field.
- 4.2.31 Select “No” in the “Corrosives, Ignitables or Reactives present?” field.
- 4.2.32 Select the “Contents 2” tab.
- 4.2.33 **IF** wet cell batteries are **NOT** present,
THEN select “No” in the “Wet Cell Batteries Present?” field.

NOTE: *Wet cell batteries are WIPP acceptable ONLY if the battery can be demonstrated to be previously drained of any liquid.*

- 4.2.33.1 **IF** WIPP-acceptable wet cell batteries are present,
THEN select “Yes” in the “Wet Cell Batteries Present?” field and enter the appropriate comment in the field to the right of the entry.

NOTE: *Entries of beryllium include the physical form (e.g., fines, metal pieces).*

(CCP-PO-003)

- 4.2.34 **IF** beryllium contaminants are **NOT** present,
THEN select “No” in the “Beryllium Contaminants Present?” field.
- 4.2.35 **IF** beryllium contaminants are present,
THEN select “Yes” in the “Beryllium Contaminants Present?” field and enter the appropriate comment in the field to the right of the entry (e.g., fines, metal pieces).
- 4.2.36 Select “No” in the “Hazardous-Only Waste Present?” field.
- 4.2.37 Select “No” in the “Is waste incompatible with backfill, packaging materials, or shipping container materials?” field.

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NOTE: Sealed containers greater than 4 liters are not allowed in S3000 waste.

- 4.2.38 Select "No" in the "Sealed containers over 4 liters?" field.
- 4.2.39 Review the following tabs to update the waste package inventory, as applicable:
- A. Liquid
 - B. Contents 1
 - C. Contents 2.
- 4.2.40 Select the WASTE PARAMS button and perform the following, as appropriate:
- 4.2.40.1 Determine the waste parameter for the remaining waste by weight percent.
 - 4.2.40.2 Enter the appropriate waste parameter by weight percent in the "Remaining Contents of Container" table.
 - 4.2.40.3 Ensure that the "Total %" for the waste parameter entered in the "Remaining Contents of Container" table equals 100%.
- ~~4.2.41 Select "Sludge Liner" from the "Waste Items by Weight Packaging Materials" field and enter 1 for the quantity.~~
- 4.2.42 **IF** entering additional items as packaging material, **THEN** select the "Packaging Materials" list and enter the quantity, as applicable.
- 4.2.43 **IF** entering additional waste items by weight, **THEN** select the appropriate items from the "Waste Items by Weight" list and enter the quantity, as applicable.
- 4.2.44 **IF** entering additional waste items by volume, **THEN** select the appropriate items from the "Waste Items by Volume" list and enter the quantity, as applicable.

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DELETE
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- 4.2.45 **IF** a waste item is **NOT** included in the “Waste Material Items” pick lists,
THEN select the ADD MATERIAL ITEMS button in the “Remaining Contents of Container” block and perform the following:
- 4.2.45.1 Select the “Description” field and enter a brief description of the waste item.
- 4.2.45.2 Select the “Item Type” field and select “Weight” or “Volume” as appropriate.
- 4.2.45.3 **IF** entering waste items by weight,
THEN select the “Weight” field and enter the weight of the item.
- 4.2.45.4 **IF** entering waste item(s) by volume,
THEN select the “Weight” field and enter the weight (per unit volume) from available reference data, as provided by the VEE.
- 4.2.45.5 Select the “Identified Layer” field and select “Yes” or “No” as appropriate.
- 4.2.45.6 Select the “Quantity” field and enter the number of units.
- 4.2.45.7 Select the “Percentage” field opposite the correct “Parameter(s)” and enter the appropriate weight percent(s).
- 4.2.45.7.1 Ensure that the total percentage for each material item entered equals 100%.
- 4.2.45.8 Select the next editable field to display the “Total Percentage.”
- 4.2.45.9 Select the SAVE button.
- 4.2.45.10 **IF** entering additional items,
THEN select the NEW ITEM button and perform the following:
- 4.2.45.10.1 **REPEAT** Steps 4.2.45.1 through 4.2.45.9 for each additional item, as necessary.
- 4.2.46 Select the EXIT button.

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NOTE: *By reviewing the “Remaining Contents of Container” table, a description of the waste can be determined for Step 4.2.50.*

- 4.2.47 Review the “Remaining Contents of Container” table.
- 4.2.48 Select the SAVE button.
- 4.2.49 Select the “General” tab, as necessary, and select the “Visual Exam Comment” field.
- 4.2.50 Enter a description of the waste (e.g., remaining waste by weight percent) that was selected in the “Remaining Contents of Container” table.
- 4.2.51 Enter any additional comments in the “Visual Exam Comment” field, as applicable.
- 4.2.52 Operator 1: Review the data for completeness and accuracy.
- 4.2.53 Operator 2: Review the data for completeness and accuracy.
- 4.2.54 **IF** there are any discrepancies,
THEN contact the SS and VEE for guidance.
- 4.2.55 Operator 1 (data generator): E-sign the WTS record for approval of the data.
- 4.2.56 Operator 2 (data verifier): E-sign the WTS record for approval of the data.

4.3 Visual Examination of S3000 Waste Closure

- 4.3.1 Access the following screen:
 - A. Facility
 - B. Visual Examination
 - C. VE Sludge.
- 4.3.2 Select the “Liner ID” field and press F7.

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4.3.3 Enter the correct liner ID number and press F8.

4.3.3.1 Verify that the liner data populates.

4.3.3.1.1 **IF** liner data does **NOT** populate accurately,
THEN suspend operations
AND notify the SS.

4.3.3.1.2 **WHEN** correct data is displayed
AND SS approval is obtained to continue,
THEN continue the examination.

NOTE: *The following entries pertain to the destination container for the waste item.*

4.3.4 Select the "Container ID" field and enter the correct container ID.

4.3.5 Ensure that two visual examiners who witnessed the packaging of the waste approve the data forms or packaging records attesting to the contents of the waste container.

(MP-TRUW-8.2)

NOTE: *Drum stub bags are normally added as two per drum (one for the undocking of the previous drum, and one for the existing drum docked to the glovebox).*

4.3.6 **IF** WIPP-acceptable secondary waste (e.g., drum stub bag, changed glovebox gloves, docking sleeve) is added prior to closure,
THEN perform the following as applicable:

4.3.6.1 Select the WASTE PARAMS button and perform the following, as appropriate, to update the filled liner (see Exhibit 1):

4.3.6.1.1 **IF** entering additional items as packaging materials,
THEN select the "Packaging Materials" list and enter the quantity, as applicable.

4.3.6.1.2 **IF** entering additional waste items by weight,
THEN select the appropriate items from the "Waste Items by Weight" list and enter the quantity, as applicable.

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4.3.5 Select the "Operator 2" field and press the F9 key.

4.3.5.1 Select the name of the second visual examiner.

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- 4.3.6.1.3 **IF** entering additional waste items by volume, **THEN** select the appropriate items from the “Waste Items by Volume” list and enter the quantity, as applicable.
- 4.3.6.1.4 **IF** a waste item is **NOT** included in the “Waste Material Items” pick lists, **THEN** select the ADD MATERIAL ITEMS button in the “Remaining Contents of Container” block and perform the following:
- 4.3.6.1.4.1 Select the “Description” field and enter a brief description of the waste item.
- 4.3.6.1.4.2 Select the “Item Type” field and select “Weight” or “Volume,” as appropriate.
- 4.3.6.1.4.3 **IF** entering waste items by weight, **THEN** select the “Weight” field and enter the weight of the item.
- 4.3.6.1.4.4 **IF** entering waste item(s) by volume, **THEN** select the “Weight” field and enter the weight (per unit volume) from available reference data, as provided by the VEE.
- 4.3.6.1.4.5 Select the “Identified Layer” field and select “Yes” or “No” as appropriate.
- 4.3.6.1.4.6 Select the “Quantity” field and enter the number of units.
- 4.3.6.1.4.7 Select the “Percentage” field opposite the correct “Parameter(s)” and enter the appropriate weight percent(s).

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4.3.6.1.4.8 Select the next editable field to display the “Total Percentage.”

4.3.6.1.4.8.1 Ensure that the total percentage for each material item entered equals 100%.

4.3.6.1.4.9 Select the SAVE button.

4.3.6.1.5 **IF** entering additional items, **THEN** select the NEW ITEM button and perform the following:

4.3.6.1.5.1 **REPEAT** Steps 4.3.6.1.4.1 through 4.3.6.1.4.9 for each additional item, as necessary.

4.3.6.1.6 Select the EXIT button.

4.3.6.1.7 Select the SAVE button.

4.3.7 Operator 1: Review the data for completeness and accuracy.

4.3.8 Operator 2: Review the data for completeness and accuracy.

4.3.9 **IF** there are any discrepancies, **THEN** contact the SS and VEE for guidance.

4.3.10 Operator 1 (data generator): E-sign the WTS record for approval of the data.

4.3.11 Operator 2 (data verifier): E-sign the WTS record for approval of the data.

4.3.12 Exit the VES screen.

4.3.13 Access the following screen from the WTS menu:

- A. Facility
- B. Visual Examination
- C. VE Sludge Closure.

4.3.14 Select the “Sludge Product Drum” field and enter the correct container ID number in the field.

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- 4.3.15 Press F8 to populate the data on the screen.
- 4.3.16 **IF** the correct procedure and revision are **NOT** displayed, **THEN** perform the following:
- 4.3.16.1 Enter a comment in the "Visual Exam Comment" field on the "Closure Tab" that the examination was performed to the current procedure and revision and provide the correct data.
- 4.3.16.2 Contact the SS to update the procedure and revision in WTS.
- 4.3.17 Select the "Equipment ID" field.
- 4.3.17.1 Ensure FAC-VSC is displayed in the "Equipment ID" field.
- 4.3.18 Ensure that the name of "Operator 1" (the first visual examiner) is displayed.
- 4.3.19 Select the "Operator 2" field and press the F9 key.
- 4.3.19.1 Select the name of the second visual examiner.
- 4.3.20 Select the "General" tab.
- 4.3.21 Select the "Rigid Liner Present?" field and select "Yes."
- MOVE 4.3.23 TO HERE
- 4.3.22 Select the "Liner Type" field and press the F9 key.
- 4.3.22.1 Select OTHER as the liner type.
- 4.3.23 Select the "Liner Lid Present?" field and select "No."
- 4.3.24 Select the "Layers of Confinement" field and enter the number 1 for the waste container.
- (CCP-PO-003)
- 4.3.25 Select the "Fill Factor" field, and enter the percent fill of the container using Exhibit 2, Fill Factor, as a guide.

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NOTE: By reviewing the "Remaining Contents" table, a description of the waste can be determined for Step 4.3.34.1.

4.3.26 Select the "Waste Summary" tab and review the "Remaining Contents" table data.

4.3.27 Select the WASTE PARAMS button (see Exhibit 1).

4.3.28 Select the appropriate waste parameter by weight percent in the "Remaining Contents of Container" table.

4.3.29 Add one drum stub bag (plastic packaging) in the "Packaging Materials" table.

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insert
step

4.3.30 Select the SAVE button.

4.3.31 Select the "Closure" tab.

4.3.32 Select the "IDC OK" field.

4.3.32.1 IF the IDC is correct,
THEN select "Y" in the "IDC OK" field
AND GO TO Step 4.3.33.

4.3.32.2 IF the IDC is NOT correct,
THEN select "N" in the "IDC OK" field and perform the following:

4.3.32.2.1 Enter the "Recommended IDC" in the "IDC Recommended" field.

4.3.32.2.2 Enter appropriate comments in the "IDC Change Reason" field.

4.3.33 Select the "Closure Method" field and select the appropriate closure method.

4.3.34 Select the "Visual Exam Comment" field.

4.3.34.1 Enter a complete description of the waste parameter that was selected in the "Remaining Contents of Container" table.

4.3.35 Enter any additional comments about the VE, as applicable.

4.3.29.1 Select "Sludge Liner" from the "Packaging Materials" table and enter 1 for the quantity.

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NOTE: *The gross weight of the container is obtained after the container has been bagged off of the glovebox and the lid has been installed.*

4.3.36 Observe container weighing via the Facility video monitoring system and enter the gross weight of the container in the "VE Weight" field.

4.3.37 Operator 1: Review the data for completeness and accuracy.

4.3.38 Operator 2: Review the data for completeness and accuracy.

4.3.39 **IF** there are any discrepancies,
THEN contact the SS and VEE for guidance.

4.3.39.1 **WHEN** concurrence is achieved,
THEN GO TO Step 4.3.40.

4.3.40 Operator 1 (data generator): E-sign the WTS record for approval of the data and drum loading.

4.3.41 Operator 2 (data verifier): E-sign the WTS record for approval of the data and drum loading.

4.3.42 Ensure that the VE date and batch number populates accurately.

4.3.43 Select the "Waste Summary" tab.

4.3.43.1 Double click on the appropriate liner ID.

NOTE: *The final weight assignments (filled liner, container net, and PCB mass) are calculated by WTS after the lid is installed and a final weight for the container is obtained.*

4.3.43.2 Observe that the filled liner weight, net weight and the PCB mass are equal.

4.3.43.3 **IF** the filled liner weight, net weight, and PCB mass are **NOT** equal,
THEN suspend operations
AND notify the SS and VEE.

4.3.43.4 Resume when a determination is made on a path forward for the container.

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4.3.44 Exit the VES Screen.

4.3.44.1 **WHEN** the “Save changes?” pop-up appears,
THEN select the appropriate response.

4.3.45 **IF** the batch needs to be closed manually,
THEN perform the following:

4.3.45.1 Select the BATCH button on the “Visual Examination” screen.

4.3.45.2 Select the CLOSE button on the “Batch Details” screen.

4.3.45.3 E-sign and save the record.

4.3.46 Exit the VSC screen.

4.3.46.1 **WHEN** the “Save Changes?” pop-up appears,
THEN select the appropriate response.

4.4 Visual Examination of BN-600 Waste

NOTE 1: *The inventory data is summarized to the container during VE of S3000 waste closure when the waste container is full or ready to be processed.*

NOTE 2: *A VEE may provide direction to assist in the VE. Any guidance or direction from the VEE related to the examination is documented in the “Visual Exam Comment” field.*

(MP-TRUW-8.1)

4.4.1 Access the following screen in WTS, if necessary:

- A. Facility
- B. Visual Examination
- C. VE Sludge.

NOTE: *Nonconformance reports are initiated in INST-FOI-38 and INST-FOI-39, as required for nonconforming items or conditions.*

4.4.2 Enter the liner ID number in the “Liner ID” field, as applicable.

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- 4.4.3 Select the “Destination” field and press the F9 key.
- 4.4.3.1 Select “PSD.”
- 4.4.4 **IF** the correct procedure and revision are **NOT** displayed, **THEN** perform the following:
- 4.4.4.1 Enter a comment in the “General” tab “Visual Exam Comment” field that the examination was performed to the current procedure and revision, and provide the correct data.
- 4.4.4.2 Contact the SS to update the procedure and revision in WTS.
- 4.4.5 Select the “Filled Liner Weight” field and enter the estimated weight of the filled liner.
- 4.4.6 Select the “Equipment ID” field.
- 4.4.6.1 Ensure FAC-VSC is displayed as the equipment ID (see Exhibit 4).
- 4.4.7 Select the “Waste Activity” field and select “Box Line Sludge.”
- 4.4.8 Ensure that the name of “Operator 1” (the first visual examiner) is displayed.
- 4.4.9 Select the “Operator 2” field and press the F9 key.
- 4.4.9.1 Select the name of the second visual examiner.
- 4.4.10 Ensure the following data is entered or displayed, as applicable:
- Liner ID number
 - Destination
 - Filled liner weight
 - Equipment ID as “FAC-VSC”
 - Waste activity and description (if applicable)
 - Correct procedure and revision

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- Operator 1 and Operator 2 names.

4.4.11 Select the “IDC” field and press the F9 key.

4.4.11.1 Select BN-600 for the waste item.

4.4.12 Select the “Closure Method” field and select “No Bags.”

NOTE: *The notation of the items in the following step is not a WIPP requirement. However, the presence of any of these, when applicable, is entered into the “Visual Exam Comment” field.*

4.4.13 **IF** any of the following items are present in the waste, **THEN** select the “General” tab and enter the data in the “Visual Exam Comment” field:

- Etiological agents (i.e., blood, medical waste)
- Radioactive sealed sources (i.e., radiation instrument check sources, smoke detectors)
- Animal carcasses
- Asbestos.

(HWMA/RCRA Permit; 40 CFR 761)

4.4.14 Select the “Source Container” tab.

4.4.14.1 Ensure the “Is there a source container?” field is populated “Yes.”

4.4.14.2 Select the first available “Source Container ID” field and enter the source container ID number.

4.4.14.2.1 Press the “Enter” key.

4.4.14.2.2 Ensure that the correct location and IDC are displayed for the source container.

4.4.14.3 **IF** adding additional source container(s), **THEN REPEAT** Steps 4.4.14.2 through 4.4.14.2.2.

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NOTE: *Waste not meeting any acceptance criterion or requirement for shipment to WIPP is managed and/or treated separate and distinct from the VE and does not undergo examination in this procedure.*

4.4.15 **IF** at any point in time the waste presented for VE does **NOT** meet WIPP acceptance requirements,
THEN suspend operations
AND notify the SS and VEE.

4.4.15.1 **WHEN** acceptance requirements have been satisfied
THEN proceed with examination.

4.4.16 Ensure that the two visual examiners who witnessed the packaging of the waste approve the data forms or packaging records attesting to the contents of the waste container.

(MP-TRUW-8.2)

4.4.17 Verify the absence of prohibited items and conditions (as listed in Exhibit 3) as the waste is presented for examination.

4.4.17.1 **WHEN** this verification is complete
THEN proceed with completion of the WTS form.

(MP-TRUW-8.1; CCP-PO-003; HWMA/RCRA Permit)

4.4.18 During the examination, describe all the contents of the waste, clearly identifying all discernible waste items, packaging materials, and waste material parameters to provide an inventory list in WTS (see Exhibit 1).

