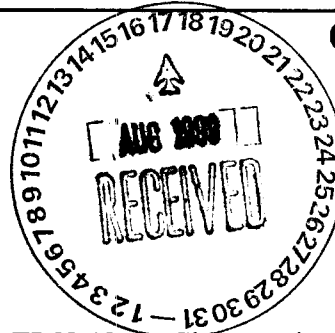


United States Government

Department of Energy  
Carlsbad Area Office

# memorandum



ENTERED

DATE: August 12, 1999

REPLY TO  
ATTN OF: CAO:QA:SAV:99-1108 UFC: 2300

SUBJECT: CAO Audit Report A-99-05, Hanford Site TRU Waste Characterization, Certification, and Transportation Program


TO: Mark French, RL

The Carlsbad Area Office (CAO) conducted an audit of the Hanford Site Waste Characterization, Certification, and Transportation activities on July 12-16, 1999. The audit team concluded overall that the Hanford Site technical and QA programs were adequate in accordance with the CAO QAPD and QAPP. The audit team also concluded that Hanford procedures were being marginally implemented and the evaluated processes were marginally effective. The CAO audit report is attached.

There were six CAO Corrective Action Reports (CARs) issued as a result of the audit. They have been forwarded to you under separate cover. Two Observations and five Recommendations were also identified during the audit.

The audit team would like to thank you and the Hanford staff for the high degree of professionalism and hospitality shown them during the audit. Most personnel seemed to have a very positive attitude and approach to the audit that certainly will contribute to the overall success and efficiency of the certification process.

If you have any questions or comments concerning this report, please contact me at (505) 234-7484.

  
for Samuel A. Vega  
CAO Quality Assurance Manager

Attachment

990807



Stu

cc w/attachment:

- I. Triay, CAO
- B. Bennington, CAO
- R. A. Stroud, CAO
- L. Chism, CAO
- D. Winters, DNFSB
- S. Monroe, EPA
- M. Eagle, EPA
- S. Zappe, NMED
- B. Walker, EEG
- P. Crane, WMH
- T. Greager, WMH
- J. Maupin, WMH
- S. Kouba, WID
- T. Bowden, CTAC



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

**AUDIT REPORT**

**OF THE**

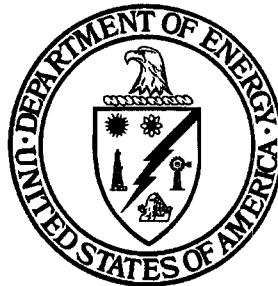
**HANFORD SITE**


**RICHLAND, WASHINGTON**

**AUDIT NUMBER A-99-05**

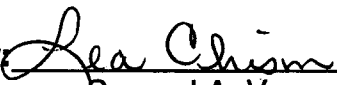
**JULY 12-16, 1998**

**TRU WASTE CHARACTERIZATION, CERTIFICATION, AND  
TRANSPORTATION**



Prepared By:   
Steven D. Calvert  
Audit Team Leader

Date: 8/4/99

Approved for Issuance By:   
for Samuel A. Vega  
CAO QA Manager

Date: 8-12-99

## **1.0 EXECUTIVE SUMMARY**

Carlsbad Area Office (CAO) Audit A-99-05 was conducted to evaluate the adequacy, implementation, and effectiveness of the Hanford Site Transuranic (TRU) Waste Characterization, Transportation, and Certification activities.

The audit was conducted at the Hanford Site July 12 through 16, 1999. The audit team concluded that the Hanford technical and Quality Assurance procedures are adequate relative to the flow down of requirements from the CAO Quality Assurance Program Document (QAPD), Quality Assurance Program Plan (QAPP), Waste Acceptance Criteria (WAC), and TRUPACT-II Authorized Methods for Payload Control (TRAMPAC). The audit team concluded that the adequacy of the Hanford QA Program was satisfactory in meeting the requirements of the CAO QAPD, Revision 2; the QAPP, Revision 0 and Interim Change 11/96; the WAC, Revision 5 and Change Notice 1; and the TRAMPAC, Revision 16. The audit team concluded that except for the areas that were not fully implemented and the identified deficiencies, the QA program was being satisfactorily implemented. Hanford technical processes evaluated by the audit team were determined to be marginally implemented and marginally effective.

