



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



DEC 14 2010

Mr. Steve Zappe, Project Leader
Hazardous Materials Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Subject: Transmittal of the Recertification Audit Report for the Advanced Mixed Waste Treatment Project, Audit A-10-24

Dear Mr. Zappe:

This letter transmits the audit report for the Advanced Mixed Waste Treatment Project Audit A-10-24 of the processes performed to characterize and certify waste as required by § II.C.2.c of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit. The report contains the results of the recertification audit conducted August 23 – 26, 2010.

I certify under penalty of law that this document and all enclosures were prepared under my direction or supervision in accordance with 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 fines and imprisonment for knowing violations.

Should you have any questions, please contact Dennis S. Miehl, Acting Director of Quality Assurance, Carlsbad Field Office, at (575) 234-7491.

Sincerely,

Edward Ziemianski
Acting Manager

Enclosure



Mr. Steve Zappe

-2-

DEC 14 2010

cc: w/Report Narrative

J. R. Stroble, CBFO	* ED
G. Basabilvazo, CBFO	ED
D. Miehl, CBFO	ED
M. Navarrete, CBFO	ED
N. Castaneda, CBFO	ED
S. McCauslin, CBFO	ED
E. Dumas, AMWTP	ED
E. Schweinsberg, AMWTP	ED
T. Fallon, AMWTP	ED
W. Lattin, DOE-ID	ED
T. Peake, EPA	ED
M. Eagle, EPA	ED
E. Feltcorn, EPA	ED
R. Joglekar, EPA	ED
S. Ghose, EPA	ED
R. Lee, EPA	ED
J. Bearzi, NMED	ED
S. Holmes, NMED	ED
J. Kieling, NMED	ED
T. Kesterson, DOE OB WIPP NMED	ED
D. Winters, DNFSB	ED
P. Gilbert, LANL-CO	ED
G. Lyshik, LANL-CO	ED
WWIS Database Administrators	ED
R. Chavez, WRES	ED
W. Most, WRES	ED
D. Streng, WRES	ED
L. Pastorello, WRES	ED
D. Guevara, WRES	ED
P. Hinojos, CTAC	ED
K. D. Martin, CTAC	ED
P. Martinez, CTAC	ED

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WIPP Operating Record, MS: 452-09

CTAC QA File

CBFO M&RC

**U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE**

FINAL AUDIT REPORT

OF THE

ADVANCED MIXED WASTE TREATMENT PROJECT

TRU WASTE CHARACTERIZATION AND CERTIFICATION

ACTIVITIES

IDAHO FALLS, IDAHO

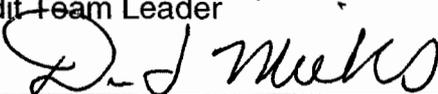
AUDIT NUMBER A-10-24

August 23 – 26, 2010



Prepared by: 
Porf Martinez, CTAC
Audit Team Leader

Date: 12/6/10

Approved by: 
Dennis S. Miehl, CBFO
Acting Quality Assurance Director

Date: 12-13-10

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Recertification Audit A-10-24 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 Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), the *CBFO Quality Assurance Program Document (QAPD)*, 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, August 23 through 26, 2010. The audit team concluded that overall, the AMWTP technical and quality assurance (QA) programs, 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 S5000 debris waste were being satisfactorily implemented in accordance with the CBFO QAPD, the HWFP *Waste Analysis Plan (WAP)*, and the WAC, and were effective in achieving the desired results.

No conditions adverse to quality that resulted in the issuance of CBFO corrective action reports (CARs) were identified during the audit. The audit team identified two deficiencies, isolated in nature and requiring only remedial corrective action, that were corrected during the audit (CDA). The corrections were verified prior to the end of the audit (see section 6.2). One Observation was identified during the audit, and one Recommendation was offered for management consideration. The Observation and Recommendation are 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 from Attachment B6, Section B6-3 of the HWFP were audited:

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

The following QA elements from Attachment B6-1 were audited:

- Personnel Qualification and Training

- Nonconformances
- Records
- Transportation
- WIPP Waste Information System/Waste Data System (WWIS/WDS)

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

- Project-Level Data Validation and Verification (V&V)
- Acceptable Knowledge (AK)
- Real-time Radiography (RTR)
- Visual Examination (VE)
- Solids Sampling
- Headspace Gas (HSG) Sampling and Analysis
- Waste Certification (Waste Stream Profile Form)

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

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

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

- *AMWTP Certification Plan for INEEL Contact-Handled Transuranic Waste*, MP-TRUW-8.1
- *AMWTP Quality Assurance Project Plan (QAPjP)*, MP-TRUW-8.2
- Related AMWTP quality assurance and technical implementing procedures

2.2 Purpose

Audit A-10-24 was conducted to assess the level of AMWTP compliance to HWFP requirements for waste characterization activities related to the certification of CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste. The audit team also evaluated the AMWTP QA program with regard to the requirements of the HWFP, WAC, and CBFO QAPD.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Martin Navarrete	CBFO Management QA Representative
Porf Martinez	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Jack Walsh	Auditor, CTAC
Greg Knox	Auditor, CTAC
Tammy Bowden	Auditor, CTAC
Cindi Castillo	Auditor, CTAC
Nick Wade	Auditor, CTAC
Mario Chavez	Auditor, CTAC
Harold Washington	Auditor, CTAC
Priscilla Martinez	Auditor, CTAC
BJ Verret	Technical Specialist, CTAC
Paul Gomez	Technical Specialist, CTAC
Dick Blauvelt	Technical Specialist, CTAC
Rhett Bradford	Technical Specialist, CTAC
Jim Oliver	Technical Specialist, CTAC

OBSERVERS

Steve Zappe	New Mexico Environment Department (NMED)
Steve Holmes	NMED
Ricardo Maestas	NMED
Connie Walker	NMED Contractor
Dennis Miehl	CBFO Management QA Representative
Kathy Leonard	CBFO Office of the National TRU Program
Dorothy Gill	Environmental Protection Agency
Pete Johansen	Idaho Department of Environmental Quality
Bruce LaRue	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 Building EDF-259, conference room WMF-1613, of the AMWTP Energy Drive Facilities in Idaho Falls, Idaho, on August 23, 2010. 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 August 26, 2010.

Attachment 2 contains a list of personnel contacted during the audit by area. Attachment 3 contains the CDA packages for CDAs 1 and 2 (in boxes). Attachment 4 contains the objective evidence reviewed during the audit (in boxes). Attachment 5 contains a list of AMWTP documents audited. Attachment 6 lists the processes and

equipment evaluated during the audit. Attachment 7 is the Procedure Revision Matrix identifying procedure changes since the last audit. Audit activities, including objective evidence reviewed, are described below.

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 Sampling and Analysis, Solids Sampling and Analysis, 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 adequate, satisfactorily implemented, and effective. Details of audit activities are described below.

5.2 General

5.2.1 Results of Previous Audits

The results of CBFO Recertification Audit A-09-19 of AMWTP were examined. No conditions adverse to quality (CAQ) were identified as a result of that audit.

5.2.2 Changes in Programs or Operations

There have been no significant changes in programs or operations since the performance of Audit A-09-19.

5.2.3 New Programs or Activities Being Implemented

No new programs or activities have been implemented since the performance of Audit A-09-19.

