

United States Government

Department of Energy

# memorandum



Carlsbad Field Office  
Carlsbad, New Mexico 88221

ENTERED

DATE: JUL 30 2012

REPLY TO  
ATTN OF: CBFO:OQA:CF:CC:12-1435:UFC 2300.00

SUBJECT: Final Audit Report for Close-Out Audit A-12-10, BAPL/CCP Waste Characterization Activities

TO: Christopher Labee, DOE-NRLFO

The Carlsbad Field Office (CBFO) conducted Audit A-12-10 of the Bettis Atomic Power Laboratory Central Characterization Project (BAPL/CCP) waste characterization activities April 24-26, 2012. The CBFO final audit report is attached.

The audit team concluded that the BAPL/CCP technical and quality assurance programs for remote-handled transuranic (RH TRU) Summary Category Group S5000 debris waste characterization activities were adequate in accordance with the Waste Isolation Pilot Plant Hazardous Waste Facility Permit, the *CBFO Quality Assurance Program Document*, the *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*, and the *RH TRU Waste Characterization Program Implementation Plan*. Emphasis was placed on characterization reporting activities since the initial certification audit (A-11-12), as well as the process for project termination and closure. The audit team determined that the BAPL/CCP procedures were satisfactorily implemented and the evaluated processes were effective.

As a result of the audit, TRU waste characterization and certification activities have been completed at the BAPL and applicable requirements for closure have been verified.

If you have any questions, please contact Courtland Fesmire at (575) 234-7548.

Randy Unger  
Quality Assurance Director

Attachment



Christopher Lahee

-2-

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cc: w/ attachment

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WIPP Operating Record	ED
CBFO QA File	
CBFO M&RC	

\*ED denotes electronic distribution

U.S. DEPARTMENT OF ENERGY  
CARLSBAD FIELD OFFICE

FINAL CLOSE-OUT AUDIT REPORT  
FOR  
TRU WASTE CHARACTERIZATION AND CERTIFICATION ACTIVITIES

PERFORMED AT THE

BETTIS ATOMIC POWER LABORATORY (BAPL)  
UTILIZING THE  
CENTRAL CHARACTERIZATION PROJECT (CCP)

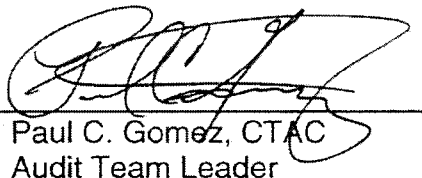
CARLSBAD, NM

AUDIT NUMBER A-12-10

April 24 – 26, 2012



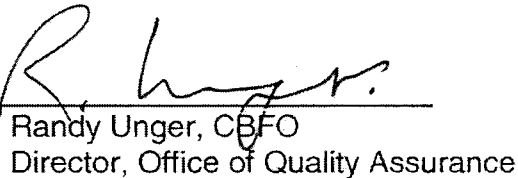
Prepared by:

  
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Date:

06/25/2012

Approved by:

  
Randy Unger, CBFO  
Director, Office of Quality Assurance

Date:

27 June 12

## 1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Audit A-12-10 was conducted to evaluate the adequacy, implementation, and effectiveness of transuranic (TRU) waste characterization activities prior to project closure. Characterization activities for remote-handled (RH) Summary Category Group (SCG) S5000 debris waste were performed at the Bettis Atomic Power Laboratory (BAPL) by the Washington TRU Solutions (WTS) Central Characterization Project (CCP). Emphasis was placed on characterization reporting activities completed since the initial certification audit (A-11-12), as well as the process for project termination and closure. All activities were evaluated to verify compliance with the applicable requirements of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), the *CBFO Quality Assurance Program Document* (QAPD), the *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WAC), and the *RH TRU Waste Characterization Program Implementation Plan* (WCPIP).

The audit was performed at the CBFO Skeen-Whitlock Building in Carlsbad, NM, April 24 – 26, 2012. Three conditions adverse to quality (CAQs) were identified and corrected during the audit (CDA) (see section 6.2). There were no CAQs requiring the issuance of a corrective action report (CAR). No observations were identified during the audit, and no recommendations were offered for management consideration.

The audit team concluded that, overall, the BAPL/CCP technical and quality assurance (QA) programs, as applicable to the audited activities, were adequate, satisfactorily implemented, and effective for compliance with upper-tier requirements. TRU waste characterization and certification activities have been completed at the BAPL and applicable requirements for closure have been verified.

## 2.0 SCOPE AND PURPOSE

### 2.1 Scope

The audit team evaluated the adequacy, implementation, and effectiveness of the programs and requirements controlling BAPL/CCP TRU waste characterization activities for RH SCG S5000 debris waste stream BT-T001 prior to project closure. The following programmatic and technical elements were evaluated.