(MP-TRUW-8.1)

NOTE: *Many of the WTS entries are performed by selecting "Yes" or "No," and accompanied by a comment field to the right of the entry. Selections of "Yes" are accompanied by an appropriate comment describing the item(s). Additional space may be used in the "Visual Exam Comment" field. The exceptions to this rule are the responses to the sharp objects questions.*

4.4.19 Select the "Liquid" tab.

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Visual Examination of S3000 Waste in the Facility		

NOTE: *The selection of a "No" response in the "Liquids present?" field will render the remainder of the "Liquids" fields inactive. Under this condition, these fields will be set by WTS to standard default values.*

4.4.20 Select "No" in the "Liquids present?" field.

4.4.21 Select the "Contents 1" tab.

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003)

NOTE 1: *The selection of "No" in response to the "Sharp Objects?" question will cause the "Are Sharp Objects Protected?" field to auto-populate a "Yes" response.*

NOTE 2: *In accordance with Exhibit 3, the "Sharp Objects?" subject field includes heavy items that are not blocked or braced.*

4.4.22 **IF** sharp objects are **NOT** present,
THEN select "No" in the "Sharp Objects?" field.

4.4.22.1 Ensure the "Are Sharp Objects Protected?" field populates "Yes."

4.4.23 **IF** sharp or heavy non-braced objects that present a puncture hazard to the drum are present,
THEN select "Yes" in the "Sharp Objects?" field.

NOTE: *Sharp or non-braced objects are treated through payload overpack as implemented through the task list.*

4.4.24 Select "Yes" in the "Are Sharp Objects Protected?" field.

4.4.25 Select "No" in the "Prohibited compressed gas present?" field.

NOTE: *Mercury in a liquid form is prohibited S3000 PCB waste.*

(HWMA/RCRA Permit)

4.4.26 Select "No" in the "Mercury Contaminated >1,000 ppm" field.

4.4.27 Select "No" in the "Explosives present?" field.

4.4.28 **WHEN** no liquid is observed
THEN select "Yes (acceptable)" in the "PCBs present?" field.

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4.4.28.1 Enter a description of the non-prohibited PCBs in the "Comment" field.

NOTE: *The estimated weight for PCB mass is the estimated net weight of the final container and is updated when the final weight is obtained at closure.*

4.4.29 Select the "PCB Mass" field, and enter the estimated weight from the "Filled Liner Weight" field.

4.4.30 Select "No" in the "Pyrophorics present?" field.

4.4.31 Select "No" in the "Corrosives, Ignitables or Reactives present?" field.

4.4.32 Select the "Contents 2" tab.

4.4.33 **IF** wet cell batteries are **NOT** present, **THEN** select "No" in the "Wet Cell Batteries Present?" field.

NOTE: *Wet cell batteries are WIPP acceptable ONLY if the battery can be demonstrated to be previously drained of any liquid.*

4.4.33.1 **IF** WIPP-acceptable wet cell batteries are present, **THEN** select "Yes" in the "Wet Cell Batteries Present?" field and enter the appropriate comment in the field to the right of the entry.

NOTE: *Entries of beryllium include the physical form (e.g., fines, metal pieces).*

(CCP-PO-003)

4.4.34 **IF** beryllium contaminants are **NOT** present, **THEN** select "No" in the "Beryllium Contaminants Present?" field.

4.4.35 **IF** beryllium contaminants are present, **THEN** select "Yes" in the "Beryllium Contaminants Present?" field and enter the appropriate comment in the field to the right of the entry (e.g., fines, metal pieces).

4.4.36 Select "No" in the "Hazardous-Only Waste Present?" field.

4.4.37 Select "No" in the "Is waste incompatible with backfill, packaging materials, or shipping container materials?" field.

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NOTE: Sealed containers greater than 4 liters are not allowed in BN-600 waste.

- 4.4.38 Select "No" in the "Sealed containers over 4 liters?" field.
- 4.4.39 Review the following tabs to update the waste package inventory, as applicable:
 - A. Liquid
 - B. Contents 1
 - C. Contents 2.
- 4.4.40 Select the WASTE PARAMS button and perform the following, as appropriate:
 - 4.4.40.1 Determine the waste parameter for the remaining waste by weight percent.
 - 4.4.40.2 Enter the appropriate waste parameter by weight percent in the "Remaining Contents of Container" table.
 - 4.4.40.3 Ensure that the "Total %" for the waste parameter entered in the "Remaining Contents of Container" table equals 100%.

FC-1
FC-2
DELETE
STEP

~~4.4.41 Select "sludge liner" from the "Waste Items by Weight" field and enter 1 for the quantity.~~

Packaging Materials

4.4.42 IF entering additional items as packaging material, THEN select the "Packaging Materials" list and enter the quantity, as applicable.

FC-2

NOTE: INST-FOI-39 instructs the performer to add one bag of Micro-cell E at the bottom of the drum for BN-600 waste. This is added as a waste **ITEM BY VOLUME** OR WASTE item by weight (Inorganic material).

- 4.4.43 IF entering additional waste items by weight, THEN select the appropriate items from the "Waste Items by Weight" list and enter the quantity, as applicable.
- 4.4.44 IF entering additional waste items by volume, THEN select the appropriate items from the "Waste Items by Volume" list and enter the quantity, as applicable.

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- 4.4.45 **IF** a waste item is **NOT** included in the “Waste Material Items” pick lists,
THEN select the ADD MATERIAL ITEMS button in the “Remaining Contents of Container” block and perform the following:
- 4.4.45.1 Select the “Description” field and enter a brief description of the waste item.
- 4.4.45.2 Select the “Item Type” field and select “Weight” or “Volume” as appropriate.
- 4.4.45.3 **IF** entering waste items by weight,
THEN select the “Weight” field and enter the weight of the item.
- 4.4.45.4 **IF** entering waste item(s) by volume,
THEN select the “Weight” field and enter the weight (per unit volume) from available reference data, as provided by the VEE.
- 4.4.45.5 Select the “Identified Layer” field and select “Yes” or “No,” as appropriate.
- 4.4.45.6 Select the “Quantity” field and enter the number of units.
- 4.4.45.7 Select the “Percentage” field opposite the correct “Parameter(s)” and enter the appropriate weight percent(s).
- 4.4.45.7.1 Ensure that the total percentage for each material item entered equals 100%.
- 4.4.45.8 Select the next editable field to display the “Total Percentage.”
- 4.4.45.9 Select the SAVE button.
- 4.4.45.10 **IF** entering additional items,
THEN select the NEW ITEM button
AND perform the following:
- 4.4.45.10.1 **REPEAT** Steps 4.4.45.1 through 4.4.45.9 for each additional item, as necessary.
- 4.4.45.11 Select the EXIT button.

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NOTE: *By reviewing the “Remaining Contents of Container” table, a description of the waste can be determined for Step 4.4.49.*

- 4.4.46 Review the “Remaining Contents of Container” table.
- 4.4.47 Select the SAVE button.
- 4.4.48 Select the “General” tab, as necessary, and select the “Visual Exam Comment” field.
- 4.4.49 Enter a description of the waste (e.g., remaining waste by weight percent) that was selected in the “Remaining Contents of Container” table.
- 4.4.50 Enter any additional comments in the “Visual Exam Comment” field, as applicable.
- 4.4.51 Operator 1: Review the data for completeness and accuracy.
- 4.4.52 Operator 2: Review the data for completeness and accuracy.
- 4.4.53 **IF** there are any discrepancies
THEN contact the SS and VEE for guidance.
- 4.4.54 Operator 1 (data generator): E-sign the WTS record for approval of the data.
- 4.4.55 Operator 2 (data verifier): E-sign the WTS record for approval of the data.

4.5 Visual Examination of BN-600 Waste Closure

- 4.5.1 Access the following screen:
 - A. Facility
 - B. Visual Examination
 - C. VE Sludge.

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Visual Examination of S3000 Waste in the Facility		

- 4.5.2 Select the "Liner ID" field and press F7.
- 4.5.3 Enter the correct liner ID number and press F8.
 - 4.5.3.1 Verify that the liner data populates.
 - 4.5.3.1.1 **IF** liner data does **NOT** populate accurately,
THEN suspend operations
AND notify the SS.
 - 4.5.3.1.2 **WHEN** correct data is displayed
AND SS approval is obtained to continue,
THEN continue the examination.

NOTE: *The following entries pertain to the destination container for the waste item.*

- 4.5.4 Select the "Container ID" field and enter the correct container ID.
- 4.5.5 *See Page 291.* Ensure that the two visual examiners who witnessed the packaging of the waste approve the data forms or packaging records attesting to the contents of the waste container.

(MP-TRUW-8.2)

NOTE: *Drum stub bags are normally added as two per drum (one for the undocking of the previous drum, and one for the existing drum docked to the glovebox).*

- 4.5.6 **IF** WIPP-acceptable secondary waste (e.g., drum stub bag, changed glovebox gloves, docking sleeve) is added prior to closure,
THEN perform the following as applicable:
 - 4.5.6.1 Select the WASTE PARAMS button and perform the following, as appropriate, to update the filled liner (see Exhibit 1):
 - 4.5.6.1.1 **IF** entering additional items as packaging materials,
THEN select the "Packaging Materials" list and enter the quantity, as applicable.

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Visual Examination of S3000 Waste in the Facility		

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4.5.5 Select the "Operator 2" field and press the F9 key.

4.5.5.1 Select the name of the second visual examiner.

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- 4.5.6.1.2 **IF** entering additional waste items by weight **THEN** select the appropriate items from the “Waste Items by Weight” list and enter the quantity, as applicable.
- 4.5.6.1.3 **IF** entering additional waste items by volume **THEN** select the appropriate items from the “Waste Items by Volume” list and enter the quantity, as applicable.
- 4.5.6.1.4 **IF** a waste item is **NOT** included in the “Waste Material Items” pick lists, **THEN** select the ADD MATERIAL ITEMS button in the “Remaining Contents of Container” block and perform the following:
- 4.5.6.1.4.1 Select the “Description” field and enter a brief description of the waste item.
- 4.5.6.1.4.2 Select the “Item Type” field and select “Weight” or “Volume,” as appropriate.
- 4.5.6.1.4.3 **IF** entering waste items by weight, **THEN** select the “Weight” field and enter the weight of the item.
- 4.5.6.1.4.4 **IF** entering waste item(s) by volume, **THEN** select the “Weight” field and enter the weight (per unit volume) from available reference data, as provided by the VEE.
- 4.5.6.1.4.5 Select the “Identified Layer” field and select “Yes” or “No” as appropriate.
- 4.5.6.1.4.6 Select the “Quantity” field and enter the number of units.

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- 4.5.6.1.4.7 Select the “Percentage” field opposite the correct “Parameter(s)” and enter the appropriate weight percent(s).
- 4.5.6.1.4.8 Select the next editable field to display the “Total Percentage.”
- 4.5.6.1.4.8.1 Ensure that the total percentage for each material item entered equals 100%.
- 4.5.6.1.4.9 Select the SAVE button.
- 4.5.6.1.5 **IF** entering additional items, **THEN** select the NEW ITEM button and perform the following:
 - 4.5.6.1.5.1 **REPEAT** Steps 4.5.6.1.4.1 through 4.5.6.1.4.9 for each additional item, as necessary.
- 4.5.6.1.6 Select the EXIT button.
- 4.5.6.1.7 Select the SAVE button.
- 4.5.7 Operator 1: Review the data for completeness and accuracy.
- 4.5.8 Operator 2: Review the data for completeness and accuracy.
- 4.5.9 **IF** there are any discrepancies **THEN** contact the SS and VEE for guidance.
- 4.5.10 Operator 1 (data generator): E-sign the WTS record for approval of the data.
- 4.5.11 Operator 2 (data verifier): E-sign the WTS record for approval of the data.
- 4.5.12 Exit the VES screen.

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Visual Examination of S3000 Waste in the Facility		

- 4.5.13 Access the following screen from the WTS menu:
 - A. Facility
 - B. Visual Examination
 - C. VE Sludge Closure.
- 4.5.14 Select the "Sludge Product Drum" field and enter the correct container ID number in the field.
- 4.5.15 Press F8 to populate the data on the screen.
- 4.5.16 **IF** the correct procedure and revision are **NOT** displayed, **THEN** perform the following:
 - 4.5.16.1 Enter a comment in the "Visual Exam Comment" field on the "Closure Tab" that the examination was performed to the current procedure and revision and provide the correct data.
 - 4.5.16.2 Contact the SS to update the procedure and revision in WTS.
- 4.5.17 Select the "Equipment ID" field.
 - 4.5.17.1 Ensure FAC-VSC is displayed in the "Equipment ID" field.
- 4.5.18 Ensure that the name of "Operator 1" (the first visual examiner) is displayed.
- 4.5.19 Select the "Operator 2" field and press the F9 key.
 - 4.5.19.1 Select the name of the second visual examiner.
- 4.5.20 Select the "General" tab.
- 4.5.21 Select the "Rigid Liner Present?" field and select "Yes."
- 4.5.22 Select the "Liner Type" field and press the F9 key.
 - 4.5.22.1 Select OTHER as the liner type.
- 4.5.23 Select the "Liner Lid Present?" field and select "No."

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Visual Examination of S3000 Waste in the Facility		

4.5.24 Select the "Layers of Confinement" field and enter the number 1 for the waste container.

(CCP-PO-003)

4.5.25 Select the "Fill Factor" field, and enter the percent fill of the container using Exhibit 2 as a guide.

NOTE: *By reviewing the "Remaining Contents" table, a description of the waste can be determined for Step 4.5.34.1.*

4.5.26 Select the "Waste Summary" tab and review the "Remaining Contents" table data.

4.5.27 Select the WASTE PARAMS button (see Exhibit 1).

4.5.28 Select the appropriate waste parameter by weight percent in the "Remaining Contents of Container" table.

4.5.29 Add one drum stub bag (plastic packaging) in the "Packaging Materials" table.

FC-2
Insert Step

4.5.30 Select the SAVE button.

4.5.31 Select the "Closure" tab.

4.5.32 Select the "IDC OK" field.

4.5.32.1 **IF** the IDC is correct,
THEN select "Y" in the "IDC OK" field
AND GO TO Step 4.5.33.

4.5.32.2 **IF** the IDC is **NOT** correct,
THEN select "N" in the "IDC OK" field and perform the following:

4.5.32.2.1 Enter the "Recommended IDC" in the "IDC Recommended" field.

4.5.32.2.2 Enter appropriate comments in the "IDC Change Reason" field.

4.5.33 Select the "Closure Method" field and select the appropriate closure method.

4.5.29.1 Select "Sludge Liner" from the "Packaging Materials" table and enter 1 for the quantity.

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4.5.34 Select the “Visual Exam Comment” field.

4.5.34.1 Enter a complete description of the waste parameter that was selected in the “Remaining Contents of Container” table.

4.5.34.2 Enter any additional comments about the VE, as applicable.

NOTE: *The gross weight of the container is obtained after the container has been bagged off of the glovebox and the lid has been installed.*

4.5.35 Observe container weighing via the facility video monitoring system and enter the gross weight of the container in the “VE Weight” field.

4.5.36 Operator 1: Review the data for completeness and accuracy.

4.5.37 Operator 2: Review the data for completeness and accuracy.

4.5.38 **IF** there are any discrepancies,
THEN contact the SS and VEE for guidance.

4.5.38.1 **WHEN** concurrence is achieved,
THEN GO TO Step 4.5.39.

4.5.39 Operator 1 (data generator): E-sign the WTS record for approval of the data and drum loading.

4.5.40 Operator 2 (data verifier): E-sign the WTS record for approval of the data and drum loading.

4.5.41 Ensure that the VE date and batch number populates accurately.

4.5.42 Select the “Waste Summary” tab.

4.5.42.1 Double click on the appropriate liner ID.

NOTE: *The final weight assignments (filled liner, container net, and PCB mass) are calculated by WTS after the lid is installed and a final weight for the container is obtained.*

4.5.42.2 Observe that the filled liner weight, net weight and the PCB mass are equal.

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- 4.5.42.3 **IF** the filled liner weight, net weight and PCB mass are **NOT** equal,
THEN suspend operations
AND notify the SS and VEE.
- 4.5.42.4 Resume when a determination is made on a path forward for the container.
- 4.5.43 Exit the VES screen.
 - 4.5.43.1 **WHEN** the “Save changes?” pop-up appears,
THEN select the appropriate response.
- 4.5.44 **IF** the batch needs to be closed manually,
THEN perform the following:
 - 4.5.44.1 Select the BATCH button on the “Visual Examination” screen.
 - 4.5.44.2 Select the CLOSE button on the “Batch Details” screen.
 - 4.5.44.3 E-sign and save the record.
 - 4.5.44.4 Exit the VSC screen.
 - 4.5.44.4.1 **WHEN** the “Save Changes?” pop-up appears,
THEN select the appropriate response.

4.6 Post-Job Review

- 4.6.1 SS: Perform a post-job review in accordance with MP-COPS-9.17.

5.0 DEFINITIONS

Container. A unit for characterization subject to radiography or direct VE. Typically, this is also identified as the “outermost container” (e.g., 55-, 83-/85-, or 100-gal drum) in the context of radiography or direct VE.

Liquid, observable (or liquid). Liquid that can be seen by a trained radiography operator or by a trained individual performing VE of the waste. This term can be implemented consistently during characterization regardless of waste type.

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Organic homogeneous solids. Wastes in this definition are any homogenous materials consisting of organic-based sludge or liquids that are solidified with cement, calcium silicate, or absorbed on solid material. Examples include, but are not limited to, cemented organic resins and sludges, organic liquids (solvent, oil, and/or grease) absorbed on or into an approved absorbent.

Packaging material. Consists of the drum, 90-mil liner, and the two outermost layers of confinement that are used as liners for the waste container.

Secondary waste. Waste generated from normal operations and/or closure processes (e.g., personal protective equipment, floor sweepings, rags/wipes from routine maintenance or decontamination activities, and equipment).

