

United States Government

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Department of EnergyCarlsbad Field Office
Carlsbad, New Mexico 88221

DATE: OCT 24 2013

REPLY TO
ATTN OF: CBFO:OQA:OV:CC:13-2077:UFC 2300.00

SUBJECT: Interim Audit Report for Recertification Audit A-14-01 of the Advanced Mixed Waste Treatment Project

TO: Benjamine B. Roberts, DOE-ID

The Carlsbad Field Office (CBFO) conducted Recertification Audit A-14-01 of the Advanced Mixed Waste Treatment Project (AMWTP) October 1-3, 2013. The CBFO Interim Audit Report is attached.

The audit team concluded that AMWTP implementing procedures are adequate relative to the flow-down of requirements, and that the AMWTP quality assurance and technical requirements are satisfactorily implemented and effective in all areas evaluated.

The audit team identified five concerns which were processed as follows: Two issues were corrected during the audit; one Observation, and two Recommendations were offered for AMWTP management consideration.

If you have any questions or comments, please contact me at (575) 234-7525.

Oba L. Vincent
Acting Quality Assurance Director

Attachment

131022



Benjamin B. Roberts

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OCT 24 2013

cc: w/attachment

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Site Documents	ED
WWIS Database Administrators	ED
WIPP Operating Record	ED
CBFO QA File	
CBFO M&RC	

*ED denotes electronic distribution

U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE
INTERIM AUDIT REPORT
OF THE
ADVANCED MIXED WASTE TREATMENT PROJECT
TRU WASTE CHARACTERIZATION AND CERTIFICATION ACTIVITIES
IDAHO FALLS, IDAHO
AUDIT NUMBER A-14-01
October 1 - 3, 2013



Prepared by: Cindi Castillo
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Date: 10/22/13

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1.0 EXECUTIVE SUMMARY

U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) Recertification Audit A-14-01 was conducted to evaluate the adequacy, implementation, and effectiveness of Advanced Mixed Waste Treatment Project (AMWTP) transuranic (TRU) waste characterization and certification 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 site and the AMWTP Energy Drive Facility (EDF) in Idaho Falls, Idaho, October 1 through 3, 2013. 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 characterizing contact-handled (CH) Summary Category Group (SCG) S3000 homogeneous solids and CH SCG S5000 debris waste were 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.

The audit team identified five concerns during the audit. No corrective action reports were issued as a result of the audit. Two of the five concerns were identified in the areas of Acceptable Knowledge (AK) and Software QA, both resulting in minor isolated deficiencies that were corrected during the audit (CDA) (see section 6.2).

One Observation was documented, as described in section 6.3, and two Recommendations were offered for AMWTP management consideration, as described in section 6.4.

2.0 SCOPE AND PURPOSE

2.1 Scope

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

The following general areas, as required by Attachment C6, Section C6-3 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 CBFO QA elements were audited:

- Organization/QA Program Implementation
- Personnel Qualification and Training
- Quality Improvement (Nonconformance Reporting and Corrective Action)
- Document Control
- Records
- Work Processes
- Procurement
- Inspection and Testing
- Assessments
- Software QA
- Container Management

The following CBFO waste characterization technical elements were audited 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)
- Nondestructive Assay (NDA)
- WIPP Waste Information System/Waste Data System (WWIS/WDS)
- Load Management

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 to evaluate activities associated with 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 QA and technical implementing procedures

For the purpose of reporting results of this audit, pursuant to an agreement reached with the New Mexico Environment Department (NMED) (reference CBFO memorandum CBFO:OQA:DSM:MAG:13-1431 dated May 30, 2013), the audit team used C6 checklists dated May 8, 2012, to evaluate chemical sampling and analysis activities conducted at AMWTP between the last recertification audit (A-13-01, conducted October 2012) and the Permit modification issued March 13, 2013, which eliminated those activities. The audit team used C6 checklists dated March 13, 2013, to evaluate activities not associated with chemical sampling and analysis.

2.2 Purpose

Audit A-14-01 was conducted to assess AMWTP's waste characterization activities related to the certification of CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste for compliance to the HWFP WAP and the WAC requirements. The audit team also evaluated the AMWTP QA program with regard to the requirements of the CBFO QAPD.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Martin Navarrete	Management Representative, CBFO Office of Quality Assurance
Dennis Miehl	QA Representative, CBFO
Cindi Castillo	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Tammy Bowden	Auditor, CTAC
Harley Kirschenmann	Auditor, CTAC
Greg Knox	Auditor, CTAC
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Charlie Riggs	Auditor, CTAC
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OBSERVERS

Robert (Bob) Toro	DOE Headquarters - Office of Environmental Management, Quality Assurance
Norma Castaneda	CBFO Office of the National TRU Program (NTP)
Kenneth Licklter	CBFO NTP

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Steve Holmes	NMED
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Connie Walker	NMED Contractor
Bob Blyth	DOE Idaho (DOE-ID)
Gregory Hayward	DOE-ID
Pete Johansen	Idaho Department of Environmental Quality (IDEQ)
Bruce LaRue	IDEQ

4.0 AUDIT PARTICIPANTS

The individuals at the INL and AMWTP EDF who were contacted during the audit are identified in Attachment 1. A pre-audit meeting was held at the EDF, Building 259, Room 116, in Idaho Falls, Idaho, on October 1, 2013. Daily meetings were held with AMWTP management and staff to discuss the previous day's issues and deficiencies. The audit was concluded with a post-audit meeting held at the EDF, Building 259, Room 116, in Idaho Falls, Idaho, on October 3, 2013.

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, VE, and NDA. Other areas evaluated were project-level data V&V, data quality objective (DQO) reconciliation, the preparation of waste stream profile forms (WSPFs), WWIS/WDS data entry, container management, load management, and the AMWTP QA program.

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 summary table of audit results. Attachment 3 contains a table of documents evaluated during the audit. Attachment 4 is a list of processes and equipment evaluated during the audit. Details of audit activities are described below.

5.2 General

5.2.1 Results of Previous Audits

The results of CBFO Recertification Audit A-13-01 of the AMWTP were examined. No conditions adverse to quality (CAQ) requiring the issuance of a corrective action report (CAR) were issued as a result of the referenced audit.

5.2.2 Changes in Programs or Operations

HSG S&A and SS&A activities are no longer required per modification of the HWFP dated March 13, 2013; therefore, the following AMWTP procedures have been deactivated:

- MP-TRUW-8.17, *Co-Located Core Sampling Control Charts*
- MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*
- MP-TRUW-8.34, *WIPP Sample Transfers*
- INST-OI-16, *Drum Coring Operations*
- INST-OI-43, *HGAS Sampling and Analysis Operations*
- INST-OI-73, *Manual Drum Coring Operations*
- INST-OI-75, *Container-in-Container Sampling*

NOTE: Since HSG S&A and SS&A activities had been performed since the previous recertification audit (A-13-01, conducted October 2012), the audit team utilized revisions of the above-mentioned procedures that were current at the time work was performed (prior to March 13, 2013).

Furthermore, AMWTP Procedure INST-OI-81, *Real-Time Radiography Operations (For WIPP Certification of Boxes)* has been deactivated, and its process/requirements have been merged into AMWTP Procedure INST-OI-12, Revision 52, *Real-Time Radiography Examinations (Certification Scans)*.

5.2.3 New Programs or Activities Being Implemented

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

5.2.4 Changes in Key Personnel

The following personnel changes have occurred since the previous audit:

- President and Project Manager changed from Dave Sandlin to Danny Nickols
- TRU Program Manager changed from Sue Peterman to George Byram
- Training Manager changed from Mike Parrish to Todd Goldberg

The above identified personnel changes did not negatively impact the program.

5.3 Quality Assurance Activities

Each QA element 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 CBFO QAPD is cited briefly, and the results of the assessment are provided.