#### General

- Results of Previous Audits
- Changes in Programs or Operations
- New Programs or Activities Being Implemented
- Changes in Key Personnel

### Quality Assurance

The following QA elements were evaluated only to the extent needed to support the technical elements listed below:

- Personnel Qualification and Training
- Quality Assurance Records
- Nonconformances
- Sample Control
- Control of Measuring and Test Equipment

### Technical

- Project-level Data Validation & Verification (V&V)
- Acceptable Knowledge (AK)
- Headspace Gas (HSG) Sampling
- Visual Examination (VE)
- WIPP Waste Information System/Waste Data System (WWIS/WDS)

The evaluation of BAPL/CCP TRU waste activities and documents was based on current revisions of the following documents:

Waste Isolation Pilot Plant Hazardous Waste Facility Permit NM4890139088-TSDF  
*CBFO Quality Assurance Program Document, DOE/CBFO-94-1012*

*Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant,*  
DOE/WIPP-02-3122

*Remote-Handled TRU Waste Characterization Program Implementation Plan,*  
DOE/WIPP-02-3214

*CCP Transuranic Waste Characterization Quality Assurance Project Plan,*  
CCP-PO-001

*CCP Transuranic Waste Certification Plan, CCP-PO-002*

Related technical and QA implementing procedures

## **2.2 Purpose**

Audit A-12-10 was conducted to evaluate the adequacy, implementation, and effectiveness of BAPL/CCP waste characterization and certification activities, prior to project closure, for compliance with the requirements in the WIPP HWFP WAP, the CBFO QAPD, the WAC, and the RH TRU WCPIP.

### **3.0 AUDIT TEAM AND OBSERVERS**

#### **Auditors/Technical Specialists**

Courtland G. Fesmire	Management Representative, CBFO
Paul C. Gomez	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Katie Martin	Auditor, CTAC
Rick Castillo	Auditor, CTAC
Cindi Castillo	Auditor, CTAC
Jack Walsh	Auditor, CTAC
Porf Martinez	Technical Specialist, CTAC
Dick Blauvelt	Technical Specialist, CTAC
B. J. Verret	Technical Specialist, CTAC

#### **Observers**

Steve Holmes	New Mexico Environment Department (NMED)
Marcus Pinzel	CBFO Office of the National TRU Program (NTP)

### **4.0 AUDIT PARTICIPANTS**

The individuals contacted during the audit are identified in Attachment 1. A pre-audit meeting was conducted in Carlsbad, NM, at the CBFO Skeen-Whitlock Building, room T224, on April 24, 2012. Daily meetings were conducted with management and staff to discuss audit progress, issues, and potential deficiencies. The audit concluded with a post-audit meeting conducted at the CBFO Skeen-Whitlock Building, room T224, on April 26, 2012.

### **5.0 SUMMARY OF AUDIT RESULTS**

#### **5.1 Program Adequacy and Implementation**

This audit was performed to assess the ability of the BAPL/CCP to characterize RH SCG S5000 debris waste for compliance with the requirements specified in the WIPP HWFP WAP, the WAC, the RH TRU WCP/IP, and the CBFO QAPD. The characterization methods evaluated, as described in the body of this report, were AK, VE, HSG (sample collection), and project-level data V&V. Additionally, QA program elements within the HWFP WAP C6-1 checklist were evaluated, including nonconformance reporting, QA records, and personnel qualification and training. The audit team concluded that the BAPL/CCP TRU waste characterization program is adequate, satisfactorily implemented, and effective.

Attachment 2 contains a summary table depicting the audit results. Attachment 3 lists the documents examined during the audit. Attachment 4 lists the processes and/or equipment evaluated during the audit.

## **5.2 General**

### **5.2.1 Results of Previous Audits**

The results of CBFO Certification Audit A-11-12 of the BAPL/CCP were examined. No CAQs were issued as a result of that audit.

### **5.2.2 Changes in Programs or Operations**

No changes in programs or operations have occurred since the previous audit (CBFO Certification Audit A-11-12).

### **5.2.3 New Programs or Activities Being Implemented**

No new programs or activities have been implemented by the BAPL/CCP since the previous audit (CBFO Certification Audit A-11-12). All TRU waste characterization and certification activities have been completed.

### **5.2.4 Changes in Key Personnel**

No changes in key personnel have been made by the BAPL/CCP since the previous audit (CBFO Certification Audit A-11-12).

