



Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221
August 28, 2002

ENTERED



Mr. Steve Zappe, Project Leader
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, New Mexico 87505

Re: Transmittal of the Final Audit Report for the Hanford Site (A-02-23)

Dear Mr. Zappe:

This letter transmits the Final Audit Report for the Hanford Site as required by Section II.C.2.c of the WIPP Hazardous Waste Facility Permit. The audit was conducted on June 24-28, 2002. Closure of the Corrective Action Report resulting from this audit was completed on August 16, 2002.

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

Please contact the CBFO Quality Assurance Manager, Ms. Ava L. Holland, at (505) 234-7423 should you have any questions concerning this audit report.

Sincerely,

Dr. Inés R. Triay
Manager

Enclosure



cc w/o enclosure:

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U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

FINAL AUDIT REPORT

OF THE

HANFORD SITE

RICHLAND, WASHINGTON

AUDIT NUMBER A-02-23

JUNE 24-28, 2002

FINAL AUDIT REPORT OF WASTE CHARACTERIZATION AND
CERTIFICATION IN ACCORDANCE WITH THE HAZARDOUS WASTE
FACILITY PERMIT



Prepared By: Pete V. Rodriguez
Pete V. Rodriguez, CTAC
Audit Team Leader

Date: 8/21/02

Approved By: Ava L. Holland
Ava L. Holland
CBFO QA Manager

Date: 8/26/02

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Audit A-02-23 was conducted to re-evaluate the adequacy, implementation, and effectiveness of the Hanford site transuranic (TRU) waste characterization and certification activities. The audit was conducted to evaluate the retrievably stored debris waste characterization process activities at the Waste Receiving and Processing (WRAP) facility, and the documentation for newly generated debris and newly generated homogeneous solids characterized at the Plutonium Finishing Plant (PFP) facility using the process for visual examination technique (VET). The applicable summary category groups were S3000, homogeneous solids, and S5000, debris waste.

The audit was conducted at the Hanford site during the week of June 24-28, 2002. The audit team concluded that the Hanford technical and quality assurance (QA) program and procedures continue to be adequate relative to the flow down of requirements from the CBFO Quality Assurance Program Document (QAPD) and the Waste Analysis Plan (WAP) of the Hazardous Waste Facility Permit (HWFP). The audit team also concluded that the defined QA and technical processes for the audited activities continue to be implemented in accordance with the Hanford Quality Assurance Project Plan (QAPjP) and implementing procedures, and that the processes are effective.

The deficiency identified in the corrective action report (CAR) discussed in section 6.0 has been subsequently corrected. The audit team also concluded that the QA program is being satisfactorily implemented and, that the Hanford technical processes evaluated, are satisfactorily implemented and effective.

The audit team identified one condition adverse to quality that resulted in the issuance of one WAP-related CBFO corrective action report (CAR), which required corrective action in the area of real-time radiography (RTR). One isolated deficiency requiring only remedial corrective action was corrected during the audit (CDA). One Observation was identified, and six Recommendations are being offered for Hanford management's consideration. The CAR and CDA are described in section 6.0 and the Observation and Recommendations are described in section 7.0.

2.0 SCOPE AND PURPOSE

2.1 Scope

The audit team evaluated the continued adequacy, implementation, and effectiveness of technical and QA processes related to Hanford TRU waste characterization and certification activities.

The following elements were evaluated in accordance with the CBFO QAPD:

- Organization
- QA Program Implementation
- Personnel Qualification and Training

Document Control
Work Processes
Records Management
Nonconformance Control
Corrective Action
Procurement
Measuring and Test Equipment
Assessments/Audits
Sample Control
Software Control
QA Grading
Performance Demonstration Program (PDP)

The following CBFO technical characterization elements were evaluated in accordance with the WAP:

Sampling Design for Visual Examination (VE)
Sample Handling
Headspace Gas Sampling and Analysis
RTR
VE
VET
Packaging (Pipe-N-Go)
Acceptable Knowledge (AK)
Data Generation, Validation, Usability, and Reporting
WIPP Waste Information System (WWIS)

Evaluation of Hanford TRU Waste Characterization Program documents was based on current revisions of the following documents:

Hanford Site Quality Assurance Project Plan (QAPjP) for the Transuranic Waste Characterization Program
Hanford Site Transuranic Waste Certification Plan
Related Hanford technical and QA implementing procedures