5.3.1 Organization/QA Program Implementation

The audit team reviewed associated documentation to verify that the AMWTP met the requirements of the CBFO QAPD, Section 1.1, Organization and Quality Assurance Program. The audit team reviewed AMWTP procedures MP-TRUW-8.2, Rev. 17, *Quality Assurance Project Plan*; MP-TRUW-8.1, Rev. 24, *Certification Plan for INL Transuranic Waste*; and MP-Q&SI-5.6, Rev. 4, *Graded Approach*, to determine the degree to which the procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address upper-tier requirements.

The audit team interviewed QA management personnel and reviewed the organizational chart to verify independence of the QA program from TRU waste characterization activities.

The graded approach process was evaluated. Procedure MP-Q&SI-5.6, Rev 4, *Graded Approach*, establishes the methods and processes to define the graded approach for AMWTP. Structures, systems, and components are graded and classified. These classifications are documented, approved, and maintained in the AMWTP Maintenance Management System (MMS). Additionally, procedure MP-PCMT-15.1, Rev. 14, *Acquisition of Material and Services*, defines the graded approach and assigns quality levels for procurement activities based on the MMS classifications.

No organization/QA program implementation concerns were identified. The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for organization/QA program implementation 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 Personnel Qualification and Training

The audit team verified that the AMWTP met the requirements of CBFO QAPD Section 1.2, Personnel Qualification and Training. The audit team conducted interviews with responsible personnel in the AMWTP Training Department. The following implementing procedures were reviewed to determine the degree to which the procedures adequately address upper-tier requirements: MP-RTQP-14.4, Rev. 21, *Personnel Qualification and Certification*; MP-RTQP-14.6, Rev. 9, *Job Analysis*; MP-RTQP-14.16, Rev. 8, *Training Program Evaluation*; MP-RTQP-14.19, Rev. 8, *Training Records Administration*; MP-Q&SI-5.8, Rev. 8, *Qualifying Supply Chain Inspectors, Auditors, Lead Auditors, and Technical Specialists*; and LST-RTQP-03-IM, Rev. 1, *WIPP Training Requirements Implementation Matrix*. The results of the review indicate that the procedures adequately address upper-tier requirements.

Personnel training records associated with VE, RTR, HSG S&A, SS&A, NDA, AK, and site project management were examined to verify implementation of associated requirements and to verify that personnel performing characterization activities were appropriately qualified.

The records reviewed provided objective evidence of AMWTP training program implementation. The audit team evaluated AMWTP qualification/requalification packages (Qualification Cards) and related individual training files for the various AMWTP positions; job analysis documentation; AMWTP Employee Training History (from the AMWTP training database [TRAIN system]); VE Expert (VEE) appointment memoranda; AK expert (AKE) training for revised AK summaries; RTR Operator test drum (capability demonstrations); eye examination forms; and management assessment reports of the AMWTP training program.

No personnel qualification and training concerns were identified. 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.

5.3.3 Quality Improvement (Nonconformance Reporting and Corrective Action)

The audit team verified that the AMWTP met the requirements of CBFO QAPD Section 1.3, Quality Improvement. The audit team conducted interviews with representatives of the AMWTP QA program. The following implementing procedures were reviewed to determine the degree to which the procedures adequately address upper-tier requirements: MP-Q&SI-5.1, Rev. 9, *Investigation and Root Cause Analysis*; MP-Q&SI-5.3, Rev. 13, *Corrective Action*; and MP-Q&SI-5.4, Rev. 21, *Identification of Nonconforming Conditions*. The results of the review indicate that the procedures adequately address upper-tier requirements.

Randomly selected nonconformance reports (NCRs), CARs, and Root Cause Analysis Reports were evaluated to ensure that CAQs were appropriately identified, documented, dispositioned, investigated, and that root cause analysis was performed where

mandated, resolved, and tracked through closure. The selected NCRs and CARs were reviewed, including verifications, to ensure that AMWTP was appropriately documenting and reporting WAP-related nonconformances (identified at the site project management level) to CBFO, as required. The review indicated AMWTP is documenting and reporting WAP-related nonconformances as required.

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

5.3.4 Document Control

The audit team verified that the AMWTP met the requirements of CBFO QAPD Section 1.4, Documents. The audit team evaluated AMWTP procedures MP-DOCS-18.1, Rev. 14, *Developing Written Work Instructions*; MP-DOCS-18.3, Rev. 8, *Developing Management Procedures*; and MP-DOCS-18.4, Rev. 38, *Document Control*,

to determine the degree to which the procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address upper-tier requirements.

The audit team interviewed document control personnel, observed document control activities for compliance to approved procedures, and evaluated recently completed document change requests and case files associated with revised and currently used documents and procedures. Demonstrations of the electronic document control system included records submittal, verification, validation, requests, changes, and destruction were evaluated by the audit team.

No document control 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 document control are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.5 Records

The audit team verified that the AMWTP met the requirements of CBFO QAPD Section 1.5, Records. The audit team evaluated the adequacy of AMWTP procedure MP-DOCS-18.2, Rev. 17, *Records Management*, with respect to the requirements of the CBFO QAPD and determined that the procedure contains adequate flow-down of upper-tier requirements. The results of the review indicate that the procedure adequately addresses upper-tier requirements.

The audit team interviewed records management personnel and observed activities in the records center to determine if AMWTP record storage methods and records practices were in compliance with procedural and QAPD requirements. Activities evaluated by the audit team included custodian training, records receipt, verification, validation, submittal, and records maintenance.

One concern was identified in the area of records. It was recommended that AMWTP evaluate the necessary changes needed within the WTS to address requirement changes within the WIPP HWFP to ensure consistency between the electronic quality record and its printed copy. The audit team determined that this condition is negligible with the conclusions reached during the audit and recommended that AMWTP investigate the condition to determine how WTS might be revised to eliminate the reported fields respective of the reporting requirements in effect at the time. See Recommendation 1 in section 6.4.

Although one concern was identified, the procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for records are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.6 Work Processes

The audit team verified that the AMWTP met the requirements of CBFO QAPD Section 2.1, Work Processes. The audit team evaluated the adequacy of AMWTP procedures MP-CD&M-11.1, Rev. 9, *Change Control*, and INST-CD&M-11.1.2, Rev. 14, *Facility Modification Proposal Preparation*, with respect to the CBFO QAPD, and determined that the procedures and instructions contain adequate flow-down of upper-tier requirements. The results of the review indicate that the procedures adequately address upper-tier requirements.

The audit team reviewed facility modification proposals (FMPs), test and investigation forms, and conducted interviews with appropriate AMWTP personnel regarding integration of FMPs with software change requests. The provided FMP documentation indicated that the appropriate level of review and approvals are completed and the appropriate organizations participate in the completion of an FMP. The audit team verified that the processes for documenting unreviewed safety question (USQ) evaluator reviews and USQ determinations are performed in accordance with the procedural requirements. Where FMPs identified hardware changes, in conjunction with software changes, the audit team verified appropriate software changes had also been initiated to work with the changed hardware. Similarly, when a software change required an FMP, an appropriate FMP had been initiated to ensure the hardware would work with the software modification.

No work process 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 work processes are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.7 Procurement

The audit team verified that the AMWTP met the requirements of CBFO QAPD Section 2.3, Procurement. The audit team evaluated the adequacy of AMWTP procedures MP-PCMT-15.1, Rev. 14, *Acquisition of Material and Services*, and MP-PCMT-15.21, Rev. 8, *Material Management*, with respect to the CBFO QAPD, and determined that the procedures and instructions contain adequate flow-down of upper-tier requirements. The results of the review indicate that the procedures adequately address upper-tier requirements.

