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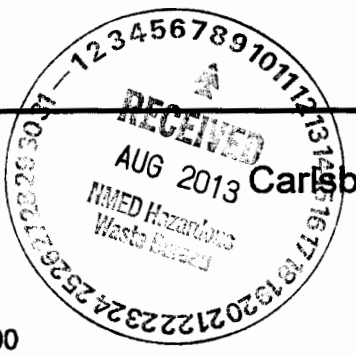
United States Government

Department of Energy



ENTERED

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: AUG 8 2013

REPLY TO ATTN OF: CBFO:OQA:MAG:MPN:13-1499:UFC 2300.00

SUBJECT: Interim Closeout Audit Report A-13-19, INL/CCP Analytical Laboratories Characterization and Certification Activities

TO: Benjamine B. Roberts, DOE-ID

The Carlsbad Field Office (CBFO) conducted Closeout Audit A-13-19, Idaho National Laboratory Central Characterization Program (INL/CCP) Analytical Laboratories, for closeout of characterization and certification activities for headspace gas analysis of Summary Category Group (SCG) S5000 debris waste and solids analysis of SCGs S3000 homogeneous solids and S4000 soils/gravel waste. The audit was conducted July 9-11, 2013. The subject CBFO interim audit report is attached.

The audit team concluded that, overall, the INL/CCP Analytical Laboratories' implementing procedures are adequate relative to the flow-down of requirements. The audit team determined that the INL/CCP technical requirements are being satisfactorily implemented and are effective in all areas. Transuranic waste characterization and certification activities have been completed at the INL/CCP Analytical Laboratories and applicable requirements for closure have been verified.

If you have any questions or comments concerning the interim audit report, please contact me at (575) 234-7483.

Martin P. Navarrete
Acting Director, Office of Quality Assurance

Attachment

cc: w/attachment

J. Franco, CBFO	*ED	R. Joglekar, EPA	ED
D. Miehls, CBFO	ED	S. Ghose, EPA	ED
J. R. Stroble, CBFO	ED	R. Lee, EPA	ED
N. Castaneda, CBFO	ED	J. Kieling, NMED	ED
M. Pinzel, CBFO	ED	T. Kliphuis, NMED	ED
J. Cooper, DOE-ID	ED	S. Holmes, NMED	ED
J. Wells, DOE-ID	ED	R. Maestas, NMED	ED
F. Sharif, NWP	ED	C. Smith, NMED	ED
T. Reynolds, NWP/CCP	ED	D. Winters, DNFSB	ED
E. Gulbransen, NWP/CCP	ED	J. Harvill, CTAC	ED
V. Cannon, NWP/CCP	ED	R. Allen, CTAC	ED
C. Turner, NWP/CCP	ED	P. Y. Martinez, CTAC	ED
A. J. Fisher, NWP/CCP	ED	D. Harvill, CTAC	ED
I. Joo, NWP/CCP	ED	G. White, CTAC	ED
W. Ledford, NWP/CCP	ED	WWIS Database Administrators	ED
M. Walker, NWP/CCP	ED	Site Documents	ED
J. Carter, NWP/CCP	ED	WIPP Operating Record	ED
T. Peake, EPA	ED	CBFO QA File	
L. Bender, EPA	ED	CBFO M&RC	
E. Feltcorn, EPA	ED	*ED denotes electro	

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U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

INTERIM AUDIT REPORT

OF THE

IDAHO NATIONAL LABORATORY
ANALYTICAL LABORATORIES
UTILIZING THE
CENTRAL CHARACTERIZATION PROGRAM

FOR

CLOSEOUT OF WASTE CHARACTERIZATION ACTIVITIES IN ACCORDANCE WITH THE HAZARDOUS WASTE FACILITY PERMIT

CARLSBAD, NEW MEXICO

AUDIT NUMBER A-13-19

July 9 – 11, 2013

Prepared by: Priscilla Y. Martinez — **Date:** 8-8-13
Priscilla Y. Martinez, CTAC
Audit Team Leader

Approved by: Martin P. Navarrete — **Date:** 8-8-13
CBFO Quality Assurance Director

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Closeout Audit A-13-19 was conducted to evaluate the continued adequacy, implementation, and effectiveness of the Idaho National Laboratory (INL) Analytical Solids and Headspace Gas Laboratories transuranic (TRU) waste characterization activities performed under the Nuclear Waste Partnership LLC (NWP) Central Characterization Program (CCP) 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* (WIPP WAC).