5.2.4 Changes in Key Personnel

No changes in key personnel have been made since the performance of Audit A-09-19.

5.3 HWFP-Related Quality Assurance Activities

The audit team evaluated both the QA program, including aspects of the B6-1 checklist, and the technical activities defined in the remaining B6 checklists. The following items related to QA program implementation were evaluated by the audit team.

5.3.1 Personal Qualification and Training

The audit team conducted interviews with responsible personnel and reviewed AMWTP implementing procedures MP-RTQP-14.4, Rev. 16, *Personnel Qualification and Certification*; MP-RTQP-14.19, Rev. 5, *Training Records Administration*; and MP-RTQP-14.20, Rev. 8, *Training Implementation Matrix (TIM)*, relative to the training and qualification of personnel, to determine the degree to which the procedures adequately address HWFP B6-1 QA requirements.

Personnel training records associated with VE, RTR, Solids Sampling and Analysis, HSG, AK, and site project management were examined to verify implementation of associated requirements and to verify that personnel performing characterization activities are appropriately qualified. Record reviews included individual training plans, qualification and requalification checklists/packages, training course reports, and required reading documentation. 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 training and qualification are adequately established for compliance with HWFP B6-1 QA 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 responsible personnel and reviewed AMWTP implementing procedure MP-Q&SI-5.4, Rev. 19, *Identification of Nonconforming Conditions*, relative to nonconformances, to determine the degree to which the procedure adequately addresses HWFP B6-1 QA requirements.

The audit team reviewed randomly selected nonconformance reports (NCRs) to ensure that nonconformances were appropriately documented, resolved, and tracked through closure. Review of the selected NCRs included verifications to ensure that AMWTP was appropriately documenting and reporting WAP-related nonconformances identified at the site project management level to the CBFO, as required. No concerns were identified during the audit.

The procedure reviews, field observations, and document reviews provided evidence that the applicable requirements for nonconformances are adequately established for compliance with HWFP B6-1 QA requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.3 Records

The audit team conducted interviews and reviewed AMWTP implementing procedure MP-DOCS-18.2, Rev. 13, *Records Management*, relative to the control and administration of QA records to determine the degree to which the procedures adequately address HWFP B6-1 QA requirements. Control of QA records was verified through review of the AMWTP Record Categories, Classification, Disposition, and Retention Matrix and associated characterization process batch data reports (BDRs). No concerns were identified during the audit.

The procedure reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for QA records are adequately established for compliance with HWFP B6-1 QA requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.4 Transportation

The audit team conducted interviews with AMWTP Waste Certification Officials 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 B6-1 QA requirements.

The audit team evaluated shipping documentation and verified that the generator/storage site accurately completed the Environmental Protection Agency (EPA) Hazardous Waste Manifest as required, including the container-specific information, and that the shipment documentation was included in 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 B6-1 QA 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 B6-1 QA requirements.

The AMWTP method for TRU waste certification was evaluated to the requirements of the INL certification plan for certifying TRU waste, along with the INL Central Characterization Project (CCP) *Transuranic Authorized Methods for Payload Control* (CCP CH-TRAMPAC). The evaluation included a demonstration of data input into the

WDS and system capabilities. It was proven during the demonstration that data could be satisfactorily transmitted to the WIPP. 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 B6-1 QA 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 B6-1, 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 B6-1 WAP checklist addresses general program requirements from an overall management perspective. The general requirements checklist addresses both 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 both characterization and certification activities, consisted of data-generation and project-level data V&V, AK, RTR, VE, Solids Sampling and Analysis, HSG Sampling and Analysis (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 VE, RTR, HSG Sampling and Analysis, and Solids Sampling and Analysis 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. 11, *Preparation of Waste Steam Profile Forms*; MP-TRUW-8.8, Rev. 29, *Level I Data Validation*; and MP-TRUW-8.9, Rev. 21, *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 of the CH S5000 debris and CH S3000 homogeneous solids WSPF/Characterization Information Summary (CIS) for BN510 Super-compacted Debris Waste Stream Profile Package Rev. 9, and BN222 Solidified Plutonium Recovery Incinerator Waste Stream Profile Package Rev. 0. To aid in the review process, site project management utilized AK documents for the waste reviewed, including AK summary reports for waste streams BNIN216, BNINW218, BN835, BN510, BN004, BN836, and BN222.

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

Radiography (RTR)

RTR09-00117 RTR10-00007
RTR09-00129 RTR10-00113

Visual Examination (VE)

VEB09-01309 VEB10-00251
VEB10-00787

Solids

SSC09-00007	ALD10015V
SSC10-00001	ALD10015S
SSC10-00002	ALD10015N
SSG09-00007	ALD10015M

Headspace Gas (HSG)

HS109-00014
HS110-00004
HS110-00014

Two conditions adverse to quality were identified and corrected during the audit. While reviewing BDRs, the audit team identified that an error was not properly corrected on Form-1599, AMWTP Solid Sampling Checklist, criteria 13a and 13b, in BDR SSC10-00002. Seventeen BDRs were reviewed; BDR SSC10-00002 was the only one with an improperly done correction (see section 6.2, CDA 1).

The second condition adverse to quality was identified during review of Form 1609, SPM Analysis of Homogenous Solids and Soils/Gravel Checklist. The response for question 53 had no indication of Yes, No, or N/A for BDR ALD100155. Seventeen BDRs were reviewed; BDR ALD100155 was the only one lacking a response to a question on Form 1609 (see section 6.2, CDA 2).

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

5.4.2 Table B6-2, 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 solids sampling. The AMWTP has the capability to sample both types of waste. The following solids sampling procedures were evaluated during the audit:

- MP-TRUW-8.17, Rev. 7, *Co-Located Core Sampling Control Charts*
- INST-OI-16, Rev. 34, *Drum Coring Operations*
- MP-TRUW-8.34, Rev. 6, *WIPP Sample Shipments*
- INST-OI-73, Rev. 7, *Manual Drum Coring Operations*
- INST-OI-75, Rev. 4, *Container-in-Container Sampling*
- MP-TRUW-8.8, Rev. 29, *Level I Data Validation*
- MP-RTQP-14.20, Rev. 8, *Training Implementation Matrix*

The solids sampling procedures were found to be adequate in meeting HWFP requirements. AMWTP solids sampling activities were evaluated by examining BDRs SSG09-00007 and SSC10-00002. There were no ongoing solids sampling or sample shipment activities at the time of this audit; however, the audit team toured the Building WMF-634 Coring Facility and examined coring tools and storage of sampling equipment. The audit team reviewed training records for solids sampling operators to verify that the required training and qualifications had been completed. Equipment blank records were audited, sample tags were checked, custody seals were examined, and control charts were verified.

The AMWTP performs its own S3000 solids sampling and performs S4000 sampling for other generator sites. The AMWTP retains responsibility for the accuracy and completeness of 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 B6-3, Acceptable Knowledge

The audit team evaluated the AMWTP AK process utilizing the WAP B6 checklists, primarily checklist B6-3, as a guide for demonstration of HWFP compliance for the characterization and certification of CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste. The audit team also evaluated the AMWTP AK process for compliance with the WIPP WAC. The audit team reviewed AMWTP procedures MP-TRUW-8.11, Rev. 17, *Data Reconciliation*; MP-TRUW-8.13, Rev. 21, *Collection, Review, and Management of Acceptable Knowledge Documentation*; and MP-TRUW-8.14, Rev. 11, *Preparation of Waste Steam Profile Forms*.