3.0 AUDIT TEAM, INSPECTORS, AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Ava Holland	CBFO QA Manager
Pete Rodriguez	Audit Team Leader, CTAC
Annabelle Axinn	Auditor, CTAC
Earl Bradford	Auditor, CTAC
Steven Calvert	Auditor, CTAC
Steve Davis	Auditor, CTAC
Jim Schuetz	Auditor, CTAC
Dee Scott	Auditor, CTAC

Jack Walsh	Auditor, CTAC
Karen Gaydosh	Technical Specialist, CTAC
Patrick Kelly	Technical Specialist, CTAC
Ray Martin	Technical Specialist-In-Training, CTAC
Martin Navarrete	CBFO Representative/Auditor-In-Training
Todd Sellmer	Technical Specialist-In-Training, WTS
BJ Verret	Technical Specialist, CTAC
Joe Willis	Technical Specialist, WTS

OBSERVERS

Connie Walker	NMED/Tech Law - Observer
Will Fetner	NMED Observer
Steve Holmes	NMED Observer
Phillis Stevens	NMED Observer
Scott Webb	EEG Observer
Reinhard Knerr	CBFO/NTP – Management Representative
Rob Tayloe	NTP (RSI) – Observer

4.0 AUDIT PARTICIPANTS

Hanford individuals involved in the audit process are identified in Attachment 1. A preaudit meeting was held in Conference Room 153, 2420 Stevens Drive, on June 24, 2002. A daily meeting was held with Hanford management and staff to discuss issues and potential deficiencies. The audit was concluded with a postaudit meeting held in Conference Room 153, 2420 Stevens Drive, on June 28, 2002.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy and Implementation

This audit was performed to assess Hanford's continued ability to characterize retrievably stored debris waste characterized at the WRAP facility. The audit also assessed and evaluated VET operations and documentation applied to retrievably stored and newly generated debris and newly generated homogeneous solids characterized at the PFP facility to the requirements specified in the WAP. The applicable summary category groups were S3000, homogeneous solids, and S5000, debris waste. The characterization methods assessed were headspace gas sampling, headspace gas analysis, AK, RTR, VE, and VET. Data review, validation, and use of those results to perform data quality objective (DQO) reconciliation and prepare a Waste Stream Profile Form (WSPF) were assessed. S3000 and S5000 were the only waste streams available for demonstration during the audit. The processes demonstrated for those waste streams will also be used to characterize other retrievably stored and newly generated debris waste streams. (AK, RTR, VE, VET and headspace gas sampling and analysis will be performed in the same manner for all waste streams, regardless of the summary category group.)

A newly generated waste stream was examined from summary category group S3000 (Hanford incinerator ash), consisting of combustible materials incinerated in the Building 232-Z Contaminated Waste Recover Facility (CWRF) incinerator at PFP. The previously examined waste stream from summary category group S3000 consisted of Rocky Flats ash (see A-01-16). Waste streams from summary category group S4000 will require an additional audit because the requirements specific to this area were not included in the scope of this audit. Waste streams from summary category group S3000 will also require an additional audit and may not be shipped to WIPP until a solid sampling and analysis program is developed and implemented for S3000 waste streams.

The audit team concluded that the applicable Hanford TRU waste characterization activities, as described in the associated Hanford implementing procedures, satisfactorily meet the requirements contained in the HWFP. The deficiency identified in section 6.1 has been corrected. Details of audit activities, including specific objective evidence reviewed, are described below and in the attached B6 checklist. The B6 checklist identifies the Hanford program documents and procedures in which the WAP requirements are met. Attachment 3 contains examples of the objective evidence reviewed during the audit.

5.2 Technical Activities

5.2.1 Table B6-1 WAP Checklist

The B6-1 WAP checklist addresses program requirements from an overall management perspective. It documents the verification that the waste characterization strategy, as defined in the WAP, is implemented by using controlled procedures. This audit was performed to assess Hanford's continued ability to characterize summary category group S5000 debris waste streams, and the process for VET being used for characterization of waste at the PFP, as applied to retrievably stored and newly generated debris (S5000) and homogenous solids (S3000) waste. Objective evidence to evaluate the implementation of the associated characterization activities was selected and reviewed. Batch reports, sampling records, and training documentation for TRU Waste Characterization Program (TWCP) personnel were included in the evaluation. The audit included direct observation of actual waste characterization activities and review of the documentation associated with gas sampling and analysis, RTR, VE, VET, and WWIS data entry. Each characterization process involves:

- Collecting raw data
- Collecting quality assurance/quality control (QA/QC) samples or information
- Reducing the data to a useable form, 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 was reviewed for each characterization technique to ensure that all applicable requirements were captured in the site operating procedures. Specific procedures audited and the objective evidence reviewed are described in more detail in the following sections.