Visual examination of S3000 waste. Activity for characterizing S3000 waste at the point of waste placement into a discharge liner in the Facility South Box Line, using VE. This examination requires two operations technicians qualified in VE, with a VEE available for support. This includes VE of newly generated waste closure.

Waste stream. Waste materials that have common physical form, that contain similar hazardous constituents and that are generated from a single process or activity.

(MP-TRUW-8.13)

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6.0 REFERENCES

- (1) 40 CFR 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
- (2) AMWTP HWMA/RCRA Permit
- (3) CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)
- (4) HA-F-017, Hazard Assessment for INST-FOI-17 and INST-FOI-22
- (5) INST-FOI-17, Facility Examination Operations
- (6) INST-FOI-38, Drum Import/Export Glovebox Operations
- (7) INST-FOI-39, Processing Sludge Drums in the South Box Line
- (8) INST-OI-34, Non-Facility Visual Examination Operations
- (9) MP-COPS 9.17, Performing Pre-Job Briefings and Post-Job Reviews
- (10) MP-DOCS-18.2, Records Management
- (11) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste
- (12) MP-TRUW-8.2, Quality Assurance Project Plan
- (13) MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation
- (14) Resource Conservation and Recovery Act
- (15) RPT-TRUW-78, AMWTP Challenging Waste Forms and Disposition
- (16) Toxic Substance Control Act
- (17) Waste Isolation Pilot Plant Waste Analysis Plan

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7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-FOI-22, Case File	Both FOR/NP WIPP/ENV2-a-1-a/Destroy 5 years after Life of Facility
Data Management System (WTS) records	Lifetime WIPP/ENV1-J-1/Turnover to CBFO at end of project.

8.0 EXHIBITS

Exhibit 1 – Waste Material Parameter Descriptions

Exhibit 2 – Fill Factor

Exhibit 3 – List of Prohibited Items

Exhibit 4 – Visual Examination Equipment IDs

9.0 APPENDICES

Appendix A – Revision Log

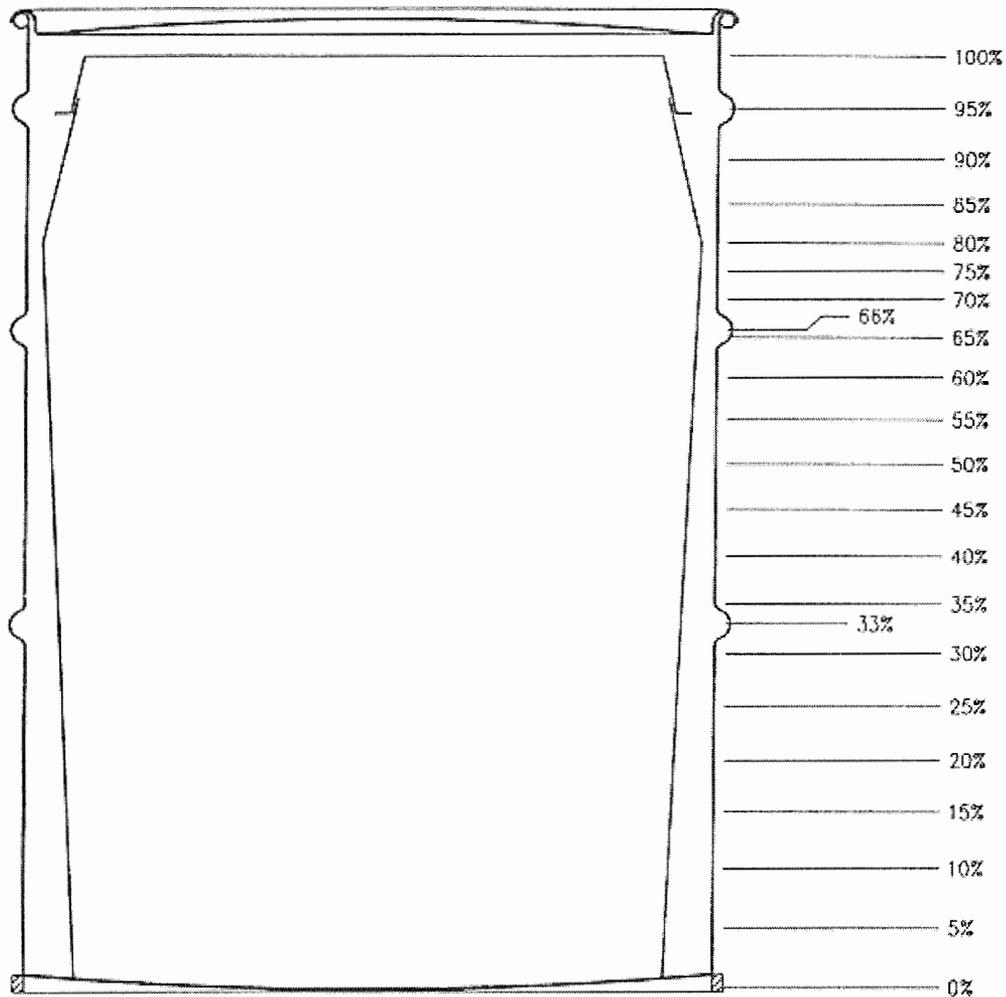
AMWTP INSTRUCTION		
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Exhibit 1 – Waste Material Parameter Descriptions

Waste Material Parameter	Help Description
Iron-based metals/alloys	Iron and steel alloys in the waste; does not include the waste container materials
Aluminum-based metals/alloys	Aluminum or aluminum-based alloys in the waste material
Other metals	All other metals found in the waste materials
Other inorganic materials	Nonmetallic inorganic waste, including concrete, glass, firebrick, ceramics, sand, and inorganic absorbents
Cellulosics	Materials generally derived from high polymer plant carbohydrates. Examples are paper, cardboard, wood, cloth, etc.
Rubber	Natural or man-made elastic latex materials. Examples are surgeons' gloves, leaded rubber gloves, etc.
Plastics (waste materials)	Generally man-made materials often derived from petroleum feedstock. Examples are polyethylene, polyvinyl chloride, etc.
Organic matrix	Cemented organic resins, solidified organic liquids, and sludge
Inorganic matrix	Any homogeneous materials consisting of sludge or aqueous-based liquids that are solidified with cement, calcium silicate, or other solidification agents. Examples are wastewater treatment sludge, cemented aqueous liquids, inorganic particulate, etc.
Soil/gravel	Generally consists of naturally-occurring soil/gravel contaminated with inorganic waste materials
Steel (packaging materials)	208-L (55-gal.) drums
Plastics (packaging materials)	90-mil polyethylene drum liner and plastic bags

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Exhibit 2 – Fill Factor



Percentage is to be based on all waste contents (including bags and absorbent) in the drum.

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Exhibit 3 – List of Prohibited Items

Prohibited Item	Comments
Liquids	Liquid waste is not acceptable at WIPP. Observable liquids containing PCBs are prohibited at WIPP. Liquid in the quantities delineated here is acceptable. Observable liquid shall be no more than 1 percent by volume of the outermost container at the time of radiography or visual examination (VE). Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited. Containers with Hazardous Waste Number U134 assigned shall have no observable liquid. Overpacking the outermost container that was examined during radiography or visual examination or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.
Compressed Gases	Typically, aerosol cans, gas bottles or cylinders that cannot be verified to be physically vented (e.g., a drilled hole, a removed relief valve).
Corrosives/Reactives/ Ignitables Present	Waste exhibiting the characteristic of ignitability, corrosivity or reactivity.
Explosives	Examples include ammunition, dynamite, black powder, detonators, nitroglycerine, urea nitrate, picric acid.
Wastes with PCBs not authorized under an EPA PCB waste disposal authorization	Light ballasts and transformers are potential sources of PCBs in much of the waste. PCB items commingled (in direct contact with, or displaying evidence of cross-contamination) with other observable liquids are prohibited.
Non-radionuclide Pyrophoric Materials	Example of pyrophoric radionuclides are: metallic plutonium, americium. Examples of non-radionuclide pyrophoric materials or materials/waste that may cause a pyrophoric type event are: organic peroxides, sodium metal, and chlorates.
Sealed Containers greater than 4 liters	Lids that are screwed into place or taped should be considered sealed. Lids that do not form an “air tight” seal do not need to be considered as a sealed container
Non-Mixed Hazardous Waste	Hazardous wastes not occurring as co-contaminants with TRU mixed wastes (non-mixed hazardous wastes).
Waste incompatible with backfill, seal and panel closure material, shipping container materials or other wastes	Excessive rust, brittle materials, excessive corrosion, evidence of reaction in the waste are all potential sources for evidence that the waste is not compatible with backfill, packaging, or shipping container.
Sharp or heavy items not blocked or braced	Sharp items that have a reasonable potential to puncture the payload container shall be treated or protected prior to shipment. (The presence of a properly assembled rigid or fiberboard liner is considered as one method of providing protection. Padding, when applicable is also an acceptable method of providing protection.) Heavy items shall be blocked, braced, or suitably packaged to provide puncture protection for the payload containers packaging these objects.

(HWMA/RCRA Permit; MP-TRUW-8.2; CCP-PO-003)

AMWTP INSTRUCTION		
INST-FOI-22, Rev. 0	Issued: 8/11/11	Effective: 8/11/11 @ 1200 Hrs.
Visual Examination of S3000 Waste in the Facility		

Exhibit 4 – Visual Examination Equipment IDs

WIPP #	Site Equipment #	Procedure Number Method Equipment Description	Components	Software
9VE2	Z-250-VEC	Procedure – INST-OI-34 Method – BN-VE2 Description – Visual Examination of Legacy Waste Containers (VEC)	N/A. (Method described in procedure INST-OI-34).	Waste Tracking System (WTS)
9VE3	Z-250-VNC	Procedure – INST-OI-34 Method – BN-VE3 Description – Newly Generated Waste Visual Examination Closure (VNC)	N/A. (Method described in procedure INST-OI-34).	Waste Tracking System (WTS)
9VE5	FAC - VEC	Procedure – INST-FOI-17 Method – BN-VE5 Description – Visual Examination of Non-Boxline Legacy Waste Containers (VEC)	N/A. (Method described in procedure INST-FOI-17).	Waste Tracking System (WTS)
9VE6	FAC - VNC	Procedure – INST-FOI-17 Method – BN-VE6 Description – Newly Generated Waste Visual Examination Closure (VNC)	N/A. (Method described in procedure INST-FOI-17).	Waste Tracking System (WTS)
9VE7	VE BID RPACK	Procedure – INST-FOI-17 Method – BN-VE7 Description – Visual Examination of Boxline Legacy Waste (VEB) – Box to a drum repackaging	N/A. (Method described in procedure INST-FOI-17).	Waste Tracking System (WTS)
9VE8	VE DID RPACK	Procedure – INST-FOI-17 Method – BN-VE8 Description – Visual Examination of Legacy Waste (VEB) – Drum to a new drum repackaging	N/A. (Method described in procedure INST-FOI-17).	Waste Tracking System (WTS)
9VE11	FAC-VSC	Procedure – FOI-22 Method – BN-VE9 Description- Visual Examination of S3000 Waste (VES) – S3000 to a new container.	N/A (Method described in procedure INST-FOI-22)	Waste Tracking System

WIPP Training Requirements Implementation Matrix

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-9632.)

T. F. Fallon
Quality Assurance and Training Manager

12/17/10

Date

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

1.0 PURPOSE/SCOPE

The purpose of this matrix is to identify how all the training requirements for the Waste Isolation Pilot Plant (WIPP) permit listed in either MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, or MP-TRUW-8.2, Quality Assurance Project Plan, are implemented at the Advanced Mixed Waste Treatment Project (AMWTP). This matrix will be reviewed and updated, as necessary, any time either source document is revised.

2.0 IMPLEMENTATION MATRIX

Procedure Section	Extract of Requirement	AMWTP Implementation
MP-TRUW-8.1, Certification Plan for INL Transuranic Waste		
5.5	Personnel performing waste characterization and certification activities affecting quality are qualified and trained to ensure that suitable proficiency is achieved and maintained in the performance of their assigned tasks.	MP-RTQP-14.1, Preparation and Administration of Training Plans MP-RTQP-14.4, Personnel Qualification and Certification Training requirements specified for waste characterization can be found throughout this document. Training requirements for certification are specified in qualification checklist QCWC01A.
5.5.1	The appropriate managers, with support of the training organization, determine job positions and qualification standards for each job category relevant to the AMWTP. Task responsibilities for personnel are analyzed in accordance with MP-RTQP-14.6, Job Analysis. Education, experience, and training prerequisites commensurate with minimum requirements are included in the qualification packages in accordance with MP-RTQP-14.4.	MP-RTQP-14.1, Preparation and Administration of Training Plans MP-RTQP-14.4, Personnel Qualification and Certification MP-RTQP-14.6, Job Analysis
5.5.2	Managers ensure that AMWTP personnel receive indoctrination and training on the scope, purpose, and objectives of the WIPP Program and the specific Quality Assurance Objectives (QAOs) of the tasks being performed.	0AWT3105, TRU Programs and WIPP Waste Analysis Plan (WAP) Overview
5.5.2	Personnel performing activities affecting quality are trained according to their respective training plans to ensure they achieve and maintain proficiency prior to performing any tasks subject to these Quality Assurance Plan (QAP) requirements.	MP-RTQP-14.1, Preparation and Administration of Training Plans MP-RTQP-14.4, Personnel Qualification and Certification

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

Procedure Section	Extract of Requirement	AMWTP Implementation
5.5.2	Personnel receive training, including on-the job training and hands-on training, as needed, to achieve initial proficiency and continuing training requisite with their activities and level of responsibility to maintain proficiency; and adapt to changes in technology, methods, job responsibilities and authority, and Quality Assurance (QA) implementing procedures in accordance with MP-RTQP-14.1, and MP-RTQP-14.4.	MP-RTQP-14.1, Preparation and Administration of Training Plans MP-RTQP-14.4, Personnel Qualification and Certification Course 0AWT2201, Quality Assurance
5.5.2	Training is designed, developed, conducted, and evaluated in accordance with approved AMWTP training procedures. Training programs may include classroom instruction, practical hands-on experience, supervised on-the-job training, self-paced individual study, and written, oral, or practical demonstration of worker competence.	MP-RTQP-14.4, Personnel Qualification and Certification MP-RTQP-14.11, Delivery of Training MP-14.16, Evaluation of Training
5.5.2	The period of effectiveness for qualification associated with special processes, operations that require special skills, and the requalification criteria are specified or referenced in MP-RTQP-14.4 or supporting training program plans.	MP-RTQP-14.4, Personnel Qualification and Certification
5.5.2	Nondestructive examination (NDE) and nondestructive assay (NDA) are considered to be characterization processes; therefore, personnel performing NDE are qualified to a program based on the American Society of Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A, June 1980 Edition. Later editions of SNT-TC-1A may be used as long as the minimum requirements of the June 1980 edition are met. Personnel performing NDA are qualified to the American Society for Testing and Materials (ASTM) C1490, Standard Guide for Selection, Training, and Qualification of Nondestructive Assay Personnel. Training is subject to ongoing review to determine instruction and training program effectiveness and shall be upgraded whenever improvements or enhancements are identified.	ASTM C1490 are implemented in the following NDA qualification packages: <ul style="list-style-type: none"> • QPOT3B, Drum Assay • QPOT3D, Box Assay • FQP-OT-9B, Facility Drum Assay. SNT-TC-1A is implemented through the following NDE qualification package(s): <ul style="list-style-type: none"> • QPOT3A, Real-Time Radiography.
5.5.2	Personnel performing TRU Program activities affecting quality receive indoctrination in the following: <ul style="list-style-type: none"> • General criteria, the QAP, and applicable codes, regulations, and standards • Specific criteria, including the Quality Assurance Project Plan (QAPjP), Certification Plan, Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC), and any implementing procedures, as applicable. 	0AWT3105, TRU Programs and WIPP-WAP Overview Position specific qualification packages and checklists listed in the applicable sections below.

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

Procedure Section	Extract of Requirement	AMWTP Implementation
5.5.2	Auditable records documenting the required training and qualifications are maintained as QA records and controlled in accordance with MP-RTQP-14.19, Training Records Administration.	MP-RTQP-14.19, Training Records Administration
5.14	Personnel performing validation at the AMWTP are trained to the existing industry standardized training requirements (e.g., ASTM C1490).	QPITR3A, Level I Validation
Nondestructive Assay and Nondestructive Examination		
A.4.1	<p>Only appropriately trained and qualified personnel are allowed to perform radioassay and data validation/review.</p> <p>Standardized Training requirements for radioassay personnel are based upon existing industry standardized training requirements (e.g., ASTM C1490, Reference A8) and meet the specifications in the Quality Assurance Program Document (QAPD).</p> <p>Requalification of radioassay personnel shall be based upon evidence of continued satisfactory performance and must be performed at least every 2 years.</p>	MP-RTQP-14.4, Personnel Qualification and Certification QPOT3B, Drum Assay QPOT3D, Box Assay FQP-OT-9B, Facility Drum Assay QCASYITR, Nondestructive Assay Independent Technical Reviewer QCNDAETR, Nondestructive Assay Expert Technical Reviewer/Independent Technical Reviewer QCSPM01A, Site Project Manager Designee
A.4.1	Personnel receive training requisite with their activities and level of responsibility in accordance with MP-RTQP-14.4, Personnel Qualification and Certification. The period of effectiveness for qualification and the requalification criteria are also specified.	MP-RTQP-14.4 is implemented through the assay qualification packages and checklists listed above.
A.6.5	<p>These controls apply to all aspects of the data generation process, including:</p> <ul style="list-style-type: none"> • Procurement of analytical instruments • Calibration and operation of assay equipment according to industry standards • Preparation and use of standardized instrument and data review procedures • Training of equipment operators and technical/data review personnel to the QAPD, as specified in Section A.4.1. 	See previous entry for Section A.4.1.