The audit team identified thirteen (13) conditions adverse to quality resulting in the issuance of six (6) Corrective Action Reports (CARs) that require corrective action in the areas of training, procurement, acceptable knowledge, software control, nondestructive assay, and transportation. Twenty-four (24) isolated deficiencies requiring only remedial corrective actions were corrected during the audit (CDAs). Two (2) Observations have been identified, and five (5) Recommendations are being offered for Hanford management consideration. The audit team noted one Exemplary Practice in the transportation area. CARs, CDAs, Observations, Recommendations, and the Exemplary Practice are described in Section 6.0.

## **2.0 SCOPE**

The audit team evaluated the adequacy, implementation, and effectiveness of technical and quality assurance processes related to Hanford TRU Waste Characterization, Certification, and Transportation activities.

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

- Organization
- QA Program Implementation
- Personnel Qualification and Training
- Quality Improvement
- Documents and Records

Work Processes  
Procurement  
Measuring and Test Equipment  
Assessments/Audits  
Software Control  
QA Grading  
Performance Demonstration Program (PDP)

The following CAO technical characterization elements were evaluated in accordance with the CAO QAPP:

Sampling Design  
Sample Handling and Control  
Headspace Gas  
Non-Destructive Assay (NDA)  
Real-Time Radiography (RTR)  
Visual Examination  
Hydrogen and Methane Analysis  
Data Validation, Usability, and Reporting  
WIPP Waste Information System (WWIS)

The following transportation technical elements were evaluated in accordance with the CAO TRAMPAC:

Inspection of Packaging  
Visual Inspection  
TRUPACT-II Preparation and Loading  
TRUPACT-II Leak Check  
Shipping Preparation  
Package Maintenance  
Documentation and Records  
Payload and Drum Certification  
Transportation Tracking and Communications (TRANSCOM)

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

Hanford Site QAPjP for the Transuranic Waste Characterization Program  
Related Hanford technical and quality assurance implementing procedures

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

#### **AUDITORS/TECHNICAL SPECIALISTS**

Samuel Vega	Quality Assurance Manager, CAO
Steven Calvert	Audit Team Leader, CTAC
Pete Rodriguez	Auditor, CTAC
Chet Wright	Auditor, CTAC
Jeff May	Auditor, CTAC
Steve Hans	Auditor, CTAC
Norm Frank	Auditor, CTAC
Dee Scott	Auditor, CTAC
Dave Kimbro	Auditor, CTAC
Dick Blauvelt	Technical Specialist, CTAC
Ken Coop	Technical Specialist, CTAC
Ron Levis	Technical Specialist, CTAC
Kerry Watson	Technical Specialist, CTAC
BJ Verret	Technical Specialist, CTAC
Tom Ward	Technical Specialist, WID
Karen Gaydosh	Technical Specialist Trainee, CTAC

#### **OBSERVERS/INSPECTORS**

James Channell	EEG
Miriam Whatley	WID
Connie Walker	EPA/TechLaw Inspector
Bruce Christain	EPA/TechLaw Inspector

### **4.0 AUDIT PARTICIPANTS**

Hanford individuals involved in the audit process are identified in Attachment 1. A pre-audit meeting was held in the 2704 HV Building Conference Room E206 on July 12, 1999. A daily meeting was held with Hanford management and staff to discuss issues and potential deficiencies. The audit was concluded with a post-audit meeting held in the 2420 Stevens Building Conference Room 153 on July 16, 1999.

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

#### **5.1 Program Adequacy, Implementation, and Effectiveness**

The audit team concluded that the adequacy of the Hanford QA Program was satisfactory in meeting the requirements of the CAO QAPD, Revision 2; the QAPP, Revision 0 and

Interim Change 11/96; the WAC, Revision 5 and Change Notice 1; and the TRAMPAC, Revision 16, except as noted in CAR 99-092. The audit team concluded that except for the areas that were not yet fully implemented and the identified deficiencies (CARs 99-094, 99-095, and 99-096), the QA program was being satisfactorily implemented. The Hanford technical processes evaluated by the audit team were determined, overall, to be marginally implemented and marginally effective.

## **5.2 QA Program Audit Activities**

Details of audit activities, including specific objective evidence reviewed, are contained within the audit checklists. The checklists are maintained as QA records. The quality assurance program procedures evaluated during this audit are provided in Attachment 2.

## **5.3 Technical Activities**

Evaluations of applicable Hanford technical activities are summarized below. Technical procedures evaluated during the audit are provided in Attachment 2.