Numerous documents from the AK record that document compliance were reviewed and compiled as objective evidence, including relevant AK Summary Reports, WSPFs and attachments, AK Source Document Summaries, BDRs from characterization testing, and 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 discrepancies identified during characterization testing, along with reviewing NCRs dealing with the identification and treatment of prohibited items. Two waste streams were examined during the audit: CH S5000 mixed waste debris stream BN510, Supercompacted Debris Waste, and S3000 mixed waste solids stream BN222, Solidified Recovery Incinerator Waste. In addition to the respective AK Summary Reports for these streams, RPT-TRUW-30, Rev. 6, and RPT-TRUW-77, Rev. 0, supporting information from AK upper-tier documents was reviewed, including RPT-TRUW-06, *AMWTP Baseline AK for Newly*

Generated Waste; RPT-TRUW-56, AK Knowledge for INL Stored TRU Waste-Rocky Flats Plant; RPT-TRUW-12, AMWTP Waste Stream Designations; RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on AK; and RPT-TRUW-05, Waste Matrix Code Reference Manual.

Nine drums were tracked for the WAP-required traceability exercise: two drums from the BN222 waste stream, one of which was part of the solids sampling and analysis lot, and seven drums from the BN510 supercompacted waste stream, including four drums from distinct HSG sampling and analysis lots for both the boxline and direct feed processes in the AMWTF. In addition to reviewing the relevant characterization BDRs, the audit team also compiled traceability data from active and historic waste container databases.

The AK audit team issued one Recommendation that dealt with clarification of language in the two AK Summary Reports (see Recommendation 1 in section 7.2). All of the changes were non-data-quality affecting modifications to these documents.

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 B6-4, Headspace Gas

The audit team reviewed AMWTP implementing procedures MP-TRUW-8.8, Rev. 29, *Level I Data Validation*; INST-OI-43, Rev. 18, *HGAS Sampling and Analysis Operations*; INST-OI-45, Rev. 12, *Drum Filter Installation*; and INST-OI-50, Rev. 10, *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 equipment, interviewing personnel, and reviewing selected HSG BDRs. BDRs HS109-00016, HS110-00009, and HS110-00013 were examined and found satisfactory. Successful participation in the latest PDP Cycle 24A was verified, determination of method detection limits (MDLs), 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 sampling individuals were confirmed to be acceptable to the AMWTP training program and WAP requirements. 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.

5.4.4 Table B6-5, Radiography Checklist

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

The audit team reviewed AMWTP procedures MP-TRUW-8.8, Rev. 29, *Level I Data Validation*; INST-OI-81, Rev. 6, *Real-Time Radiography Operations (for WIPP Certification of Boxes)*; and INST-OI-12, Rev. 44, *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.

Qualification cards were examined for six RTR operators, along with associated capability demonstration (test drum scans) audio/video media. The audit team determined that the training qualifications adequately addressed upper-tier requirements.

The audit team examined the following RTR BDRs from operations performed in Building WMF-634 to verify implementation and compliance with the requirements of INST-OI-81 and INST-OI-12.

RTR09-00163
RTR09-00052
RTR10-00002
RTR10-00025
RTR10-00048
RTR10-00083

The audit team reviewed associated audio/video recordings for multiple containers and noted that the audio quality on the RTR audio/video media were often almost inaudible (see section 7.2, Observation 1).

On Tuesday, August 24, 2010, the audit team observed RTR operations for container 10368079 using RTR Unit Z-213-101 in Building WMF-634. The container was rejected for an impenetrable object and an NCR was written. The audit team verified RTR operations were performed to current procedures, interviewed the RTR operator performing the scan, and examined the RTR Logbook for Z-213-101. An additional RTR Unit, Z-213-106, located in the same building, was also observed.

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

5.4.5 Table B6-6, Visual Examination

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

The audit team reviewed procedures MP-TRUW-8.8, Rev. 29, *Level I Data Validation*; INST-FOI-17, Rev. 19, *Facility Visual Examination Operations*; INST-OI-34, Rev. 22, *Non-Facility Visual Examination Operations*; INST-FOI-20, Rev. 30, *Supercompactor and Post-Compaction Operations*; and MP-RTQP-14.20, Rev. 8, *Training 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 in the glovebox prior to compaction in the Supercompactor.

The audit team examined the following VE BDRs from operations performed in the Building WMF-676 Boxline and Special Case Glovebox to verify implementation and compliance with the requirements for documenting VE activities as stipulated in INST-FOI-17.

VEB10-00440	VEB10-00616
VEB10-00150	VEB10-00138
VEB10-00790	VEB09-01313
VEB10-00811	VEC06-00013

On Tuesday, August 24, 2010, the audit team observed VE operations in the WMF-676 Boxline area for container 10043202, which then went to the Supercompactor. The audit team interviewed VE operators and VE Experts (VEEs), and examined the logbooks. VE operations were not being performed in the Special Case Glovebox at the time of the audit.

The audit team examined training records for five VE Operators and confirmed the appointment of four VEEs. The audit team determined that the training qualifications adequately addressed upper-tier requirements.

Overall, VE 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.

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 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 a 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.

Two conditions adverse to quality were identified and corrected during Audit A-10-24, as described below.

CDA-1

While performing project-level data V&V, the audit team noted that an error was not properly corrected on Form-1599, AMWTP Solid Sampling Checklist, for criteria 13a and 13b in BDR SSC10-00002. Seventeen BDRs were reviewed; BDR SSC10-00002 was the only one with an improper error correction. The condition was corrected and the audit team verified the correction had been completed prior to the end of the audit.

CDA-2

While performing project-level data V&V, the audit team noted that a response to question 53 on Form 1609, SPM Analysis of Homogenous Solids and Soils/Gravel Checklist, had no indication of Yes, No, or N/A in BDR ALD100155. Seventeen BDRs were reviewed; BDR ALD100155 was the only one that lacked a response to a question on Form 1609. The condition was corrected and the audit team verified corrections had been completed prior to the end of the 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.

Recommendations – Suggestions that are 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

After reviewing multiple RTR certification scans, the audit team noted that the audio on the RTR DVDs was often almost inaudible. In some cases, background noise can be heard, obscuring the identification of the container contents. If the audio portion of the DVD is inaudible, the contents of the waste container will not be identified as required in section 4.7 of INST-IO-12, Rev. 44, "The contents of the waste container will be described in sufficient detail on the audio/video record to provide an adequate inventory of the waste container contents in the audio/video record narrative," and section 4.7 of INST-IO-81, Rev. 6, "The contents of the waste container will be described in sufficient detail on the audio/video record to provide an adequate inventory of the waste container

contents in the audio/video record narrative.” This poor audio quality could 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

It is recommended that the following changes be made in the next revision of AK Summary Document RPT-TRUW-77 for waste streams BN222 and RPT-TRUW-30 (or RPT-TRUW-83 as appropriate) for the supercompacted waste stream.

