

United States Government

Department of Energy

**memorandum**Carlsbad Field Office  
Carlsbad, New Mexico 88221

DATE: December 2, 2002

REPLY TO  
ATTN OF: CBFO:QA:DSM:GS:02-1967:UFC 2300.00

SUBJECT: Audit Report A-03-02, Rocky Flats Environmental Technology Site (RFETS)  
Characterization of Waste Certification Audit

to: John Schneider, Assistant Manager for Projects

The Carlsbad Field Office (CBFO) conducted a certification audit of the Rocky Flats Environmental Technology Site (RFETS) waste characterization activities. The audit was conducted on November 19-20, 2002. The audit team concluded that the RFETS technical and quality assurance programs for these activities were adequate in accordance with the WIPP Hazardous Waste Facility Permit, the CBFO Contact-Handled Transuranic Waste Acceptance Criteria for the WIPP, and the CBFO Quality Assurance Program Document. The audit team also concluded that overall the RFETS procedures were being satisfactorily implemented and the evaluated processes were effective.

One CBFO Corrective Action Report was issued as a result of the audit, under separate cover.

Please contact me at (505) 234-7491 if you have any questions or comments.



Dennis S. Miehls  
Quality Assurance Specialist

## Attachment

cc: w/attachments

A. Holland, CBFO	*ED
K. Watson, CBFO	*ED
R. Knerr, CBFO	*ED
G. Morgan, RFFO	*ED
L. Xuan, RFFO	*ED
M. Eagle, EPA	*ED
R. Joglekar, EPA	*ED
E. Felcorn, EPA	*ED
S. Zappe, NMED	*ED
S. Holmes, NMED	*ED
B. Walker, EEG	*ED
D. Winters, DNFSB	*ED
C. Ferrera, RFETS	*ED
J. O'Leary, RFETS	*ED
C. Riggs, CTAC	*ED
T. Bowden, CTAC	*ED
L. Greene, WTS	*ED
P. Roush, WTS	
CBFO QA File	
CBFO M&RC	



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U.S. DEPARTMENT OF ENERGY  
CARLSBAD FIELD OFFICE

AUDIT REPORT

OF THE

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE  
GOLDEN, COLORADO

AUDIT NUMBER A-03-02

November 19-20, 2002

AUDIT REPORT OF WASTE CHARACTERIZATION ACTIVITIES

Visual Examination to Confirm RTR in Building 371  
Gas Generation Testing  
PCB Analysis



Prepared By: *Charles L. Riggs*  
Charles L. Riggs  
Audit Team Leader, CTAC

Date: 11/27/02

Approved By: *Ava L. Holland*  
Ava L. Holland  
Quality Assurance Manager

Date: 12/02/02

## **1.0 EXECUTIVE SUMMARY**

Carlsbad Field Office (CBFO) Audit A-03-02 was conducted to evaluate the adequacy, implementation, and effectiveness of the Rocky Flats Environmental Technology Site (RFETS) transuranic (TRU) waste characterization activities relative to the requirements contained in the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), the Contact-Handled Transuranic Waste Acceptance Criteria (WAC) for the WIPP, and the Quality Assurance Program Document (QAPD).

The audit scope included Summary Category Groups S5000 debris and S3000 solid wastes. The audit evaluated a new visual examination (VE) facility (in Building 371) to confirm real-time radiography (RTR), and polychlorinated biphenyl (PCB) analysis. The new VE facility will be used to characterize retrievably stored S5000 debris and S3000 homogeneous solid waste. In addition, the Building 440 gas generation testing process (GGTP) was evaluated.

The audit was conducted at RFETS November 19-20, 2002. The audit team concluded that the overall adequacy of the RFETS technical and quality assurance (QA) programs, as applicable to audited activities, was satisfactory in meeting requirements. The audit team also concluded that the defined QA and technical programs for these activities (except PCB analysis and GGTP) were being implemented in accordance with the RFETS Quality Assurance Project Plan (QAPjP) and the applicable implementing procedures, and that the processes were effective. The audit team found that the adequacy, implementation, and effectiveness of the PCB analysis and GGTP activities were indeterminate. These activities may be included in the scope of a future audit.

The audit team identified one condition adverse to quality (CAQ) resulting in the issuance of CBFO corrective action report (CAR) 03-009. No deficiencies requiring remedial corrective actions were found during the course of the audit. No Observations resulted from the audit. Two Recommendations were presented to RFETS management.