### **5.3.1 Nondestructive Assay (NDA)**

The audit team evaluated procedures and activities associated with the Gamma Energy Assay (GEA) and Imaging Passive/Active Neutron Assay (IPAN) Systems. The audit team reviewed analyses and the reporting of data and NDA results. The audit team determined that some upper tier requirements had not been incorporated into the operating procedure (CAR 99-092). The procedure was missing information on total measurement uncertainties (TMU), total bias, exact algorithms being used, and equipment operating ranges. The audit team concluded that the written program was marginally adequate and the NDA process was unsatisfactorily implemented and ineffective.

### **5.3.2 Data Generation and Data Verification and Validation**

Evaluations of batch data reports from Non-Destructive Examination (NDE), NDA, and headspace gas processes were performed to verify implementation of procedural requirements. The audit team determined that procedures for data generation had incorporated upper tier requirements and were adequate. The audit team concluded that the process for data generation was satisfactorily implemented and effective.

The audit team evaluated project level verification and validation activities by reviewing data packages from the NDE, NDA, and headspace gas processes. The audit team determined that procedures for project level data verification and validation had incorporated upper tier requirements. The audit team concluded that the procedures for

data verification and validation were adequate. The audit team determined that the process for data verification and validation was satisfactorily implemented and effective (see Recommendations 3, 4, and 5).

### **5.3.3 Real-Time Radiography (RTR)**

The audit team evaluated procedures and activities associated with the RTR System. The audit team reviewed analyses and the reporting of data and RTR results. The audit team determined the RTR procedures to be adequate. The audit team concluded that the RTR process was satisfactorily implemented and effective.

### **5.3.4 Visual Examination (VE)**

The audit team evaluated procedures and activities associated with the VE System. The audit team reviewed analyses and the reporting of data and VE results. The audit team determined the VE procedures to be adequate. The audit team concluded that the VE process was satisfactorily implemented and effective.

### **5.3.5 Hydrogen and Methane Analysis and Gas Volatile Organic Compounds (VOCs)**

The audit team evaluated hydrogen, methane, and gas VOCs analyses activities by reviewing analytical results and data packages. Analysis methods were evaluated by random witnessing of performance. The audit team determined that procedures for hydrogen, methane, and gas VOCs analyses had incorporated the upper tier requirements. The audit team concluded that the procedures for hydrogen, methane, and gas VOCs analysis were adequate. The audit team determined that the processes for hydrogen, methane, and gas VOCs analyses were satisfactorily implemented and effective.

### **5.3.6 Sample Handling and Chain-of-Custody**

Activities for sample handling and chain-of-custody were evaluated by observing the process steps and examining related documentation. The audit team concluded that the procedure for sample handling and chain-of-custody was adequate. The audit team determined that the sample handling and chain-of-custody process was satisfactorily implemented and effective.

### **5.3.7 Headspace Gas Sampling**

The audit team evaluated headspace gas sampling activities by reviewing procedures and witnessing of performance of the sampling process. The audit team determined that



procedures for headspace gas sampling incorporated the upper tier requirements. The audit team concluded that the procedures for headspace gas sampling were adequate. The audit team determined that the process for headspace gas sampling was satisfactorily implemented and effective.

### **5.3.8 Transportation**

The transportation program was evaluated by reviewing applicable documentation and procedures. The audit team observed demonstrations of transportation personnel performing loading, inspection, and testing activities associated with the use of the TRUPACT II container. The transportation procedures had not received approval from WID, as required (CAR 99-093). The audit team determined the procedures to be marginally adequate. The audit concluded that the transportation process was satisfactorily implemented and effective (see Recommendations 1 and 2).

### **5.3.9 Software**

The audit team evaluated the software quality assurance program by examining the software being used and associated verification and validation activities. Issues were identified relating to software configuration management and inventory listing of software (CAR 99-095). The audit team determined that the software quality assurance program was adequate. The audit team concluded that the software quality assurance program was marginally implemented and marginally effective.

### **5.3.10 WIPP Waste Information System (WWIS)**

Hanford input to the WWIS process was demonstrated for the audit team and applicable documentation was reviewed. The team verified that access control had been established and that Hanford has the ability to input correct data into the WWIS. The audit team concluded that the procedure for WWIS is adequate and that the process has been satisfactorily implemented and is effective.