RPT-TRUW-77

- Section 1.6, page 10, revise the definition for prohibited liquids to be consistent with the language in the WAP.

RPT-TRUW-30

- Section 1.5, page 12, revise the definition for prohibited liquids to be consistent with the WAP language.
- Section 1.6.1, page 13, remove the repetitious language in paragraphs 1 and 2 regarding the source of the “bulk of the feed stock debris.” Change DO28 to D028 in paragraph 2. Remove or revise language about “heavily painted drums” in paragraph 1.
- Section 1.7, page 19, remove the last sentence of paragraph 1 regarding concentrations of Pu in excess of 20% by weight since it is no longer a criterion. Remove duplicative language in paragraphs 2 and 3 such as “the two most prevalent radionuclides expected....”

8.0 LIST OF ATTACHMENTS

- Attachment 1: Personnel Contacted During the Audit
- Attachment 2: Personnel Contacted During the Audit by Area
- Attachment 3: CBFO CDA Packages
- Attachment 4: Objective Evidence
- Attachment 5: Table of Audited Procedures
- Attachment 6: List of Processes and Equipment Reviewed
- Attachment 7: Procedure Revision Matrix

PERSONNEL CONTACTED DURING THE AUDIT

PERSONNEL CONTACTED DURING AUDIT A-10-24				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Carolyn Abbot	AMWTP/NWI AK SME		X	X
Scott Biorn	BBWI Production Manager		X	
Kathy Birch	BBWI RTR SME		X	
Todd Bischoff	BBWI Maintenance Supervisor		X	X
Sarah Bodily	BBWI Procurement Fleet Clerk		X	
Bob Bouchet	TRU Programs NDA System Engineer		X	
Keri Brashier	BBWI Procurement Specialist		X	
Gail Brown	BBWI Documents/Records Manager		X	X
Mike Brugger	BBWI VEE SME		X	X
Arron Buckskin	TRU Programs Shift Supervisor		X	
George Byram	BBWI SPM Lead		X	X
Steve Carpenter	BBWI AK Manager		X	X
Dale Cook	BBWI Database Administrator		X	
Elvin Dumas	BBWI QA Programs Manager	X	X	X
Jeff Duncan	TRU Programs NDA Operator		X	
Rob Eder	TRU Programs NDA ETR		X	
Tom Fallon	BBWI QA Manager	X		X
Denny Gasper	BBWI ITR Lead		X	X
Ronald Grise	BBWI Operations Technician		X	
Jeremy Hampton	BBWI Production Manager		X	
Rod Harrison	BBWI Procurement Manager	X	X	X

PERSONNEL CONTACTED DURING AUDIT A-10-24				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Ralph Hartline	BBWI Training Manager		X	
Jared Hawley	BBWI ICS Supervisor		X	
Sabin Hawley	BBWI M&TE Supervisor		X	
Jason Hayne	BBWI RTR SME		X	X
Steve Holmes	NMED Observer		X	X
Jeff Jensen	BBWI Engineer			X
Pete Johansen	Idaho DEQ Observer	X		X
Micky Johnson	BBWI AKE		X	
Mitch Johnson	BBWI HSG Operator		X	
Nancy Kirk	BBWI AKE		X	
Frank Kuck	BBWI Operations Technician		X	
Bruce LaRue	Idaho DEQ Observer			X
Denise Lee	BBWI RTR ITR		X	X
Kathy Leonard	CBFO NTP Observer	X		X
Austin Loftis	TRU Programs NDA Operator		X	
Robert Lyon	BBWI Software Administrator		X	
Ricardo Maestas	NMED Observer		X	
Dave Marquardt	BBWI Coring SPM		X	
Stormy McCurdy	BBWI WCO		X	
Dennis Miehl	CBFO QA Representative	X		
Robert Minton	BBWI Operations Technician		X	
William J. Muirhead	BBWI AMWTP Manager	X	X	X
Martin Navarrete	CBFO QA Representative	X		
Rebecca Newman	BBWI M&TE Custodian		X	
John Nicklas	BBWI HSGS Chemist		X	X
Dave Preston	BBWI VEE Lead SME		X	

PERSONNEL CONTACTED DURING AUDIT A-10-24				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Dot Reed	BBWI Training Records Coordinator		X	
Cesar Rojas	BBWI HSGS Chemist		X	X
Scott Raish	BBWI Deputy Project Manager			X
Eric Schweinsberg	BBWI SPM	X		X
James Seamans	TRU Programs NDA SME		X	
Jim Simmons	BBWI Acquisition Service Manager	X	X	X
Whitney St. Michel	BBWI TRAMPAC SME		X	
Matthew Storms	BBWI Certification Manager		X	X
Steve Tallmon	BBWI RTR SME		X	X
Gina Tedford	BBWI SPM Audit Lead	X	X	X
Alice Terramorse	BBWI Administrative Assistant			X
Travis Thompson	BBWI Production Planning SME		X	
Tana Tibbitts	BBWI WCO		X	
Ron Todd	BBWI System Engineer		X	
Kiki Torres	BBWI Waste Program Manager	X		X
Steve Turner	TRU Programs NDA System Engineer		X	
Adaire Vaughn	BBWI Operations Technician		X	
Trina Verges	BBWI Human Resources Specialists		X	
Connie Walker	NMED Observer		X	
L. J. Walker	BBWI VEE		X	
Sherri Walker	BBWI Documents/Records Manager		X	X
Jerry Wells	DOE-ID Project Manager	X		X

PERSONNEL CONTACTED DURING AUDIT A-10-24				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Steven Yount	BBWI VEE		X	
Steve Zappe	NMED Observer		X	X

PERSONNEL CONTACTED DURING THE AUDIT BY SUBJECT AREA

Personnel Qualification and Training	Ralph Hartline Dot Reed
Control of Nonconforming Items	Elvin Dumas
Records	Gail Brown Sherrie Walker
Sample Control	John Nicklas Cesar Rojas Mitch Johnson
Waste Certification/Project Level Data V&V	George Byram Dave Marquardt Gina Tedford
Solids Sampling and Analysis	Dave Preston Steven Yount Dave Marquardt
Acceptable Knowledge	Steve Carpenter Carolyn Abbott Micky Johnson Nancy Kirk Whitney St. Michel
Headspace Gas & Gas VOCs Sampling and Analysis	John Nicklas Cesar Rojas Mitch Johnson
Real-Time Radiography	Steve Tallman Denise Lee Jason Hayne Kathy Birch Frank Kuck Adaire Vaughn
Visual Examination	Dave Preston Denny Gasper Mike Brugger LJ Walker Ronald Grise Jeremy Hampton Robert Minton
WIPP Waste Information System (WWIS Data Entry)	Matthew Storms Stormy McCurdy Tana Tibbitts