The audit team interviewed procurement personnel and reviewed a sample of purchase orders, purchase requisitions, receipt inspection reports, the AMWTP Approved Vendor List, stores adjustments, certificates of conformance, vendor packing slips, procurement statements of work, suspect/counterfeit item training documentation, and supplier evaluation reports. AMWTP uses an electronic system, MAXIMO, to track inventory. The audit team evaluated inventory shelf-life documentation maintained in MAXIMO.

The audit team observed the storage of inventory at the main receiving area (Lindsay 01 warehouse). All items observed were appropriately tagged and stored. Items not

completed through the receipt inspection process and items with NCRs and/or QA hold tags were segregated from accepted items. Items with a specific shelf-life were identified with a bright green shelf-life label. The audit team verified a sample of shelf-life dates agreed with specified shelf-life periods. The audit team verified that supply chain inspectors who performed receipt inspections had completed their required training and that warehouse personnel had completed suspect/counterfeit item awareness training.

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

5.3.8 Inspection and Testing (Control of Measurement and Test Equipment for Data Collection)

The audit team verified that the AMWTP met the requirements of CBFO QAPD Section 2.4, Inspection and Testing. The audit team evaluated the adequacy of AMWTP procedures MP-CMNT-10.5, Rev. 10, *Measuring and Test Equipment Program*; INST-CMNT-10.5.1, Rev. 12, *Calibration and Control of Measuring and Test Equipment*; MP-CMNT-10.14, Rev. 6, *In-Plant and Process Instrumentation Testing Program*; and INST-CMNT-10.14.1, Rev. 8, *Testing In-Plant and Process Instrumentation*, with respect to the CBFO QAPD, and determined that the procedures and instructions contain adequate flow-down of upper-tier requirements. The results of the review indicate that the procedures adequately address upper-tier requirements.

The audit team interviewed personnel and reviewed the applicable AMWTP procedures for the established methods and processes to calibrate and control both measurement and test equipment (M&TE) and in-plant and process instrumentation. In general, M&TE is calibrated by SIMCO Electronics (an approved calibration facility currently on the AMWTP Qualified Supplier List). In-plant and process instruments have calibration and/or functional checks performed using calibrated M&TE at prescribed intervals using approved procedures.

Records of both M&TE calibrations and in-plant and process instrumentation checks are maintained in the Computerized Maintenance Management System (CMMS). Several records for M&TE and in-plant and process instruments were reviewed using CMMS. A site tour was also conducted to observe the site tool crib and instrumentation facility.

No inspection and testing concerns were identified during the audit. The documents reviewed and evaluated during the audit provided evidence that the applicable requirements for inspection and testing are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.9 Audits/Assessments

The audit team verified that the AMWTP met the requirements of CBFO QAPD Section 3, Assessment Requirements. The audit team evaluated the adequacy of AMWTP procedures MP-M&IA-17.1, Rev. 11, *Management Assessment*; MP-M&IA-17.2, Rev. 11, *Independent Assessment*; MP-M&IA-17.3, Rev. 8, *Quality Assurance Surveillance*; and MP-TRUW-8.26, Rev. 6, *Reports to Management*, with respect to the CBFO QAPD, and determined that the procedures contain adequate flow-down of upper-tier requirements. The results of the review indicate that the procedures adequately address upper-tier requirements.

The audit team interviewed QA personnel and reviewed documentation, including semi-annual reports to management, independent and management assessment schedules, surveillance schedules, lead auditor qualification and certification documentation, and assessment plans and reports. The audit team verified that the electronic system, TrackWise, serves as a suitable resource for tracking audit issues and notifications.

One concern was identified in the area of assessments. It was observed during the review of the AMWTP Independent Assessment Schedule that the frequency of QAPD-related independent audits is in question because audits have not been scheduled or performed since June 2011 (IA-11-01). See Observation 1 in section 6.3.

Although one concern was identified, the documents reviewed and evaluated during the audit provided evidence that the applicable requirements for audits/assessments are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.10 Software Quality Assurance

The audit team verified that the AMWTP met the requirements of CBFO QAPD Section 6, Software Requirements. The audit team evaluated the adequacy of AMWTP procedures MP-TRUW-8.5, Rev. 29, *TRU Waste Certification*; MP-CD&M-11.2, Rev. 17, *Software Quality Assurance*; INST-CD&M-11.2.1, Rev. 8, *Software Version Control*; INST-CD&M-11.2.2, Rev. 13, *Software Inventory Classification*; INST-CD&M-11.2.3, Rev. 7, *System Data Change Request*; and INST-CD&M-11.2.6, Rev. 5, *Temporary Software Override*, with respect to the CBFO QAPD, and determined that the procedures contain adequate flow-down of upper-tier requirements. The results of the review indicate that the procedures adequately address upper-tier requirements.

The audit team evaluated the implementation of the of AMWTP software QA (SQA) process. The evaluation included interviews with personnel, examination of a sample of changes to the WTS, examination of the electronic software change tracking system and version control system, Polytronic Version Control System (PVCS), review of a sample of software change requests from inception to closure, and review of a sample of the baseline software installed on AMWTP systems. TestTrack Pro and PVCS Version Manager are used to control software and data changes. Both programs allow access only to those people who need access. Only personnel within assigned PVCS authorization may check-in or check-out software code versions for modification or

installation. The audit team verified the effective implementation of the AMWTP SQA process.

One concern was identified in the area of SQA. During a walk-down of procedure INST-CD&M-11.2.1, Rev. 8, *Software Version Control*, the audit team noticed that a work step related to SQA testing was performed, but was not described in the procedure. During the audit, the procedure was revised to include the missing step and the audit team verified the change was satisfactory in describing the current work process. The concern was determined to be isolated in nature and was corrected during the audit. See CDA 1 in section 6.2.

Although one concern was identified, the documents reviewed and evaluated during the audit provided evidence that the applicable requirements for SQA 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 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. Although the technical area of NDA is not required by the HWFP, it was audited and objective evidence reviewed during the audit is described in sections 5.4.1 and 5.4.7. NDA information will not be included in the final audit report.

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 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.

The audit team evaluated the QA program, including aspects of the C6-1 checklist, and the technical activities defined in the remaining C6 checklists. The following items related to QA program implementation were evaluated by the audit team:

- **Personnel Qualification and Training:** The audit team conducted interviews with responsible personnel and reviewed AMWTP implementing procedures MP-RTQP-14.4, Rev. 21, *Personnel Qualification and Certification*; MP-RTQP-14.6, Rev. 9, *Job Analysis*; MP-RTQP-14.16, Rev. 8, *Training Program Evaluation*; MP-RTQP-14.19, Rev. 8, *Training Records Administration*; MP-Q&SI-5.8, Rev. 8, *Qualifying Supply Chain Inspectors, Auditors, Lead Auditors, and Technical*

Specialists; and LST-RTQP-03-IM, Rev. 1, *WIPP Training Requirements Implementation Matrix*, relative to the training and qualification of personnel, to determine the degree to which the procedures adequately address HWFP WAP training requirements. The results of the review indicate that the procedures adequately address HWFP WAP requirements.

Personnel training records associated with VE, RTR, NDA, SS&A, HSG S&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. Record reviews included individual training plans, qualification and requalification checklists/packages, training course reports, and required reading documentation.

No WAP-related concerns regarding personnel qualification and training 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 WAP training requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

- **Records:** The audit team conducted interviews and reviewed AMWTP implementing procedure MP-DOCS-18.2, Rev. 17, *Records Management*, relative to the control and administration of QA records, to determine the degree to which the procedures adequately address HWFP WAP records requirements. The results of the review indicate that the procedure adequately addresses HWFP WAP requirements.