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

Procedure Section	Extract of Requirement	AMWTP Implementation
Real-Time Radiography Operations		
F.2	Only trained and qualified radiography operators shall be allowed to operate radiography equipment.	QPOT3A, Real Time Radiography Operations
F2	Standardized training and qualification requirements for radiography operators are based upon existing industry standard training requirements as detailed in the radiography qualification package and comply with the training and qualification requirements in MP-RTQP-14.4.	QPOT3A, Real Time Radiography Operations
F.2	The AMWTP has developed a training program that provides radiography operators with both formal and on-the-job training (OJT).	QPOT3A, Real Time Radiography Operations
F.2	Radiography operators are instructed in: <ul style="list-style-type: none"> • Specific waste generating practices • Typical packaging configurations • Associated waste material parameters expected to be found in each waste matrix code at the site. 	QPOT3A, Section 3.4 QPOT3A, Section 3.4 QPOT3A, Section 3.3 (required reading of MP-TRUW-05, Waste Matrix Code Reference Manual, and MP-TRUW-12, AMWTP Waste Stream Designations)
F.2	The Real-Time Radiography (RTR) OJT and apprenticeship is conducted by an experienced, qualified radiography operator prior to qualification of the training candidate.	AMWTP does not have an apprenticeship program; instead, minimum time performing duties under an OJT instructor are included in QPOT3A, Section 4.
F.2	Radiography operators are trained on the types of waste that are generated, stored, or characterized at the AMWTP. The RTR training program contains: <ul style="list-style-type: none"> • Project requirements • State and Federal regulations • Basic principles of radiography • Radiographic image quality • Radiographic scanning techniques • Application techniques • Radiography of waste forms • Standards, codes, and procedures for radiography • Site-specific instruction. 	QPOT3A, Sections 3.4, 4.4 and 4.5 QPOT3A, Section 3. QPOT3A, Section 3. 0AWT4302, RTR Theory and Equipment and QPOT3A, Section 3.4 QPOT3A, Sections 4.4 and 4.5 QPOT3A, Section 4.3, 4.4, and 4.5 QPOT3A, Sections 4.4 and 4.5 QPOT3A, Section 3.2 QPOT3A, Section 3 and 4

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

Procedure Section	Extract of Requirement	AMWTP Implementation
F.2	<p>The RTR training program also contains OJT which addresses:</p> <ul style="list-style-type: none"> • System operation • Identification of packaging configurations • Identification of waste material parameters • Weight and volume estimation • Identification of prohibited items. 	<p>0A WT4302, RTR Theory and Equipment QPOT3A, Section 3.4. QPOT3A, Section 3.4. QPOT3A, Sections 3.4 and 4.3 QPOT3A, Section 3.4</p>
F.2	<p>Requalification of operators are based on evidence of continued satisfactory performance (primarily audio/video recording reviews), and shall be done at least every 2 years.</p> <p>Unsatisfactory performance will result in disqualification. Unsatisfactory performance is defined as the misidentification of a prohibited item in a training drum or a score of less than 80% on the comprehensive exam.</p>	<p>MP-RTQP-14.4 QPOT3A, Requalification, Section 1.0 QPOT3A, Requalification, Section 6.0</p>
F.2	<p>Successfully pass a comprehensive exam based upon training enabling objectives. The comprehensive exam will address all of the radiography operations, documentation, characterization, and procedural elements stipulated in the Waste Acceptance Criteria (WAC).</p>	<p>QPOT3A, Examination</p>
F.2	<p>A practical capability demonstration shall be performed in the presence of an appointed site radiography subject matter expert. The person will be an experienced radiography operator who is also qualified as an OJT trainer.</p>	<p>QPOT3A, Section 4</p>
F.2	<p>A training drum with internal containers of various sizes is scanned semiannually by each operator.</p>	<p>Admin Form AFRTRDRU and AFRTRSWB</p>

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

Procedure Section	Extract of Requirement	AMWTP Implementation
F.2	<p>Radiography test drums contain items common to the waste streams to be generated and stored at the AMWTP. The test drums are divided into layers with varying packing densities or different drums may be used to represent different situations that may occur during radiography examination at the site. Test drums shall be representative of the waste matrix codes for which Waste Stream Profile Form (WSPF) approval is sought. Test drums shall be examined and successfully identified prior to waste stream shipment. The following is a list of required elements of a radiography test drum:</p> <ul style="list-style-type: none"> • A punctured aerosol can • Pigtails on poly liners (horsetail bag) • Pair of coveralls • Empty bottle • Irregular shaped pieces of wood • Empty one-gallon paint can • Full container • Aerosol can with fluid • One-gallon bottle with three tablespoons of fluid • One-gallon bottle with one cup of fluid (upside down) • Leaded glove or leaded apron • Wrench. <p>These items shall be successfully identified by the operator as part of the qualification process.</p>	QPOT3A Admin Form AFRTRDRU and AFRTRSWB
F.4	Only appropriately trained and qualified personnel shall be allowed to perform data validation/review.	QPITR3A, Level I Validation ITR QCSPM01A, Site Project Manager Designee
Visual Examination		
G.2	Standardized training for visual examination (VE) has been developed to include both formal classroom training and OJT.	QPVE0001, Visual Examiner 0AWT3141, VE Indoctrination 0AWT3142, Visual Examination 0AWT3143, Waste Tracking System and Data Quality Objectives
G.2	Personnel performing VE are instructed in the specific waste generating processes.	QPVE0001, Section 4.1

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

Procedure Section	Extract of Requirement	AMWTP Implementation
G.2	Personnel performing VE are instructed in typical packaging configurations.	QPVE0001, Section 4.1
G.2	Personnel performing VE are instructed in and the waste material parameters expected to be found in each waste matrix code at the site.	QPVE0001, Section 4.1
G.2	The OJT and apprenticeship is conducted by an operator experienced and qualified in VE prior to qualification of the candidate.	QPVE0001, Section 4.0 AMWTP does not have a formal apprenticeship program; instead, requirements to perform VE on different waste streams at AMWTP under an OJT instructor are included in QPVE0001, Section 4.
G.2	The training shall be site-specific to include the various waste configurations at the site.	QPVE0001, Visual Examiner
G.2	Training and qualification requirements for VE are detailed in the VE qualification package in accordance with MP-RTQP-14.4.	QPVE0001, Visual Examiner
G.2	Visual examination operators need only be trained to the physical forms and packaging configurations used on the waste stream that they are examining and packaging.	QPVE0001, Visual Examiner
G.2	Visual examination personnel are requalified once every 2 years.	QPVE0001, Visual Examiner
G.2	Training shall address the following requirements: <ul style="list-style-type: none"> • Project requirements • State and Federal regulations • Application techniques • Site-specific instruction. 	QPVE0001, Section 4.1 QPVE0001, Section 3 QPVE0001, Section 4 QPVE0001, Sections 3 and 4
G.2	Training shall also include OJT that addresses: <ul style="list-style-type: none"> • Identification of packaging configurations • Identification of waste material parameters • Weight and volume estimation • Identification of prohibited items. 	QPVE0001, Section 4.1 QPVE0001, Section 4.1 QPVE0001, Section 4.1 QPVE0001, Section 4.1

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

Procedure Section	Extract of Requirement	AMWTP Implementation
Visual Examination Expert		
G.2	The Visual Examination Expert (VEE) receives training in the same elements as the visual examination personnel with both formal training and on-the-job training.	QCVVEE001, Visual Examination Expert Qualification QCVVEELEA, Visual Examination Expert Lead Qualification Package
G.2	Qualification of a VEE is based on familiarity with waste generating processes, familiarity with the types of waste being characterized, and meeting the training requirements discussed above.	QCVVEE001, Visual Examination Expert Qualification QCVVEELEA, Visual Examination Expert Lead Qualification Package
G.2	Consistent with other VE personnel, the VEE is requalified once every 2 years. Specific qualification and training requirements for the VEE are listed in the qualification checklist in accordance with MP-RTQP-14.4.	QCVVEE001, Visual Examination Expert Qualification QCVVEELEA, Visual Examination Expert Lead Qualification Package
G.4	Only appropriately trained and qualified personnel are allowed to perform data validation/review.	QCSPM01A, Site Project Manager Designee

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

Procedure Section	Extract of Requirement	AMWTP Implementation
MP-TRUW-8.2, Quality Assurance Project Plan		
B-0	The TRU Programs Manager's responsibilities include ensuring that adequate technical and QA training are provided for personnel performing WIPP activities.	MP-RTQP-14.4, Personnel Qualification and Certification 0AWT2201, Quality Assurance
Real-Time Radiography Operations		
C.1.3	Operator training and experience are the most important considerations for ensuring implementation of quality controls (QCs) in regard to the operation of the RTR system and for interpretation and disposition of radiography results. Only trained personnel are allowed to operate RTR equipment.	QPOT3A, Real Time Radiography Operations
C1-3	Standardized training requirements for RTR operators are based upon existing industry standard training requirements as detailed in the RTR qualification package in accordance with MP-RTQP-14.4.	QPOT3A, Real Time Radiography Operations
C1-3	The AMWTP has developed a training program that provides RTR operators with both formal and OJT.	QPOT3A, Real Time Radiography Operations
C1-3	Radiography operators are instructed in: <ul style="list-style-type: none"> • Specific waste generating practices • Typical packaging configurations • Associated waste material parameters expected to be found in each waste matrix code at the site. 	QPOT3A, Section 3.
C1-3	The OJT and apprenticeship is conducted by an experienced, qualified RTR operator prior to qualification of the training candidate.	AMWTP does not have an apprenticeship program; instead, minimum time performing duties under an OJT instructor are included in QPOT3A, Section 4.
C1-3	Radiography operators are trained on the types of waste that are generated, stored, and characterized at the AMWTP.	QPOT3A, Sections 3.4, 4.4, and 4.5
C1-3	All of the radiography QC requirements specified in the WIPP-WAP are incorporated into the AMWTP training program and RTR operations to ensure data quality and comparability.	MP-RTQP-14.4, Personnel Qualification and Certification QPOT3A, Real Time Radiography Operations
C1-3	One or more training containers with items (including prohibited items) common to the waste streams to be characterized and internal containers of various sizes are scanned semiannually by each operator.	QPOT3A, Section 4.2 Admin Forms AFRTRDRU and AFRTR SWB

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

Procedure Section	Extract of Requirement	AMWTP Implementation
Visual Examination		
C1-4	Standardized training for VE has been developed.	QPVE0001, Visual Examiner
C1-4	Personnel performing VE are instructed in: <ul style="list-style-type: none"> • Specific waste generating processes • Typical packaging configurations • Waste material parameters expected to be found in each waste matrix code at the AMWTP. The training is site specific to include the various waste configurations at the AMWTP.	0AWT3141, VE Indoctrination QPVE0001, Section 4.1 QPVE0001, Section 4.1 QPVE0001, Sections 4.1, 4.2, and 4.4
C1-4	Training will include the following regardless of Summary Category Group: <ul style="list-style-type: none"> • Identifying and describing the contents of a waste container by examining all items in waste containers of previously packaged waste • Identifying when VE cannot be used to meet the Data Quality Objectives (DQOs). 	QPVE0001, Section 4.1 QPVE0001, Section 4.1
C1-4	VE personnel are requalified once every 2 years in accordance with MP-RTQP-14.4.	QPVE0001, Visual Examiner
Visual Examination Expert		
C1-4	The VEE will be familiar with: <ul style="list-style-type: none"> • Waste generating processes that have taken place at the AMWTP • All types of waste being characterized at the AMWTP. 	0AWT3141, VE Indoctrination 0AWT3142 Visual Examination
C1-4	VEEs selected will meet the qualification and training requirements specified in MP-RTQP-14.4.	QPVE0001, Visual Examiner

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

Procedure Section	Extract of Requirement	AMWTP Implementation
Other Requirements		
C-2	Program procedures shall address the following minimum elements: <ul style="list-style-type: none"> • Develop training specific to waste characterization and certification procedures. 	MP-RTQP-14.4, Personnel Qualification and Certification
C3-4a	Accuracy is obtained by using a target to tune the image for maximum sharpness and by requiring operators to successfully identify 100% of the items required to meet the DQOs for radiography specified in Section C-4a(1) in a training container during their initial qualifications and subsequent requalification.	QPOT3A, Real Time Radiography Operations
C3-4a	The comparability of RTR data from different operators is enhanced by using standardized RTR procedures and operator qualification. Operator training requirements are detailed in the RTR qualification package in accordance with outlined in Section B1-3b , MP-RTQP-14.4, and this implementation matrix.	QPOT3A, Real Time Radiography Operations
C3-4b	Accuracy is maintained by requiring operators to pass a comprehensive examination and demonstrate satisfactory performance in the presence of the VEE during their initial qualification and subsequent requalification. VE operators shall be requalified every 2 years.	QPVE0001, Visual Examiner
C3-4b	The comparability of VE data from different operators is enhanced by using standardized VE procedures and operator qualification. Operator training requirements are detailed in the VE qualification package in accordance with MP-RTQP-14.4.	QPVE0001, Visual Examiner
C3-9	Comparability is ensured through sites meeting the training requirements and complying with the minimum standards outlined for procedures that are used to implement the acceptable knowledge (AK) process.	QCAKE01A, Acceptable Knowledge Expert
C3-10a(1)	One hundred percent of the Batch Data Reports receive an Independent Technical Review (ITR). This review is performed by a trained and qualified individual who was not involved in the generation or recording of the data under review.	QPITR3A, Level I Validation

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

Procedure Section	Extract of Requirement	AMWTP Implementation
C3-14	<p>Before performing activities that affect QAPjP quality, all personnel receive indoctrination into the applicable scope, purpose, and objectives of the QAPjP and the specific QAOs of the assigned task.</p> <p>Personnel assigned to perform activities for the QAPjP have the education, experience, and training applicable to the functions associated with the work.</p> <p>Evidence of personnel proficiency and demonstration of competence in the task(s) assigned is demonstrated and documented.</p> <p>All personnel designated to work on specific aspects of the QAPjP maintain qualification (that is, training and certification) throughout the duration of the work. Qualification requirements for personnel are documented in Individual Training Plans or qualification packages.</p> <p>Job performance is evaluated and documented at periodic intervals to ensure personnel maintain proficiency and record additions to training, as necessary per MP-RTQP-14.4.</p>	<p>0AWT3105, TRU Programs and WIPP-WAP Overview</p> <p>MP-RTQP-14.4, Personnel Qualification and Certification</p> <p>MP-RTQP-14.1, Preparation and Administration of Training Plans</p>
C3-14a	<p>Personnel involved in QAPjP activities receive continuing training to ensure job proficiency is maintained. Training includes both education in principles and enhancement of skills. Training records that specify the scope of the training, the date of completion, and documentation of job proficiency are maintained as QA Records. Maintenance of training records is addressed in MP-RTQP-14.19, Training Records Administration.</p>	<p>MP-RTQP-14.4, Personnel Qualification and Certification</p> <p>MP-RTQP-14.19, Training Records Administration.</p>
C3-14	<p>Analytical laboratory line management ensures analytical personnel are qualified to perform the analytical method(s) for which they are responsible. The minimum qualifications for certain specified positions for the WIPP-WAP are summarized in Table C3-10. Analytical laboratory personnel are trained and qualified in accordance with CCP-QP-002, CCP Training and Qualification Plan.</p>	<p>CCP-QP-002, CCP Training and Qualification Plan.</p>
C3-14	<p>An evaluation of personnel qualifications includes comparing and evaluating the requirements specified in the job/position description and the skills, training, and experience included in the person's current resume. This evaluation, done in accordance with MP-RTQP-14.1 and MP-RTQP-14.4, is also performed for personnel who change positions because of a transfer or promotion as well as personnel assigned to short-term or temporary work assignments that may affect the quality of the WIPP-WAP.</p>	<p>MP-RTQP-14.1, Preparation and Administration of Training Plans</p> <p>MP-RTQP-14.4, Personnel Qualification and Certification</p>

Advanced Mixed Waste Treatment Project
WIPP Training Requirements Implementation Matrix

Procedure Section	Extract of Requirement	AMWTP Implementation
Table C3-10	Minimum Training and Qualification	The requirements listed in this table are included in the applicable Employee Position Descriptions (Form-1018), Individual Training Plans (Form-1020), or qualification packages or checklists.
C4-3a	<p>To ensure compliance with the requirements for compiling, assembling, evaluating, assessing, and resolving discrepancies associated with AK, AMWTP AK personnel shall be trained in accordance with MP-RTQP-14.4.</p> <p>The training requirements shall include the following subjects:</p> <ul style="list-style-type: none"> • WIPP-WAP in Permit Attachment C and the WIPP Hazardous Waste Permit TSDf-WAC specified in the QAPjP • State and Federal Resource Conservation and Recovery Act (RCRA) regulations associated with solid and hazardous waste characterization • Discrepancy resolution and reporting processes • Site-specific procedures associated with waste characterization using AK. 	QCAKE01A, Acceptable Knowledge Expert
C4-3g	<p>QA AK audit checklists include the elements listed below for review during the periodic audit, and the AMWTP provides information as requested by QA to satisfy the AK audit/surveillance requirements:</p> <ul style="list-style-type: none"> • Personnel training and qualifications are documented. 	MP-RTQP-14.19, Training Records Administration

3.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
LST-RTQP-03, WIPP Training Requirements	Misc. Other Records/A16-1.2/Destroy 5 years after submittal or being superseded.

Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-9648.)

Enrique Torres
TRU Programs Manager

11/22/10

Date

User is responsible to use the correct revision.