CBFO CDA
PACKAGES
ARE LOCATED
IN BOXES

**OBJECTIVE EVIDENCE
IS LOCATED
IN BOXES**

Table of Audited Procedures

NUMBER	PROCEDURE NUMBER	REVISION	TITLE
1.	CI-IDA-NDA-0035	3	Calibration Verification & Confirmation Procedure for the Integrated Waste Assay (IWAS) at AMWTP, Canberra Industries
2.	CI-IDA-NDA-0055	1	Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems, Canberra Industries
3.	INST-CD&M-11.1.2	10	Facility Modification Proposal Preparation
4.	INST-CD&M-11.2.1	7	Software Version Control
5.	INST-CD&M-11.2.2	8	Software Inventory Classification
6.	INST-CD&M-11.2.3	5	System Data Change Requests
7.	INST-CMNT-10.14.1	7	Testing In-Plant and Process Instrumentation
8.	INST-CMNT-10.5.1	10	Calibration and Control of Measuring and Test Equipment
9.	INST-FOI-01	19	In-Plant Drum Assay Operations
10.	INST-FOI-17	19	Facility Visual Examination Operations
11.	INST-FOI-20	30	Supercompactor and Post-Compaction Operations
12.	INST-OI-09	40	Retrieval Enclosure Waste Container Extraction
13.	INST-OI-11	39	Waste Container Handling
14.	INST-OI-12	44	Real-Time Radiography Operations (Drum)
15.	INST-OI-14	25	Drum Assay Operations
16.	INST-OI-16	34	Drum Coring Operations
17.	INST-OI-34	22	Non-Facility Visual Examination Operations
18.	INST-OI-43	18	HGAS Sampling and Analysis Operations
19.	INST-OI-45	12	Drum Vent Filter Installation
20.	INST-OI-50	11	WMF-615 Filter Insertion Operations
21.	INST-OI-73	7	Manual Drum Coring
22.	INST-OI-75	4	Container-in-container Sampling
23.	INST-OI-81	6	Real-Time Radiography Operations (WIPP Certification of Boxes)
24.	INST-TRUW-8.1.1	11	Drum Assay Post Maintenance Calibration & Verification
25.	MP-CD&M-11.1	8	Change Control (Facility)
26.	MP-CD&M-11.2	15	Software Quality Assurance
27.	MP-CMNT-10.14	5	In-Plant and Process Instrumentation Testing Program
28.	MP-CMNT-10.5	8	Measuring and Test Equipment Program
29.	MP-DOCS-18.1	11	Developing Written Work Instructions
30.	MP-DOCS-18.2	13	Records Management
31.	MP-DOCS-18.3	7	Developing Management Procedures
32.	MP-DOCS-18.4	30	Document Control
33.	MP-M&IA-17.1	10	Management Assessment
34.	MP-M&IA-17.2	8	Independent Assessments
35.	MP-M&IA-17.3	7	Surveillance
36.	MP-PCMT-15.1	10	Acquisition of Materials and Services
37.	MP-PCMT-15.21	6	Materials Management
38.	MP-Q&SI-5.1	8	Investigation & Root Cause Analysis
39.	MP-Q&SI-5.3	10	Corrective Action
40.	MP-Q&SI-5.4	19	Identification of Nonconforming Conditions
41.	MP-Q&SI-5.6	3	Graded Approach
42.	MP-Q&SI-5.8	7	Qualifying Supply Chain Inspectors, Auditors, Lead Auditors and Technical Specialists
43.	MP-RTQP-14.16	5	Training Program Evaluation
44.	MP-RTQP-14.19	5	Training Records Administration

NUMBER	PROCEDURE NUMBER	REVISION	TITLE
45.	MP-RTQP-14.20	8	Training Implementation Matrix (TIM)
46.	MP-RTQP-14.4	16	Personnel Qualification and Certification
47.	MP-RTQP-14.6	6	Job Analysis
48.	MP-TRUW-8.1	19	Certification Plan for INL Transuranic Waste
49.	MP-TRUW-8.2	13	Quality Assurance Project Plan (QAPjP)
50.	MP-TRUW-8.5	25	TRU Waste Certification (Includes OSM)
51.	MP-TRUW 8.8	29	Level I Data Validation
52.	MP-TRUW 8.9	22	Level II Data Validation
53.	MP-TRUW 8.11	17	Data Reconciliation
54.	MP-TRUW 8.12	22	Waste Receipt and Shipping Inspection
55.	MP-TRUW 8.13	21	Collection, Review, and Management of Acceptable Knowledge Documentation
56.	MP-TRUW 8.14	11	Preparation of Waste Stream Profile Forms
57.	MP-TRUW 8.17	7	Co-located Core Sampling Control Charts
58.	MP-TRUW 8.25	17	Random Selection of Containers for HSG and Solids Sampling and Analysis
59.	MP-TRUW 8.26	5	Reports to Management
60.	MP-TRUW 8.34	6	WIPP Sample Shipments

PROCESSES & EQUIPMENT EVALUATED DURING THE AUDIT

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 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

PROCESSES & EQUIPMENT EVALUATED DURING THE AUDIT

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
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
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
9VE9	Visual Examination Procedure – INST-OI-34 Description – Box Line Visual Examination (VEB) – Box to drum repackaging	Solids (S3000) Debris (S5000)	YES	YES

PROCESSES & EQUIPMENT EVALUATED DURING THE AUDIT

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
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. 7	Rev. 8	Rev. 8 , Step 3.6.4 - DCR-8595. Clarified the step regarding resolution of comments with the Team Lead.
2	MP-Q&SI-5.3	Corrective Action	Rev. 10	Rev. 10	No revision since Audit A-09-19.
3	MP-Q&SI-5.4	Identification of Nonconforming Conditions	Rev. 17	Rev. 19	Rev. 18 - DCR-9191. Added new Section 3.12 to address process for Waste Programs evaluation and verification of container disposition as required in CAR 48277. Divided Section 3.10 into two sections (3.10 and 3.11) and added material to those sections. Updated characterization NCR process flow and incorporated flow chart as Exhibit 1 of procedure. Rev. 19 - DCR-9329. Revised Step 3.4.2 to address WIPP permit modification.
4	MP-Q&SI-5.6	Graded Approach	Rev. 3	Rev. 3	No revision since Audit A-09-19.
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-09-19.
TRU Management					
6	MP-TRUW-8.1	Certification Plan for INL Transuranic Waste	Rev. 17	Rev. 19	Rev. 18 - DCR-8904. Incorporate DOE/WIPP-02-3122, Revision 6.4, The majority of the changes to this document are contained in Tables 3.3.2 and 3.3.4. These changes capture the FGE and PE-Ci requirements contained in the Waste Isolation Pilot Plant Documented Safety Analysis. Other changes include updates to the acronym list, an addition to the glossary, modification of the references, and minor editorial changes. Rev. 19 - DCR-8904. Incorporate DOE/WIPP-02-3122, Revision 6.4, The majority of the changes to this document are contained in Tables 3.3.2 and 3.3.4. These changes capture the FGE and PE-Ci requirements contained in the Waste Isolation Pilot Plant Documented Safety Analysis. Other changes include updates to the acronym list, an addition to the glossary, modification of the references, and minor editorial changes.
7	INST-TRUW-8.1.1	Drum Assay Post-Maintenance Calibration and Verification	Rev. 10	Rev. 11	Rev. 11 - DCR-8894. Incorporated FC-1 (DCR-8552). Incorporated DOCS-BLUESHEET-01. Moved Revision Log from front of procedure to Appendix B per standard formatting requirements. Made editorial changes per MP-DOCS-18.1, Developing written instructions. Editorial changes include ensuring that there is only one action per step and ensuring that steps are written consistently with the rest of the steps.