## **5.3 Quality Assurance Activities**

The following elements related to QA program implementation were evaluated by the audit team. Each QA element evaluated is discussed in detail below. The objective evidence compiled to assess compliance is briefly cited, along with the audit team's conclusions for each area evaluated.

### **5.3.1 Personnel Qualification and Training**

The audit team interviewed responsible personnel and examined documentation to verify that BAPL/CCP adequately addresses and complies with the requirements in the HWFP WAP, the WAC, the CBFO QAPD, the RH TRU WCPIP, and CCP implementing procedures for personnel training and qualification.

Training and qualification records for the following positions were reviewed: RH waste acceptable knowledge experts(AKEs); QA engineers; RH waste site project managers (SPMs); HSG Summa<sup>®</sup> container sampling operators/independent technical reviewers (ITRs); VE operators; and helium leak testing/transportation personnel. Record reviews also included visual examination expert (VEE) and subject matter expert/on-the-job training appointment letters.

Real-time radiography and VE personnel are required to be trained on newly developed and revised waste stream reports ONLY when changes are made to a report regarding (1) waste generating processes, (2) packaging, and (3) expected waste material

parameters. Changes incorporated into the latest revision (Rev. 2) of CCP-AK-BAPL-500 did not affect any of these three elements; therefore, waste stream training was not required or conducted for CCP-AK-BAPL-500, Rev. 2.

No concerns were identified. Overall, the processes and requirements for Personnel Qualification and Training were determined to be 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 Quality Assurance Records

The audit team interviewed responsible personnel and examined documentation to verify that BAPL/CCP adequately addresses and complies with the requirements in the HWFP WAP, the CBFO QAPD, the WAC, the RH TRU WCPIP, and CCP implementing procedures for the control of QA records. Evidence reviewed included personnel training and qualification records, characterization process batch data reports (BDRs), a sample of BAPL/CCP-generated records, and the BAPL/CCP Records Inventory and Disposition Schedule (RIDS).

The audit team conducted interviews and reviewed implementing procedures relative to the control and administration of QA records to determine the degree to which the procedures adequately address upper-tier requirements. The team reviewed CCP-PO-001, Rev. 20, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*; CCP-PO-002, Rev. 26, *CCP Transuranic Waste Certification Plan*; CCP-QP-008, Rev. 19, *CCP Records Management*; and CCP-QP-028, Rev. 14, *CCP Records Filing, Inventorying, Scheduling, and Dispositioning*. Control of QA records was verified through review of the CCP RH RIDS dated 8/15/2011. Three CAQs were identified during the records review portion of this audit relative to the accuracy and completeness of records in the areas of AK source documents and a headspace gas summary. The CAQs were resolved through the CDA process and the corrective actions were verified complete prior to the end of the audit (see section 6.2).

Concerns cited for the AK source documents in records were resolved during a briefing held April 25, 2012, after the management briefing. The AK management lead, the auditors who cited the concerns, the audit team leader (ATL), and the CBFO QA management representative attended the briefing. All points of the original concern were resolved with the exception of the following. The title of source document U397 did not match the title listed in section 9.0 of the AK Summary Report. This concern was corrected during the audit (see section 6.2, CDA 1).

A CAQ was identified regarding records associated with the Headspace Gas Summary for RH Lot 1, BT-T001. The SPM failed to sign pages 004, 010, and 011. This concern was corrected during the audit (see section 6.2, CDA 2).

Shipping BDRs for shipment numbers BAR11001, BAR11003, and BAR11005 were examined during this audit. Shipping data package preparation was found to be complete. ITR and SPM review were performed as required. Leak test results were



verified to be compliant, calibration of measuring and test equipment (M&TE) was checked and found to be acceptable, and entry of information into the WWIS/WDS system by the Waste Certification Official (WCO) was verified as acceptable.

While reviewing records, the audit team identified a deficiency on one of the leak test forms where the operator recorded the wrong year. CCP records personnel corrected the error by recording the correct year, reviewing and signing the corrected form, and submitting the corrected form to CCP records (see section 6.2, CDA 3).

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

### Nonconformances

The audit team interviewed the project office QA Engineer/Nonconformance Report (NCR) Coordinator and reviewed all NCRs generated at BAPL/CCP from 2010 to the present. The following NCRs were reviewed to confirm that deficiencies are being appropriately documented and tracked through resolution, as required:

NCR-RHBAPL-0001-10	NCR-RHBAPL-2143-11
NCR-RHBAPL-0200-10	NCR-RHBAPL-2453-11
NCR-RHBAPL-0300-11	NCR-RHBAPL-2454-11
NCR-RHBAPL-0501-11	NCR-ALD-0500-11
NCR-RHBAPL-0502-11	

The audit team reviewed the BAPL/CCP NCRs and determined there were no reportable NCRs generated since the previous certification audit. All NCRs were verified as managed and tracked in the CCP Data Center, file transfer protocol (FTP) site, and on the CCP NCR logs. Additionally, the audit team reviewed the BAPL/CCP Data Generation Level and Project Level NCR Log Reconciliation Reports for 2011, and verified compliance with procedural requirements.