The audit team interviewed records management personnel and observed activities to determine if AMWTP record storage methods were in compliance with procedural and WAP 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 WAP-related concerns regarding records were identified during the audit. The procedure reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for records are adequately established for compliance with HWFP WAP records requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

- **Nonconformances:** The audit team conducted interviews with responsible personnel and reviewed AMWTP implementing procedure MP-Q&SI-5.4, Rev. 21, *Identification of Nonconforming Conditions*, relative to nonconformances, to determine the degree to which the procedure adequately addresses HWFP WAP nonconformance requirements. The results of the review indicate that the procedure adequately addresses HWFP WAP requirements.

Randomly selected NCRs, CARs, and Root Cause Analysis Reports were evaluated to ensure that CAQs were appropriately identified, documented, dispositioned, investigated, and that root cause analysis was performed where mandated, 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 WAP-related concerns regarding nonconformances were identified during the audit. The procedure reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for nonconformances are adequately established for compliance with HWFP WAP nonconformance requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

- **Transportation:** The audit team conducted interviews with AMWTP waste certification officials (WCOs) and reviewed AMWTP implementing procedure MP-TRUW-8.12, Rev. 24, *Waste Receipt and Shipping Inspection*, relative to transportation requirements, to determine the degree to which the procedure adequately addresses HWFP WAP transportation requirements. The results of the review indicate that the procedure adequately addresses HWFP WAP requirements.

The audit team evaluated shipping documentation and verified that the generator/storage site accurately completed the U.S. Environmental Protection Agency Hazardous Waste Manifest as required, including the container-specific information, and the shipment documentation was included within the shipment package. Objective evidence included two manifests for outgoing shipments which were verified to be complete and compliant.

No WAP-related concerns regarding transportation were identified during the audit. The procedure 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 WAP transportation requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

- **WWIS/WDS:** The audit team conducted interviews with responsible personnel and reviewed AMWTP implementing procedure MP-TRUW-8.5, Rev. 29, *TRU Waste Certification*, relative to WWIS/WDS data entry, to determine the degree to which the procedure adequately addresses HWFP WAP WWIS/WDS requirements. The results of the review indicate that the procedure adequately addresses HWFP WAP requirements.

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

adequately trained in WWIS/WDS operations. Access control to WDS applications is established using AMWTP user identification and passwords for network/server access and 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 WDS certification module and the OSM. The audit team determined that WCOs properly enter data directly into WDS characterization and certification modules. A sample of documentation packages were reviewed to provide objective evidence of data entry into AMWTP WTS modules and extraction to the WWIS/WDS certification modules. Data entry is properly performed to complete characterization data and submit it for certification.

No WAP-related concerns regarding WWIS/WDS were identified during the audit. The procedure 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 WAP WWIS/WDS requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

- **Container Management:** The audit team conducted interviews with responsible personnel and reviewed AMWTP implementing procedures MP-TRUW-8.12, Rev. 24, *Waste Receipt and Shipping Inspection*; MP-TRUW-8.25, Rev. 18, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*; INST-OI-09, Rev. 53, *Retrieval Inspection Station Operations*; INST-OI-11, Rev. 50, *Waste Container Handling*; and MP-PRPL-22.1, Rev. 33, *Production Planning*, relative to container management activities, to determine the degree to which procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address upper-tier requirements.

Container management activities were evaluated by a walkthrough of AMWTP container storage areas and interviews with operators involved with container management. Container tracking is maintained using the WTS and TrackWise system. Containers are located by obtaining container numbers and entering the specific container number in WTS or TrackWise database systems. Daily checks are performed to verify location of acceptable drums and results are reported to AMWTP management via e-mail. The audit team verified storage locations for WIPP-certified containers were segregated from non-WIPP-certified containers. The audit team also verified that containers with open NCRs were segregated and tracked using the WTS and TrackWise systems.

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

Technical activities evaluated, including both 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), NDA (including 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 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 waste characterization requirements of the HWFP WAP through documentation and by performing characterization activities.

Objective evidence was reviewed to ensure project-level activities were adequately performed to support waste characterization. The audit team reviewed AMWTP procedures MP-TRUW-8.14, Rev. 15, *Preparation of Waste Stream Profile Forms*; MP-TRUW-8.8, Rev. 35, *Level I Data Validation*; MP-TRUW-8.9, Rev. 26, *Level II Data Validation*; and MP-TRUW-8.25, Rev. 18, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*, relative to project-level and random selection activities, to determine the degree to which the procedures adequately address HWFP WAP requirements. The results of the review indicate that the procedures adequately address HWFP WAP requirements.

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

Solids Sampling & Analysis (SS&A)

SSC12-00006 SSG12-00007

Headspace Gas Sampling & Analysis (HSG S&A)

HS112-00015 HS113-00002

Real-time Radiography (RTR)

RTR12-00137	RTR13-00002	RTR13-00023	RTR13-00053
RTR13-00187			

Visual Examination (VE)

VEB12-01000	VEB13-00001	VEB13-00444	VEB13-00475
VNC13-00084	VNC13-00093		

Nondestructive Assay (NDA)

ASY12-03729	ASY12-03977	ASY12-03986	ASY13-00284
ASY13-00506	ASY13-01915	INNDAD13001	INNDAD13002

The audit team evaluated the random selection process for HSG S&A. Random selection documentation for HSG samples and their associated BDRs were evaluated for the supercompacted SCG S5000 debris waste stream BN510.1, for Boxline Lot 3. The evaluation determined that the random selection process for HSG S&A is being performed in accordance with applicable procedures.

Procedures and objective evidence were reviewed to ensure that AMWTP can adequately perform data reconciliation and properly prepare WSPFs. A review was performed on the CH SCG S3000 homogeneous solids and CH SCG S5000 debris WSPF/Characterization Information Summary for waste streams BNINW218, building 374 sludge; BN510.1/BN510.2, supercompacted debris waste; and BN222, solidified plutonium recovery incinerator waste. The results of the review of the above referenced documents indicate that AMWTP is completing WSPFs in accordance with applicable requirements.

No WAP-related 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 WAP requirements.

Overall, the procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that procedures are adequately established for

compliance with HWFP WAP requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

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 performs its own SCG S3000 solids sampling. AMWTP also performs coring activities of SCG S3000 solids and SCG S4000 soils/gravel wastes from other generator sites, but the SCG S4000 waste is not certified to ship for disposal at WIPP. The AMWTP retains responsibility for the accuracy and completeness of SCG S3000

BDRs by performing project-level data V&V. Solids analysis is performed by INL and is audited separately.

The audit team evaluated the following AMWTP implementing procedures: MP-TRUW-8.17, Rev. 7, *Co-Located Core Sampling Control Charts*; INST-OI-16, Rev. 41, *Drum Coring Operations*; MP-TRUW-8.34, Rev. 8, *WIPP Sample Transfers*; INST-OI-73, Rev. 13, *Manual Drum Coring Operations*; INST-OI-75, Rev. 11, *Container-in-Container Sampling*; MP-TRUW-8.8, Rev. 35, *Level I Data Validation*; LST-RTQP-03-IM, Rev. 1, *WIPP Training Requirements Implementation Matrix*, relative to solids and soils/gravel sampling activities, to determine the degree to which procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address HWFP WAP requirements.

AMWTP solids sampling activities were evaluated by examining two BDRs, SSG12-000046 and SSG12-00007. The audit team toured building WMF-634 Coring Facility and examined the remaining coring tools, grab sampling tools, storage of sampling equipment and samples, and the AMWTP spare parts inventory. The audit team reviewed training records for solids sampling operators to verify that the required training and qualifications were current for the last sampling performed. Equipment blank records were audited, sample tags were checked, and custody seals were examined. Although solids sampling activities were evaluated during this audit, these activities are no longer required per modification of the HWFP dated March 13, 2013.

No WAP-related concerns regarding solids and soils/gravel sampling were identified during the audit. The procedure reviews, field observations, and document reviews provided evidence that the applicable requirements for characterizing CH SCG S3000 homogeneous solids waste and CH SCG S4000 soils/gravel waste using the solids and soils/gravel sampling process are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective at the time of the last sampling events.