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
8	MP-TRUW-8.2	Quality Assurance Project Plan	Rev. 11	Rev. 13	Rev. 12 - DCR-8769. Annual review: updated the overview, description of the site, project description, and AMWTP organizations and responsibilities, WDS implementation; added characterization and AK of off-site waste, and update analytical lab name and location. Editorial changes consistent with MP-DOCS-18.3. Rev. 13 - DCR-9164. Incorporate Class 2 PMR change for liquid, VE, and NCRs.
9	MP-TRUW-8.5	TRU Waste Certification	Rev. 24	Rev. 25	Rev. 25 - DCR-7689. Entire document revised. Implemented changes to accommodate the new Waste Data System. Revised roles and responsibilities. Introduced more sections to provide clarification to users. Added section on Direct Load Standard Waste Box roll-up functionality. Addressed recommended changes in MAR 36576. Made additional changes in response to CBFO comments. Periodic review.
10	MP-TRUW-8.8	Level I Data Validation	Rev. 28	Rev. 29	Rev. 29 - DCR-9010. Changes made to clarify DGL independent technical review; clarify that RTR cannot confirm the waste stream, revise definition of "waste stream"; move Section 3.1, Description of Batch Data Reports as Appendix C; incorporate WIPP Permit modification changes; and incorporate SCR 4077 changes.
11	MP-TRUW-8.9	Level II Data Validation	Rev. 20	Rev. 22	Rev. 21 - DCR-9224. Pg 2 & 7 - Incorporated the WIPP permit modification for liquids, VE, and NCRs. Rev. 22 - DCR-9409. Pg 9 Note - Change "5 calendar days" to "7"calendar days" to be consistent throughout.
12	MP-TRUW-8.11	Data Reconciliation	Rev. 17	Rev. 17	No revision since Audit A-09-19.
13	MP-TRUW-8.12	Waste Receipt and Shipping Inspection	Rev. 20	Rev. 22	Rev. 21 - DCR-8642. Incorporate changes to resolve CAR 44465, including revising step 3.1.11 for the Transportation Mgr. to be notified, add steps after 3.3.5 to ensure review of PCBs is performed, including ensuring a waste container data report is provided. Rev. 22 - DCR-8937. Incorporated DOCS-BLUESHEET-06. Replaced "payload number" with "TRUPACT/HalfPACT numbers" in Step 3.2.1 and "package number" with "payload number" in Step 3.3.1. Deleted Step 3.3.17.1. Deleted "If the gross weight is above 77,500, the shipment is weighed" from the note before Step 3.3.23. Made minor editorial corrections per MP-DOCS-18.3.

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
14	MP-TRUW-8.13	Collection, Review, and Management of Acceptable Knowledge Documentation	Rev. 20	Rev. 21	Rev. 21 - DCR-9075. Clarified when an AK baseline is required for off-site waste that is received and AK is used for characterization of the waste. Also editorial changes.
15	MP-TRUW-8.14	Preparation of Waste Stream Profile Forms	Rev. 10	Rev. 11	Rev. 11 – Step 3.1.6.1 - DCR-9226. Inserted step to address new requirement from Section B3-12b(2) of WIPP Hazardous Waste Permit as a result of the permit modification.
16	MP-TRUW-8.17	Co-Located Core Sampling Control Charts	Rev. 7	Rev. 7	No revision since Audit A-09-19.
17	MP-TRUW-8.25	Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis	Rev. 17	Rev. 17	No revision since Audit A-09-19.
18	MP-TRUW-8.26	Reports to Management	Rev. 5	Rev. 5	No revision since Audit A-09-19.
19	MP-TRUW-8.34	WIPP Sample Transfers	Rev. 4	Rev. 6	Rev. 5 – DCR-8804. Revised to reflect onsite sample transfer and discontinued use of Form-1437. Rev. 6 - DCR-8905. Minor change to fix title of document in headers.
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-09-19.
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-09-19.
Conduct of Maintenance					
22	MP-CMNT-10.5	Measuring and Test Equipment Program	Rev. 8	Rev. 8	No revision since Audit A-09-19.
23	INST-CMNT-10.5.1	Calibration and Control of Measuring and Test Equipment	Rev. 10	Rev. 10	No revision since Audit A-09-19.
24	MP-CMNT-10.14	In-Plant and Process Instrumentation Testing Program	Rev. 5	Rev. 5	No revision since Audit A-09-19.
25	INST-CMNT-10.14.1	Testing In-Plant and Process Instrumentation	Rev. 6	Rev. 7	Rev. 7 - DCR-9288. Incorporate DOCS-BLUESHEET-01, and moved the revision log to last appendix per company template. Advanced periodic review date.

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
Control of Design and Modification					
26	MP-CD&M-11.1	Change Control	Rev. 8	Rev. 8	No revision since Audit A-09-19.
27	INST-CD&M-11.1.2	Facility Modification Proposal Preparation	Rev. 9	Rev. 10	Rev. 10 - DCR-8973. Complete rewrite to revise existing FMPs and so that forms implemented by this document are consistent. Incorporated changes to ensure independent design input reviews are performed as required by CAR 51614. Provided guidance and a more direct interface to ensure Scope and Technical Requirements are recognized during review and validation of procedure revisions as required by CAR-48277.
28	MP-CD&M-11.2	Software Quality Assurance	Rev. 15	Rev. 15	No revision since Audit A-09-19.
29	INST-CD&M-11.2.1	Software Version Control	Rev. 7	Rev. 7	No revision since Audit A-09-19.
30	INST-CD&M-11.2.2	Software Inventory Classification	Rev. 8	Rev. 8	No revision since Audit A-09-19.
31	INST-CD&M-11.2.3	System Data Change Request	Rev. 5	Rev. 5	No revision since Audit A-09-19.
Training and Qualification					
32	MP-RTQP-14.4	Personnel Qualification and Certification	Rev. 15	Rev. 16	Rev. 16 - DCR-9073. Add additional direction and clarification for continuing training and technical staff position analysis to address issues from CAR 47696 and CAR 47697.
33	MP-RTQP-14.6	Job Analysis	Rev. 6	Rev. 6	No revision since Audit A-09-19.
34	MP-RTQP-14.16	Training Program Evaluation	Rev. 5	Rev. 5	No revision since Audit A-09-19.
35	MP-RTQP-14.19	Training Records Administration	Rev. 5	Rev. 5	No revision since Audit A-09-19.
36	MP-RTQP-14.20	Training Implementation Matrix	Rev. 8	Rev. 8	No revision since Audit A-09-19.
Procurement					
37	MP-PCMT-15.1	Acquisition of Material and Services	Rev. 9	Rev. 10	Rev. 10 - DCR-8836. Updated document, incorporated NQA-1-2008, Safety Significant Commercial Grade Item/Services Dedication Process, and edited per MP-DOCS-18.3, Developing Management Procedures (including ensuring that all steps were written the same and revising capitalization).