Hanford demonstrated compliance with the characterization requirements of the WAP in documentation and in characterization activities performed. Hanford provided combined sampling and analysis batch data reports WSCF-010619 and WSCF-020520 (containing sampling and gas analytical batch information); radiography batch data reports WR-TB-2001-058, WR-TB-2001-081, WR-TB-2001-025, and WR-TB-2001-030; VE batch data reports WR-TB-2001-072 and WR-TB-2001-087; and VET batch data reports PFP-VE-2001-013, PFP-2001-015 and PFP-VE-2002-006. The project-level data verification and validation process was evaluated by reviewing the following batch data reports (copies of all the referenced batch data reports are included in Attachment 3):

- WR-TB-2001-058 (RTR)
- WR-TB-2001-081 (RTR)
- WR-TB-2001-025 (RTR)
- WR-TB-2001-030 (RTR)
- WR-TB-2001-072 (VE)
- WR-TB-2001-087 (VE)
- PFP-VE-2001-013 (VET)
- PFP-VE-2002-006 (VET)
- WSCF-010619 (HGAS)
- WSCF-020520 (HGAS)

AK and the auditable records were reviewed in detail for retrievably stored and newly generated debris waste streams (S5000). The AK record was reviewed to demonstrate that the required information was present and correctly interpreted. Batch data reports WR-TB-2000-24, WR-TB-2000-33, and PFP-VE-2001-015, in addition to batch data reports cited above, were used to demonstrate confirmation of AK, to reconcile DQOs, to prepare a WSPF, and to transmit data to WIPP using the WWIS.

A WSPF and related summarized characterization information were reviewed to establish the objective evidence for reporting waste characterization information to WIPP. The form was completed using information from characterization processes. An actual WSPF has been prepared and was submitted to CBFO prior to any shipments, as required. The form was reviewed and approved by the CBFO when the waste stream had been fully characterized, and the site was approved to ship waste.

5.2.2 Table B6-2 Solids and Soils/Gravel Sampling Checklist

Hanford is not performing sampling of solids or soils/gravel waste streams at this time. With the exception of the VET being used for characterizing waste at the PFP, as applied to homogeneous solids (S3000), these areas were not audited. Accordingly, no Hanford S3000 or S4000 waste will be accepted for disposal at WIPP until the

procedures and processes have been audited and accepted by CBFO and a final audit report for those processes has been approved by the New Mexico Environment Department (NMED).

5.2.3 Table B6-3 Acceptable Knowledge Checklist

This audit was performed to assess Hanford's ability to characterize summary category group S5000 retrievably stored and newly generated debris waste streams. Items on the AK checklist are intended to ensure that Hanford has AK processes in place to:

- Train personnel in the data collection requirements
- Assemble those data into a coherent narrative detailing the waste generation and constituents
- Segregate the waste into like waste streams
- Provide Resource Conservation and Recovery Act (RCRA) characterization for those waste streams
- Confirm those characterizations using sampling and analysis
- Provide an auditable set of records to support the characterization

The AK process was evaluated by reviewing AK summary reports, source documents, and other applicable documentation related to waste streams from the PFP, the Plutonium Uranium Extraction Plant (PUREX), and waste being processed that was shipped from Rocky Flats Environmental Technology Site (RFETS). Specific AK documents reviewed included: HNF-3461, *Hanford Site TRU Waste Management Program AK Documentation for Retrievably Stored Contact Handled Waste*; HNF-5482, *Hanford Site TRU Waste Management AK Documentation for the Plutonium Finishing Plant*; HNF-5481, *Hanford Site TRU Waste Specific AK Documentation for PFP Non-Mixed Debris*; and HNF-6899, *Hanford Site TRU Waste Management AK Documentation for the Plutonium Uranium Extraction Plant*. Other upper-tier AK summary documents were examined for mixed PFP debris (HNF-6489) and PUREX mixed and non-mixed debris (HNF-7355 and 6900, respectively).

The AK checklist was completed, in part, by reviewing the documents as noted above. Additional documentation supporting the AK summary documents and AK source document review summaries are contained in Attachment 3 to support the entries in Table B6-3.

The AK process includes provisions to identify information that conflicts with what is expected in a waste stream (confirmation processes) and a method by which these conflicts can be resolved. The discrepancy resolution procedure is WMH-400, Section 7.1.9, *Acceptable Knowledge Documentation Management*. Procedure WMH-400, section 7.1.1, *TRU Waste Characterization DQO Reconciliation and Reporting*, was also evaluated during the audit.