5.4.3 Table C6-3, Acceptable Knowledge Checklist

The audit team evaluated the AK process for characterizing SCG S3000 homogeneous solids and SCG S5000 debris 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 WAC. Four waste streams were examined during the audit, including the S5000 mixed waste debris streams BN510.1 and BN510.2 (RPT-TRUW-83, AK Summary for Supercompacted Debris Waste), along with two S3000 mixed waste solids streams generated at the Rocky Flats Plant designated as BN222 (RPT-TRUW-77, AK Summary for Solidified Plutonium Recovery Incinerator Waste) and BNINW218 (RPT-TRUW-15, AK Summary for Building 374 Sludge).

The audit team evaluated the following AMWTP implementing procedures: MP-TRUW-8.1, Rev. 24, *Certification Plan for INL Transuranic Waste*; MP-TRUW-8.2, Rev. 17, *Quality Assurance Project Plan*; MP-TRUW-8.11, Rev. 25, *Data Reconciliation*; MP-TRUW-8.13, Rev. 25, *Collection, Review, and Management of Acceptable Knowledge*

Documentation; and MP-TRUW-8.14, Rev. 15, *Preparation of Waste Stream Profile Forms*, relative to AK activities, to determine the degree to which procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address HWFP WAP requirements.

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 memoranda for HSG and solids sampling lots, as appropriate, were reviewed along with corresponding HSG and Solids Analysis Summary Reports 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 the resolution of discrepancies identified during characterization testing. The audit team also reviewed NCRs dealing with the identification and treatment of prohibited items.

In addition to the respective AK summary reports for the above mentioned streams, WAP- and WAC-required and/or supporting information from AK upper-tier documents were also reviewed by the audit team. These upper-tier documents include RPT-TRUW-06, *AMWTP Baseline AK for Newly Generated Waste*; RPT-TRUW-56, *AK Document for INL Stored TRU Waste-Rocky Flats Plant*; RPT-TRUW-12, *AMWTP Waste Stream Designations*; RPT-TRUW-05, *Waste Matrix Code Reference Manual*; and RPT-TRUW-07, *Determination of Radioisotopic Content in TRU Waste Based on AK*. The audit team examined WAP-compliant AK accuracy reports, and the most recent internal surveillances related to the AK record. Requisite training records were reviewed for AKEs and site project managers (SPMs) and were determined to be compliant with applicable training requirements.

A total of six drums were tracked for the WAP-required traceability exercise, including three drums from the BN510.1 waste stream, one of which was part of the latest HSG S&A lot, one drum from BN510.2, and one drum each from waste streams BN222 and BNINW218 that were both part of the solids sampling and analysis lot.

In addition to reviewing the relevant HSG and SS&A BDRs and associated data, the relevant VE, RTR, and NDA characterization BDRs were also examined. The audit team also compiled traceability screenshot data from active container databases, along with container input forms, where applicable.

Two concerns were identified in the area of AK. The first concern was related to RPT-TRUW-15, Rev. 12, *Acceptable Knowledge Summary for Building 374 Sludge*, where the waste stream volume was unsupported by an appropriate AK source document. AMWTP was able to place an appropriate AK source document into the AK record and also provided the audit team with objective evidence (a document change request) depicting the change in the next revision of RPT-TRUW-15. The concern was determined to be isolated in nature and was corrected during the audit. See CDA 2 in section 6.2.

The second concern was presented as a recommendation for AMWTP AK personnel to (1) reference the waste material parameter weight estimate memorandum (C605A) in AK Summary RPT-TRUW-77; (2) review AK Summaries RPT-TRU-15, RPT-TRU-77, and RPT-TRU-79, for possible clarification of the AK Source Documents supporting hazardous waste number assignment; and (3) to also clarify language tense issues as needed. See Recommendation 2 in section 6.3.

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

5.4.4 Table C6-4, Headspace Gas Checklist

The audit team reviewed AMWTP implementing procedures MP-TRUW-8.8, Rev. 35, *Level I Data Validation*; MP-TRUW-8.25, Rev. 18, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*; INST-OI-43, Rev. 22, *HGAS Sampling and Analysis Operations*; INST-OI-45, Rev. 18, *Drum Filter Installation*; and INST-OI-50, Rev. 16, *WMF-615 Filter Insertion Operations*, relative to HSG sampling activities, to determine the degree to which procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address HWFP WAP requirements.

The audit team evaluated AMWTP operations for HSG S&A using an automated online sampling and analytical system with gas chromatography/mass spectrometry and gas chromatography/thermal conductivity detector. HSG S&A operations were evaluated by observation, examining the equipment, conducting personnel interviews, and reviewing HSG S&A BDRs HS112-00015 and HS113-00002. The results of the review indicated

that the BDRs were complete and compliant with applicable requirements. Cancellation of the latest PDP, Cycle 27A, was verified. The determination of method detection limits, laboratory logbooks, standard gas certifications, accuracy studies, and the current WIPP-approved equipment were audited and found to be compliant to requirements. M&TE was audited and found to be acceptable. Training and qualification of sampling individuals was confirmed to be acceptable to the AMWTP training program. Random sampling documentation was provided and evaluated to indicate compliance to the requirements for the random selection process. Confirmation of sample size and containers selected for waste stream BN510.1, for Boxline Lot 3, were verified to be compliant. Although HSG S&A activities were evaluated during this audit, these activities are no longer required per modification of the HWFP dated March 13, 2013. The on-line sampling and analytical equipment have been rendered out-of-service and appropriately tagged to preclude further use.

No WAP-related concerns regarding HSG S&A were identified during the audit. The procedure reviews, field observations, and document reviews provided evidence that the applicable requirements for characterizing CH SCG S3000 homogeneous solids and CH

SCG S5000 debris waste using the HSG S&A process are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective at the time of the last sampling events.

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 S3000 homogeneous solids waste and SCG S5000 debris waste using the RTR characterization process.

The audit team reviewed AMWTP procedures MP-TRUW-8.8, Rev. 35, *Level I Data Validation*; INST-OI-12, Rev. 52, *Real-Time Radiography Examinations (Certification Scans)*; and INST-OI-81, Rev. 10, *Real-Time Radiography Operations (for WIPP Certification of Boxes)*, relative to RTR activities, to determine the degree to which procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address HWFP WAP 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 for compliance with training requirements.

The audit team evaluated RTR operations in building WMF-634. RTR scan operations for vent verification of container number 10025563 was observed using RTR Unit 101. The audit team also examined RTR operational logbook entries on the electronic login system (eSOMS) for RTR Units 101 and 106 to verify entries were correct and reviewed by the facility shift supervisor, as required. RTR Unit 106 was out of service at the time of the audit. Both units are located in building WMF-634 and are appropriately equipped with the required components.

AMWTP procedure INST-OI-81, *Real-Time Radiography Operations (For WIPP Certification of Boxes)*, has been deactivated, but its process/requirements have been merged into AMWTP procedure INST-OI-12, Revision 52, *Real-Time Radiography Examinations (Certification Scans)*. There were no certifications of boxes since the previous audit (A-13-01, conducted October 2012) or during this audit.

The audit team examined the following RTR BDRs:

RTR12-00139	RTR12-00170	RTR12-00187	RTR13-00002
RTR13-00004	RTR13-00105	RTR13-00121	RTR13-00138
RTR13-00181			

No WAP-related concerns regarding RTR were identified during the audit. The procedure reviews, field observations, and document reviews provided evidence that the applicable requirements for characterizing CH SCG S3000 homogeneous solids and CH SCG 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 the AMWTP VE characterization process for SCG S5000 debris waste. The certified VE process for characterizing SCG S3000 homogeneous solids waste, implemented for the South Boxline in the waste treatment facility, building WMF-676, is no longer being used. Procedure INST-FOI-022, *Visual Examination of S3000 Waste in the Facility*, has been deactivated.