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
38	MP-PCMT-15.21	Material Management	Rev. 5	Rev. 6	Rev. 6 - DCR-9149. Various changes for clarity and to hand off to MP-Q&SI-5.11. Add responsibilities for material management specialist to Section 2.0. Delete Exhibits 1 and 2.
Management and Independent Assessments					
39	MP-M&IA-17.1	Management Assessment	Rev. 9	Rev. 10	Rev. 10 - DCR-8609. Revised to identify specific MAR training requirement as required in CAR 45413, Surveillance Report # 44151 and AI 46072. Clarified manager role in documenting MAR review and assigning action items. General editorial changes and improvements.
40	MP-M&IA-17.2	Independent Assessment	Rev. 7	Rev. 8	Rev. 8 - DCR-8468. Entire document revised. AI-46815 updated references and clarified instructions for the number of independent assessments that the AMWTP QA Manager will schedule annually (calendar year). Deleted Exhibit 7.3. Incorporated ANSI/ASME NQA-1-2008. Made editorial changes per MP-DOCS-18.3.
41	MP-M&IA-17.3	Quality Assurance Surveillance	Rev. 6	Rev. 7	Rev. 7 - Sections 3.3, 3.4, 3.5, 4.0, 6.0, Exhibits 1 and 2 - DCR 8816. Incorporated use of electronic surveillance checklist using TrackWise. Additional guidance added for surveillance planning, performance, and reporting. Made minor changes to the formatting of some steps to clarify actions. (Associated DCR-8818, Cancellation of Form-1247, Surveillance Report.)
Documents and Records					
42	MP-DOCS-18.1	Developing Written Work Instructions	Rev. 10	Rev. 11	Rev. 11 - Cover Page/Appendix A 3.3.5.1 - DCR-8665. Revised to remove periodic review date from cover page and example cover page. Clarified that Roles & Responsibilities are to be specific to procedure.
43	MP-DOCS-18.2	Records Management	Rev. 13	Rev. 13	No revision since Audit A-09-19.
44	MP-DOCS-18.3	Developing Management Procedures	Rev. 6	Rev. 7	Rev. 7 - Cover, 3.2.5.1, 3.2.10 Appendix A - DCR-8664. Revised to remove periodic review date from cover and clarify rolls/responsibilities, exhibits, and remove period review date from cover page example in Appendix A.

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No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
45	MP-DOCS-18.4	Document Control	Rev. 27	Rev. 30	<p>Rev. 28 – DCR-8645. Revised to clarify roles & responsibilities and submittals to DOE, revised process for documenting periodic reviews, removed steps for DCR longevity tracking, and clarified minimum reviewers for PAIT and CCP documents.</p> <p>Rev. 29 – DCR-8940. Revised to use TrackWise AIs instead of training tracking numbers, define line management, clarify use of partial or complete validations, obtain concurrence from validators, and add the Operations Excellence group to Appendix A.</p> <p>Rev. 30 – Pg 8 & 17 - DCR-9197. Revised to add interface between document revisions and potential FMPs being processed in answer to AI 52557 for CAR 48277.</p>
Retrieval and Characterization					
46	INST-OI-09	Retrieval Enclosure Waste Container Extraction	Rev. 36	Rev. 40 FC-1	<p>Rev. 37 – DCR-8575. Action Item 46473. Implemented PCB marking requirements. Removed items/step pertaining to the TSA-RE conveyor. Made editorial changes/updates per MP-DOCS-18. 1.</p> <p>Rev. 37 FC-1 – Pg 15, Sec. 4.0 - DCR-8876. Added new Steps for RTs to perform LAWs and visual inspection.</p> <p>Rev. 38 – DCR-8970. Incorporated FC-I (DCR-8876). CAR 48600. Clarified instructions for using a barcode scanner and what to do if a barcode scanner is unavailable. Added steps for using an extra barcode when creating a drum in a contamination area. Also, deleted some P&Ls that are no longer needed.</p> <p>Rev. 39 – Pg 37, Sec. 4.6 - DCR-9256. Added section for container stabilization panel placement and securing.</p> <p>Rev. 39 FC-1 – Pg 14, Sec. 4.0 - DCR-9285. Clarification for RTs to perform (the initial) LAWs and visual inspection.</p> <p>Rev. 40 – DCR-9367. Incorporate changes regarding containers with small breaches. Incorporate FC-I to make permanent.</p> <p>Rev. 40 FC-1 – Pg 37 – DCR-9395. Note to allow steps 4.6.1.4 and 4.6.2.4 to be worked out of sequence.</p>

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
47	INST-OI-11	Waste Container Handling	Rev. 36	Rev. 39	<p>Rev. 37 – DCR-8656. Changes due to WTS update, for clarification regarding containers with defects, corrected stacking requirements, edited per MP-DOCS-18.1 and template.</p> <p>Rev. 37 FC – Pgs 17, 18 - DCR-9098. Change to require inspection of trailers for ice prior to waste movement. Require boxes and drums to be secured to the trailer with tie-downs and/or cargo nets. Create new IDC for “true” unknown wastes.</p> <p>Rev. 38 - DCR- 9056. Incorporated DCR-9098 with modifications. Changes to allow inspection of straps and cargo nets, clarify exemptions in storage areas, provide instructions for sliding or shifting containers, instructions to additional securement methods and for stacking inverted cakeboxes.</p> <p>Rev. 39 - DCR-9127. Changes to clarify wording of four straps vs. four legs, to allow process flow where move sheets are not needed, to give direction to OTs and clarifications to match EDF-0737.</p>
48	INST-OI-12	Real-Time Radiography Operations (Drum)	Rev. 40 FC-1	Rev. 44	<p>Rev. 41 – DCR-8555. Incorporate permanent field change (DCR-8177), and added DOCS-BLUESHEET-02 changes.</p> <p>Rev. 42 – DCR-8725. Incorporated 2009 DSA/TSR update. Added Appendix B.</p> <p>Rev. 43 – DCR-9006. Changes to ensure IQI has been completed and is compliant, to ensure 55-gal drums overpacked into larger containers have an RTR scan, and editing per MP-DOCS-18.1 and editorial consistency.</p> <p>Rev. 43 FC-1 – B1 - DCR-9193. Change kV ratings of RTR-101</p> <p>Rev. 43 FC-2 – B1 - DCR-9205. Change kV ratings for RTR-106</p> <p>Rev. 43 FC-3 – Pg 4 - DCR-9209. Added Step 3.1.22 to resolve CAR 49662, incorporating alternative isolation device information to procedure.</p> <p>Rev. 43 FC-4 – Pgs 13, 14 & B1 - DCR-9375. Changed warm-up steps and RTR kV values RTR-106.</p> <p>Rev. 44 - DCR-9136. Incorporated DCRs-9193, -9205, -9209 and -9375 EXCEPT did not incorporate changes to the RTR kV values; also incorporated WIPP Permit modifications.</p>
49	INST-OI-14	Drum Assay Operations	Rev. 24	Rev. 25	<p>Rev. 24 FC-1 – Pgs 4, 38, 42 - DCR-8530. To include new hardware changes per FMP-0907.</p> <p>Rev. 25 - DCR-8600. Incorporated 2009 DSA/TSR update. Incorporated FC-1, DCR-8530.</p>