### **5.3.11 Acceptable Knowledge (AK)**

The AK process was evaluated by reviewing the summary documents, references, and other applicable documentation. Data collection activities associated with the summary had not included all possible sources of information (CAR 99-097). It was determined that the AK procedure had captured the upper tier requirements. The activities associated with data reconciliation were also reviewed and found not to be sufficiently implemented to make a determination on implementation and effectiveness. The audit team concluded overall that the program for AK and data reconciliation was adequate. The audit team determined that due to the CAR and the incomplete data reconciliation

information that the implementation and effectiveness of AK activities are marginal at this time.

## **6.0 CARS, OBSERVATIONS, RECOMMENDATIONS, AND EXEMPLARY PRACTICE**

### **6.1 CARs**

#### **6.1.1 CARs Initiated as a Result of CAO Audit A-99-05:**

The following six CARs, initiated as a result of Audit A-99-05, have been transmitted to Hanford under separate cover. A brief description of each CAR is provided below.

##### **6.1.1.1 CAO CAR 99-092**

The following issues were identified during the evaluation of the NDA process:

1. The exact algorithms used by Hanford have not been documented in the site-specific technical documents.
2. Determination and documentation of the minimum detectable concentration (MDC) has not been completed. Determination of total bias and total measurement uncertainty is incomplete.
3. NDA procedures do not specify the operating range of the NDA equipment.

##### **6.1.1.2 CAO CAR 99-093**

Hanford has not received approval of the TRUPACT II and transportation maintenance procedures from the Westinghouse Waste Isolation Division (WID).

##### **6.1.1.3 CAO CAR 99-094**

1. Procedure WMH-400, Section 1.2.2, Paragraph 4.2.1.3 allows experience to be substituted for NDE on-the-job training (OJT). This is not allowed by the QAPjP.
2. Procedure WMH-400, Section 1.2.2, Paragraph 4.3.1.3 allows experience to be substituted for visual examination (VE) OJT. This is not allowed by the QAPjP.
3. Minimum education and experience requirements have not been established for all key project positions.
4. The training program has not been completely implemented. Examples are as follows:
  - Indoctrination does not include purpose or specific QA objectives as required by

paragraph 4.2 of procedure WMH-400, Section 1.2.1.

- Specific training has not been completed for procedures WMH-IP-1237, WRP1-TR-0905, and WRP1-TR-0906, as required by paragraph 4.3.2. of procedure WMH-400, Section 1.2.1.
  - Procedure WMH-400, Section 1.2.1 requires certification to SNT-TC-1A, 1992 edition. The Project used the 1996 edition. The QAPD requires the 1980 edition be used for CAO certification.
5. No objective evidence could be obtained to verify that a demonstration of competence had been completed for analytical personnel.
  6. A project form for lead auditor certification had not been completed and an individual certified as a lead auditor did not have objective evidence of completion of the required five audits in the previous three years.

#### **6.1.1.4 CAO CAR 99-095**

1. The TRU Project procedure (WMH-400, Section 6.1.1) allows for the use of experimental test data as a method for evaluating the adequacy of software test case results. This method is not allowed by the QAPD.
2. The software inventory list does not include all the software being used at the WRAP facility. The inventory list includes the system level software, but does not list the software modules issued under the system.
3. Unauthorized changes have been made to the following project software:
  - IPAN, KEH.EXE, Version 3.26
  - MGA Software for plutonium analysis, Version 9.2ACI (changed to 9.5CI)
4. The Baseline Software List does not include periodic review dates or code version retirement dates.

#### **6.1.1.5 CAO CAR 99-096**

The TRU Project has been using drum filters manufactured and distributed by NFT. NFT is not currently listed on the Evaluated Supplier List (ESL). The TRU Project was unable to provide evidence that a supplier evaluation has been performed on NFT.

#### **6.1.1.6 CAO CAR 99-097**

The following issues were identified and are examples of concerns in the area of acceptable knowledge (AK):

- The AK summary documentation does not contain information from all available sources (e.g., classified and archived documents)
- A matrix parameter was assigned at the summary level.
- The summary documentation did not establish the presence or absence of prohibited materials or potentially flammable volatile organic compounds.
- Waste container storage information was not included in the AK documentation.

## **6.2 Deficiencies Corrected During the Audit (CDA)**

During the audit, Hanford was able to correct 24 isolated concerns identified in the processes being performed for TRU waste characterization, certification, document control, QA records, training and transportation activities. Specific information is contained in the audit checklists.