The procedures cited above, which are used by the site to assemble, evaluate, document, and reconcile sampling and analysis results, were reviewed for adequacy, and their implementation was assessed during the audit. The AK requirements include

procedure content and specific requirements for retrievably stored waste, and ensure that the AK summary includes all mandatory information required by the WAP.

Reports and records used to document the basis of Hanford AK were evaluated; copies of pages used for objective evidence can be found in Attachment 3. The reports were found to be satisfactory and the records properly maintained as QA records. Attachment 3 contains a list of AK documentation reviewed in support of Procedure WMH-400, Section 7.1.1.

An issue was identified related to the fact that the AK summary did not reference all the applicable documents that support the AK polychlorinated biphenyl (PCB) conclusions. The issue was determined to be an isolated case and was corrected during the audit (CDA). Three recommendations were offered relative to acquiring additional information supporting the strontium-90/cesium-137 scaling factor/value, waste matrix code (WMC) determination and reassignment and AK Accuracy/Performance Report clarification, and consistent application of waste stream code assignment (see Recommendations 4, 5, and 6, section 7.2). This audit verified that Hanford is satisfactorily implementing the AK process to delineate, characterize, and confirm the characterization of waste for disposal, in accordance with WIPP WAP requirements.

5.2.4 Table B6-4 Headspace Gas Checklist

This audit was performed to assess Hanford's ability to characterize summary category group S5000 debris waste streams. Headspace gas sampling and analysis operations at Hanford were evaluated by examining the sampling and analysis equipment, conducting personnel interviews, and reviewing selected headspace gas batch data reports for actual sample collection and analysis of SUMMA® canister samples and for sample canister assemblies (SCAs). The following procedures were evaluated:

WMP-400, Section 7.1.7, *TRU Waste Sample and Waste Container Management Activities*

WMP-400, Section 8.1.1, *Logkeeping Practices for WIPP Activities for Headspace Gas Sampling and Analysis*

WMP-400, Section 8.1.8, *Data Management for Headspace Gas Sampling and Analytical Results*

LO-080-407, *Cleaning Summa Canisters for TRU HSG Sampling*

LA-523-410, *Determination of VOCs in TRU/Mixed Waste Container Headspace*

LO-090-450, *TRU Project Sample C-O-C, Storage, Acceptance, and Disposal*

DO-080-009, *Obtain Headspace Gas Samples of TRU Waste Containers*

The headspace gas sampling and analysis process was audited by evaluating and inspecting the sampling equipment and analytical laboratory, and reviewing available headspace gas batch reports. Sampling and analytical batch data reports are combined into a single report. Batch reports were reviewed to evaluate sampling and analysis results against WAP requirements (batch data reports WSCF-010619, WSCF-020520, WSCF-010731 and WSCF-020122).

Documentation specific to these activities (e.g., calibration records, maintenance logbooks, and instrument logbooks) was reviewed to ensure that laboratory operations met QA requirements, as specified in the WAP. Copies of the applicable documentation reviewed are included in the batch data reports and excerpts.

Assessing the implementation of the procedures listed above completed the Table B6-4 headspace gas checklist. Sampling and analysis operations were evaluated and verified through review of the batch reports and documents noted above.

At Hanford, headspace gas is sampled using a single canister assembly. Samples are collected by inserting a side-port needle through the drum filter. More detail concerning the sampling system can be found in the Hanford QAPjP and the applicable procedure.

Equipment is controlled to ensure that it does not contaminate the sample. Sample integrity is protected using procedure LO-090-450, *TRU Project Sample Chain-of-Custody, Storage, Acceptance, and Disposal*. Copies of the chain-of-custody (COC) and sample canister information documents are included in the batch data reports.

Sample collection is assessed by collecting QC samples and evaluating the process against specific quality assurance objectives (QAOs). Sample collection is controlled by procedure DO-080-009, *Obtain Headspace Gas Samples of TRU Waste Containers*, and analysis of samples is controlled by procedures LA-523-410, *Determination of VOCs in TRU/Mixed Waste Container Headspace*. Review of the results to ensure they meet program QAOs is controlled by WMP-400, section 8.1.8, *Data Management for Headspace Gas Sampling and Analytical Results*. Sampling QAOs are assessed after the QC samples are analyzed and are documented in the analytical batch report.