The activities evaluated include the headspace gas (HSG) analysis of Summary Category Group (SCG) S5000 debris waste at the Environmental Chemistry Laboratory (ECL) and the solids analysis of SCGs S3000 homogeneous solids and S4000 soils/gravel waste at the Analytical Chemistry Laboratory (ACL). Data generation-level data validation and verification and SUMMA® canister preparation and certification for use by other generator sites were also evaluated for both laboratories, as applicable. The closeout audit was based on the Class 2 Permit Modification Request approved by the New Mexico Environment Department (NMED) on March 13, 2013, which included the removal of chemical analytical sampling and analysis and HSG sampling and analysis from the TRU waste characterization process.

INL/CCP completed characterization activities on March 13, 2013. No new containers were introduced into the characterization process after that date. Containers requiring the completion of data generation-level and project-level activities to finalize the characterization processes were managed for a short time thereafter. Emphasis for the audit was placed on characterization reporting activities completed since the last recertification audit (A-12-14), as well as the process for project termination and closure documentation.

The audit was performed at the CBFO Skeen-Whitlock Building in Carlsbad, NM, July 9-11, 2013. No conditions adverse to quality (CAQs) were identified or corrected during the audit (CDA). Also, 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 INL/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 INL/CCP Analytical Laboratories and applicable requirements for closure have been verified.

2.0 SCOPE AND PURPOSE

2.1 Scope

The audit team evaluated the continued adequacy, implementation, and effectiveness of the programs and requirements controlling the INL/CCP TRU waste characterization activities for HSG analysis of SCG S5000 debris waste; solids analysis of SCGs S3000 homogeneous solids and S4000 soils/gravel waste; generation-level data validation and verification; and SUMMA® canister preparation and certification for use by other generator sites.

The following general elements were evaluated:

- 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:

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

The following CBFO waste characterization technical elements were audited:

- Data Generation-Level Data Validation and Verification
- Headspace Gas Sampling Analysis
- Solids Sampling Analysis
- SUMMA® Sample Canister Preparation

Evaluation of adequacy of the INL/CCP Analytical Laboratories documents was based on current revisions of the following documents:

- Waste Isolation Pilot Plant Hazardous Waste Facility Permit, NM4890139088-TSDF, New Mexico Environment Department
- *CBFO Quality Assurance Program Document*, DOE/CBFO-94-1012
- *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*, DOE/WIPP-02-3122
- *CCP Transuranic Waste Characterization Quality Assurance Project Plan*, CCP-PO-001
- *CCP Transuranic Waste Certification Plan*, CCP-PO-002
- *CCP/INL Interface Document*, CCP-PO-024
- Related technical and QA implementing procedures

2.2 Purpose

Audit A-13-19 was conducted to assess the INL/CCP Analytical Laboratories waste characterization activities related to the certification of HSG sampling analysis of SCG S5000 debris waste and solids sampling analysis of SCGs S3000 homogeneous solids and S4000 soils/gravel waste for compliance to the HWFP Waste Analysis Plan (WAP) and the WIPP WAC requirements. The audit team also evaluated the INL/CCP Analytical Laboratories QA program with regard to the requirements of the CBFO QAPD.

3.0 AUDIT TEAM AND OBSERVERS

Auditors/Technical Specialists

Martin Navarrete	CBFO Management Representative, CBFO Office of Quality Assurance
Priscilla Y. Martinez	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Berry Pace	Auditor, CTAC
Paul Gomez	Technical Specialist, CTAC
Mavis Lin	Technical Specialist, CTAC

Observers

Norma Castaneda	CBFO Office of the National TRU Program (NTP)
Mark Doherty	CTAC/NTP

4.0 AUDIT PARTICIPANTS

The individuals contacted during the audit are identified in Attachment 1. A pre-audit meeting was held in Carlsbad, NM, at the CBFO Skeen-Whitlock Building, room T224, on July 9, 2013. Daily briefings were held with the INL/CCP management and staff to discuss the previous day's issues and deficiencies. The audit was concluded with a post-audit meeting held at the CBFO Skeen-Whitlock Building, room T224, on July 11, 2013.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy and Implementation