The audit team reviewed procedures MP-TRUW-8.8, Rev. 35, *Level I Data Validation*; INST-OI-34, Rev. 28, *Non-Facility Visual Examination Operations*; INST-FOI-17, Rev. 27, *Facility Visual Examination Operations*; INST-FOI-20, Rev. 39, *Supercompactor and Post-Compaction Operations*; and LST-RTQP-03-IM, Rev. 1, *WIPP Training Requirements Implementation Matrix*, relative to VE activities, to determine the degree to which procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address WAP 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.

The audit team toured the North and South Boxline in building WMF-676 and the VE-Tent in building WMF-628. Interviews with VE operators were conducted, as well as a review of VE logbook entries. VE was not being performed during the audit due to a recent shutdown associated with an unexpected event in the boxline; however, this condition did not preclude the audit team from verifying the VE characterization process.

The audit team examined the following VE BDRs:

VEB12-01150	VEB12-01157	VEB12-01172	VEB13-00390
VEB13-00424	VEB13-00476	VEB13-00493	

The audit team examined training records for VE operators, Independent Technical Reviewers, and VEEs, and confirmed the appointment of AMWTP VEEs. The audit team verified that VE operators, Independent Technical Reviewers, and VEEs were appropriately trained and qualified as required.

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

5.4.7 Nondestructive Assay

The audit team evaluated the continued adequacy, implementation, and effectiveness of the Z-390-100 and Z-390-101 NDA systems in building WMF-676, and the Z-211-102 and Z-211-103 NDA systems in building WMF-634 at the AMWTP site. The Z-390-100 and Z-390-101 systems are capable of assaying waste in 55-gallon drums, while the Z-211-102 and Z-211-103 systems are capable of assaying waste in both 55- and 83/85-gallon drums.

The audit team reviewed procedures MP-TRUW-8.8, Rev. 35, *Level I Data Validation*; INST-TRUW-8.1.1, Rev. 12, *Drum Assay Post-Maintenance Calibration & Verification*; RPT-TRUW-03, Rev. 9, *Drum Assay Technical Review Report*; CI-IDA-NDA-0035, Rev. 3, *Calibration Verification & Confirmation Procedure for the Integrated Waste Assay System (IWAS) at AMWTP*, Canberra Industries; CI-IDA-NDA-0055, Rev. 1, *Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems*, Canberra Industries; INST-OI-14, Rev. 33, *Drum Assay Operations*; and INST-FOI-01, Rev. 28, *In-Plant Drum Assay Operations*, relative to NDA activities, to determine the degree to which procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address upper-tier requirements.

The NDA systems are Canberra multi-mode hybrid systems that run NDA 2000 and incorporate Canberra's Genie 2000, Multi Group Analysis, as well as Multi-Group Analysis-Uranium, when sufficient quantities of uranium are detected. Each system consists of the following components:

- Two broad energy germanium gamma detectors mounted one over the other in the assay chamber wall, perpendicular to, and pointing toward the vertical axis of the drum.
- An array of 122 Helium-3 proportional tubes is arranged in a 4π geometry about the assay chamber. These tubes are divided into 16 detector banks currently only used in the passive neutron coincidence counting mode. These systems have the capability (both qualified and maintained) to assay in the active neutron differential die-away (DDA) mode. Active mode was not used for WIPP assay purposes in the year since the last audit.
- A Cf-252 (Californium)/Cs-137 (Cesium) Add-A-Source correction source, mounted in a retractable housing external to the assay cavity, with an intensity of approximately 10^5 neutrons per second is used, in part, for the determination of matrix correction factors.
- A 14 million electron volt (MeV) neutron generator with a capability of producing 10^8 14-MeV neutrons per second can be used, along with cavity and barrel flux monitors and four Fast Neutron Detector Packs, in the active neutron DDA mode.

Based on a review of the current revisions of AMWTP procedures and reports provided prior to the audit, a checklist was prepared and used to evaluate the following:

- System stability as evidenced by the implementation and effectiveness of daily and weekly measurement controls and calibration verifications.

- Applicability of each system's calibration and operational range to the matrix, geometry and radionuclide content of waste assayed since Audit A-13-01, conducted October 2012.
- Successful participation in the CBFO-sponsored NDA PDP Cycle 20A.
- Completed BDRs to ensure data are reported and reviewed as required.
- Data storage and retrievability.
- Personnel qualification and training.
- Continued operability and condition of the NDA systems since Audit A-13-01, conducted October 2012.

The audit team interviewed AMWTP NDA personnel and operations staff, observed equipment and practices, and examined electronic and paper copies of records, including BDRs, control charts, NCRs, and work orders. The audit team also verified that NDA operators were appropriately qualified as required for compliance with training requirements.

No system recalibrations have been required or performed since Audit A-13-01 in October 2012, and the system performance checks have been performed as required. AMWTP successfully participated in PDP Cycle 20A for combustibles and glass waste matrices for all four systems.

The following BDRs were reviewed during the audit:

ASY12-03461	ASY12-03505	ASY12-03668	ASY12-03743
ASY12-03762	ASY12-03835	ASY12-03967	ASY12-04171
ASY13-00179	ASY13-00510	ASY13-00685	ASY13-00943
ASY13-01167	ASY13-01879	ASY13-01889	ASY13-01898
ASY13-01930	ASY13-02071	ASY13-02338	

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

5.4.8 Load Management

The audit team conducted interviews with responsible personnel and reviewed AMWTP implementing procedure MP-TRUW-8.1, Rev. 24, *Certification Plan for INL Transuranic Waste*, to determine the degree to which the procedure adequately addresses upper-tier requirements. The results of the review indicate that the procedures adequately address upper-tier requirements.

AMWTP practices load management on CH TRU waste streams as appropriate following the guidance and requirements in AMWTP implementing procedure MP-TRUW-8.1, Rev. 24, *Certification Plan for INL Transuranic Waste*. The audit team examined three AK

summaries with waste streams that are load managed: RPT-TRUW-83, Rev. 6, *Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.2)*; RPT-TRUW-83, Rev. 5, *Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)*; and RPT-TRUW-15, Rev.12, *Acceptable Knowledge Summary for Building 374 Sludge (BNINW218)*. Estimates of the amount of waste greater than, and less than, 100 nanocuries per gram (nCi/g) are 50% in both cases are provided, as required, with supporting documentation available for these numbers.

For BN510.1 and BN510.2 supercompacted waste streams, pucks that assay at slightly less than 100 nCi/g of waste are loaded in 100-gallon waste containers with pucks assaying at greater than 100 nCi/g such that the assay for the 100-gallon drum is compliant at greater than 100 nCi/g. Pucks that assay well below the 100 nCi/g are also placed into 100-gallon containers but are then managed as mixed low level waste. These containers are treated to meet Land Disposal Restriction standards and are shipped to the Nevada National Security Site, formerly the Nevada Test Site, as appropriate. The SCG S3000 waste stream BNINW218 is also load-managed by overpacking drums assaying at less than 100 nCi/g of waste with those assaying at greater than 100 nCi/g such that the assay of the payload container is compliant. The containers in SCG S3000 waste stream BN222 are nearly all greater than 100 nCi/g and therefore this stream is not load-managed.

No concerns were identified regarding load management during the audit. The procedure reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for load management are 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

The audit team identified five concerns during the audit. These concerns were classified by CBFO QA as documented in sections 6.2, 6.3, and 6.4.

6.1 Corrective Action Reports

During the audit, the audit team may identify CAQs, as defined below, 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. Audit team members, the audit team leader (ATL), and the CBFO QA representative evaluate the CAQs to determine if they are significant. Once a determination is made that the CAQ is not significant, the audit team member, in conjunction with the ATL and the CBFO QA representative, 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 and the CBFO QA representative, 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 CBFO QA representative 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.