The processes used to clean, leak-check, and maintain sampling equipment were evaluated and found to adequately meet WAP requirements. Procedure LO-080-407, *Cleaning Summa Canisters for TRU HSG Sampling* controls canister cleaning and certification. Field records associated with sampling activities were also found to be acceptable. Copies of pages from the field records can be found in the batch reports in Attachment 3. Review of the batch reports showed compliance with the WIPP WAP requirements and that Hanford has successfully implemented effective plans and procedures in both the technical and QA areas. Pages from the batch reports that serve as objective evidence for implementation of some activities of the B6-4 checklist are included in Attachment 3.

One issue of no current deficiency but possible future impact in the area of COC, relating to SUMMA[®] canister "cleaning" blanks is discussed in Section 7.1, and is noted as an Observation.

The headspace gas sampling and analysis process at Hanford satisfactorily implements the WIPP WAP requirements.

5.2.5 B6-5 Radiography Checklist

This audit was performed to assess Hanford's ability to characterize summary category group S5000 retrievably stored debris waste streams. Hanford radiography operations are performed using a real-time system located in the WRAP facility. Hanford has controls to allow the operator to enhance the image quality of the radiograph, annotate the videotape with text, provide narration with video, rotate the drum as it is imaged, enlarge the image, and pan up and down the container. These systems allow site personnel to view drums while recording the examination on an audio/video tape.

Videotapes of operations were reviewed, and the documentation provided by these activities was evaluated. Batch data reports WR-TB-2001-025, WR-TB-2001-081, WR-TB-2001-083, WR-TB-2001-058, and WR-TB-2001-066 are included in Attachment 3. Training course material and the RTR test drums (no specific drum number) were reviewed for adequacy.

Objective evidence was evaluated for RTR equipment and operations. The RTR process was evaluated and verified through review of the documentation noted above. Batch reports and RTR videotapes were selected to evaluate the documentation of the RTR process.

Radiography equipment maintenance and daily checks were evaluated against the WAP requirements as implemented in the RTR procedures, and were found to be satisfactory. Radiography results are properly reported on standard forms and are adequately reviewed, as required by the WAP. Copies of the forms are included in the batch data reports listed in Attachment 3.

One deficiency associated with items that cannot be penetrated in the waste container was identified and is discussed in Section 6.1. This CAQ (CBFO CAR 02-070) has been resolved and closed.

The audit team concluded that Hanford satisfactorily implements the WIPP WAP radiography requirements.

5.2.6 B6-6 VE Checklist

This audit was performed to assess Hanford's ability to characterize summary category group S5000 retrievably stored debris waste streams. Visual examinations include both the QC check performed on radiography results and observations made during initial waste packaging. Hanford was audited to determine the effectiveness of VE as the QC check on RTR. VE to support radiography is recorded on audio/video tape and documented on standard forms.

Hanford VE activities were evaluated and verified by conducting personnel interviews, reviewing videotapes, and evaluating batch data reports and associated documentation. The batch data reports reviewed were WR-TB-2001-072 and WR-TB-2001-087, included in Attachment 3.

The VE procedure used is WRP1-OP-0729, *Visual Examination*. The procedure was found to be adequate in meeting the WAP requirements.

An audit was conducted of the random selection procedure, WMH-400, Section 7.1.4, *Sampling Design and Data Analysis for RCRA Characterization and Visual Examination of Retrievably Stored Waste*, which is used to select drums to confirm radiography results. Procedures WHM-400, Section 7.1.6, *TRU Waste Project Level Data Validation and Verification*, which is used to determine the miscertification rate for the site, and WRP1-OP-0726, *TRU Loadout Glovebox Operation*, which is used to document the condition and contents of repackaged waste, were assessed.

The training course content for operators and VE experts was reviewed to verify that all WAP requirements were captured in the course. The course material is included in Attachment 3. No deficiencies were noted in this area.

The audit team concluded that Hanford is satisfactorily implementing the WIPP WAP VE requirements.

5.2.7 B6-6 VE Checklist (VET)

The audit also assessed and evaluated VET operations and documentation applied to newly generated debris (S5000) and newly generated homogeneous solids (S3000) characterized at the PFP facility to the requirements specified in the WIPP WAP.