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.25, Rev. 18	Issued: 12/28/10	Effective: 12/29/10
Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	06/13/02	All	Initial issue. DCR-2002-1270.
1	09/05/02	4-7, 10, 13	DCR-1466: Changed revision number from 0 to 1. Added text for information and clarification.
2	09/26/02	6-9	DCR-1538: Changed revision number from 1 to 2. Deleted and added text for clarification and work flow.
3	11/21/02	1, 6-9, 11, 13	DCR-1749: Changed revision number from 2 to 3. Added "AMWTP HWMA/RCRA Storage Permit" to note the requirement.
4	02/06/03	8, 11	DCR-2003: Changed revision number from 3 to 4. Deleted NOTE for clarification.
5	03/28/03	All	DCR-2163: Changed effective date from "When DOE Approves Retrieval Operations" to March 28, 2003.
6	05/01/03	Various	DCR-2119: Incorporate changes from CBFO.
7	8/19/04	Various	DCR-3208. Incorporate corrective actions from CAR-8217 (CBFO 04-033 Revision 1). Updated references to include BNFL RPT-12 and made other minor editorial/format changes.
8	11/29/04	Various	DCR-3373. Incorporated CBFO post-audit comments. Editorial/format changes to comply with MP-DOCS-18.3.
9	03/01/05	7 and 10	DCR-4178. Minor change to correct a typo in 4.1.2.4 and 4.2.1.6 (5 th bullet in both steps).
10	06/09/05	Various	DCR 4281. Incorporation of Class 1 Permit Modification Notification to Revise Language for Compacted 55-Gallon Drums With Rigid Liners, April 27, 2005 and WIPP Memorandum CBFO:OCT:KWW:VW:05-1164-UFC:5822. Incorporated the procedure to implement the UFGTP long-term objective

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Revision Number	Date Approved	Pages Affected	Description of Revision
11	10/10/05	1, 3 – 5, and A1	DCR-4472. Revised to accommodate a new method of lot planning.
12	01/10/06	All	DCR-4723. Added new steps 3.1.2.1 and 3.1.2.2. Format to meet MP-DOCS-18.3.
13	06/13/06	1.0, 3.1.1.2.1, 3.1.2.2.1, 3.1.2.6, P.4 Note 2	DCR-5025. Clarification of intended purpose. Clarification for lot development.
14	1/05/07	All	DCR-5483. Complete rewrite and title change to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR).
15	11/25/07	Appendix A	DCR-6387. Revise Appendix A, Statistical Evaluations; periodic review.
16	03/12/08	Pages. 6 and 14	DCR-6918. Action item 38120 from QA surveillance 37885.
17	06/04/09	Pages 1, 11 and A9	DCR-8024. Add paragraph/note for clarification of procedure. Periodic Review.
18	11/22/10	Various	DCR-9648. Incorporated changes to implement the WIPP Permit Renewal.

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**Random Selection of Containers for Headspace Gas and Solids
Sampling and Analysis**

1.0 PURPOSE/SCOPE

MP-TRUW-8.2, Quality Assurance Project Plan, requires that containers be randomly selected for sampling and analysis. This procedure describes the process the Advanced Mixed Waste Treatment Project (AMWTP) uses for random selection of contact-handled (CH) and remote-handled (RH) transuranic (TRU) waste containers for headspace gas (HSG) and solids sampling and analysis.

This procedure applies to retrievably stored and newly generated S5000 debris waste streams that require HSG sampling and analysis for waste characterization and to retrievably stored and newly generated S3000 homogenous solids and S4000 soil/gravel waste streams that require solids sampling and analysis for waste characterization.

All steps outlined in this procedure are performed by the Site Project Manager (SPM), SPM Alternate (or their designee) unless otherwise noted.

The sections within this procedure do not have to be completed in a sequential fashion.

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2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Site Project Manager (SPM), Alternate, or Designee	<ul style="list-style-type: none"> • Determines population of containers in the waste stream or waste stream lot to select from for HSG and solids sampling and analysis. • Performs random selection of HSG containers to be sampled and analyzed. • Prepares and submits the Headspace Gas Random Sample Selection Memorandum. • Prepares and submits the Subsequent Headspace Gas Random Sample Selection Candidate Memorandum. • Prepares and submits the Subsequent Headspace Gas Random Sample Selection Memorandum. • Determines population of containers in the waste stream or waste stream lot to select from for solids sampling and analysis. • Performs random selection of solids containers to be sampled and analyzed. • Prepares and submits the Solids Random Sample Selection Memorandum. • Prepares and submits the Subsequent Solids Random Sample Selection Candidate Memorandum. • Prepares and submits the Subsequent Solids Random Sample Selection Memorandum.

3.0 PROCEDURE

3.1 Determining Sampling Population for Headspace Gas Sampling and Analysis

- 3.1.1 Review the acceptable knowledge (AK) documentation to determine the number of containers in the waste stream that will be shippable to the Waste Isolation Pilot Plant (WIPP).
- 3.1.2 Identify the containers in the waste stream lot or waste stream.
 - 3.1.2.1 If the entire population of the waste stream is accessible, go to Section 3.2.

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- 3.1.2.2 If the entire population of the waste stream is known, and only a portion of the waste stream is accessible for HSG sampling and analysis, go to Section 3.2.
- 3.1.2.3 If the population of the waste stream as a whole is indeterminate (e.g., continually generated waste streams from ongoing processes), or to facilitate waste processing, divide the waste stream into waste stream lots, and go to Section 3.3.

3.2 Container Selection for Accessible Waste Stream or Waste Stream Lot Populations for Headspace Gas Sampling and Analysis

NOTE 1: *When the waste stream population is divided into multiple waste stream lots, the steps in this section are to be repeated for each waste stream lot.*

NOTE 2: *For the initial sample selection for a waste stream or waste stream lot, n will at a minimum equal 10. If the waste stream population is less than 10, each container is sampled once. For subsequent required samples from within the same waste stream or waste stream lot, n will be determined from the Upper 90 Percent Confidence Level (UCL₉₀) calculations using Appendix A, Statistical Evaluations and, at a minimum, n will equal 10.*

- 3.2.1 Using Microsoft Excel, create a spreadsheet with the title to include the waste stream ID number and waste stream lot number, if applicable.
- 3.2.2 Create a column within the spreadsheet containing the Container ID numbers for the waste stream or waste stream lot, excluding all containers identified in previous Headspace Gas Random Sample Selection Memoranda.
- 3.2.3 Using the Random Number Function in Microsoft Excel, generate a random number associated with each container in the waste stream or waste stream lot in an adjacent column.

3.2.3.1 Use the following equation in Microsoft Excel:

RandomNumber = RAND() where RAND() is a Microsoft Excel Function that produces a random number greater than or equal to 0 and less than 1.

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- 3.2.3.2 Select and copy the column containing the generated random numbers.
- 3.2.3.3 Using the Edit/Paste Special/Value function, replace the column containing the generated random numbers with its fixed values.
- 3.2.4 Using the Data/Sort Function, sort the container numbers based on the numbers in the random number column in ascending order.
- 3.2.5 Select the first n containers in the resulting Random Headspace Gas Sample Selection Listing for sampling (see Appendix B, Random Headspace Gas Sample Selection Listing).
- 3.2.6 Create a Headspace Gas Random Sample Selection Memorandum containing the following information:
- Form-1196, Randomly Selected Container Report
 - Population size (waste stream or waste stream lot) from which containers have been selected for HSG sampling and analysis
 - Quantity of containers selected for HSG sampling and analysis
 - Printout or listing of the randomly selected container numbers that were selected by this random selection method
 - Printout or listing of the correlation of randomly generated numbers selected and Container ID numbers
 - Identification of all containers within the entire population of the waste stream or waste stream lot.
- 3.2.7 Initial the Headspace Gas Random Sample Selection Memorandum.
- NOTE:** *The correspondence from the SPM (or Alternate SPM) is distributed to other SPMs (SPM and/or Alt SPMs), the TRU Programs Manager, and the Scientific Support Manager.*
- 3.2.8 Submit the Random Headspace Gas Sample Selection Memorandum per MP-DOCS-18.2, Records Management with copies to the SPM(s) and the appropriate distribution list.

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3.3 Container Selection for Indeterminate Waste Stream Populations for Headspace Gas Sampling and Analysis

3.3.1 Determination of Sample Selection for First Waste Stream Lot

NOTE: *For the first sample selection for a waste stream or waste stream lot, n will at a minimum equal 10. For subsequent required samples from within the same waste stream or waste stream lot, n will be determined from the UCL_{90} calculations using Appendix A and, at a minimum, n will equal 10.*

3.3.1.1 Using Microsoft Excel, create a spreadsheet with the title to include the waste stream ID number.

NOTE: *The accessible containers in an indeterminate waste stream will be considered the first waste stream lot and must include a minimum of 10 containers.*

3.3.1.2 Create a column within the spreadsheet containing the container ID numbers for the first waste stream lot.

3.3.1.3 Using the Random Number Function in Microsoft Excel, generate a random number associated with each container in the first waste stream lot in an adjacent column.

3.3.1.3.1 Use the following equation in Microsoft Excel:

RandomNumber = RAND() where RAND() is a Microsoft Excel Function that produces a random number greater than or equal to 0 and less than 1.

3.3.1.3.2 Select and copy the column containing the generated random numbers.

3.3.1.3.3 Using the Edit/Paste Special/Value Function, replace the column containing the generated random numbers with its fixed values.

3.3.1.4 Using the Data/Sort Function, sort the container numbers based on the numbers in the random number column in ascending order.

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3.3.1.5 Select the first n containers in the resulting Random Headspace Gas Sample Selection Listing for HSG sampling and analysis.

3.3.1.6 Create a Headspace Gas Random Sample Selection Memorandum containing the following information:

- Form-1196
- Population size (waste stream or waste stream lot) from which containers have been selected for HSG sampling and analysis
- Quantity of containers selected for HSG sampling and analysis
- Printout or listing of the randomly selected container numbers that were selected by this random selection method
- Printout or listing of the correlation of randomly generated numbers selected and actual Container ID numbers
- Identification of all containers within the entire population of the waste stream or waste stream lot.

3.3.1.7 Initial the Headspace Gas Random Sample Selection Memorandum.

NOTE: *The correspondence from the SPM (or Alternate SPM) is distributed to other SPMs (SPM and/or Alt SPMs), the TRU Programs Manager, and the Scientific Support Manager.*

3.3.1.8 Submit the Headspace Gas Random Sample Selection Memorandum per MP-DOCS-18.2, Records Management, with copies to the SPM(s) and the appropriate distribution list.

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- 3.3.2 Determination of Subsequent Samples
 - 3.3.2.1 Estimate a conservatively low minimum and a conservatively high maximum for the number of containers expected in the remaining waste stream or waste stream lot population.
 - 3.3.2.2 Using Microsoft Excel or equivalent, create a spreadsheet with the title to include the waste stream ID number and waste stream lot number, if applicable.
 - 3.3.2.3 Create a column within the spreadsheet containing container sequence numbers from 1 through the estimated maximum determined in Step 3.3.2.1 for the waste stream or waste stream lot, excluding all containers identified in previous Headspace Gas Random Sample Selection Memoranda.
 - 3.3.2.4 Using the Random Number Function in Microsoft Excel or equivalent, generate a random number associated with each container sequence number in an adjacent column.
 - 3.3.2.4.1 Use the following equation in Microsoft Excel:
$$\text{RandomNumber} = \text{Rand}()$$
where *Rand()* is a Microsoft Excel function that produces a random number greater than or equal to 0 and less than 1.
 - 3.3.2.4.2 Select and copy the column containing the generated random numbers.
 - 3.3.2.4.3 Using the Edit/Paste Special/Value Function, replace the column containing the generated random numbers with its fixed values.
 - 3.3.2.5 Using the Data/Sort Function, sort the container sequence numbers based on the numbers in the random number column in ascending order.

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NOTE: *For subsequent required samples from within a waste stream or waste stream lot, n will be determined from the UCL₉₀ calculations using Appendix A and, at a minimum, n will equal 10.*

3.3.2.6 While preserving the sorted listing order, select the first *n* containers with sequence numbers less than or equal to the minimum number estimated in Step 3.3.2.1 as initial candidate containers for sampling.

3.3.2.7 Similarly, make a contingency selection of additional container sequence numbers to serve as additional samples if needed (e.g., to satisfy increased minimum sample size as dictated by UCL₉₀ calculation results).

NOTE 1: *Selected containers occupying any of the n positions at the top of the list will never be eligible for replacement by a later sequence numbered container as the encountered population of waste stream or waste stream lot containers grows larger. Such containers are permanently assigned to the sample selection and may be sampled and analyzed immediately.*

NOTE 2: *Previously selected containers no longer contained within the first n containers on the listing with sequence numbers less than or equal to the currently received population size may be released.*

3.3.2.8 As additional containers with sequence numbers in excess of the estimated minimum are received, repeat Step 3.3.2.7 as necessary to select previously non-selected container sequence numbers as they become available.

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NOTE: *Appendix C, Determination of Subsequent Samples, contains an example of the application of this selection methodology for a small indeterminate population of containers expected to contain between 100 and 150 containers total. Although the example population is small, the methodology can be extended to any larger expected population size range and ensures that all containers in the population will have equal likelihood of selection.*

3.3.2.9 Create a Subsequent Headspace Gas Random Sample Selection Candidate Memorandum, containing the following information:

- Form-1196
- Estimated minimum and maximum population size (waste stream or waste stream lot) from which candidate container sequence numbers have been selected for HSG sampling and analysis
- Quantity of containers selected for HSG sampling and analysis
- Printout or listing of the randomly selected candidate container sequence numbers that were determined to be eligible for selection by this random selection method, preserving the random-number-sorted order established in Step 3.3.1.3
- Description and justification of methodology used for objective assignment of sequential container numbers.

3.3.2.10 Initial the Subsequent Headspace Gas Random Sample Selection Candidate Memorandum.

NOTE: *The correspondence from the SPM (or Alternate SPM) is distributed to other SPMs (SPM and/or Alt SPMs), the TRU Programs Manager, and the Scientific Support Manager.*

3.3.2.11 Submit the Subsequent Headspace Gas Random Sample Selection Candidate Memorandum per MP-DOCS-18.2 with copies to the SPM(s) and the appropriate distribution list.

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3.3.2.12 Upon completion of identification of all containers in the waste stream or waste stream lot or upon reaching the maximum number of containers estimated in Step 3.3.2.1, create a final Subsequent Headspace Gas Random Sample Selection Memorandum containing the following information:

- Form-1196
- Estimated minimum and maximum population size (waste stream or waste stream lot) from which candidate container sequence numbers have been selected for HSG sampling and analysis
- Quantity of containers selected for HSG sampling and analysis
- Printout or listing of the randomly selected candidate container sequence numbers that were ultimately selected for HSG sampling and analysis using this random selection method, preserving the random-number-sorted order established in Step 3.3.1.3
- Printout or listing of the correlation of randomly generated numbers selected, sequence numbers, and associated actual Container ID numbers
- Identification of all containers within the entire population of the waste stream or waste stream lot.

3.3.2.13 Initial the Subsequent Headspace Gas Random Sample Selection Memorandum.

NOTE: *The correspondence from the SPM (or Alternate SPM) is distributed to other SPMs (SPM and/or Alt SPMs), the TRU Programs Manager, and the Scientific Support Manager.*

3.3.2.14 Submit the Subsequent Headspace Gas Random Sample Selection Candidate Memorandum per MP-DOCS-18.2, with copies to the SPM(s) and the appropriate distribution list.

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3.4 Determining Sampling Population for Solids Sampling and Analysis

3.4.1 Review the AK documentation to determine the number of containers in the waste stream that will be shippable to WIPP.

3.4.2 Identify the containers in the waste stream lot or waste stream.

3.4.2.1 If the entire population of the waste stream is accessible, go to Section 3.5.

3.4.2.2 If the entire population of the waste stream is known and only a portion of the waste stream is accessible for solids sampling and analysis, go to Section 3.5.

3.4.2.3 If the population of the waste stream as a whole is indeterminate, (e.g., continually generated waste streams from ongoing processes), or to facilitate waste processing, divide the waste stream into waste stream lots and go to Section 3.6.

3.5 Container Selection for Accessible Waste Stream or Waste Stream Lot Populations for Solids Sampling and Analysis

NOTE 1: *When the waste stream population is divided into multiple waste stream lots, the steps of Section 3.5 will be repeated for each waste stream lot.*

NOTE 2: *For the initial sample selection for a waste stream or waste stream lot, n will at a minimum equal 5. If the waste stream has fewer than five containers, one or more containers will require multiple sampling. For subsequent required samples from within the same waste stream or waste stream lot, n will be determined from the UCL₉₀ calculations using Appendix A and, at a minimum, n will equal 5.*

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NOTE 3: *For a waste stream lot where the lot size has been determined but not all containers have been assigned a container ID number, a preliminary Solids Random Sample Selection Memorandum may be generated. A final Solids Random Sample Selection Memorandum will be submitted when all containers have an assigned container ID number.*

- 3.5.1 Using Microsoft Excel, create a spreadsheet with the title to include the Waste Stream ID Number and Waste Stream Lot Number, if applicable.
- 3.5.2 Create a column within the spreadsheet containing the container ID numbers for the waste stream or waste stream lot, excluding all containers identified in previous Solids Random Sample Selection Memoranda.
- 3.5.3 Using the Random Number Function in Microsoft Excel, generate a random number associated with each container in the waste stream or waste stream lot in an adjacent column.
 - 3.5.3.1 Use the following equation in Microsoft Excel:
$$\text{RandomNumber} = \text{RAND}()$$
 where *RAND()* is a Microsoft Excel Function that produces a random number greater than or equal to 0 and less than 1.
 - 3.5.3.2 Select and copy the column containing the generated random numbers.
 - 3.5.3.3 Using the Edit/Paste Special/Value Function, replace the column containing the generated random numbers with its fixed values.
- 3.5.4 Using the Data/Sort Function, sort the container numbers based on the numbers in the random number column in ascending order.
- 3.5.5 Select the first *n* containers in the resulting Random Solids Sample Selection Listing for solids sampling and analysis (see Appendix D, Random Solids Sample Selection Listing).

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3.5.6 Create a Solids Random Sample Selection Memorandum containing the following information:

- Form-1196
- Population size (waste stream or waste stream lot) from which containers have been selected for solids sampling and analysis.
- Quantity of containers selected for solids sampling and analysis.
- Printout or listing of the randomly selected container numbers that were selected by this random selection method.
- Printout or listing of the correlation of randomly generated numbers selected and Container ID numbers.
- Identification of all containers within the entire population of the waste stream or waste stream lot.