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 Nonconformances are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

### Sample Control

The audit team interviewed personnel and reviewed documentation to verify that BAPL/CCP complies with the requirements of QAPD section 4.1, Sample Control. Evidence of sample control was verified through the review of HSG sampling BDRs and associated chain-of-custody records.

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 Sample Control are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

#### Control of Measuring and Test Equipment

The audit team interviewed personnel and reviewed documentation to verify that the BAPL/CCP complies with the requirements of QAPD section 2.4.5, Monitoring, Measuring, Testing, and Data Collection Equipment. Evidence of control of M&TE was verified through review of certificates of calibration associated with instruments used during the collection of HSG samples.

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 Control of Measuring and Test Equipment 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 evaluated is discussed in detail in the following sections. Technical activities evaluated included data generation-level and project-level data V&V, AK, HSG sampling, VE, and WWIS/WDS. Since all characterization activities have been completed, the evaluations of activities were based on objective evidence collected and examined during the audit including AK summaries, source documents, BDRs, sampling records, and personnel training and qualification records.

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 data quality objectives (DQOs)
- Reporting the final waste characterization information to WIPP

The flow of data for each characterization technique was reviewed to ensure that all applicable requirements were captured in the site operating procedures. Specific procedures audited, the objective evidence reviewed to assess compliance, and the audit team's conclusions for each area evaluated are briefly cited in the following sections.

#### **5.4.1 Project-level Data Validation and Verification**

The audit team evaluated project-level data V&V of data collected as a result of the waste characterization implementing procedures. Objective evidence was reviewed as part of this assessment and was used in completion of Table C6-1, the WAP Checklist. The objective evidence included completed BDRs from the BAPL/CCP SPM review of HSG sampling and analysis and VE. In addition, procedures and objective evidence were reviewed to ensure that BAPL/CCP could adequately perform data reconciliation and properly prepare a Waste Stream Profile Form (WSPF).

The flow of data from the point of generation to inclusion in the WSPF for each characterization technique was reviewed to ensure compliance with site operating procedures. The material in this section is also addressed in more detail in the following checklists, where the specific procedures audited and the objective evidence reviewed are identified.

Compliance with the project-level data V&V requirements of the HWFP WAP was evaluated through examination of the BDRs listed below. Some of the BDRs cited were used to demonstrate confirmation of AK, to reconcile DQOs, and to prepare a WSPF.

##### VE BDR

RHBAPLVE100001

##### Headspace Gas Sampling and Analysis BDRs

BAHSGS100001

ECL10037G

ECL10037M

The field reference standard results and quarterly repeat of generation-level data requirements for HSG sampling and VE were reviewed during the initial certification audit and determined to be acceptable. Additionally, a review was performed of the RH WSPF Characterization Information Summary for BAPL/CCP waste stream BT-T001.

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 Project-level Data Validation and Verification are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

#### **5.4.2 Acceptable Knowledge**

Evaluations were performed to verify compliance with the requirements for AK associated with BAPL/CCP RH TRU waste stream BT-T001. The results of the evaluations are documented on the WAP C6-3 checklist and in portions of the C6-1 checklist. Objective evidence was compiled and examined to verify compliance with each of the requirements during Audit A-11-12, and any updates since that initial certification audit are reported in these checklists. The team also reviewed AK documentation in relation to the requirements of the RH TRU WCPIP, Rev. 2, driven

primarily by U.S. Environmental Protection Agency (EPA) requirements during Audit A-11-12. This inventory of RH TRU waste is expected to represent the final volume for this waste stream.

In addition to AK Summary Report CCP-AK-BAPL-500, Rev. 2, the audit team reviewed a freeze file of proposed changes for the next revision, a copy of the WSPF and attachments, and numerous relevant AK source documents to establish support for the conclusions noted in the AK Summary Report. The team also examined completed AK attachments prescribed by CCP-TP-005, *CCP Acceptable Knowledge Documentation*, addressing a crosswalk between the AK source documents and the WAP requirements during Audit A-11-12. These attachments included the Acceptable Knowledge Information List (attachment 4), Hazardous Constituents (attachment 5), Waste Form, Waste Material Parameters, Prohibited Items, and Packaging (attachment 6), and Waste Containers List (attachment 8).