## **6.3 Observations**

The following two Observations were identified during the audit. Both Observations require a written response:

1. Hanford should assure that an effective system is in place to evaluate procurement bids/proposals for inclusion of the minimum quality assurance criteria.
2. Hanford should assure that the procurement description screen indicates all the applicable compliance requirements for supplier qualification.

## **6.4 Recommendations**

The following five Recommendations are presented for Hanford management consideration:

1. Hanford should consider enhancing the roller platform to prevent damage to the lifting lugs on the TRUPACT II. Currently there is no support for the lifting lugs when the TRUPACT II pallet is sitting on the roller platform.

2. Hanford should develop a system for segregating TRUPACT II spare parts from other tools, equipment, and parts.
3. Hanford is marking N/A for the quality assurance objectives (QAOs) on NDA batch data reports and referencing another document that contains information on the QAOs. This is misleading, Hanford should be marking the batch data report "YES" and making the appropriate references.
4. Hanford should develop a data validation sheet that includes a sign off for each QAO. Currently, one entry is made stating all QAOs were met.
5. Hanford should develop a system to assure total random selection for the quarterly re-review of data generation level data.

### **6.5 Exemplary Practice**

The Hanford TRU Waste Project has fabricated trays to hold the TRUPACT II covers and plugs. The covers and plugs are placed in specific locations in the trays making traceability and status of the parts obvious.

### **7.0 LIST OF ATTACHMENTS**

Attachment 1: Personnel Contacted During the Audit  
Attachment 2: Table of Procedures Audited

**PERSONNEL CONTACTED DURING THE AUDIT**

<b>HANFORD PERSONNEL CONTACTED</b>				
<b>NAME</b>	<b>ORG/TITLE</b>	<b>PREAUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST AUDIT MEETING</b>
<b>E. Aromi</b>	<b>WMH/President/GM</b>	<b>X</b>		<b>X</b>
<b>W. Ayers</b>	<b>WMH/SWP Operations</b>	<b>X</b>		
<b>S. Bakhtiar</b>	<b>WML/Analytical Services Manager</b>	<b>X</b>	<b>X</b>	
<b>B. Barrow</b>	<b>WMH/Director Project Operations</b>	<b>X</b>		<b>X</b>
<b>J. Bartz</b>	<b>WDOE/Chemist</b>		<b>X</b>	
<b>V. Beaver</b>	<b>LMSI/Data Storage Analyst</b>		<b>X</b>	
<b>H. Bilson</b>	<b>DOE-RL/WPD Division Director</b>	<b>X</b>		<b>X</b>
<b>V. Birkland</b>	<b>WMH/Procedure Lead</b>	<b>X</b>	<b>X</b>	
<b>R. Bisping</b>	<b>FDH/Program Manager</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>L. Blackford</b>	<b>WMH/TRU Program Manager</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>D. Bogart</b>	<b>LMSI/Work Lead</b>		<b>X</b>	
<b>B. Bolls</b>	<b>WMH/Team Lead</b>		<b>X</b>	
<b>J. Boynton</b>	<b>FDH/Buyer</b>		<b>X</b>	
<b>J. Buckley Jr.</b>	<b>WMH/General Services Manager</b>	<b>X</b>	<b>X</b>	
<b>R. Clinton</b>	<b>WMH/Acceptable Knowledge Expert</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>R. Connolly</b>	<b>WMH/Facility Integration Manager</b>	<b>X</b>	<b>X</b>	<b>X</b>