The specific waste summary categories subject to the VET were Rocky Flats ash (S3000, homogenous solids) plutonium/aluminum (Pu/Al) Alloys (S5000, debris), and Hanford incinerator ash (S3000, inorganic homogenous solids). The VE technique requirements for use at Hanford on TRU waste are promulgated to the waste generators by the TRU Site Project Office in procedure WMP-400, Section 7.1.10, *TRU Waste Visual Examination Technique*. This is a generic procedure that applies to any waste generator performing VET of TRU waste for WIPP characterization at Hanford. The PFP has developed two procedures based on the requirements of WMP-400, Section 7.1.10. Procedure ZO-160-080, *Pipe-N-Go Operations*, provides the instructions for repackaging and performing VET on residues. Implementation of this procedure at the time of the audit was no longer limited to Rocky Flats ash (as it was during the previous audit, A-01-16), but has also been implemented on Hanford incinerator ash. The procedure requires that the residues be crushed and sieved during repackaging, and that the residues are "blended down" with silica sand to reduce plutonium concentrations. Procedure ZO-160-081, *Pu/Al Alloys Operations*, was limited to repackaging and performing VET on plutonium/aluminum alloys, and since this campaign is complete, the procedure was inactivated on February 28, 2002. Hanford intends to develop other procedures that meet the requirements of WMP-400, Section 7.1.10, for other waste types in various facilities.

Hanford VET activities were evaluated and verified by conducting personnel interviews and reviewing VET batch data reports PFP-VE-2001-013, PFP-VE-2002-006, and PFP-VE-2001-015, and associated documentation.

The training of the VET operators was reviewed and found to meet the requirements of the TRU Waste Program. No deficiencies were identified in the area of VET and repackaging in PFP. The audit team determined that the written procedures for VET and repackaging were adequate and that the VET and repackaging processes were satisfactorily implemented and effective.

6.0 SUMMARY OF DEFICIENCIES

6.1 Corrective Action Reports

During the audit, the audit team may identify Conditions Adverse to Quality (CAQ) and document such conditions on Corrective Action Reports (CAR).

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 QA program.

One WAP-related deficiency, requiring issuance of a CAR, was identified during the audit. Two drums were examined that contained leaded rubber gloves and could not be completely examined because the mass of gloves was impenetrable. This CAQ has been corrected and the CAR has been closed.

6.2 Deficiencies Corrected During the Audit

During the audit, the audit team may identify CAQs. The audit team members and the Audit Team Leader (ATL) evaluate the CAQs to determine if they are significant using the following definitions. Once a determination is made that the CAQ is not significant, the audit team members, in conjunction with the ATL, determine 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 members, in conjunction with the ATL, evaluate/verify any objective evidence/actions submitted or taken by the audited organization and determine if the condition was corrected in an acceptable manner. Once it has been determined that the CAQ has been corrected, the ATL categorizes the condition as a CDA.

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

Corrected During the Audit (CDA) – Isolated deficiencies that do not require a root cause determination or actions to preclude recurrence, and where 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 dated (isolated), and one or two individuals who have not completed a reading assignment.

One WAP-related concern that resulted in a CDA was identified and corrected during this audit. The isolated deficiency was that the AK summary did not reference all the applicable documents that support the AK PCB conclusions. The applicable documents were obtained and included in the AK summary prior to the end of the audit.

7.0 SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS

During the audit, the audit team may identify conditions, which warrant input by the audit team to the audited organization regarding potential problems or suggestions for improvement. The audit team members, in conjunction with the ATL, evaluate these conditions and classify them as Observations or Recommendations, using the following definitions. Once a determination is made, the audit team members, in conjunction with the ATL, categorize the conditions appropriately.

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.

7.1 Observations

One WAP-related issue resulting in an Observation was identified during the audit. SUMMA[®] canister cleaning blanks are sent to the analytical lab (in a separate building), and not handled per the TRU Project COC procedure L0-090-450. It was determined that while a deficiency did not currently exist, there is a potential for future problems. It should also be noted that a Document Change Form (DCF) was initiated on June 26, 2002, for procedure L0-080-407, *Cleaning Summa™ Canisters for TRU Waste HSG Sampling*. This DCF provides clarifications on technical requirements and will require that cleaning blanks also be handled per the COC procedure L0-090-450, *TRU Project Sample COC, Storage, Acceptance, and Disposal*.

Recommendations

Six WAP-related Recommendations were provided to Hanford management during the audit:

1. When a waste item is identified (during RTR) that could contain PCBs (such as ballasts and transformers), the justification for not identifying it as a prohibited item should be documented in the batch data report.
2. During videotaping of VE, the narrator should state his or her name and the names of the VE expert and VE operators.
3. The meaning of signatures of VE technician and VE expert on the VE drum log should be specified. Hanford should be more timely in obtaining these signatures.
4. Hanford should explore the need for acquiring additional information to support the strontium-90/cesium-137 scaling factor/value and place this information in the AK

record. HNF-6489 (Table 3-4) documents critical isotope distribution information, but the source of the data could be discussed in greater detail within the text of HNF-6489.