The required traceability exercise was performed for all containers that have been completely through the characterization and certification process for VE and HSG. During Audit A-11-12, the random selection memos for HSG sampling and analysis for Lot 1 were reviewed, along with the HSG summary reports for Lot 1. Also during Audit A-11-12, the team examined copies of the AK Accuracy Report, AKE and SPM training records, copies of the Project-Tracking System database and the AK Tracking spreadsheet, and the reconciliation of the characterization data with the AK record for the shipping lots, along with the requisite AK Characterization Checklists.

Non-WAP-related checklists were used during the initial certification audit (A-11-12) to evaluate the requirements of the WCPIP, including the AK requirements, and the completion of a WCPIP WSPF, AK accuracy report, and characterization reconciliation reports (CRRs). The focus of the WCPIP requirements is upon physical and radiological properties and the absence of residual liquid in the waste. The audit team examined AK source documentation that supported these parameters in the AK Summary Report and in the CCP RH TRU Radiological Characterization Technical Report for this stream in CCP-AK-BAPL-501. The CRRs for each of the shipping lots were reviewed to assure that for each of the DQOs identified in the WCPIP, the supporting AK sources and methods of qualification of the data were appropriately identified and the relevant QA objectives were met.

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 Acceptable Knowledge are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

#### **5.4.3 Headspace Gas Sampling**

Objective evidence was reviewed to evaluate compliance with HSG sampling requirements specified in the WIPP HWFP. BAPL/CCP collects HSG samples in SUMMA<sup>®</sup> canisters and ships the canisters to the Idaho National Laboratory CCP

facilities for analysis. The audit team examined HSG sampling BDR BAHSGS100001 and reviewed documentation on the random selection of containers, drum age criteria, use of operational logbooks, sample chain-of-custody, certificates of calibration for M&TE, certificates of accuracy, and transfer to the analytical laboratory.

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 Headspace Gas Sampling 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 Visual Examination**

The audit team evaluated BAPL/CCP capability to characterize RH SCG S5000 debris waste using the VE characterization method.

BAPL/CCP Procedures CCP-TP-500, Rev. 11, *CCP Remote-Handled Waste Visual Examination*, CCP-QP-002, Rev. 32, *CCP Training and Qualification Plan*, and CCP-PO-005, Rev. 22, *CCP Conduct of Operations*, were reviewed to ensure they adequately address the applicable requirements in the WIPP HWFP and the RH TRU WCPIP.

VE activities at BAPL had been completed for the RH waste stream evaluated during Audit A-11-12 and no additional VE activities have been performed since that audit. Therefore, the audit team examined RH VE BDR RHBAPLVE100001 to verify implementation and compliance with the requirements for documenting VE activities as stipulated in CCP-TP-500.

The audit team reviewed training records for VE operators and verified that the required training and qualification had been achieved. Additionally, the audit team confirmed the appointment of the BAPL/CCP Visual Examination Expert (VEE) in accordance with requirements.

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 Visual Examination are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

#### **5.4.5 WIPP Waste Information System/Waste Data System**

The audit team evaluated the implementation of the CCP RH TRU Waste Certification and WWIS/WDS Data Entry procedure by observing data entry into a WWIS/WDS spreadsheet. The evaluation included data population of the spreadsheet, review of data entry by a Waste Certification Assistant, and waste certification by the WCO. Record reviews included container information summaries, pages from BDRs showing

analyses values, WWIS/WDS container data reports, and submittals for WWIS/WDS review/approval.

The audit team reviewed one WWIS/WDS waste certification package for RH waste canister BE0003, which had three internal containers (HIP-41-27-14, HIP-41-05-13, and HIP-41-24-7), and one WWIS/WDS waste certification package for RH waste canister BE0004, which also had three internal containers (HIP-41-23-4, HIP-41-30-3, and HIP-41-32-6).

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 the WIPP Waste Information System/Waste Data System 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**

### **6.1 Corrective Action Reports**

During the audit, the audit team may identify conditions adverse to quality (CAQs) and document such conditions on corrective action reports (CARs).

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

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

No CAQs necessitating the generation of a CAR were identified during the course of this audit.

### **6.2 Deficiencies Corrected During the Audit**

During the audit, the audit team may identify CAQs. The audit team members and the ATL 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, determines if the CAQ is an isolated case requiring only remedial action and therefore can be corrected during the audit. Upon determination that the CAQ is isolated, the audit team member, in conjunction with the ATL, evaluates/verifies any objective evidence/actions submitted or taken by the audited organization and determines if the condition was corrected in an acceptable manner. Once it has been determined that the CAQ has been corrected, the ATL categorizes the condition as corrected during the 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.*

Three CDAs were identified as a result of the audit, as described below.