Two CAQs were identified, which were corrected during the audit.

CDA 1

Condition:

Software code modules are changed and tested by various developers before previous testing passes. The developer checking out a code version should be required to verify that all testing related to previous Software Change Requests passes prior to checking out a code module for the next change scope. During a walk-down of procedure INST-CD&M-11.2.1, Rev. 8, *Software Version Control*, the audit team noticed that a work step related to SQA testing was performed, but was not described in the procedure.

Requirement:

The QAPD, Section 2.1.1 A. states: "Work shall be performed in accordance with established technical standards and administrative controls. Work shall be performed under controlled conditions using approved instructions, procedures, or other appropriate means."

MP-DOCS-18.3, Rev. 8, *Developing Management Procedures*, Section 3.2.6 states: "In the procedure section, identify the requirements or steps to be followed by using sub-sections, including where appropriate, the person or organization assigned responsibility for those requirements."

During the audit, AMWTP provided the audit team with a new revision of procedure INST-CD&M-11.2.1, *Software Version Control*, which included the missing work step. The audit team verified the change was satisfactory in describing the current work

process. The concern was determined to be isolated in nature and was corrected during the audit.

CDA 2

Condition:

In RPT-TRUW-15, Rev. 12, *Acceptable Knowledge Summary for Building 374 Sludge*, the waste stream volume was unsupported by an appropriate AK source document. Although the requisite number was identified in the AK summary, the supporting AK source document identified was RPT-TRUW-06, which no longer contains waste stream volume estimates; thus, the number was unsupported.

Requirement:

MP-TRUW-8.13, Rev. 25, *Collection, Review and Management of AK Documentation*, Section 3.5.1.4 states: "Develop a container inventory and establish waste stream volumes and time periods of generation for the waste stream, as required by the WIPP-WAP."

During the audit, AMWTP placed an appropriate AK source document into the AK record and then provided the audit team with objective evidence (a document change request) depicting the change to the next revision of RPT-TRUW-15. The concern was determined to be isolated in nature and was corrected during the audit.

6.3 Observations

During the audit, the audit team may identify potential problems that should be communicated to the audited organization. The audit team members, in conjunction with the ATL, evaluate these conditions and classify them as Observations using the following definition.

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

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

One observation was identified during the audit.

Observation 1

It was observed during the review of the AMWTP Independent Assessment Schedule that the frequency of QAPD-related independent assessments was in question because audits have not been scheduled or performed since June 2011 (IA-11-01). Although the QAPD does not provide a specific frequency for the performance of such audits, AMWTP should consider clarifying periodicity in MP-M&IA-17.2, *Independent Assessment*.

6.4 Recommendations

During the audit, the audit team may identify suggestions for improvement that should be communicated to the audited organization. The audit team members, in conjunction with the ATL, evaluate these conditions and classify them as Recommendations using the following definition.

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.

Two Recommendations were provided to AMWTP Management as a result of the audit.

Recommendation 1

During the audit, the audit team noticed certain fields on the RTR and VE data print-outs were blank. In particular, certain fields were left blank on the real-time radiography (RTR) and visual examination (VE) data printouts. Upon further examination and discussion with responsible AMWTP personnel, it was determined that the blank fields were a result of Permit-related changes regarding the manner in which certain data are to be reported and how the data are presented when printed from the AMWTP Waste Tracking System (WTS). For example, the VE Box-Line and Repackaging Reports examined during the audit contain two fields identified as "Containerized Liquid" and "Internal Container with Liquid." These two fields and the responses to them correlate with the manner in which liquids were required to be reported at VE for the Permit-required reporting format in effect at that time. A similar condition related to the reporting of compressed gases and aerosol cans was observed during the examination of RTR Analysis Reports. For both VE and RTR, the audit team verified that the data in the WTS accurately depicts the required reporting method for the time frames in which the activity occurred. Therefore, for the reasons described above, the objective evidence submitted supporting RTR and VE contain blank fields, giving the appearance that data entries are absent. The audit team determined that this condition is negligible with the conclusions reached during the audit and recommended that AMWTP investigate the condition to determine how WTS might be revised to eliminate the reported fields respective of the reporting requirements in effect at the time.

Recommendation 2

The audit team made a recommendation regarding AK summary reports as follows:

1. AMWTP AK personnel consider making a change to RPT-TRUW-77, Rev. 1, AK Summary for Solidified Plutonium Recovery Incinerator Waste. The waste material parameter weight estimate memorandum C605A is in the AK record, but should be referenced in the AK Summary.

2. AMWTP AK personnel review AK summaries RPT-TRUW-15, RPT-TRUW-77, and RPT-TRUW-79 and clarify applicable AK source documents supporting the hazardous waste number assignments.
3. AMWTP AK personnel review AK summaries RPT-TRUW-15, RPT-TRUW-77, and RPT-TRUW-79 and clarify language tense issues as needed. (For example, possibly change wording from "may be done" to "has been done").

7.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During the Audit

Attachment 2: Summary Table of Audit Results

Attachment 3: Table of Audited Documents

Attachment 4: List of Processes and Equipment Reviewed

PERSONNEL CONTACTED DURING THE AUDIT				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Jade Anderson	ITG Software Development Manager	X	X	
Kevin Bake	ITG Systems Engineer	X	X	
Scott Bjorn	ITG Operations Manager		X	
Delisa Blattner	ITG Document Technical Publications Specialist		X	
Bob Blyth	DOE-ID SQA Observer	X	X	X
Corey Boland	ITG Systems Engineer		X	
Mike Brugger	ITG VE Expert		X	
Dave Butler	ITG Training Instructional Analyst Developer	X	X	X
George Byram	ITG TRU Programs Manager	X	X	X
Steve Carpenter	ITG AK Expert		X	
Norma Castaneda	CBFO NTP Observer	X	X	X
Chuck Conway	ITG Acting Plant Manager	X		
Rick Dale	ITG Communications Manager			X
Doug Dineen	ITG Cognizant System Engineer		X	X
Mark Doherty	CBFO NTP Observer	X	X	X
Jake Fellows	ITG Facility Ops. Technician		X	
Shannon Florez	ITG Packaging & Shipping Manager		X	
Denny Gasper	ITG VE Expert	X	X	X
Danny Green	ITG RTR Operator		X	
Ronald Grise	ITG VE Expert	X	X	X
David Haar	ITG Waste Programs Manager	X	X	X

PERSONNEL CONTACTED DURING THE AUDIT				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Jeremy Hampton	ITG Production Planning Manager		X	
Rod Harrison	ITG Procurement Manager		X	
Gregory Hayward	DOE-ID QA Observer	X	X	X
Hilda Hernandez	ITG Tool Crib Custodian		X	
Steve Holmes	NMED Observer	X	X	X
Bill Huggins	ITG NDA Operator		X	
Tally Jenkins	DOE-ID, AMWTP	X		X
Pete Johansen	Idaho DEQ Observer	X	X	
Nancy Kirk	ITG AK Expert		X	X
Bruce LaRue	Idaho DEQ Observer	X	X	X
Denise Lee	ITG RTR ITR	X	X	
Kenneth Licklitter	CBFO NTP Observer	X	X	X
Ricardo Maestas	NMED Observer	X	X	X
Stormy McCurdy	ITG WCO		X	
Dennis Miehls	CBFO QA Observer	X	X	X
Paul Minor	ITG WCO		X	
Randy Morris	ITG AK Expert		X	
Angie Morse	ITG QA Manager	X	X	X
Mel Murdock	ITG Packaging & Shipping Supervisor		X	
Danny Nichols	ITG President & Project Manager	X	X	X
Seth Oldham	ITG HSG Operator		X	
Trent Olaveson	ITG PAIT/ICS			X
Jerry Patterson	ITG PAIT/ICS		X	X
Dave Preston	ITG TRU Programs SME		X	