3.5.7 Initial the Solids Random Sample Selection Memorandum.

NOTE: *The correspondence from the SPM (or Alternate SPM) is distributed to other SPMs (SPM and/or Alt SPMs), the TRU Programs Manager, and the Scientific Support Manager.*

3.5.8 Submit the Solids Random Sample Selection Memorandum for the designated waste stream or waste stream lot per MP-DOCS-18.2 with copies to the SPM(s) and the appropriate distribution list.

3.6 Container Selection for Indeterminate Waste Stream Populations for Solids Sampling and Analysis

3.6.1 Determination of Sample Selection for First Waste Stream Lot

NOTE: *For the first sample selection for a waste stream or waste stream lot, n will at a minimum equal 5. If the waste stream has fewer than five containers, one or more containers will require multiple sampling. For subsequent required samples from within the same waste stream or waste stream lot, n will be determined from the UCL₉₀ calculations using Appendix A and, at a minimum, n will equal 5.*

3.6.1.1 Using Microsoft Excel, create a spreadsheet with the title to include the Waste Stream ID Number.

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NOTE: *The accessible containers in an indeterminate waste stream will be considered the first waste stream lot.*

3.6.1.2 Create a column within the spreadsheet containing the Container ID numbers for the first waste stream lot.

3.6.1.3 Using the Random Number Function in Microsoft Excel, generate a random number associated with each container in the first waste stream lot in an adjacent column.

3.6.1.3.1 Use the following equation in Microsoft Excel:

RandomNumber = RAND() where *RAND()* is a Microsoft Excel Function that produces a random number greater than or equal to 0 and less than 1.

3.6.1.3.2 Select and copy the column containing the generated random numbers.

3.6.1.3.3 Using the Edit/Paste Special/Value Function, replace the column containing the generated random numbers with its fixed values.

3.6.1.4 Using the Data/Sort Function, sort the container numbers based on the numbers in the random number column in ascending order.

3.6.1.5 Select the first *n* containers in the resulting Random Solids Sample Selection Listing for solids sampling and analysis.

3.6.1.6 Create a Solids Random Sample Selection Memorandum containing the following information:

- Form-1196
- Population size (waste stream or waste stream lot) from which containers have been selected for solids sampling and analysis.
- Quantity of containers selected for solids sampling and analysis.

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- Printout or listing of the randomly selected container numbers that were selected by this random selection method.
- Printout or listing of the correlation of randomly generated numbers selected and actual Container ID numbers.
- Identification of all containers within the entire population of the waste stream or waste stream lot.

3.6.1.7 Initial the Solids Random Sample Selection Memorandum.

NOTE: *The correspondence from the SPM (or Alternate SPM) is distributed to other SPMs (SPM and/or Alt SPMs), the TRU Programs Manager, and the Scientific Support Manager.*

3.6.1.8 Submit the Solids Random Sample Selection Memorandum per MP-DOCS-18.2 to with copies to the SPM and the appropriate distribution list.

3.6.2 Determination of Subsequent Samples

3.6.2.1 Estimate a conservatively low minimum and a conservatively high maximum for the number of containers expected in the remaining waste stream or waste stream lot population.

3.6.2.2 Using Microsoft Excel, create a spreadsheet with the title to include the Waste Stream ID Number and Waste Stream Lot Number, if applicable.

3.6.2.3 Create a column containing container sequence numbers from 1 through the estimated maximum determined in Step 3.6.2.1 for the waste stream or waste stream lot, excluding all containers identified in previous Solids Random Sample Selection Memoranda.

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3.6.2.4 Using the Random Number Function in Microsoft Excel, generate a random number associated with each container sequence number in an adjacent column.

3.6.2.4.1 Use the following equation in Microsoft Excel:

RandomNumber = $RAND()$ where $RAND()$ is a Microsoft Excel Function that produces a random number greater than or equal to 0 and less than 1.

3.6.2.4.2 Select and copy the column containing the generated random numbers.

3.6.2.4.3 Using the Edit/Paste Special/Value Function, replace the column containing the generated random numbers with its fixed values.

3.6.2.5 Using the Data/Sort Function, sort the container sequence numbers based on the numbers in the random number column in ascending order.

NOTE: *For subsequent required samples from within the same waste stream or waste stream lot, n will be determined from the UCL_{90} calculations using Appendix A, Statistical Evaluations.*

3.6.2.6 While preserving the sorted listing order, select the first n containers with sequence numbers less than or equal to the minimum number estimated in Step 3.6.2.1 as initial candidate containers for solids sampling and analysis.

3.6.2.7 Similarly, make a contingency selection of additional container sequence numbers to serve as additional samples if needed (e.g., to satisfy increased minimum sample size as dictated by UCL_{90} calculation results).

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NOTE 1: *Selected containers occupying any of the n positions at the top of the list will never be eligible for replacement by a later sequence numbered container as the encountered population of waste stream or waste stream lot containers grows larger. Such containers are permanently assigned to the sample selection and may be sampled and analyzed immediately.*

NOTE 2: *Previously selected containers no longer contained within the first n containers on the listing with sequence numbers less than or equal to the currently received population size may be released.*

3.6.2.8 As additional containers with sequence numbers in excess of the estimated minimum are received, repeat Step 3.6.2.7 as necessary to select previously non-selected container sequence numbers as they become available.

NOTE: *Appendix E, Determination of Subsequent Samples, contains an example of the application of this selection methodology for a small indeterminate population of containers expected to contain between 100 and 150 containers total. Although the example population is small, the methodology can be extended to any larger expected population size range and ensures that all containers in the population will have equal likelihood of selection.*

3.6.2.9 Create a Subsequent Solids Random Sample Selection Candidate Memorandum containing the following information:

- Form-I196
- Estimated minimum and maximum population size (waste stream or waste stream lot) from which candidate container sequence numbers have been selected for solids sampling and analysis.
- Quantity of containers selected for solids sampling and analysis.

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- Printout or listing of the randomly selected candidate container sequence numbers that were determined to be eligible for selection by this random selection method, preserving the random-number-sorted order established in Step 3.6.2.4.
- Description and justification of methodology used for objective assignment of sequential container numbers.

3.6.2.10 Initial the Subsequent Solids Random Sample Selection Candidate Memorandum.

NOTE: *The correspondence from the SPM (or Alt SPM) is distributed to other SPMs (SPM and/or Alt SPMs), TRU Program Manager, and Scientific Support Manager.*

3.6.2.11 Submit the Subsequent Solids Random Sample Selection Candidate Memorandum for the designated waste stream or waste stream lot per MP-DOCS-18.2 with copies to the SPM(s) and the appropriate distribution list.

3.6.2.12 Upon completion of identification of all containers in the waste stream or waste stream lot or upon reaching the maximum number of containers estimated in Step 3.6.2.1, create a final Subsequent Solids Random Sample Selection Memorandum containing the following information:

- Form-1196
- Estimated minimum and maximum population size (waste stream or waste stream lot) from which candidate container sequence numbers have been selected for solids sampling and analysis
- Quantity of containers selected for solids sampling and analysis
- Printout or listing of the randomly selected candidate container sequence numbers that were ultimately selected for sampling using this random selection method, preserving the random-number-sorted order established in Step 3.6.2.4

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- Printout or listing of the correlation of randomly generated numbers selected, sequence numbers, and associated actual Container ID numbers
- Identification of all containers within the entire population of the waste stream or waste stream lot.

3.6.2.13 Initial the Subsequent Solids Random Sample Selection Memorandum.

NOTE: *The correspondence from the SPM (or Alt SPM) is distributed to other SPMs (SPM and/or Alt SPMs), TRU Program Manager, and Scientific Support Manager.*

3.6.2.14 Submit the Subsequent Solids Random Sample Selection Memorandum per MP-DOCS-18.2 with copies to the SPM(s) and the appropriate distribution list.

4.0 DEFINITIONS

None

5.0 REFERENCES

- (1) MP-TRUW-8.2, Quality Assurance Project Plan
- (2) MP-DOCS-18.2, Records Management
- (3) MP-TRUW-8.14, Preparation of Waste Stream Profile Forms
- (4) INST-OI-43, HGAS Sampling and Analysis Operation

User is responsible to use the correct revision.

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6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-TRUW-8.25, Case File	Nonpermanent WIPP/ENV1-J-1/ Destroy 10 years after being superseded.
Headspace Gas or Solids Random Sample Selection, Subsequent, and Candidate Selection Memorandums which includes as appropriate: <ul style="list-style-type: none">• Form-1196 – Randomly Selected Container Report• Form-1598 - Characterization Information Summary Report• Population size• Quantity of containers• Printout or listing of container numbers• Listing of correlation of generated numbers• Identification of all containers within entire population• Description and justification of methodology used for objective assignment of sequential container numbers.	Lifetime WIPP/ENV1-J-1/ Turnover to CBFO at end of project

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – Statistical Evaluations

Appendix B – Headspace Gas Random Sample Selection Listing (Example)

Appendix C – Determination of Subsequent Samples for Headspace Gas Sampling (Example)

Appendix D – Solids Random Sample Selection Listing (Example)

Appendix E – Determination of Subsequent Samples for Solids Sampling (Example)

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**Appendix A —
Statistical Evaluations**

The statistical approach for characterizing retrievably stored and newly generated homogeneous solids (S3000) and soil/gravel (S4000) waste and repackaged or treated S3000 waste relies on using AK to segregate waste containers into relatively homogeneous waste streams. Using AK, the AMWTP will classify the entire waste stream rather than individual waste containers as either hazardous or non-hazardous. Individual waste containers serve as convenient units for characterizing the combined mass of waste from the waste stream of interest. Once segregated by waste stream, random selection and sampling of the waste containers followed by analysis of the waste samples shall be performed to ensure that the resulting mean contaminant concentration provides an unbiased representation of the true mean contaminant concentration for each waste stream. The SPM verifies that the samples collected from within a waste stream were selected randomly in accordance with MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

An end use of analytical results for retrievably stored homogeneous solids and soil/gravel is for assigning the Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWNs) associated with Toxicity Characteristic (TC) waste (D-numbers) that apply to each mixed waste stream. The D-numbers are indicators that the waste exhibits the TC for specific contaminants under the Resource Conservation and Recovery Act (RCRA). The RCRA-toxicity determination is made on the basis of sampling and analysis of waste streams and on whether or not the waste stream includes F-number wastes. If a waste stream includes one or more RCRA F-numbers identified via AK, TC contaminants associated with the F-number waste(s) are not included in the RCRA-TC determination. That is, the F-numbers take precedence over RCRA-toxicity D-numbers, and the waste stream is assumed hazardous regardless of the concentration. Therefore, TC contaminants associated with F-numbers for a waste stream are omitted from all calculations for determining the number of containers to sample because these waste streams are assumed to be hazardous. In addition, each TC contaminant associated with the F-numbers is excluded from evaluation of analytical results to determine D-numbers. Contaminants of interest for the sampling, analysis, and RCRA-toxicity determination of a waste stream, then, exclude contaminants associated with F-numbers that have been assigned to the waste stream.

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The sampling and analysis strategy is illustrated in Figure A1. Preliminary estimates of the mean concentration and variance of each RCRA regulated contaminant in the waste are used to determine the number of waste containers to select for sampling and analysis. Preliminary estimates will be based on a minimum of five samples selected randomly from the waste stream for totals analysis and a minimum of ten samples for headspace gas analysis. If the entire waste stream is not accessible for sampling, then the minimum number of preliminary samples will be selected randomly from the accessible population. As the rest of the waste stream is retrieved or generated, additional selected containers will be sampled as provided below. The analytical results will be reported to WIPP. Samples collected to establish preliminary estimates that are selected, sampled and analyzed using a CBFO approved laboratory in accordance with applicable provisions of the CBFO approved laboratory's Quality Assurance Project Plan may be used as part of the required number of samples to be collected. The applicability of the preliminary estimates to the waste stream to be sampled is justified and documented.

The equations used to establish the mean, standard deviation, and 90% upper confidence level (UCL_{90}) for constituent data to be used in final HWN determinations are described in this appendix. Use of the equations included in this appendix assumes normality. Unless the results for an analyte are all less than the method detection limit (MDL) or are comprised of two or fewer valid samples, normality of the data will be tested (e.g., Shapiro-Wilk test) and transformation of the data will be performed as necessary. Test for normality will be performed using a certified software package. Transformation of data and other calculations will be performed manually or with a validated or certified software package.

To perform the calculations, a data set for each analyte of interest must be generated that at a minimum has the container numbers, the field and laboratory sample numbers, analyte names, concentrations, units, and reporting flags (U, J, B, E, D). Replicate or duplicate samples and co-located core samples are not included in the data set.

To determine the mean and standard deviation, all headspace gas or totals data for a waste stream or waste stream lot (i.e., the portion of the waste stream that is characterized as a unit) will be used, including data qualified with a 'J' flag (i.e., less than the Program Required Quantitation Limit [PRQL] but greater than the MDL) and data qualified with a 'U' flag (i.e., less than the MDL). For data qualified with a 'U' flag, one-half the MDL will be used in calculating the mean and standard deviation. Samples with elevated detection limits due to dilution are excluded from the mean and standard deviation calculations. These samples have both 'U' and 'D' flags.

Elevated MDLs may be included in the calculation if you are trying to determine the applicability of adding a toxicity characteristic to the wastes being determined.

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The process described below does not address headspace composite sampling because the AMWTP does not utilize composite sampling.

A.1 Calculate the sample mean (\bar{x}), and standard deviation (s), for each analyte.

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i \quad (\text{A-1})$$

$$s = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2} \quad (\text{A-2})$$

Where:

\bar{x} is the calculated mean.

s is the calculated concentration standard deviation.

n is the number of samples analyzed.

x_i is the concentration determined in the i^{th} sample.

i is an index from 1 to n .

(HWMA/RCRA Storage Permit)

A.2 Calculate the Preliminary Estimated Required Sample Size for Totals Analysis

Analytes should be excluded from the sample size determination if the analyte is (a) undetected in all samples or (b) already has an F-number associated with the waste stream. The F-number takes precedence over the D-number and will not be removed based on sampling results.

Based upon the preliminary estimates of \bar{x} and s for each chemical contaminant of concern, estimate the appropriate minimum number of samples (n) to be collected for each contaminant using the following formula from SW-846 (EPA 1996):

$$n = \frac{t_{\alpha, n_0-1}^2 s^2}{(RT - \bar{x})^2} \quad (\text{A-3})$$

Where:

n is the calculated minimum required number of samples.

t_{α, n_0-1} is the 90th percentile for the t distribution with n_0-1 degrees of freedom.

n_0 is the initial number of samples used to calculate the preliminary estimates.

RT is the Regulatory Threshold of the contaminant (TC limit for TC wastes, PRQL for listed wastes).

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The number of samples to be collected will be based upon the largest n calculated for each of the contaminants of concern. The actual number of samples collected shall be adjusted as necessary to ensure that an adequate number of samples are collected to allow for acceptable levels of completeness.

Non-integer results of calculations for required sample size should be rounded up to the next integer. A minimum of five containers shall be sampled and analyzed in each waste stream. If there are fewer containers than the minimum or required number of samples in a waste stream, one or more randomly selected containers shall be sampled more than once to obtain the number of needed samples of the waste. Otherwise, any one container may be selected for sampling only once.

The calculated total number of required waste containers will then be randomly sampled and analyzed using a CBFO approved laboratory. Waste container samples used to calculate the preliminary mean and variance estimates may be counted as part of the total calculated number of required samples if and only if:

- There is documented evidence that the waste containers for the preliminary estimate samples were selected in the same random manner as is chosen for the required samples.
- There is documented evidence that the method of sample collection in the preliminary estimate samples was identical to the methodology to be employed for the required samples.
- There is documented evidence that the method of sample analysis in the preliminary estimate samples was identical to the analytical methodology employed for the required samples.
- There is documented evidence that the validation of the sample analyses in the preliminary estimate samples was comparable to the validation employed for the required samples. In addition, the validated sample results shall indicate that all sample results were valid according to the analytical methodology.

If only a portion of a waste stream is accessible for sampling (e.g., the remainder of the waste stream will be recovered from storage or only a portion of the waste stream has been repackaged or treated), the calculated number of samples will be randomly selected from the accessible portion of the waste stream. A minimum of five randomly selected samples will be obtained and analyzed from the accessible portion of the waste stream. The CBFO may approve the Waste Stream Profile Form (WSPF) and authorize the AMWTP to begin shipping the waste stream to WIPP once the analytical data for the randomly selected samples from the accessible portion of the waste stream have been obtained.

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The AMWTP will also randomly select the calculated number of sample locations from the waste stream as a whole. A minimum of five randomly selected sample locations will be selected from the waste stream as a whole. As those randomly selected locations (e.g., buried or newly generated waste containers), become accessible for sampling, samples will be obtained and analyzed.

For those waste streams where the population of the waste stream as a whole is indeterminate (e.g., continually generated waste streams from ongoing processes), or to facilitate waste processing, the AMWTP may divide the waste stream into lots. In this case, a minimum of five randomly selected containers will be selected from within each subsequent lot. As those randomly selected containers (e.g., buried or newly generated waste containers) become accessible, samples will be obtained and analyzed. As with sampling from the waste stream as a whole, the AMWTP may ship waste from the lot being generated or retrieved prior to the completion of sampling and analysis for the lot.

The AMWTP will use the data to update the UCL_{90} values for the waste stream as described in Section A.6 and assign EPA HWNs as appropriate. The AMWTP will submit the analytical data from subsequent sampling to the CBFO for inclusion in the WIPP facility operating record. If changes to EPA HWNs are required as a result of subsequent sampling, the AMWTP will notify the CBFO and shipments of the affected waste stream shall be suspended until the CBFO approves a revised WSPF for the affected waste stream.

Upon collection and analysis of the preliminary samples, or at any time after the preliminary samples have been analyzed, the AMWTP may assign HWNs to a waste stream even if the calculated number of required samples is greater than the preliminary number of samples collected. For waste streams with calculated upper confidence limits below the regulatory threshold, the AMWTP shall collect the required number of samples if the AMWTP intends to establish that the constituent is below the regulatory threshold.