#### **CDA 1**

The title of source document U397 did not reflect the title listed in section 9.0 of the AK Summary Report. A freeze file has been issued to reflect the correct title of the AK source document in the AK Summary Report. The audit team verified the freeze file contained the corrected title prior to the end of the audit.

#### **CDA 2**

In the Headspace Gas Summary for Remote-Handled Lot 1 BT-T001, the SPM failed to sign pages 004, 010, and 011. The deficiency was corrected and the audit team verified the records were correct and complete prior to the end of the audit.

#### **CDA 3**

An incorrect year was recorded on attachment 7 of Shipping BDR BAR11001. The error was corrected and verified by the audit team. The corrected attachment was reviewed, signed, and entered into records prior to the end of the audit.

### **6.3 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.

#### **6.4 Observations**

No Observations were documented as a result of this audit.

## **6.5 Recommendations**

No Recommendations were presented to BAPL/CCP management for consideration as a result of this audit.

## **7.0 LIST OF ATTACHMENTS**

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



**PERSONNEL CONTACTED DURING THE AUDIT**

<b>PERSONNEL CONTACTED DURING AUDIT A-12-10</b>				
<b>NAME</b>	<b>ORG/TITLE</b>	<b>PREAUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST-AUDIT MEETING</b>
Armijo, Cheryl	Stoller/CCP Records Clerk		X	
Fesmire, Court	CBFO/QA	X		X
Fisher, A. J.	WTS/CCP/Tech Advisor	X		X
Greenwood, Trey	Tech. Specialists/AK		X	
Golden, Jerry	WTS/M&TE		X	
Gomez, Chris	WTS/CCP/QA Eng		X	
Kirkes, Creta	WTS/CCP/WCO		X	
Licklitter, Ken	Tech. Specialists/AK		X	
Luginbyhl, Jim	LANL/AKE	X	X	
Martin, Ryan	Stoller/CCP/Training		X	
Pearcy, Sheila	CCP/Stoller/Mgr	X	X	X
Pinzel, Marcus	CBFO/NTP	X		
Quintana, Irene	WTS/CCP/PM	X	X	X
Reeves, Ron	WTS/CCP/PM	X		
Strum, Mike	WTS/WDS/Data Admin.		X	
Walker, Mak	WTS/QA CAR Coordin.		X	

<b>Personnel Contacted During the Audit by Area</b>	
Nonconformances	Mak Walker Christine Gomez
Training	Ryan Martin
Records	Sheila Pearcy Cheryl Armijo
Acceptable Knowledge	Jim Luginbyhl Ken Lickliter Trey Greenwood
Headspace Gas Sampling	Irene Quintana
Real-time Radiography	Irene Quintana
Visual Examination	Irene Quintana
WIPP Waste Information System/Waste Data System (WWIS/WDS)	Creta Kirkes Mike Strum
Waste Certification/Project Level Validation & Verification	Irene Quintana

### **CDA Supporting Documentation**

The CDA documentation supporting Audit A-12-10 is included in the box(es) submitted with this report. Included in the box(es) is a "Content Map" describing the location (using color coding) and identity of all required objective evidence supporting the performance of the audit.

### **Objective Evidence**

The objective evidence supporting Audit A-12-10 is included in the box(es) submitted with this report. Included in the box(es) is a "Content Map" describing the location (using color coding) and identity of all required objective evidence supporting the performance of the audit.