This audit was performed to assess the ability of the INL/CCP Analytical Laboratories to characterize HSG sampling analysis of SCG S5000 debris waste and solids sampling analysis of SCGs S3000 homogeneous solids and S4000 soils/gravel waste to the requirements specified in the CBFO QAPD, the HWFP WAP, and the WIPP WAC. Other areas evaluated were generation-level data validation and verification and SUMMA® canister preparation and certification for use by other generator sites. The characterization methods evaluated, as described in the body of this report, were HSG sampling analysis and solids sampling analysis. 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 INL/CCP TRU waste characterization activities, as described in the associated INL/CCP implementing procedures, are satisfactory in meeting upper-tier requirements. Attachment 2 is the Summary Table of the Audit Results. Attachment 3 is the Table of Audited Documents examined during the audit. Attachment 4 is the List of Processes and Equipment Reviewed during the audit. Details of audit activities are described below.

5.2 General Activities

5.2.1 Results of Previous Audits

The results of CBFO Recertification Audit A-12-14 of the INL/CCP Analytical Laboratories were examined. No CAQs requiring the issuance of a CAR were identified as a result of the referenced audit.

5.2.2 Changes in Programs or Operations

No changes in programs or operations have occurred since the previous audit (CBFO Recertification Audit A-12-14).

5.2.3 New Programs or Activities Being Implemented

No new programs or new activities have been implemented by the INL/CCP Analytical Laboratories since the previous audit (CBFO Recertification Audit A-12-14). All TRU waste characterization and certification activities are being completed for closure of the two laboratories.

5.2.4 Changes in Key Personnel

No changes in key personnel have been made by the INL/CCP Analytical Laboratories since the previous audit (CBFO Recertification Audit A-12-14).

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 assessments are provided.

5.3.1 Personnel Qualification and Training

The audit team verified that the INL/CCP Analytical Laboratories met the requirements of CBFO QAPD Section 1.2, *Personnel Qualification and Training.* The audit team

conducted interviews with responsible personnel in the CCP training department. The audit team reviewed procedure CCP-QP-002, Rev. 35, *CCP Training and Qualification Plan*, to determine the degree to which the procedure adequately addresses the upper-tier requirements. The results of the review indicate that the procedure adequately addresses upper-tier requirements. Personnel training records associated with HSG sample analysis and solids sample analysis were examined to verify implementation of associated requirements and to verify that personnel performing characterization activities are appropriately qualified.

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

5.3.2 Records

The audit team verified that the INL/CCP Analytical Laboratories met the requirements of CBFO QAPD Section 1.5, *Records*. The audit team reviewed procedures CCP-PO-001, Rev. 21, *CCP Transuranic Waste Characterization Quality Assurance Project Plan;* CCP-PO-002, Rev. 27, *CCP Transuranic Waste Certification Plan*; CCP-QP-008, Rev. 21, *CCP Records Management*; and CCP-QP-010, Rev. 23, *CCP Document Preparation, Approval, and 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 records management personnel and observed activities to determine if the INL/CCP record storage methods were in compliance with procedural and WAP requirements. Documents for records coordinator designation and training, records transmittals, and record indices were reviewed during the evaluation. The audit team observed records management activities at the records department and WIPP Records Archive. Control of QA records was verified through review of the Records Inventory and Disposition Schedule dated 8/2/2012.

No concerns related to records were identified during the audit. 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.

5.3.3 Nonconformance Reporting and Corrective Action

The audit team verified that the INL/CCP Analytical Laboratories met the requirements of CBFO QAPD Section 1.3, *Quality Improvement*. The audit team conducted interviews with representatives of the CCP QA program and reviewed CCP-QP-005, Rev. 22, *CCP TRU Nonconforming Item Reporting and Control*, to determine the degree

to which the procedure adequately addresses upper-tier requirements. The results of the review indicate that the procedure adequately addresses the upper-tier requirements.

The audit team selected a sampling of nonconformance reports (NCRs) and a CAR (only one CAR has been issued since Recertification Audit A-12-14) for review to ensure that CAQs were appropriately identified, documented, dispositioned, investigation and root cause analysis performed where mandated, resolved, and tracked through closure. The audit team verified that the INL/CCP Analytical Laboratories were appropriately documenting and reporting WAP-related nonconformances (identified at the site project management level) to CBFO as required.