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A.3 Calculate the Preliminary Estimated Required Sample Size for Headspace Gas Analysis

Headspace gas sampling of a waste stream may be done on a randomly selected portion of containers in the waste stream. The minimum number of containers, (n_{VOC_i}), that must be sampled is determined by taking an initial VOC sample from a minimum of ten randomly selected containers. These samples are analyzed for all of the target analytes using INST-OI-43, HGAS Sampling and Analysis Operations. The standard deviation (s), is calculated for each of the nine VOCs in Table 4.4.1 of the WIPP Hazardous Waste Facility Permit. The value of n_{VOC_i} is determined as the largest number of samples (not to exceed the number of containers in the waste stream or waste stream lot) calculated using the following equation:

$$n_{VOC_i} = \frac{t_{\alpha, n_0 - 1}^2 s_{eVOC_i}^2}{E^2_{VOC_i}} \tag{A-4}$$

Where:

n_{VOC_i} is the number of samples needed to representatively sample the waste stream for the VOC_i from Table 4.4.1 of the WIPP Hazardous Waste Facility Permit.

n_0 is the initial number of samples used to calculate the preliminary estimates.

$t_{\alpha, n_0 - 1}$ is the 90th percentile of the t distribution with $n_0 - 1$ degrees of freedom.

s_{eVOC_i} is the estimated standard deviation based on the initial n samples for VOC_i from Table 4.4.1 of the WIPP Hazardous Waste Facility Permit.

E_{VOC_i} is the allowable error determined as one percent of the limiting concentration for VOC_i from Table 4.4.1 of the WIPP Hazardous Waste Facility Permit.

As an in-house management practice only, for VOCs not listed in Table 4.4.1 of the WIPP Hazardous Waste Facility Permit, n_{VOC_i} is calculated using the following equation:

$$n_{VOC_i} = \frac{t_{\alpha, n_0 - 1}^2 s_{eVOC_i}^2}{\left(RT_{VOC_i} - \bar{x}_{eVOC_i} \right)^2} \tag{A-5}$$

Where:

RT_{VOC_i} is the Regulatory Threshold (PRQL) of the contaminant.

\bar{x}_{eVOC_i} is the estimated mean contaminant concentration for VOC_i .

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The number of samples to be collected will be based upon the largest n_{VOC_i} calculated from the analytes used in the sample size determination. Non-integer results of calculations for the required sample size should be rounded up to the next integer. A minimum of ten containers shall be sampled and analyzed in each waste stream. If there are fewer than the minimum or required number of containers in a waste stream, then each container should be sampled once.

The calculated total number of required waste containers will then be randomly sampled and analyzed. Waste container samples used to calculate the preliminary mean and variance estimates may be counted as part of the calculated total number of required samples if and only if:

- There is documented evidence that the waste containers for the preliminary estimate samples were selected in the same random manner as is chosen for the required samples.
- There is documented evidence that the method of sample collection in the preliminary estimate samples was identical to the methodology to be employed for the required samples.
- There is documented evidence that the method of sample analysis in the preliminary estimate samples was identical to the analytical methodology employed for the required samples.
- There is documented evidence that the validation of the sample analyses in the preliminary estimate samples was comparable to the validation employed for the required samples. In addition, the validated samples' results shall indicate that all sample results were valid according to the analytical methodology.

The mean and standard deviation calculated after sampling n containers can be used to calculate a UCL_{90} for each of the headspace gas VOCs using the methodology presented in Section A.7.

If only a portion of a waste stream is accessible for sampling (e.g., the remainder of the waste stream will be recovered from storage or only a portion of the waste stream has been repackaged or treated), the calculated number of samples will be randomly selected from the accessible portion of the waste stream. A minimum of ten randomly selected samples will be obtained and analyzed from the accessible portion of the waste stream. The CBFO may approve the WSPF and authorize the AMWTP to begin shipping the waste stream to WIPP once the analytical data for the randomly selected samples from the accessible portion of the waste stream have been obtained.

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The AMWTP will also randomly select the calculated number of sample locations from the waste stream as a whole. A minimum of ten randomly selected sample locations will be selected from the waste stream as a whole. As those randomly selected locations (e.g., buried or newly generated waste containers), become accessible for sampling, samples will be obtained and analyzed.

For those waste streams where the population of the waste stream as a whole is indeterminate (e.g., continually generated waste streams from ongoing processes), or to facilitate waste processing, the AMWTP may divide the waste stream into lots. In this case, a minimum of ten randomly selected containers will be selected from within each subsequent lot. As those randomly selected containers (e.g., buried or newly generated waste containers) become accessible, samples will be obtained and analyzed. As with sampling from the waste stream as a whole, the AMWTP may ship waste from the lot being generated or retrieved prior to completing sampling and analysis of the lot.

The AMWTP will use the data to update the UCL₉₀ values for the waste stream as described in Section A.7 and assign EPA HWNs as appropriate. The AMWTP will submit the analytical data from subsequent sampling to the CBFO for inclusion in the WIPP facility operating record. If changes to EPA HWNs are required as a result of subsequent sampling, the AMWTP will notify the CBFO and shipments of the affected waste stream shall be suspended until the CBFO approves a revised WSPF for the affected waste stream.

Upon collection and analysis of the preliminary samples, or at any time after the preliminary samples have been analyzed, the AMWTP may assign HWNs to a waste stream even if the calculated number of required samples is greater than the preliminary number of samples collected. For waste streams with calculated upper confidence limits below the regulatory threshold, the AMWTP shall collect the required number of samples if the AMWTP intends to establish that the constituent is below the regulatory threshold.

A.4 Randomly Sample and Analyze the Estimated Number of Waste Containers for Totals Analysis or Headspace Gas Analysis

Randomly sample and analyze the estimated number of waste containers identified in accordance with MP-TRUW-8.25.

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A.5 Calculate the 90% Upper Confidence Limit for Each Analyte of Totals Analysis

Upon completion of the required sampling, final mean and variance estimates and the UCL_{90} for the mean concentration for each contaminant shall be determined. The observed sample n^* shall be checked against the preliminary estimate for the number of samples (n) to be collected before proceeding, where n^* is:

$$n^* = \frac{t_{\alpha, n-1}^2 s^2}{(RT - \bar{x})^2} \quad (\text{A-6})$$

and the right-side terms in the equation are as defined in Equation A-3.

If the observed sample n^* estimate results in greater than 20 percent more required samples than the previously calculated estimate (n), then the additional samples required to fulfill the revised sample estimate shall be collected and analyzed. The determination of n^* is an iterative process that follows the collection and analysis of any additional samples and continues until the difference between n^* and the previous sample size is less than 20 percent.

Once sufficient sampling and analysis has occurred, the waste characterization will proceed. The assessment will be made at the 90 percent confidence level. The UCL_{90} for the mean concentration of each contaminant will be calculated using the following equation from OSWER 9285.6-10 (EPA 2002):

$$UCL_{90} = \bar{x} + \frac{t_{\alpha, n-1} s}{\sqrt{n}} \quad (\text{A-7})$$

If the UCL_{90} for the mean concentration is less than the regulatory threshold limit, the waste stream is not required to be assigned the hazardous waste number for the associated contaminant. If the UCL_{90} is greater than or equal to the regulatory threshold limit, the waste stream will be assigned the hazardous waste number for the associated contaminant.

A.6 Calculate the 90% Upper Confidence Limit for Each Analyte of Headspace Gas Analysis

A UCL_{90} concentration for each headspace gas VOC must be calculated from the sample data collected. The observed sample (n^*) shall be checked against the estimate for the number of samples (n) to be collected before proceeding, where n^* is:

$$n^* = \frac{t_{\alpha, n-1}^2 s^2}{E^2} \quad (\text{A-8})$$

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and the right-side terms in the equation are defined in Equation A-4. If the n^* calculated using equation A-8 results in a greater than 20 percent larger number of required samples than the previously calculated estimate (n_{VOC_i}), then the additional samples required to fulfill the revised sample estimate shall be collected and analyzed. The determination of n^* is an iterative process that follows the collection and analysis of any additional samples and continues until the difference between n^* and the previous sample size is less than 20 percent. The UCL_{90} is then calculated using Equation A-7. In this case, UCL_{90} is the 90 percent upper confidence limit for the mean VOC concentration, \bar{x} is the calculated sample mean VOC concentration and s is the calculated sample standard deviation. The value of $t_{(\alpha, n-1)}$ is found in Table 9-2 of Chapter 9 of SW-846.

As an in-house management practice only, for VOCs not listed in Table 4.4.1 of the WIPP Hazardous Waste Facility Permit, n^* is calculated using the following equation:

$$n^* = \frac{t_{\alpha, n-1}^2 s^2}{(RT - \bar{x})^2} \quad (A-9)$$

Where:

RT is the Regulatory Threshold (PRQL) of the contaminant.

\bar{x} is the estimated mean contaminant concentration for VOC_i .

A.7 Document Results

Report headspace gas summary data or solidified sampling data on Form-1598, Characterization Information Summary Report; see MP-TRUW-8.14, Preparation of Waste Stream Profile Forms.

As a management practice, the following table format may be used to document results of preliminary statistics performed prior to the completion of a solids or headspace gas lot. Each contaminant of interest should be included in the table.

ANALYTE	Number of Samples	Number of Samples above MDL ^a	Transformation Used ^b	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL ₉₀ (mg/kg)	Transformed PRQL	PRQL (mg/kg)	Required number of samples ^{c, d, e}	Comments
COMMENTS											

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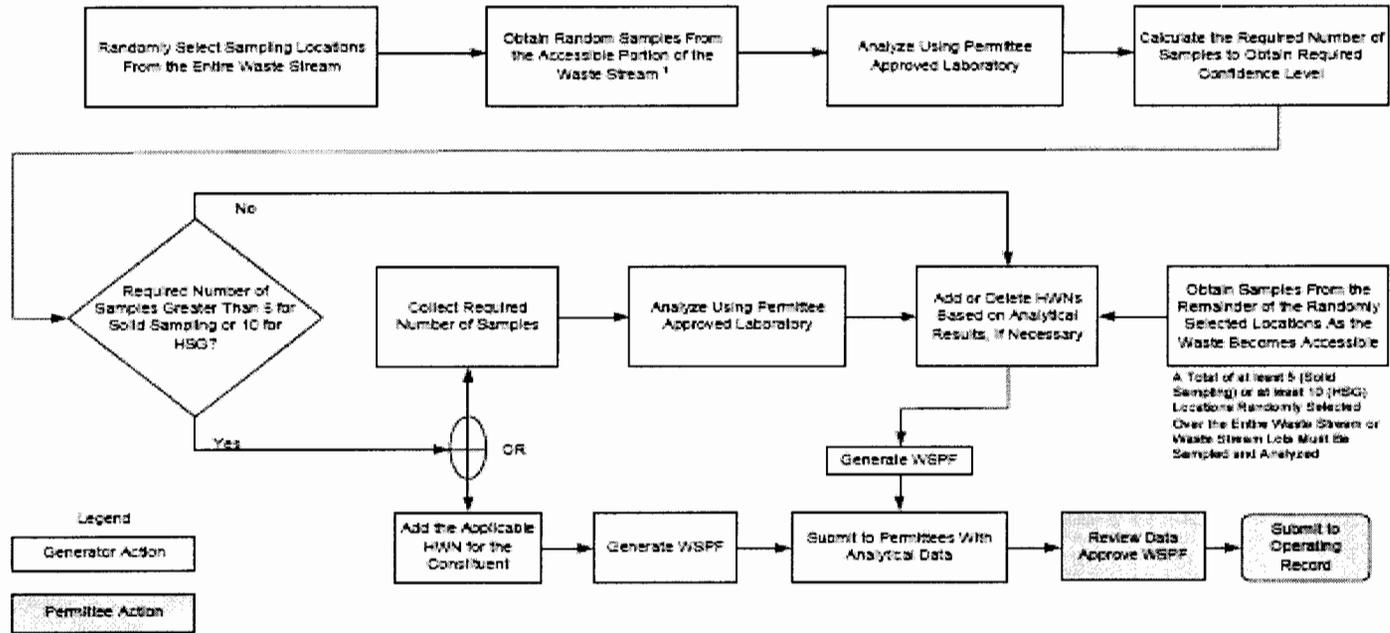


Figure A1. Approach for Solid and Headspace Gas Sampling and Analysis to Obtain Additional Waste Characterization Information.

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**Appendix C —
Determination of Subsequent Samples for Headspace Gas Sampling (Example)**

This example assumes a small indeterminate population of containers expected to contain between 100 and 150 containers total. Although this example population is small, the methodology is equally applicable to any larger expected population size range and ensures that all containers in the population will have equal likelihood of selection.

Following the steps in Section 3.3.2:

STEP	ACTION
3.3.2.1	Population is estimated to be at least 100 containers and at most 150 containers. For generality, the initial lot is assumed to have been identified and characterized and the population now under consideration is the subsequent 100-to-150 containers estimated to remain but as yet not encountered.
3.3.2.2	Create and title spreadsheet. (See Table 1, Indeterminate Waste Stream Lot [Example].)
3.3.2.3	Create container sequence number column. (Table 1 illustrates the columns wrapped to fit on a single page.)
3.3.2.4	Substeps 3.3.2.4.1 through 3.3.2.4.3: Random number generation and fixing of values as shown in Table 1.
3.3.2.5	Sort sequence numbers. (Shown in Table 2, Initial Selection of Candidate and Contingency Container Sequence Number.)
3.3.2.6	Selection of first 10 candidates with sequence numbers less than 101. (Indicated with dashed-line enclosed area in Table 2.) Note that since Container Sequence Numbers 100, 82, 30, 18, 78, and 59 all fall within the first 10 candidates on the listing, they will never be replaced when the waste stream exceeds 100 containers up to the maximum of 150. Therefore, those containers may be sampled as soon as encountered. The other selected candidates (50, 74, 66, and 57) should be held pending replacement by containers shown earlier in the list and encountered as the actual population grows beyond the estimated minimum.
3.3.2.7	Selection of three contingency containers. (Indicated by the lines designated "c1", "c2", and "c3" in Table 2.) The resulting selection of candidates is shown in the first block of Table 3, Additional Container Sequence Numbers.
3.3.2.8	As Container Sequence Numbers 105, 108, 112, 119, 125, and 126 are encountered in the waste stream, the selection is modified as shown in Table 3.

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Table 1. Example Indeterminate Waste Stream Lot.

Waste Stream Number: Example				Lot Number XX		Site Name	
Minimum Number of Drums						Possible Additional	
Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.
1	0.795816	41	0.239170	81	0.420466	116	0.201177
2	0.493101	42	0.782071	82	0.011035	117	0.438231
3	0.390797	43	0.428539	83	0.150062	118	0.466989
4	0.884290	44	0.877716	84	0.334525	119	0.008390
5	0.139729	45	0.911383	85	0.644586	120	0.247066
6	0.338425	46	0.150631	86	0.384826	121	0.172964
7	0.982202	47	0.287346	87	0.443527	122	0.438726
8	0.583402	48	0.266979	88	0.437717	123	0.569943
9	0.169107	49	0.847502	89	0.944644	124	0.102881
10	0.519467	50	0.091949	90	0.654006	125	0.089983
11	0.126069	51	0.890286	91	0.591444	126	0.085334
12	0.162153	52	0.951984	92	0.713918	127	0.155156
13	0.329562	53	0.632342	93	0.752457	128	0.120302
14	0.366813	54	0.965497	94	0.222357	129	0.619459
15	0.944430	55	0.811906	95	0.384366	130	0.763524
16	0.404505	56	0.811917	96	0.361573	131	0.646226
17	0.151525	57	0.123857	97	0.261811	132	0.717305
18	0.038540	58	0.344866	98	0.901939	133	0.694667
19	0.268033	59	0.081956	99	0.940442	134	0.408942
20	0.780567	60	0.802073	100	0.000315	135	0.723941
21	0.606261	61	0.218626			136	0.872911
22	0.825824	62	0.843237	Possible Additional		137	0.674650
23	0.844424	63	0.767781	101	0.216513	138	0.733276
24	0.210491	64	0.387468	102	0.601331	139	0.843634
25	0.760036	65	0.362584	103	0.668950	140	0.521067
26	0.383727	66	0.123568	104	0.632926	141	0.289139
27	0.709664	67	0.312835	105	0.096839	142	0.444749
28	0.767440	68	0.979299	106	0.495670	143	0.491637
29	0.905473	69	0.510775	107	0.957712	144	0.327233
30	0.026108	70	0.405983	108	0.099083	145	0.852892
31	0.577665	71	0.424389	109	0.219925	146	0.456442
32	0.548678	72	0.605972	110	0.706972	147	0.816217
33	0.674097	73	0.394560	111	0.401395	148	0.837125
34	0.503522	74	0.096820	112	0.057195	149	0.515053
35	0.813080	75	0.190328	113	0.213647	150	0.591335
36	0.294724	76	0.877162	114	0.388150		
37	0.252494	77	0.464337	115	0.175092		
38	0.470358	78	0.050724				
39	0.944005	79	0.152187				
40	0.501722	80	0.602263				

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Table 2. Initial Selection of Candidate and Contingency Container Sequence Numbers.