<b>HANFORD PERSONNEL CONTACTED</b>				
<b>NAME</b>	<b>ORG/TITLE</b>	<b>PREAUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST AUDIT MEETING</b>
<b>E. Conner</b>	<b>LMSI/Imaging Operations Manager</b>		<b>X</b>	
<b>A. Cooper</b>	<b>FDH/Acquisition Verification Manager</b>		<b>X</b>	
<b>P. Crane</b>	<b>WMH/SPM</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>M. Downing</b>	<b>WHM/WRAP Operator</b>		<b>X</b>	
<b>J. Dudley</b>	<b>WMH/Operations Lead</b>		<b>X</b>	
<b>J. Durfee</b>	<b>WMH/Clerk</b>	<b>X</b>		<b>X</b>
<b>T. Erickson</b>	<b>WMH/Procedure Writer</b>		<b>X</b>	
<b>M. Estes</b>	<b>WMH/Procurement Manager</b>	<b>X</b>	<b>X</b>	
<b>C. Fagendin</b>	<b>WMH/RCT</b>		<b>X</b>	
<b>M. French</b>	<b>DOE-RL/TRU Project Manager</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>G. Fies</b>	<b>Cogema/Scientist</b>		<b>X</b>	
<b>E. Galbreath</b>	<b>LMSI/System Administrator</b>		<b>X</b>	
<b>A. Garcia</b>	<b>WMH/Maintenance Manager</b>	<b>X</b>		<b>X</b>
<b>J. Geary</b>	<b>WRAP Operations Manager</b>	<b>X</b>		
<b>T. Greager</b>	<b>WMH/Alternate SPM</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>J. Guyette</b>	<b>FDH/QA</b>		<b>X</b>	<b>X</b>
<b>M. Hackworth</b>	<b>WMH/Engineer</b>	<b>X</b>	<b>X</b>	



<b>HANFORD PERSONNEL CONTACTED</b>				
<b>NAME</b>	<b>ORG/TITLE</b>	<b>PREAUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST AUDIT MEETING</b>
<b>P. Harris</b>	<b>WMH/Control Room Operator</b>		<b>X</b>	
<b>B. Hill</b>	<b>WMH/Director Quality</b>	<b>X</b>		
<b>R. Higgins</b>	<b>DOE-RL/Facility Representative</b>	<b>X</b>		
<b>K. Hlader</b>	<b>WMH/Strategic Planning</b>			<b>X</b>
<b>D. Holland</b>	<b>WDOE/Permit Writer</b>	<b>X</b>		
<b>B. Houley</b>	<b>WMH/Operator</b>		<b>X</b>	
<b>K. Humphrys</b>	<b>WMH/NDE Engineer</b>		<b>X</b>	
<b>M. Ibatuan</b>	<b>WMH/Corrective Action Management</b>	<b>X</b>		
<b>W. Jasen</b>	<b>WMH/Certification Official</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>L. Jensen</b>	<b>WML/Records Specialist</b>		<b>X</b>	
<b>J. Kere</b>	<b>Cogema/NDE Level III</b>		<b>X</b>	
<b>K. Kline</b>	<b>DOE-RL/Hanford Site Manager</b>		<b>X</b>	
<b>S. Kooiker</b>	<b>WMH/Operations Supervisor</b>		<b>X</b>	
<b>R. Kowitz</b>	<b>Cogema/NDE Level II</b>		<b>X</b>	
<b>K. Lachut</b>	<b>WML/Business Services Manager</b>		<b>X</b>	<b>X</b>
<b>M. Lane</b>	<b>WMH/Engineer</b>		<b>X</b>	
<b>G. Lasswell</b>	<b>Benchmark/Technical Support</b>			<b>X</b>

<b>HANFORD PERSONNEL CONTACTED</b>				
<b>NAME</b>	<b>ORG/TITLE</b>	<b>PREAUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST AUDIT MEETING</b>
<b>I. Leonard</b>	<b>WMH/Op. Spec.</b>		<b>X</b>	
<b>D. Levinskas</b>	<b>WMH/T-Plant Operations Manager</b>		<b>X</b>	
<b>L. Lockhard</b>	<b>WML/Scientist</b>		<b>X</b>	
<b>J. Maupin</b>	<b>WMH/SQAO</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>D. McCall</b>	<b>WMNW/Alternate TCO</b>	<b>X</b>	<b>X</b>	
<b>C. McCollum</b>	<b>WHM/Operations Specialist</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>J. McCoy</b>	<b>WMNW/TCO</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>J. McGuffy</b>	<b>WMH/Visual Examination Expert</b>	<b>X</b>	<b>X</b>	
<b>H. Meznarich</b>	<b>WMH/FQAO</b>		<b>X</b>	<b>X</b>
<b>T. Moore</b>	<b>WMH/Director, Project Support</b>	<b>X</b>		<b>X</b>
<b>A. Mortensen</b>	<b>WMH/T-Plant Treatment Manager</b>		<b>X</b>	
<b>S. Nance</b>	<b>WMH/Records Custodian</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>T. Orgill</b>	<b>WMH/Work Control</b>	<b>X</b>		
<b>M. Palmer</b>	<b>WMH/Engineer</b>		<b>X</b>	
<b>K. Pennock</b>	<b>Cogema/Scientist</b>		<b>X</b>	
<b>L. Pingel</b>	<b>Cogema/Scientist</b>		<b>X</b>	
<b>J. Prilucik</b>	<b>WML/Operations Supervisor</b>	<b>X</b>	<b>X</b>	<b>X</b>