The audit team reviewed the following NCRs/CAR: CAR-ALD-0001-13; NCR-ALD-0285-13; NCR-ALD-0286-13; NCR-ALD-1830-12; NCR-ALD-1841-12; NCR-ALD-1519-12; NCR-ALD-1520-12; NCR-ECL-0487-13; NCR-ECL-0158-12; and NCR-ECL-0159-12.

The audit team verified that all NCRs and CAR associated with the Analytical Laboratories were closed. The purpose of the NCR review was to confirm that administrative deficiencies are being appropriately documented and tracked through resolution. There were no reportable NCRs since the previous recertification audit. All NCRs were verified as being managed and tracked in the CCP Integrated Data Center on the CCP NCR Logs.

No concerns relating to NCRs and corrective action were identified during the audit. The procedure reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for NCRs and corrective actions 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 verified that the INL/CCP Analytical Laboratories met the requirements of CBFO QAPD, Section 4.1, *Sample Control.* The audit team conducted interviews with representatives of the CCP QA program and reviewed CCP-TP-177, Rev. 0, *CCP Sample Receipt, Custody, and Storage*, to determine the degree to which the procedure adequately addresses upper-tier requirements. The results of the review indicate that the procedure adequately addresses the upper-tier requirements.

The audit team verified evidence of sample control through the review of batch data reports (BDRs) and associated chain-of-custody (COC) records for final waste sample disposition. The audit team reviewed and verified the COC records were documented and traceable.

No concerns relating to sample control 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 verified that the INL/CCP Analytical Laboratories met the requirements of CBFO QAPD Section 2.4.5, *Monitoring, Measuring, Testing, and Data Collection Equipment.* The audit team conducted interviews with measuring and test equipment (M&TE) personnel and reviewed CCP-QP-016, Rev. 17, *CCP Control of Measuring and Testing Equipment*, to determine the degree to which the procedure adequately addresses upper-tier requirements. The results of the review indicate that the procedure adequately addresses the upper-tier requirements.

Evidence of control of M&TE was verified through review of labeled equipment and verification in the CCP M&TE database. A review of the certificates of calibration were found to be adequate.

No concerns relating to M&TE were identified during the audit. The documents reviewed and evaluated during the audit provided evidence that the applicable requirements for M&TE 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.

5.4.1 Data Generation-Level Data Validation and Verification

Objective evidence was reviewed to ensure data generation-level activities were adequately performed to support waste characterization. BDRs, sampling records, and data generation-level documentation were evaluated based on data generation-level requirements for HSG and solids and soils/gravel analysis.

The audit team reviewed CCP-TP-188, Rev. 2, *CCP Analytical Recording, Review, and Reporting*, to determine the degree to which the procedure adequately addresses upper-tier requirements. The results of the review indicate that the procedure adequately addresses the upper-tier requirements. No concerns relating to data generation-level data validation and verification (V&V) were identified during the audit. The procedure reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for data generation-level data V&V 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 Solids and Soils/Gravel Analysis

The audit team evaluated the INL/CCP ACL's ability to perform analysis of SCGs S3000 homogeneous solids and S4000 soils/gravel waste.

The audit team reviewed the following solids and soils/gravel analysis related CCP procedures: CCP-TP-180, Rev. 3, *CCP Analytical Sample Management*; CCP-TP-181, Rev. 0, *CCP Determination of Mercury by CVAA for TRU Waste Characterization*; CCP-TP-182, Rev. 1, *CCP Determination of Metals of ICP-AES for TRU Waste Characterization*; CCP-TP-183, Rev. 0, *CCP Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel*; CCP-TP-184, Rev. 1, *CCP Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry;* CCP-TP-185, Rev. 2, *CCP Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry*; CCP-TP-186, Rev. 2, *CCP Determination of Nonhalogenated Volatile Organics by Gas Chromatography*; CCP-TP-187, Rev. 1, *CCP Sample Preparation for Semivolatile Organic Compounds*; CCP-TP-188, Rev. 2, *CCP Analytical Data Recording, Review, and Reporting*; CCP-QP-011, Rev. 10, *CCP Laboratory Logbooks*; CCP-QP-016, Rev. 17, *CCP Control of Measuring and Testing Equipment*; CCP-TP-196, Rev. 1, *CCP Determination of Formaldehyde by High-Performance Liquid Chromatography (HPLC)*; and CCP-TP-197, Rev. 2, *CCP Determination of Hydrazine by High-Performance Liquid Chromatography (HPLC)*, to determine the degree to which the procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address the upper-tier requirements.