	Seq. Nr.	Rand Nr.						
1	100	0.000315	120	0.247066	118	0.466989	25	0.760036
	119	0.008390	37	0.252494	38	0.470358	130	0.763524
2	82	0.011035	97	0.261811	143	0.491637	28	0.767440
3	30	0.026108	48	0.266979	2	0.493101	63	0.767781
4	18	0.038540	19	0.268033	106	0.495670	20	0.780567
5	78	0.050724	47	0.287346	40	0.501722	42	0.782071
	112	0.057195	141	0.289139	34	0.503522	1	0.795816
6	59	0.081956	36	0.294724	69	0.510775	60	0.802073
	126	0.085334	67	0.312835	149	0.515053	55	0.811906
	125	0.089983	144	0.327233	10	0.519467	56	0.811917
7	50	0.091949	13	0.329562	140	0.521067	35	0.813080
8	74	0.096820	84	0.334525	32	0.548678	147	0.816217
	105	0.096839	6	0.338425	123	0.569943	22	0.825824
	108	0.099083	58	0.344866	31	0.577665	148	0.837125
	124	0.102881	96	0.361573	8	0.583402	62	0.843237
	128	0.120302	65	0.362584	150	0.591335	139	0.843634
9	66	0.123568	14	0.366813	91	0.591444	23	0.844424
10	57	0.123857	26	0.383727	102	0.601331	49	0.847502
C1	11	0.126069	95	0.384366	80	0.602263	145	0.852892
C2	5	0.139729	86	0.384826	72	0.605972	136	0.872911
C3	83	0.150062	64	0.387468	21	0.606261	76	0.877162
	46	0.150631	114	0.388150	129	0.619459	44	0.877716
	17	0.151525	3	0.390797	53	0.632342	4	0.884290
	79	0.152187	73	0.394560	104	0.632926	51	0.890286
	127	0.155156	111	0.401395	85	0.644586	98	0.901939
	12	0.162153	16	0.404505	131	0.646226	29	0.905473
	9	0.169107	70	0.405983	90	0.654006	45	0.911383
	121	0.172964	134	0.408942	103	0.668950	99	0.940442
	115	0.175092	81	0.420466	33	0.674097	39	0.944005
	75	0.190328	71	0.424389	137	0.674650	15	0.944430
	116	0.201177	43	0.428539	133	0.694667	89	0.944644
	24	0.210491	88	0.437717	110	0.706972	52	0.951984
	113	0.213647	117	0.438231	27	0.709664	107	0.957712
	101	0.216513	122	0.438726	92	0.713918	54	0.965497
	61	0.218626	87	0.443527	132	0.717305	68	0.979299
	109	0.219925	142	0.444749	135	0.723941	7	0.982202
	94	0.222357	146	0.456442	138	0.733276		
	41	0.239170	77	0.464337	93	0.752457		

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Table 3. Additional Container Sequence Numbers.

Sample for Populations 100-104		
Sel.	Seq. Nr.	Rand Nr.
1	<u>100</u>	<u>0.00032</u>
	119	0.008390
2	<u>82</u>	<u>0.011035</u>
3	<u>30</u>	<u>0.026108</u>
4	<u>18</u>	<u>0.038540</u>
5	<u>78</u>	<u>0.050724</u>
	112	0.057195
6	<u>59</u>	<u>0.081956</u>
	126	0.085334
	125	0.089983
7	<u>50</u>	<u>0.091949</u>
8	<u>74</u>	<u>0.096820</u>
	105	0.096839
	108	0.099083
	124	0.102881
	128	0.120302
9	<u>66</u>	<u>0.123568</u>
10	<u>57</u>	<u>0.123857</u>
c1	11	0.126069
c2	5	0.139729
c3	83	0.150062

Sample for Populations 105-107		
Sel.	Seq. Nr.	Rand Nr.
1	<u>100</u>	<u>0.000315</u>
	119	0.008390
2	<u>82</u>	<u>0.011035</u>
3	<u>30</u>	<u>0.026108</u>
4	<u>18</u>	<u>0.038540</u>
5	<u>78</u>	<u>0.050724</u>
	112	0.057195
6	<u>59</u>	<u>0.081956</u>
	126	0.085334
	125	0.089983
7	<u>50</u>	<u>0.091949</u>
8	<u>74</u>	<u>0.096820</u>
9	<u>105</u>	<u>0.096839</u>
	108	0.099083
	124	0.102881
	128	0.120302
10	<u>66</u>	<u>0.123568</u>
c1	57	0.123857
c2	11	0.126069
c3	5	0.139729

Sample for Populations 108-111		
Sel.	Seq. Nr.	Rand Nr.
1	<u>100</u>	<u>0.000315</u>
	119	0.008390
2	<u>82</u>	<u>0.011035</u>
3	<u>30</u>	<u>0.026108</u>
4	<u>18</u>	<u>0.038540</u>
5	<u>78</u>	<u>0.050724</u>
	112	0.057195
6	<u>59</u>	<u>0.081956</u>
	126	0.085334
	125	0.089983
7	<u>50</u>	<u>0.091949</u>
8	<u>74</u>	<u>0.096820</u>
9	<u>105</u>	<u>0.096839</u>
10	<u>108</u>	<u>0.099083</u>
	124	0.102881
	128	0.120302
c1	66	0.123568
c2	57	0.123857
c3	11	0.126069

Sample for Populations 112-118		
Sel.	Seq. Nr.	Rand Nr.
1	<u>100</u>	<u>0.000315</u>
	119	0.008390
2	<u>82</u>	<u>0.011035</u>
3	<u>30</u>	<u>0.026108</u>
4	<u>18</u>	<u>0.038540</u>
5	<u>78</u>	<u>0.050724</u>
6	<u>112</u>	<u>0.057195</u>
7	<u>59</u>	<u>0.081956</u>
	126	0.085334
	125	0.089983
8	<u>50</u>	<u>0.091949</u>
9	<u>74</u>	<u>0.096820</u>
10	<u>105</u>	<u>0.096839</u>
c1	108	0.099083
	124	0.102881
	128	0.120302
c2	66	0.123568
c3	57	0.123857

Sample for Populations 119-124		
Sel.	Seq. Nr.	Rand Nr.
1	<u>100</u>	<u>0.000315</u>
2	<u>119</u>	<u>0.008390</u>
3	<u>82</u>	<u>0.011035</u>
4	<u>30</u>	<u>0.026108</u>
5	<u>18</u>	<u>0.038540</u>
6	<u>78</u>	<u>0.050724</u>
7	<u>112</u>	<u>0.057195</u>
8	<u>59</u>	<u>0.081956</u>
	126	0.085334
	125	0.089983
9	<u>50</u>	<u>0.091949</u>
10	<u>74</u>	<u>0.096820</u>
c1	105	0.096839
c2	108	0.099083
	124	0.102881
	128	0.120302
c3	66	0.123568

Sample for Populations 124-124		
Sel.	Seq. Nr.	Rand Nr.
1	<u>100</u>	<u>0.000315</u>
2	<u>119</u>	<u>0.008390</u>
3	<u>82</u>	<u>0.011035</u>
4	<u>30</u>	<u>0.026108</u>
5	<u>18</u>	<u>0.038540</u>
6	<u>78</u>	<u>0.050724</u>
7	<u>112</u>	<u>0.057195</u>
8	<u>59</u>	<u>0.081956</u>
	126	0.085334
	125	0.089983
9	<u>50</u>	<u>0.091949</u>
10	<u>74</u>	<u>0.096820</u>
c1	105	0.096839
c2	108	0.099083
c3	124	0.102881

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Table 3. (Cont.)

Sample for Populations 125-125			Sample for Populations 126-150		
Sel.	Seq. Nr.	Rand Nr.	Sel.	Seq. Nr.	Rand Nr.
1	<u>100</u>	<u>0.000315</u>	1	<u>100</u>	<u>0.000315</u>
2	<u>119</u>	<u>0.008390</u>	2	<u>119</u>	<u>0.008390</u>
3	<u>82</u>	<u>0.011035</u>	3	<u>82</u>	<u>0.011035</u>
4	<u>30</u>	<u>0.026108</u>	4	<u>30</u>	<u>0.026108</u>
5	<u>18</u>	<u>0.038540</u>	5	<u>18</u>	<u>0.038540</u>
6	<u>78</u>	<u>0.050724</u>	6	<u>78</u>	<u>0.050724</u>
7	<u>112</u>	<u>0.057195</u>	7	<u>112</u>	<u>0.057195</u>
8	<u>59</u>	<u>0.081956</u>	8	<u>59</u>	<u>0.081956</u>
	126	0.085334	9	<u>126</u>	<u>0.085334</u>
9	<u>125</u>	<u>0.089983</u>	10	<u>125</u>	<u>0.089983</u>
10	<u>50</u>	<u>0.091949</u>	c1	50	0.091949
c1	74	0.096820	c2	74	0.096820
c2	105	0.096839	c3	105	0.096839
c3	108	0.099083			

Continuing the illustrative example:

STEP	ACTION
3.3.2.9	Create the Subsequent Random Headspace Gas Sample Candidate Container Selection Memorandum with the specified waste steam lot information and including the tabled values of Table 2.
3.3.2.10	Initial the Subsequent Random Headspace Gas Sample Candidate Container Selection Memorandum, as directed.
3.3.2.11	Submit the Subsequent Random Headspace Gas Sample Candidate Container Selection Memorandum to AMWTP Records, with copies to the SPM(s).
3.3.2.12	Upon exhaustion of the waste stream lot, prepare the Subsequent Random Headspace Sample Selection Memorandum, with the specified waste stream lot information and including the tabled values of the final sample selection shown in the applicable segment of Table 3.
3.3.2.13	Initial the Subsequent Random Headspace Sample Selection Memorandum, as directed.
3.3.2.14	Submit the Subsequent Random Sample Selection Memorandum per MP-DOCS-18.2 with copies made for the SPM(s).

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**Appendix E --
Determination of Subsequent Samples for Solids Sampling (Example)**

This example assumes a small indeterminate population of containers expected to contain between 100 and 150 containers total. Although this example population is small, the methodology is equally applicable to any larger expected population size range and ensures that all containers in the population will have equal likelihood of selection.

Following the steps in Section 3.6.2:

STEP	ACTION
3.6.2.1	Population is estimated to be at least 100 containers and at most 150 containers. For generality, the initial waste stream lot is assumed to have been identified and characterized and the population now under consideration is the subsequent 100 to 150 containers estimated to remain but as yet not encountered.
3.6.2.2	Create and title spreadsheet. (See Table 1, Indeterminate Waste Stream Lot.)
3.6.2.3	Create container sequence number column. (Table 1 illustrates the columns wrapped to fit on a single page.)
3.6.2.4.1 through 3.6.2.4.3	Random number generation and fixing of values as shown in Table 1.
3.6.2.5	Sort sequence numbers. (Shown in Table 2, Initial Selection of Candidate and Contingency Container Sequence Numbers.)
3.6.2.6	Selection of first five candidates with sequence numbers less than 101. (Indicated with dashed-line enclosed area in Table 2.) Note that since Container Sequence Numbers 100, 82, 30, and 18 all fall within the first five candidates on the listing, they will never be replaced when the waste stream exceeds 100 containers up to the maximum of 150. Therefore, those containers may be sampled as soon as encountered. The other selected candidate (78) should be held pending replacement by non-selected candidate containers (112 and 119) shown earlier in the list and encountered as the actual population grows beyond the estimated minimum.
3.6.2.7	Selection of three contingency containers. (Indicated by the lines designated "c1", "c2", and "c3" in Table 2.) The resulting selection of candidates is shown in the first block of Table 3, Additional Container Sequence Numbers.
3.6.2.8	As Container Sequence Numbers 112 and 119 are encountered in the waste stream, the selection is modified as shown in the applicable block of Table 3.

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Table 1. Example Indeterminate Waste Stream Lot.

Waste Stream Number: Example				Lot Number XX		Site Name	
Minimum Number of Drums						Possible Additional	
Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.
1	0.795816	41	0.239170	81	0.420466	116	0.201177
2	0.493101	42	0.782071	82	0.011035	117	0.438231
3	0.390797	43	0.428539	83	0.150062	118	0.466989
4	0.884290	44	0.877716	84	0.334525	119	0.008390
5	0.139729	45	0.911383	85	0.644586	120	0.247066
6	0.338425	46	0.150631	86	0.384826	121	0.172964
7	0.982202	47	0.287346	87	0.443527	122	0.438726
8	0.583402	48	0.266979	88	0.437717	123	0.569943
9	0.169107	49	0.847502	89	0.944644	124	0.102881
10	0.519467	50	0.091949	90	0.654006	125	0.089983
11	0.126069	51	0.890286	91	0.591444	126	0.085334
12	0.162153	52	0.951984	92	0.713918	127	0.155156
13	0.329562	53	0.632342	93	0.752457	128	0.120302
14	0.366813	54	0.965497	94	0.222357	129	0.619459
15	0.944430	55	0.811906	95	0.384366	130	0.763524
16	0.404505	56	0.811917	96	0.361573	131	0.646226
17	0.151525	57	0.123857	97	0.261811	132	0.717305
18	0.038540	58	0.344866	98	0.901939	133	0.694667
19	0.268033	59	0.081956	99	0.940442	134	0.408942
20	0.780567	60	0.802073	100	0.000315	135	0.723941
21	0.606261	61	0.218626			136	0.872911
22	0.825824	62	0.843237	Possible Additional		137	0.674650
23	0.844424	63	0.767781	101	0.216513	138	0.733276
24	0.210491	64	0.387468	102	0.601331	139	0.843634
25	0.760036	65	0.362584	103	0.668950	140	0.521067
26	0.383727	66	0.123568	104	0.632926	141	0.289139
27	0.709664	67	0.312835	105	0.096839	142	0.444749
28	0.767440	68	0.979299	106	0.495670	143	0.491637
29	0.905473	69	0.510775	107	0.957712	144	0.327233
30	0.026108	70	0.405983	108	0.099083	145	0.852892
31	0.577665	71	0.424389	109	0.219925	146	0.456442
32	0.548678	72	0.605972	110	0.706972	147	0.816217
33	0.674097	73	0.394560	111	0.401395	148	0.837125
34	0.503522	74	0.096820	112	0.050724	149	0.515053
35	0.813080	75	0.190328	113	0.213647	150	0.591335
36	0.294724	76	0.877162	114	0.388150		
37	0.252494	77	0.464337	115	0.175092		
38	0.470358	78	0.057195				
39	0.944005	79	0.152187				
40	0.501722	80	0.602263				

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Table 2. Initial Selection of Candidate and Contingency Container Sequence Numbers.

	Seq. Nr.	Rand Nr.						
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	119	0.008390	37	0.252494	38	0.470358	130	0.763524
	82	0.011035	97	0.261811	143	0.491637	28	0.767440
	30	0.026108	48	0.266979	2	0.493101	63	0.767781
	18	0.038540	19	0.268033	106	0.495670	20	0.780567
2	112	0.050724	47	0.287346	40	0.501722	42	0.782071
	78	0.057195	141	0.289139	34	0.503522	1	0.795816
C1	59	0.081956	36	0.294724	69	0.510775	60	0.802073
	126	0.085334	67	0.312835	149	0.515053	55	0.811906
	125	0.089983	144	0.327233	10	0.519467	56	0.811917
C2	50	0.091949	13	0.329562	140	0.521067	35	0.813080
C3	74	0.096820	84	0.334525	32	0.548678	147	0.816217
	105	0.096839	6	0.338425	123	0.569943	22	0.825824
	108	0.099083	58	0.344866	31	0.577665	148	0.837125
	124	0.102881	96	0.361573	8	0.583402	62	0.843237
	128	0.120302	65	0.362584	150	0.591335	139	0.843634
	66	0.123568	14	0.366813	91	0.591444	23	0.844424
	57	0.123857	26	0.383727	102	0.601331	49	0.847502
	11	0.126069	95	0.384366	80	0.602263	145	0.852892
	5	0.139729	86	0.384826	72	0.605972	136	0.872911
	83	0.150062	64	0.387468	21	0.606261	76	0.877162
	46	0.150631	114	0.388150	129	0.619459	44	0.877716
	17	0.151525	3	0.390797	53	0.632342	4	0.884290
	79	0.152187	73	0.394560	104	0.632926	51	0.890286
	127	0.155156	111	0.401395	85	0.644586	98	0.901939
	12	0.162153	16	0.404505	131	0.646226	29	0.905473
	9	0.169107	70	0.405983	90	0.654006	45	0.911383
	121	0.172964	134	0.408942	103	0.668950	99	0.940442
	115	0.175092	81	0.420466	33	0.674097	39	0.944005
	75	0.190328	71	0.424389	137	0.674650	15	0.944430
	116	0.201177	43	0.428539	133	0.694667	89	0.944644
	24	0.210491	88	0.437717	110	0.706972	52	0.951984
	113	0.213647	117	0.438231	27	0.709664	107	0.957712
	101	0.216513	122	0.438726	92	0.713918	54	0.965497
	61	0.218626	87	0.443527	132	0.717305	68	0.979299
	109	0.219925	142	0.444749	135	0.723941	7	0.982202
	94	0.222357	146	0.456442	138	0.733276		
	41	0.239170	77	0.464337	93	0.752457		

AMWTP MANAGEMENT PROCEDURE		
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Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis		

Table 3. Additional Container Sequence Numbers.

Sample for Populations 100-111			Sample for Populations 112-118			Sample for Populations 119-150		
Sel.	Seq. Nr.	Rand Nr.	Sel.	Seq. Nr.	Rand Nr.	Sel.	Seq. Nr.	Rand Nr.
1	100	0.00032	1	100	0.000315	1	100	0.000315
	119	0.008390		119	0.008390	2	119	0.008390
2	82	0.011035	2	82	0.011035	3	82	0.011035
3	30	0.026108	3	30	0.026108	4	30	0.026108
4	18	0.038540	4	18	0.038540	5	18	0.038540
	112	0.057195	5	112	0.057195	c1	112	0.057195
5	78	0.050724	c1	78	0.050724	c2	78	0.050724
c1	59	0.081956	c2	59	0.081956	c3	59	0.081956
	126	0.085334		126	0.085334			
	125	0.089983		125	0.089983			
c2	50	0.091949	c3	50	0.091949			
c3	74	0.096820						

Continuing the illustrative example:

STEP	ACTION
3.6.2.9	Create a Subsequent Random Solids Sample Selection Candidate Memorandum with the specified waste stream lot information and including the table values of Table 2.
3.6.2.10	Initial the Subsequent Random Solids Sample Selection Candidate Memorandum.
3.6.2.11	Submit the Subsequent Random Solids Sample Selection Candidate Memorandum per MP-DOCS-18.2 with copies for the SPM(s).
3.6.2.12	Upon exhaustion of the lot, prepare the Subsequent Random Solids Sample Selection Memorandum with the specified waste stream lot information and including the tabled values of the final sample selection shown in the applicable segment of Table 3.
3.6.2.13	Initial the Subsequent Random Solids Sample Selection Memorandum.
3.6.2.14	Submit the Subsequent Random Solids Sample Selection Memorandum to, with copies made for the SPM(s).