<b>HANFORD PERSONNEL CONTACTED</b>				
<b>NAME</b>	<b>ORG/TITLE</b>	<b>PREAUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST AUDIT MEETING</b>
<b>T. Plush</b>	<b>WMH/Contracts</b>			<b>X</b>
<b>M. Purcell</b>	<b>WMH/WRAP Scientist</b>		<b>X</b>	
<b>C. Richards</b>	<b>WMH/RCT Lead</b>		<b>X</b>	
<b>D. Richards</b>	<b>WMH/VE Technician</b>		<b>X</b>	
<b>R. Reddinger</b>	<b>WMH/Training Manager</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>L. Roberts</b>	<b>WMH/WRAP Facility Manager</b>	<b>X</b>		<b>X</b>
<b>T. Romano</b>	<b>WMNW/Training</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>C. Scott</b>	<b>WML/Records Specialist</b>		<b>X</b>	
<b>N. Sequin</b>	<b>Benchmark/Technical Support</b>		<b>X</b>	<b>X</b>
<b>N. Shoemaker</b>	<b>WMH/T-Plant Supervisor</b>		<b>X</b>	
<b>M. Stauffer</b>	<b>Cogema/Scientist</b>		<b>X</b>	
<b>D. Stewart</b>	<b>WMH/RADCON Manager</b>			<b>X</b>
<b>S. Stitt</b>	<b>WMH/Customer Interface Manager</b>	<b>X</b>		<b>X</b>
<b>C. Stratman</b>	<b>WHM/Container Management</b>	<b>X</b>	<b>X</b>	
<b>K. Svoboda</b>	<b>FDH/Project Manager</b>	<b>X</b>		
<b>T. Synoground</b>	<b>WMH/WRAP Operations</b>		<b>X</b>	
<b>W. Thackaberry</b>	<b>WMH/Quality Services</b>		<b>X</b>	
<b>P. Thurman</b>	<b>LMSI/Records Specialist</b>		<b>X</b>	

<b>HANFORD PERSONNEL CONTACTED</b>				
<b>NAME</b>	<b>ORG/TITLE</b>	<b>PREAUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST AUDIT MEETING</b>
<b>G. Triner</b>	<b>WMH/Technical Services Manager</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>G. Valante</b>	<b>WMH/WWIS Clerk</b>		<b>X</b>	<b>X</b>
<b>J. Van Slyke</b>	<b>WMH/Procedure Editor</b>		<b>X</b>	<b>X</b>
<b>M. Watkin</b>	<b>WMH/RCT</b>		<b>X</b>	
<b>J. Weidert</b>	<b>WMH/WRAP Engineering Manager</b>	<b>X</b>	<b>X</b>	
<b>D. White</b>	<b>WMH/Operator</b>		<b>X</b>	
<b>D. Wilde</b>	<b>WMH/Vice President</b>			<b>X</b>
<b>J. Williams</b>	<b>FDH/Project Director</b>			<b>X</b>
<b>N. Willis</b>	<b>WMH/WRAP Engineer</b>		<b>X</b>	
<b>C. Wills</b>	<b>WMH/NDA Engineer</b>		<b>X</b>	
<b>J. Wilson</b>	<b>WMH/Procedure Writer</b>		<b>X</b>	
<b>W. Wise</b>	<b>WMH/Operator</b>		<b>X</b>	
<b>C. Wolfe</b>	<b>WMH/Procedures</b>	<b>X</b>	<b>X</b>	