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
50	INST-OI-16	Drum Coring Operations	Rev. 30 FC-1	Rev. 34	<p>Rev. 31 – DCR-8556. Incorporate field change; and added DOCS-BLUESHEET-02 changes.</p> <p>Rev. 31 FC-1 – Pgs 16, 75, 77 - DCR-8620. Appropriate method of determining FGE of metal waste.</p> <p>Rev. 32 – DCR-8716. Incorporated DCR- 8620. Step 3.2.4 added to incorporate comments from Hazard Assessment HA-N-044 and editing per MP-DOCS-18.1.</p> <p>Rev. 32 FC-1 – Pg 7 - DCR-9211. Change made to resolve CAR 49662, incorporating alternate isolation device information.</p> <p>Rev. 33 – DCR-9227. Made changes to Sections 4.3, 4.4, 4.8, 4.10, and 4.18.</p> <p>Rev. 34 - DCR-9313. Made changes determined by WIPP permit.</p>
51	INST-OI-34	Non-Facility Visual Examination Operations	Rev. 21	Rev. 22	<p>Rev. 22 - DCR-9221. Made changes for establishing consistency and implementing current WIPP Permit modifications.</p>
52	INST-OI-43	HGAS Sampling and Analysis Operations	Rev. 17	Rev. 18 FC-1	<p>Rev. 18 – DCR-8961. Document rewrite. Applied DOCS-BLUESHEET-02, removed Appendices F and G, combined Data Review and Data Processing into one section, removed Forms Generation from procedure, added steps for more effective waste management practices, updated template, and edited per MP-DOCS-18.1.</p> <p>Rev. 18 FC-1 – Restored missing steps 4.4.3.2.9.5 and 4.4.3.2.9.5.1</p>
53	INST-OI-45	Drum Filter Installation	Rev. 11	Rev. 12 FC-1	<p>Rev. 11 FC-1 – Pgs 2 & 8 - DCR-8660. Restrictions for drum from cargo containers.</p> <p>Rev. 12 – Pgs 1-4, 7, 8, 10 - DCR-8570. Incorporated DCR-8660 Rev. 11 FC-1. Implemented new hazardous assessment findings. Incorporated Blue Sheet 02 changes; made editorial changes for consistency with MP-DOCS-18.1. Periodic review.</p> <p>Rev. 12 FC-1 – Pg 2 - DCR-9212. Added Step 3.1. 7 to resolve CAR 49662, incorporating alternative isolation device information to procedure.</p>
54	INST-OI-50	WMF-615 Filter Insertion Operations	Rev. 8	Rev. 11	<p>Rev. 9 – DCR-8515. Changes for new software ICS SCR# 547 FMP #0898, edited per MP-DOCS-18.1, incorporated DOCS-BLUESHEET-02.</p> <p>Rev. 10 – Pg 2 - DCR-8765. Added Step 3.1.7 to implement 2009 DSA/TSR update.</p> <p>Rev. 11 – Pgs 2, 4 & 5 - DCR-9319. To change the order of steps for proper sequencing which requires that the computer be online.</p>

PROCEDURE REVISION MATRIX

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55	INST-OI-73	Manual Drum Coring Operations	Rev. 4 FC-1	Rev. 7	<p>Rev. 5 – DCR-8557. Incorporate field change and added DOCS-BLUESHEET-02 changes.</p> <p>Rev. 5 FC-1 – Pgs 16, 73, 75, A2 - DCR-8626. Appropriate method for determining FGE on metal waste.</p> <p>Rev. 6 - DCR-8715. Added FC-1 DCR-8626. Incorporated hazard assessment HA-N-043 changes in Section 3.2, made editorial changes to bring in line with INST-OI-16, and added changes per roundtable.</p> <p>Rev. 6 FC-1 – Pg 10 - DCR-9213. Change made to resolve CAR 49662, incorporating alternate isolation device information.</p> <p>Rev. 7 - DCR-9229. Incorporated DCR-9213. Changes to incorporate WIPP Permit modification.</p>
56	INST-OI-75	Container-in-Container Sampling	Rev. 2 FC-1	Rev. 4	<p>Rev. 2 FC-2 – Pgs 16, 70, 73, B1 – DCR-8627. Update method.</p> <p>Rev. 3 – DCR-8672. Items added to Incorporate Hazardous Assessment HA-N-045. Made minor editorial changes for consistency with MPDOCS-18.1 requirements. Incorporated DOCS-Bluesheet-02 changes.</p> <p>Rev. 3 FC-1 – Pg 7 – DCR-9228. Change made to resolve CAR 49662, incorporating alternate isolation device information.</p> <p>Rev. 4 - DCR-9231. Incorporated DCR-9228, changes to incorporate operational requirements and WIPP Permit modifications.</p>
57	INST-OI-81	Real-Time Radiography Operations (for WIPP Certification of Boxes)	Rev. 3	Rev. 6	<p>Rev. 4 – DCR-8729. Incorporated 2009 DSA/TSR update.</p> <p>Rev. 5 – DCR-9007. Changes to clarify IQI requirements.</p> <p>Rev. 5 FC-1 – B1 – DCR-9208. Changed RTR ratings for RTRs 101 and 106.</p> <p>Rev. 5 FC-2 – Pg 5 – DCR-9249. Change made to resolve CAR 49662, incorporating alternative isolation device information.</p> <p>Rev. 5 FC-3 – Pgs 12, 13 & 14, B1 – DCR-9376. Change made to warm-up steps and RTR 106 kV settings.</p> <p>Rev. 6 - DCR-9138. Incorporated DCRs-9208 -9249, and -9376 (EXCEPT for the RTR kV changes), and WIPP Permit modifications.</p>

PROCEDURE REVISION MATRIX

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
Treatment Facility					
58	INST-FOI-01	In-Plant Drum Assay Operations	Rev. 18	Rev. 19	Rev. 19 - DCR-8718. Incorporated 2009 DSA/TSR updates.
59	INST-FOI-17	Facility Visual Examination Operations	Rev. 17 FC-1	Rev. 19	<p>Rev. 17 FC-2 – Pg 68 – DCR-8545. Change “repack” to “RTR/VE update”.</p> <p>Rev. 18 – DCR-8673. Incorporated FC DCRs 7996 and 8545. Added new note to Section 4.7, new Step 4.7.5 and moved Step 4.7.8 before existing Step 4.7.7. Made changes to Section 4.9.</p> <p>Rev. 19 - DCR-9220. Made changes for establishing consistency, and implementing current WIPP Permit modifications.</p>
60	INST-FOI-20	Supercompactor and Post-Compaction Operations	Rev. 27 FC-1	Rev. 30 FC-2	<p>Rev. 28 – DCR-8511. Incorporate DCR-8008. Update TSR SAC references (AI# 46147). Incorporate changes relating to CAR#39218.</p> <p>Rev. 29 – DCR-8721. Incorporated 2009 DSA/TSR update.</p> <p>Rev. 29 FC-1 – Pg 34 - DCR-9022. Delete Step 4.7.5.2</p> <p>Rev. 30 – DCR-8989. Incorporated DCR-9022. Added new torque value, changed sequence of steps, edited per MP-DOCS-18.1.</p> <p>Rev. 30 FC-1 – Pg 7 – DCR-9235. Change made to resolve CAR 49662, incorporating alternate isolation device information.</p> <p>Rev. 30 FC-2 – Pg 24 – DCR-9251. Removal of step 4.5.3.8 for surveying inner lids.</p>