The audit team verified for closure the solids and soils/gravel analysis activities performed by the INL/CCP ACL, including sample receipt, sample custody, sample preparation and analysis for formaldehyde (Savannah River Site [SRS] waste), hydrazine (SRS waste), volatile organic compounds (VOCs), non-halogenated VOCs, semivolatile organic compounds, metals, and mercury. Successful participation in the latest Resource Conservation and Recovery Act Solids Performance Demonstration Program (PDP), Cycles 19B and 20A, were verified. Determination of detection limits (method detection limit and instrument detection limit), performance and accuracy studies, standard certification and material, the current WIPP-approved processes, and equipment were audited and found to be compliant. Three BDRs: ALD12017 F, H, M, N, S, V; ALD12022 F, H, M, N, S, V; and ALD12030 F, H, M, N, S, V, including tentatively identified compounds, were evaluated and determined to be acceptable. Logbooks were properly completed and maintained. Sample preparation and sample dilutions were verified to be compliant. During the closeout audit, the records of COC for final waste sample disposition were reviewed and the COC records were documented and traceable.

No concerns relating to solids and soils/gravel analysis were identified during the audit. The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for solids and soils/gravel

analysis 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 Analysis

The audit team verified for closure of the ECL that the laboratory participated in the CBFO PDP Cycle 26A and successfully demonstrated capability to perform the analysis through the CBFO scoring report. The laboratory received notification of the next round of samples for PDP Cycle 27A. The samples were not provided due to the WIPP HWFP Modification effective March 13, 2013. For the purposes of this audit, the laboratory met the requirements of the PDP upper-tier documents.

The audit team reviewed the following HSG-related procedures: CCP-TP-056, Rev. 5, *CCP HSG Performance Demonstration Plan*; CCP-TP-175, Rev. 3, *CCP Analysis of Gas Samples for VOCs by GC/MS*; CCP-TP-176, Rev. 1, *CCP Determination of Method Detection Limits for Gas Analysis*; CCP-TP-177, Rev. 0, *CCP Sample Receipt, Custody, and Storage*; CCP-TP-178, Rev. 1, *CCP SUMMA® Canister Cleaning*; CCP-TP-179, Rev. 0, *CCP Gas Transfer Manifold Systems and Sample Compositing*; CCP-TP-188, Rev. 2, *CCP Analytical Recording, Review, and Reporting*; CCP-QP-011, Rev. 10, *CCP Laboratory Logbooks*; CCP-QP-016, Rev. 17, *CCP Control of Measuring and Testing Equipment*, to determine the degree to which the procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address the upper-tier requirements.

The audit team evaluated the laboratory data generated since the last recertification audit and prior to the March 13, 2013 HWFP Modification. The following BDRs were evaluated during the audit:

SRHSG1212 – ECL12021M	SRHSG1216 – ECL12027M
SRHSG1222 – ECL12040M	SRHSG1230 – ECL12049M
SRHSG1302 – ECL13002M	SRHSG1304 – ECL13007M

The ECL/CCP HSG BDRs reported by the laboratory effectively meet the requirements of the CCP procedures. This includes the proper sample maintenance and control through the COC process from collection in the field to final disposition at the laboratory via delegation of authority to release the CCP HSG samples. The audit team evaluated the qualification cards of the laboratory personnel and CCP data review personnel and determined that all personnel were adequately trained to perform their assigned tasks.

The audit team evaluated data for QA and quality control samples for the characterization program. The data included the certification of needle cleanliness information, as reported in the sampling BDRs listed above. The results of the review indicate that the needle cleanliness information adequately addresses upper-tier requirements.

The following needle blank BDRs were evaluated:

INHSG1102NB	INHSG1114NB	INHSG1201NB
INHSG1203NB	INHSG1205NB	

The team also verified the logbook entries for results of the equipment cleaning of the SUMMA® canisters with leak testing, and the logbook entries for canister maintenance. As part of the QA and control, the laboratory provided to CCP Records the initial calibration reports titled "Response Factor Reports," for both analysis gas chromatograph–mass spectrometry units (GCMS-I and GCMS-J). This included the calibration gasses and the certification of the gas standards that are traceable to the National Institute of Standards and Technology. In addition, the laboratory provided to CCP Records the ECL Method Performance Demonstration, including method detection limit evaluations for both GCMS-I and GCMS-J, and a report for the units' precision and accuracy. The reports provided were dated to cover the ECL analysis reports listed above.