**HANFORD PROCEDURES AUDITED**

<b>NUMBER</b>	<b>PROCEDURE NUMBER</b>	<b>TITLE</b>
1.	WMH-400, Section 1.1.2	TRU Graded Approach
2.	WMH-400, Section 1.2.1	TRU Training and Qualification Plan
3.	WMH-400, Section 1.2.2	Qualification and Certification of Inspection and Test Personnel
4.	WMH-400, Section 1.2.3	Qualification and Certification of Audit Personnel
5.	WMH-400, Section 1.2.4	TRU Training and Qualification Program
6.	WMH-400, Section 1.3.1	TRU Corrective Action Management
7.	WMH-400, Section 1.3.2	TRU Nonconforming Item Reporting and Control System
8.	WMH-400, Section 1.3.3	TRU Corrective Action Reporting and Control
9.	WMH-400, Section 1.4.1	TRU Document Control
10.	WMH-400, Section 1.5.1	TRU Records Management
11.	WMH-400, Section 2.1.1	TRU Process Control
12.	WMH-400, Section 2.1.2	TRU Operating Procedure Preparation and Approval
13.	WMH-400, Section 2.1.3	TRU Administrative Procedure Preparation and Approval
14.	WMH-400, Section 2.1.5	TRU Transportation Logistics
15.	WMH-400, Section 2.1.6	TRU Analytical Procedure Process
16.	WMH-400, Section 2.3.1	TRU Procurement Planning
17.	WMH-400, Section 2.3.2	TRU Procurement Document Control
18.	WMH-400, Section 2.3.3	TRU Control of Purchased Items and Services
19.	WMH-400, Section 2.4.4	TRU Control of Measuring, Test, and Data Collecting Equipment
20.	WMH-400, Section 3.1.1	TRU Management Assessment
21.	WMH-400, Section 3.1.2	Quality Assurance Reports to Management
22.	WMH-400, Section 3.2.1	TRU Independent Assessments
23.	WMH-400, Section 3.2.2	TRU Surveillance Program
24.	WMH-400, Section 6.1.1	TRU Software Quality Assurance
25.	WMH-400, Section 7.1.1	TRU Waste DQOs Reconciliation and reporting
26.	WMH-400, Section 7.1.3	Transuranic Waste Repackaging, Visual Examination, and Sampling
27.	WMH-400, Section 7.1.4	Sampling Design and Data Analysis for RCRA Characterization and Visual Examination of Retrievably Stored waste
28.	WMH-400, Section 7.1.5	WWIS Data Reporting and Entry
29.	WMH-400, Section 7.1.6	TRU Waste Project Level Data Validation and Verification
30.	WMH-400, Section 7.1.7	TRU Waste Sample and Waste Container Management Activities
31.	WMH-400, Section 7.1.8	Transuranic Waste Transportation and Disposal Certification
32.	WMH-400, Section 7.1.9	Acceptable Knowledge Documentation Management
33.	WMH-400, Section 8.1.1	Logkeeping Practices for WIPP Activities in Special Analytical Support
34.	WMH-400, Section 8.1.8	Data Management for headspace Gas Results
35.	WMH-350, Section 2.2	Calculation of Assay results
36.	WMH-350, Section 2.3	Data Management of NDE/NDA Results
37.	WMH-350, Section 2.4	QAOS for NDA Results
38.	WRP1-OP-0521	Receive and Load TRUPACT Containers
39.	WRP1-OP-0522	Assemble and Stretch Wrap TRUPACT Payload
40.	WRP1-OP-0523	Helium Leak Test of the TRUPACT II
41.	WRP1-OP-0729	Visual Examination
42.	WRP1-OP-0905	Imaging PAN Assay Operations
43.	WRP1-OP-0906	Gamma Energy Assay Operations
44.	WRP1-OP-0908	Operation of Drum NDE System
45.	WRP1-OP-0911	Storage and Use of Special Nuclear Material (for PDP work only)
46.	DO-080-009	Obtain Headspace Gas Samples of TRU Waste Containers
47.	LA-523-410	Determination of VOCs in TRU/Mixed Waste Container Headspace
48.	LA-523-426	Determination of Permanent Gases in Waste Container Headspace
49.	LO-080-404	Headspace Gas Sampling of TRU Waste Containers

**HANFORD PROCEDURES AUDITED**

<b>NUMBER</b>	<b>PROCEDURE NUMBER</b>	<b>TITLE</b>
50.	LO-080-407	Cleaning SUMMA Canisters
51.	LO-090-450	TRU Project Sample Chain-of-Custody, Acceptance, and Disposal
52.	DOE/CAO-94-1045	Performance Demonstration Program Plan for Nondestructive Assay for the TRU Waste Characterization Program
53.	DOE/CAO-94-1076	Performance Demonstration Program Plan for Analysis of Simulated Headspace Gases