5. The waste matrix code (WMC) determination by Hanford resulted in assignment of a broad category to the Mixed Plutonium Finishing Plant Debris (MPFPD) waste stream (S5490). AK personnel are performing the appropriate WMC checks. However, procedure WMP-400, Section 7.1.9, could be enhanced to include specific direction on how to track waste matrix and parameter volumes and criteria on when an AK re-evaluation is needed for possible WMC reassignment based on the results of the tracking. In addition, Hanford should include NDA-AK comparison data to the AK accuracy/performance reports.
6. Hanford applies hazardous waste codes to all containers in a waste stream, even though the AK data indicate most of the containers do not contain the material that requires the application of the codes. It was noted that this approach is different from other sites, which break out the individual containers with unique hazardous waste codes into separate waste streams. The generator sites should request guidance from CBFO and consider consistent application of hazardous waste codes. Consistent hazardous waste code assignment by all the generator sites will continue to ensure that the data quality requirements of the permit are met.

8.0 LIST OF ATTACHMENTS

- Attachment 1: Hanford Personnel Contacted During the Audit
- Attachment 2: Corrective Action Supporting Documentation
- Attachment 3: Objective Evidence
- Attachment 4: Hanford Procedures Audited for A-02-23

HANFORD PERSONNEL CONTACTED				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Abdurrahman, Naeem	FH, NDA Senior Scientist	X	X	
Ailes, Sid	FH/Duratek Consultant	X	X	X
Anderson, Aaron	WRAP RTR Operator		X	
Bancroft, Linda	WRAP Tool Crib Attendant		X	
Bisping, Russ	Fluor Global Services Measurement Assurance Lead	X		
Bisping, Scott	FH AK Expert	X	X	X
Bloom, Robert	WRAP Facility Manager		X	
Bottenus, R. Jay	FH WRAP Engineering	X	X	X
Brickey, M. F.	FH QC		X	
Brooks, Patti	FH Sr. Clerk		X	X
Burrow, Barry	FH T-Plant Mgr.	X		
Campbell, Jim	Training Specialist		X	
Cantaloub, Michael	FD/NDA/Engineer		X	
Chase, R. E.	WRAP Operations		X	
Clinton, Richard	FH TRU AK Expert	X	X	X
Colley, Briana	FH WSCF HSG		X	X
Crane, Paul J.	TRU Site Project Manager	X	X	X
Curfman, E.W.	FH PFP A-Lab Manager			X
DeRosa, David	FH Assistant TRU SPM	X	X	X
Durkin, B. K.	WRAP Maintenance		X	
Gentry, Wayne	T-Plant Crane Ops.		X	
Gillespie, Bruce	Canberra, NDA Scientist	X	X	X
Greager, Eric	FH TRU Project Alternate SMP	X	X	X
Greager, Tim	TRU Program/Alternate Site Project Manager	X	X	X
Guera, R.F.	DOE-RL SW Program Mgr.			X
Hale, Joseph	FH Scientist HSG	X	X	X
Halelki, Tom	Corrective Action Mgmt.		X	
Harris, Phillip	WRAP NDA / Operations		X	
Heath, Nettie	FH Records Specialist		X	X

Henry, Deanna	Oregon Energy Emergency Preparedness Coordinator	X		
Hey, Bruce	FH Scientist		X	
Hiegel, Bob	DOE-RL, Engineer	X		
Hines, K.	WRAP RADCON		X	
Hopkins, Blaine	NDE Level II - Leak Test		X	
Huggins, Stewart	FH Alternate SQAQO		X	X
Hutchins, Les	FH Environmental Engineer		X	X
Keve, John	Independent Technical Reviewer – NDE Level III		X	
Kover, Karola	FH WMP, Waste Certification Official Alternate, and TRU HSG	X	X	X
Leonard, Kathy	TRU Transportation Certification Official	X	X	X
Maupin, Jim	Site Quality Assurance Officer	X	X	X
McCollum, Rick	FH WMP Calibration Activity Manager	X		
McGhan, Mark	FH CAM		X	
Miller, Loretta	FH Records Specialist		X	X
Moore, Terry	FH, Director	X		
Nance, Sheri	FH Alternate SQAQO		X	X
Parsons, Brian	WSCF Radcon.		X	
Richards, Dave	WRAP Operators		X	
Ruhlman, W.A. "Bill"	DOE-RL Facility Rep. WRAP CWC	X	X	
Sams, C. A.	WRAP QA/QC, QAE		X	
Sax, Scott	FH PFP Director	X		
Skeels, Brian	FH PFP Project Manager	X		X
Shrader, Todd	DOE-RL TRU Program Manager	X	X	X
Southworth, Tim	WRAP NDA Expert		X	
Sutter, Caroline	FH PFP Residues Manager	X	X	X
Svoboda, Ken	FH TRU Lead Process/WCO	X	X	X
Taylor, Charles	WRAP NDE Technical Supervisor		X	
Thackaberry, W.R.	WRAP/Facility Quality Assurance Officer		X	
Thomas, Debra	FH Training Administrator		X	X
Valero, Oscar	NDA PFP residues Operator		X	