No concerns relating to HSG analysis were identified during the audit. The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for HSG analysis 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 CAQs, as described below, and document such conditions on CARs.

Condition Adverse to Quality (CAQ) – An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, nonconformances, and technical, inadequacies.

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

No CAQ necessitating the generation of a CAR was 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 Audit Team Leader (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 (CDA).

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 CDA according to the definition below.

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

No CDAs were identified as a result 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.

6.3.1 Observations

No Observations were documented as a result of this audit.

6.3.2 Recommendations

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

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: Processes and/or Equipment Reviewed During Audit

PERSONNEL CONTACTED DURING THE AUDIT

PERSONNEL CONTACTED DURING AUDIT A-13-19				
NAME	**ORG/TITLE**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST-AUDIT MEETING**
Allen, Randall	CTAC – Audits and Assessments Manager			X
Billett, Michele	Training Coordinator		X	X
Castaneda, Norma	CBFO/NTP – Certification Waste Manager	X		X
Doherty, Mark	Tech Specialist	X	X	X
Fisher, A. J.	NWP/CCP – Support Services Manager	X	X	X
Goff, Ruthie	Records Clerk		X	X
Ledford, Wayne	NWP – QA Specialist			X
McCormick, Kali	Records Clerk		X	
Mueller, Terry	NWP – QA Specialist	X		
Payanes, Jose	Document Services Manager		X	
Ramirez, Mike	NWP/CCP - SPM	X		
Sexton, Chris	NWP – Engineer		X	
Turner, Charles	NWP – SPM	X	X	X
Vernon, Jim	NWP-SPM	X		X

SUMMARY TABLE OF AUDIT RESULTS
Audit A-13-19

Area/Activity	Concern Classification				QA Evaluation		Technical
	CARs	CDAs	Obs	Rec	Adequacy	Implementation	Effectiveness
Personnel Qualifications and Training					A	S	E
Nonconformances					A	S	E
Records					A	S	E
Sample Control					A	S	E
Solids/Soils/Gravel Analysis					A	S	E
Headspace Gas Analysis					A	S	E
Data Generation-level Data Validation and Verification					A	S	E
Summa Canister Preparation					A	S	E
TOTALS	0	0	0	0	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

IDAHO NATIONAL LABORATORY
CENTRAL CHARACTERIZATION PROGRAM
TABLE OF AUDITED DOCUMENTS
Audit A-13-19

No.	Procedure Number	Rev	DOCUMENT TITLE
1.	CCP-PO-001	21	CCP Transuranic Waste Characterization Quality Assurance Project Plan
2.	CCP-PO-002	27	CCP Transuranic Waste Certification Plan
3.	CCP-PO-024	13	CCP/INL Interface Document
4.	CCP-QP-002	35	CCP Training and Qualification Plan
5.	CCP-QP-005	22	CCP TRU Nonconforming Item Reporting and Control
6.	CCP-QP-008	21	CCP Records Management
7.	CCP-QP-010	23	CCP Document Preparation, Approval, and Control
8.	CCP-QP-011	10	CCP Laboratory Logbooks
9.	CCP-QP-016	17	CCP Control of Measuring and Testing Equipment
10.	CCP-TP-056	5	CCP HSG Performance Demonstration Plan
11.	CCP-TP-175	3	CCP Analysis of Gas Samples for VOCs by GC/MS
12.	CCP-TP-176	1	CCP Determination of Method Detection Limits for Gas Analysis
13.	CCP-TP-177	0	CCP Sample Receipt, Custody, and Storage
14.	CCP-TP-178	1	CCP SUMMA® Canister Cleaning
15.	CCP-TP-179	0	CCP Gas Transfer Manifold Systems and Sample Compositing
16.	CCP-TP-180	3	CCP Analytical Sample Management
17.	CCP-TP-181	0	CCP Determination of Mercury by CVAA for TRU Waste Characterization
18.	CCP-TP-182	1	CCP Determination of Metals of ICP-AES for TRU Waste Characterization
19.	CCP-TP-183	0	CCP Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel
20.	CCP-TP-184	1	CCP Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry
21.	CCP-TP-185	2	CCP Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry
22.	CCP-TP-186	2	CCP Determination of Nonhalogenated Volatile Organixs by Gas Chromatography
23.	CCP-TP-187	1	CCP Sample Preparation for Semivolatile Organic Compounds
24.	CCP-TP-188	2	CCP Analytical Data Recording, Review, and Reporting
25.	CCP-TP-196	1	CCP Determination of Formaldehyde by High-Performance Liquid Chromatography (HPLC)
26.	CCP-TP-197	2	CCP Determination of Hydrazine by High-Performance Liquid Chromatography (HPLC)