**BETTIS ATOMIC POWER LABORATORY  
CENTRAL CHARACTERIZATION PROJECT  
TABLE OF AUDITED DOCUMENTS  
Audit A-12-10**

No.	Procedure Number	Rev	DOCUMENT TITLE
1.	CCP-AK-BAPL-500	2	Central Characterization Project Acceptable Knowledge Summary Report for Bettis Atomic Power Laboratory
2.	CCP-PO-001	20	CCP Transuranic Waste Characterization Quality Assurance Project Plan
3.	CCP-PO-002	26	CCP Transuranic Waste Certification Plan
4.	CCP-PO-008	9	CCP Quality Assurance Interface with the WTS Quality Assurance Program
5.	CCP-PO-505	1	CCP Remote-Handled Transuranic Waste Authorized Methods for Payload Control (CCP RH-TRAMPAC)
6.	CCP-QP-002	32	CCP Training and Qualification Plan
7.	CCP-QP-005	20	CCP TRU Nonconforming Item Reporting and Control
8.	CCP-QP-008	19	CCP Records Management
9.	CCP-QP-021	7	CCP Surveillance Program
10.	CCP-QP-028	14	CCP Records Filing, Inventorying, Scheduling, and Dispositioning
11.	CCP-TP-001	19	CCP Project Level Data Validation and Verification
12.	CCP-TP-002	24	CCP Reconciliation of DQOs and Reporting Characterization Data
13.	CCP-TP-003	18	CCP Data Analysis for S3000, S4000, and S5000 Characterization
14.	CCP-TP-005	24	CCP Acceptable Knowledge Documentation
15.	CCP-TP-033	19	CCP Shipping of CH TRU Waste
16.	CCP-TP-082	8	CCP Preparing and Handling Waste Containers for Headspace Gas Sampling
17.	CCP-TP-093	16	CCP Sampling of TRU Waste Containers
18.	CCP-TP-106	7	CCP Headspace Gas Sampling Batch Data Report Preparation
19.	CCP-TP-162	1	CCP Random Selection of Containers for Solids and Headspace Gas Sampling and Analysis
20.	CCP-TP-500	11	CCP Remote-Handled Waste Visual Examination
21.	CCP-TP-504	11	CCP Dose-to-Curie Survey Procedure for Remote-Handled Transuranic Waste
22.	CCP-TP-506	2	CCP Preparation of the Remote-Handled Transuranic Waste Acceptable Knowledge Characterization Reconciliation Report
23.	CCP-TP-507	7	CCP Shipping of Remote-Handled Transuranic Waste
24.	CCP-TP-509	3	CCP Remote-Handled Transuranic Container Tracking
25.	CCP-TP-530	10	CCP RH TRU Waste Certification and WWIS/WDS Data Entry
26.	WP 13-QA.03	19	Quality Assurance Independent Assessment Program

**List of Processes and/or Equipment Reviewed**

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
<b>APPROVED PROCESSES OR EQUIPMENT</b>				
BAPL/CCP Audit A-12-10 Remote Handled (RH) S5000 debris waste				
N/A	Acceptable Knowledge (AK) Procedure – CCP-TP-002 & CCP-TP-005	Debris (S5000)	Yes	Yes
19RHVE1	Visual Examination (VE) Procedure – CCP-TP-500	Debris (S5000)	Yes	Yes
19DTC1	Radiological Characterization (DTC) Procedure – CCP-TP-504	Debris (S5000)	N/A	Yes
N/A	Headspace Gas Sampling Procedure – CCP-TP-093	Debris (S5000)	Yes	N/A
N/A	Data Generation and Project Level Validation & Verification (V&V) Procedure – CCP-TP-001	Debris (S5000)	Yes	Yes
N/A	WIPP Waste Information System (WWIS/WDS) Procedure – CCP-TP-530 and CCP-TP-507	Debris (S5000)	Yes	Yes
N/A	Quality Assurance	N/A	N/A	Yes

## PROCEDURE REVISION MATRIX

Previous BAPL/ CCP Audit A-11-12

Current BAPL/CCP Audit A-12-10

No.	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
1.	CCP-PO-001	CCP Transuranic Waste Characterization Quality Assurance Project Plan	19	20	<b>Rev 20:</b> Revised to incorporate Class 2 Permit Modification (Transuranic Package Transporter Model III and Standard Large Box 2).
2.	CCP-PO-002	CCP Transuranic Waste Certification Plan	25	26	<b>Rev 26:</b> Revised to incorporate revision 7.1 and 7.2 of DOE/WIPP-02-3122, <i>Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant</i> , minor editorial changes, and delete Appendix 11.
3.	CCP-QP-002	CCP Training and Qualification Plan	30	32	<b>Rev 31:</b> Revised based on Revision 2 of the DOE/WIPP 02-3214, <i>Remote-Handled TRU Waste Characterization Program Implementation Plan</i> . <b>Rev 32:</b> Revised to simplify the process for tracking waste stream Summary Training in Section 4.2. Added full requalification as an option in Section 4.1.2 [I]. Added the Training Module in Integrated Data Center (IDC) as a source of Training information to the note in Section 4.1. Incorporated Standing Orders CCP-SO-051 in Section 4.4.1[C], CCP-SO-069 in Section 4.2, and CCP-SO-078 in Section 4.1.2[F]. Expanded Section 4.1.1 to add a documented analysis of positions requiring qualification, in response to Carlsbad Field Office (CBFO) Corrective Action Report (CAR) 12-010.
4.	CCP-QP-005	CCP TRU Nonconforming Item Reporting and Control	19	19	N/A
5.	CCP-QP-008	CCP Records Management	17	19	<b>Rev 18:</b> Revised to support corrective action report