Van Slyke, Jan	FH Procedures		X	X
Van Vliet, Jim	FH WMP Vice President	X		X
Varljen, Greg	FH WRAP Verification	X		
Wardrobe, L. F.	WRAP NDA		X	
Weeks, K. E.	WRAP Facility Rep. HP		X	
Westsik, George	FH PFP NDA Scientist	X	X	X
Wilkinson, Robert	FH Treatment Facility		X	
Wise, Will	WRAP Ops/Operator		X	
Wright, Allison	DOE-RL, Residues PM	X		X
Yale, Chris	NDA PFP Residues		X	

Personnel Contacted During the Audit by Area

Nonconformance/Corrective Action	P. Crane J. Maupin T. Halelki S. Nance
Personnel Qualification and Training	D. Thomas
Documents and Records	J. Van Slyke T. Greager J. Maupin L. Miller K. Svoboda N. Heath
Sample Control	K. Kover B. Hey S. Huggins S. Nance
Acceptable Knowledge	R. Clinton S. Bisping D. Thomas J. Campbell
Headspace Gas Sampling and Analysis	K. Kover B. Colley B. Hey J. Hale S. Nance
Real-Time Radiography	J. Keve S. Huggins A. Anderson D. DeRosa C. Taylor W. Thackaberry
Visual Examination	J. Keve S. Huggins A. Anderson D. DeRosa C. Taylor W. Thackaberry
Verification and Validation	D. DeRosa S. Nance P. Crane J. Maupin

HANFORD PROCEDURES AUDITED FOR A-02-23		
NUMBER	PROCEDURE NUMBER	TITLE
1.	WMP-400, section 1.2.1	TRU Training and Qualification Plan
2.	WMP-400, section 1.2.2	Qualification and Certification of Inspection and Test Personnel
3.	WMP-400, section 1.3.1	TRU Corrective Action Management
4.	WMP-400, section 1.3.2	TRU Nonconforming Item Reporting and Control System
5.	WMP-400, section 1.3.3	TRU Corrective Action Reporting and Control
6.	WMP-400, section 1.4.1	TRU Document Control
7.	WMP-400, section 1.5.1	TRU Records Management
8.	WMP-400, section 2.4.4	TRU Control of Measuring, Test, and Data Collecting Equipment
9.	WMP-400, section 7.1.1	TRU Waste DQOs Reconciliation and Reporting
10.	WMP-400, section 7.1.3	Transuranic Waste Repackaging, Visual Examination, and Sampling
11.	WMP-400, section 7.1.4	Sampling Design and Data Analysis for RCRA Characterization and Visual Examination of Retrievably Stored Waste
12.	WMP-400, section 7.1.5	WWIS Data Reporting and Entry
13.	WMP-400, section 7.1.6	TRU Waste Project Level Data Validation and Verification
14.	WMP-400, section 7.1.7	TRU Waste Sample and Waste Container Management Activities
15.	WMP-400, section 7.1.9	Acceptable Knowledge Documentation Management
16.	WMP-400, section 7.1.10	TRU Waste VE Technique
17.	WMP-400, section 8.1.1	Logkeeping Practices for WIPP Activities in Special Analytical Support
18.	WMP-400, section 8.1.8	Data Management for Headspace Gas Results
19.	WMP-350, section 2.3	Data Management of NDE/NDA Results
20.	WRP1-OP-0726	TRU Loadout Gloveboxes Operation
21.	WRP1-OP-0729	Visual Examination
22.	WRP1-OP-0908	Operation of the Drum NDE System
23.	DO-080-009	Obtain Headspace Gas Samples of TRU Waste Containers
24.	LA-523-410	Determination of VOCs in TRU/Mixed Waste Container Headspace
25.	LO-080-407	Cleaning SUMMA Canisters
26.	LO-090-450	TRU Project Sample CO-C, Storage, Acceptance, and Disposal
27.	ZO-160-080	Pipe-n-Go Processing
28.	FSP-PFP-5-8, section 16.2	Data Management