PERSONNEL CONTACTED DURING THE AUDIT				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Ben Roberts	DOE-ID, AMWTP Operations Activity Manager	X		
Cesar Rojas	ITG HSG Chemist	X	X	
Lyle Ryman	ITG QA Specialist	X	X	
Eric Schweinsberg	ITG TRU Programs SPM	X	X	X
James Seamans	ITG TRU Programs NDA SME	X	X	
Michelle Sharp	ITG QA Specialist	X	X	X
Brittany Skaar	ITG Production Planner		X	
Coleman Smith	NMED Observer	X	X	X
Mark Sorenson	ITG RTR ITR		X	X
Norm Stoner	ITG NDA Expert		X	
Matthew Storms	ITG WCO		X	
Steve Tallman	ITG RTR SME	X	X	
Gina Tedford	ITG SPM Audit Lead	X	X	X
Alice Terramorse	ITG Procurement Specialist		X	X
Matt Thompson	WTS Coordinator	X	X	
Robert (Bob) Toro	DOE-HQ (EM-43) Quality Assurance Observer	X	X	X
Tim Venneman	ITG AKE		X	
Connie Walker	NMED Observer	X	X	
Jerry Wells	DOE-ID, AMWTP Deputy Operations Activity Manager	X		X

SUMMARY TABLE OF AUDIT RESULTS

QA/ Technical Elements	Concern Classification				QA Evaluation		Technical
	CARs	CDAs	Obs	Rec	Adequacy	Implementation	Effectiveness
Acceptable Knowledge		1		1	A	S	E
Reconciliation of DQOs/WSPFs					A	S	E
Project Level Data V & V					A	S	E
Solids Sampling & Analysis					A	S	E
HSG Sampling & Analysis					A	S	E
Real-time Radiography					A	S	E
Visual Examination					A	S	E
Nondestructive Assay					A	S	E
Container Management/ C6-1 Transportation					A	S	E
Training					A	S	E
Corrective Actions/NCRs M&TE/Graded Approach					A	S	E
Work Processes					A	S	E
Assessments/Records Document Control			1	1	A	S	E
Software QA / WWIS/WDS Procurement		1			A	S	E
Organization/QA Program/Load Management					A	S	E
TOTALS	0	2	1	2	A	S	E

Definitions

E = Effective

S = Satisfactory

I = Indeterminate

M = Marginal

U = Unsatisfactory

CAR = Corrective Action Report

CDA = Corrected During Audit

EP = Exemplary Practice

NE = Not Effective

Obs - Observation

Rec = Recommendation

A = Adequate

NA = Not Adequate

TABLE OF AUDITED DOCUMENTS			
NUMBER	PROCEDURE NUMBER	REVISION NUMBER	PROCEDURE TITLE
1.	CI-IDA-NDA-0035	3	Calibration Verification & Confirmation Procedure for the Integrated Waste Assay System (IWAS) at AMWTP
2.	CI-IDA-NDA-0055	1	Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems
3.	RPT-TRUW-03	9	Drum Assay Technical Review Report
4.	INST-CD&M-11.1.2	14	Facility Modification Proposal Preparation
5.	INST-CD&M-11.2.1	8	Software Version Control
6.	INST-CD&M-11.2.2	13	Software Inventory Classification
7.	INST-CD&M-11.2.3	7	System Data Change Request
8.	INST-CD&M-11.2.6	5	Temporary Software Override
9.	INST-CMNT-10.14.1	8	Testing In-Plant and Process Instrumentation
10.	INST-CMNT-10.5.1	12	Calibration and Control of Measuring and Test Equipment
11.	INST-FOI-01	28	In-Plant Drum Assay Operations
12.	INST-FOI-17	27	Facility Visual Examination Operations
13.	INST-FOI-20	39	Supercompactor and Post-Compaction Operations
14.	INST-OI-09	53	Retrieval Inspection Station Operations
15.	INST-OI-11	50	Waste Container Handling
16.	INST-OI-12	52	Real-Time Radiography Examinations (Certification Scans)
17.	INST-OI-14	33	Drum Assay Operations
18.	INST-OI-34	28	Non-Facility Visual Examination Operations
19.	INST-OI-45	18	Drum Filter Installation
20.	INST-OI-50	16	WMF-615 Filter Insertion Operations
21.	INST-TRUW-8.1.1	12	Drum Assay Post-Maintenance Calibration and Verification
22.	LST-RTQP-03-IM	1	WIPP Training Requirements Implementation Matrix
23.	MP-CD&M-11.1	9	Change Control (Facility)
24.	MP-CD&M-11.2	17	Software Quality Assurance
25.	MP-CMNT-10.14	6	In-Plant and Process Instrumentation Testing Program
26.	MP-CMNT-10.5	10	Measuring and Test Equipment Program
27.	MP-DOCS-18.1	14	Developing Written Work Instructions
28.	MP-DOCS-18.2	17	Records Management
29.	MP-DOCS-18.3	8	Developing Management Procedures
30.	MP-DOCS-18.4	38	Document Control
31.	MP-M&IA-17.1	11	Management Assessment
32.	MP-M&IA-17.2	11	Independent Assessment
33.	MP-M&IA-17.3	8	Quality Assurance Surveillance
34.	MP-PCMT-15.1	14	Acquisition of Material and Services
35.	MP-PCMT-15.21	8	Material Management
36.	MP-PRPL-22.1	33	Production Planning
37.	MP-Q&SI-5.1	9	Investigation and Root Cause Analysis
38.	MP-Q&SI-5.3	13	Corrective Action
39.	MP-Q&SI-5.4	21	Identification of Nonconforming Conditions
40.	MP-Q&SI-5.6	4	Graded Approach
41.	MP-Q&SI-5.8	8	Qualifying Supply Chain Inspectors, Auditors, Lead Auditors and Technical Specialists
42.	MP-RTQP-14.16	8	Training Program Evaluation
43.	MP-RTQP-14.19	8	Training Records Administration
44.	MP-RTQP-14.4	21	Personnel Qualification and Certification
45.	MP-RTQP-14.6	9	Job Analysis

TABLE OF AUDITED DOCUMENTS			
NUMBER	PROCEDURE NUMBER	REVISION NUMBER	PROCEDURE TITLE
46.	MP-TRUW-8.1	24	Certification Plan for INL Transuranic Waste
47.	MP-TRUW-8.2	17	Quality Assurance Project Plan
48.	MP-TRUW-8.5	29	TRU Waste Certification [Includes Offsite Shipping Module (OSM)]
49.	MP-TRUW-8.8	35	Level I Data Validation
50.	MP-TRUW-8.9	26	Level II Data Validation
51.	MP-TRUW-8.11	25	Data Reconciliation
52.	MP-TRUW-8.12	24	Waste Receipt and Shipping Inspection
53.	MP-TRUW-8.13	25	Collection, Review, and Management of Acceptable Knowledge Documentation
54.	MP-TRUW-8.14	15	Preparation of Waste Stream Profile Forms
55.	MP-TRUW-8.26	6	Reports to Management

Processes 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				
Evaluated During A-14-01 Audit				
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
Nondestructive Examination (NDE)				
9RR1	Procedure – INST-OI-12 Description – Real-Time Radiography System	Solids (S3000) Debris (S5000)	YES	YES
9RR2	Procedure – INST-OI-12 Description – Real-Time Radiography System	Solids (S3000) Debris (S5000)	YES	YES

Processes and Equipment Reviewed

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
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

Processes and Equipment Reviewed

DEACTIVATED PROCESSES OR EQUIPMENT				
Headspace Gas (HSG)*				
9HG4	Procedure – INST-OI-43 Description – Consonant Technology Inc. (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

*Audit team verified data collected prior to the Class 2 PMR dated March 13, 2013.