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
APPROVED PROCESSES OR EQUIPMENT				
INL/CCP Audit A-13-19				
PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT				
Headspace Gas				
12HE10	Environmental Chemistry Lab (ECL) – Headspace gas volatile organic compounds specified in Procedure CCP-TP-175 Equipment = GC/MS-I	DEBRIS (S5000)	Yes	N/A
12HE11	Environmental Chemistry Lab (ECL) – Headspace gas volatile organic compounds specified in Procedure CCP-TP-175 Equipment = GC/MS-J	DEBRIS (S5000)	Yes	N/A
Solids				
12HA3	Analytical Chemistry Laboratory (ACL) – Total non-halogenated volatile organic compounds specified in Procedure CCP-TP-186 Equipment = GC-1	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A
12HA8	Analytical Chemistry Laboratory (ACL) – Total purgeable volatile organic compound analysis specified in Procedure CCP-TP-184 Equipment = VOA-4	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A
12HA10	Analytical Chemistry Laboratory (ACL) – Total semi-volatile organic compounds specified in Procedure CCP-TP-185 Equipment = SV-6	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A
12HA12	Analytical Chemistry Laboratory (ACL) – Total semi-volatile organic compounds specified in Procedure CCP-TP-185 Equipment = SV-8	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A

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
12HA13	Analytical Chemistry Laboratory (ACL) – Total purgeable volatile organic compounds specified in Procedure CCP-TP-184 Equipment = VOA-5	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A
12HA14	Analytical Chemistry Laboratory (ACL) – Total non-halogenated volatile organic compounds specified in Procedure CCP-TP-186 Equipment = GC-6	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A
12HM8	Analytical Chemistry Laboratory (ACL) – Total metals (Hg) analysis specified in Procedure CCP-TP-181 Equipment = CVHG-2	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A
12HM9	Analytical Chemistry Laboratory (ACL) – Total metals digestion specified in Procedure CCP-TP-183 Equipment = MW-3	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A
12HM10	Analytical Chemistry Laboratory (ACL) – Total metals digestion specified in Procedure CCP-TP-183 Equipment = MW-4	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A
12HM11	Analytical Chemistry Laboratory (ACL) – Total metals analysis specified in Procedure CCP-TP-182 Equipment = ICP-7	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A
12HM12	Analytical Chemistry Laboratory (ACL) – Total metals (Hg) analysis specified in Procedure CCP-TP-181 Equipment = CVHG-3	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A
12HM13	Analytical Chemistry Laboratory (ACL) – Total metals analysis specified in Procedure CCP-TP-182 Equipment = ICP-8	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A

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
12HP1	Analytical Chemistry Laboratory (ACL) – Determination of Formaldehyde and Hydrazine by High-Performance Liquid Chromatography (HPLC) specified in Procedure CCP-TP-196 and CCP-TP-197 Equipment = HPLC-1	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A
Processes				
N/A	Data Validation and Verification	DEBRIS (S5000) SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	Yes
N/A	Sample Management as described in Procedure CCP-TP-180	SOILS/GRAVEL (S4000) HOMOGENEOUS SOLIDS (S3000)	Yes	N/A
N/A	SUMMA Canister Cleaning for generator/storage sites HSG sample collection, as described in Procedure CCP-TP-178	DEBRIS (S5000)	Yes	N/A
Deactivated Equipment				
12HE4	Environmental Chemistry Lab (ECL) – Headspace gas volatile organic compounds specified in Procedure CCP-TP-175 Equipment = GC/MS-H	DEBRIS (S5000)	Yes	N/A
12HE6	Environmental Chemistry Lab (ECL) – Headspace gas volatile organic compounds specified in Procedure CCP-TP-173 Equipment = GC-2	DEBRIS (S5000)	Yes	N/A