## PROCEDURE REVISION MATRIX

Previous BAPL/ CCP Audit A-11-12

Current BAPL/CCP Audit A-12-10

No.	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
					(CAR)-LANL-0004-10. <b>Rev 19:</b> Revised to change the number of the form in the definition of retention period. Change to Section 4.8 for clarification.
6.	CCP-QP-021	CCP Surveillance Program	7	7	N/A
7.	CCP-QP-028	CCP Records Filing, Inventorying, Scheduling and Dispositioning	12	14	<b>Rev 13:</b> Revised to correct reference section of the procedure and remove a reference that is no longer active. <b>Rev 14:</b> Revised to bring into line with the Waste Isolation Pilot Plant (WIPP) Inventory Worksheets and general editing of the procedure.
8.	CCP-TP-001	CCP Project Level Data Validation and Verification	19	19	N/A
9.	CCP-TP-002	CCP Reconciliation of DQOs and Reporting Characterization Data	23	24	<b>Rev 24:</b> Revised to make editorial changes. Replacing Waste Stream Profile Form (WSPF) change notice with revision to WSPF. Revising instructions for completing WSPF package.
10.	CCP-TP-003	CCP Data Analysis for S3000, S4000 and S5000 Characterization	18	18	N/A
11.	CCP-TP-005	CCP Acceptable Knowledge Documentation	21	24	<b>Rev 22:</b> Revised to address changes in Revision 2 of the <i>Remote-Handled Tru Waste Characterization Program Implementation Plan (WCPIP)</i> . Incorporated editorial changes and technical clarifications throughout procedure. <b>Rev 23:</b> Revised to clarify what constitutes a record as part of the resolution to resolve CBFO CAR11-043. <b>Rev 24:</b> Revised to address comments from inspectors during U.S. Environmental Protection Agency (EPA) Baseline Inspection EPA-SNL-CCP-



## PROCEDURE REVISION MATRIX

Previous BAPL/ CCP Audit A-11-12

Current BAPL/CCP Audit A-12-10

No.	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
					RH-06.11-8 (June 6/8, 2011). Also revised to incorporate lessons learned from Carlsbad Field Office (CBFO) records surveillance.
12.	CCP-TP-082	CCP Preparing and Handling Waste Containers for Headspace Gas Sampling	8	8	N/A
13.	CCP-TP-093	CCP Sampling of TRU Waste Containers	15	16	<b>Rev 16:</b> Deleted incorrect Uniform Resource Locator (URL) for approved filters and add Standard Large Box 2 (SLB2) information to Packaging Configuration Table and Drum Age Criteria (DAC) table, and other editorial changes.
14.	CCP-TP-106	CCP Headspace Gas Sampling Batch Data Report Preparation	7	7	N/A
15.	CCP-TP-162	CCP Random Selection of Containers for Solids and Headspace Gas Sampling and Analysis	1	1	N/A
16.	CCP-TP-163	CCP Visual Examination of Records	2	3	<b>Rev 3:</b> Revised to incorporate Standing Order CCP-SO-ANLE-002.
17.	CCP-TP-500	CCP Remote-Handled Waste Visual Examination	10	11	<b>Rev 11:</b> Implement Revision 2 of Remote-Handled Transuranic (TRU) Waste Characterization Program Implementation Plan DOE/WIPP-02-3214.
18.	CCP-TP-506	CCP Preparation of the Remote-Handled Transuranic Waste Acceptable Knowledge Characterization Reconciliation Report	2	2	N/A
19.	CCP-TP-507	CCP Shipping of Remote-Handled Transuranic Waste	7	7	N/A
20.	CCP-TP-509	CCP Remote-Handled Transuranic Container Tracking	2	3	<b>Rev 3:</b> Revised to include the nondestructive assay (NDA) process.

## PROCEDURE REVISION MATRIX

Previous BAPL/ CCP Audit A-11-12

Current BAPL/CCP Audit A-12-10

No.	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
21.	CCP-TP-530	CCP RH TRU Waste Certification and WWIS/WDS Data Entry	9	10	<b>Rev 10:</b> Revised Table 1, Data Sources for the RH WDS Master Template, to include a new source for Gross Weight and a new field label and source for remote-handled (RH) nondestructive assay (NDA).
22.	WP 13-QA.03	Quality Assurance Independent Assessment Program	17	19	<b>Rev 18:</b> Added allowance for the Assurance Programs manager to extend the time limit for issuance of an audit report. (6.0) <b>Rev 19:</b> Added discussion of effectiveness reviews (Introduction). Added clarification for developing criteria for (4.3) and performing (5.0) effectiveness reviews. Deleted reference to EFCOG Contractor Guide For Performance of Effectiveness Reviews (4.3, 5.0).