## **2.0 SCOPE AND PURPOSE**

### **2.1 Scope**

The audit team evaluated the adequacy, implementation, and effectiveness of the RFETS TRU waste characterization processes for a new VE facility in Building 371 to confirm RTR for pipe overpack components (POCs), and PCB analysis. The new VE facility will be used to characterize retrievably stored S5000 debris and S3000 homogeneous solid waste. The Building 440 gas generation testing process (GGTP) was also evaluated.

The audit included the following elements:

Technical

- Building 371 Visual Examination to Confirm Radiography
- Project-Level Verification and Validation
- PCB Analysis
- Building 440 Gas Generation Testing

Quality Assurance

The following QA elements were evaluated only to the extent needed to support the above technical elements.

- Records/Document Control
- Training
- Quality Improvement

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

*Waste Isolation Pilot Plant Hazardous Waste Facility Permit*

*Quality Assurance Program Document, CAO-94-1012*

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

*RFETS Quality Assurance Project Plan for the Transuranic Waste Characterization Program, 95-QAPjP-0050*

*RFETS Transuranic Waste Management Manual, 1-MAN-008-WM-001*

Related RFETS technical and QA implementing procedures

**2.2 Purpose**

Audit A-03-02 was conducted to assess the level of compliance of RFETS waste characterization activities associated with the new VE facility in Building 371, and PCB analysis. Building 440 gas generation testing was also evaluated.

**3.0 AUDIT TEAM AND OBSERVER**

**AUDITORS/TECHNICAL SPECIALISTS**

Charlie Riggs	Team Leader, CTAC
Annabelle Axinn	Auditor, CTAC
Karen Gaydosh	Technical Specialist, CTAC
William (BJ) Verret	Technical Specialist, CTAC

**OBSERVER**

Steve Holmes

NMED

**4.0 AUDIT PARTICIPANTS**

RFETS individuals contacted during the audit are identified in Attachment 1. A pre-audit meeting was held at RFETS Building 460 on November 19, 2002. A daily meeting was held with RFETS management and staff to discuss the issues and potential deficiencies of the previous day. The audit concluded with a post-audit meeting held at RFETS Building 460 on November 20, 2002.

**5.0 SUMMARY OF AUDIT RESULTS**

**5.1 Program Adequacy and Implementation**

The audit team concluded that the applicable RFETS TRU waste characterization activities, as described in the associated RFETS implementing procedures, satisfactorily meet requirements. The audit team found that the adequacy, implementation, and effectiveness of the PCB analysis and GGTP activities were indeterminate. These activities may be included in the scope of a future audit.

Attachment 2 contains a summary table of audit results. Audit activities, including objective evidence reviewed, are described below and in CBFO checklists and/or objective evidence reviewed forms maintained as QA records. Attachment 3 contains a list of RFETS procedures included in the audit.

**5.2 Technical Activities**

The following sections describe the technical activities reviewed during the audit.

**5.2.1 Visual Examination (VE)**

The audit team reviewed the batch data report and associated videotape for batch VE-2003-003. One concern was identified during the review of the batch data report and associated videotape: The cans were opened, but were not emptied and sorted to determine if prohibited items were present (see CAR 03-009). Two Recommendations were provided to RFETS management (see Recommendations 1 and 2).

Training records for the VE experts were examined during the audit. The training was found to be in compliance with the HWFP requirements for VE.

Overall, the VE processes were determined to be adequate, satisfactorily implemented, and effective.

### **5.2.2 Verification and Validation**

The audit team reviewed the verification and validation (V&V) process at both the data-generation and the project level for data packages associated with the other audited activities.

Overall, data-generation and project-level data V&V were determined to be adequate, satisfactorily implemented, and effective.

### **5.2.3 PCB Analysis**

The audit team determined that RFETS PCB Analytical Operation has encountered problems with high radioactivity counts in the organic extracts that have made it impossible to analyze the 15 drum samples that have been submitted for PCB analysis. The RFETS PCB Laboratory Manager and his staff have been working on methods to lower the radioactivity in the organic extracts to an acceptable level for analysis. No final batch data package has been through project level data V&V. PCB analysis will be included in the scope of a future audit.

The adequacy, implementation, and effectiveness of the PCB analysis activities were deemed to be indeterminate.

### **5.2.4 Gas Generation Testing**

The audit team observed the Building 440 heated GGTP facility. GGTP personnel were interviewed. The GGTP facility needs additional equipment and tools in order to begin operations. No data packages were available for auditing. This program is using the same equipment as was used in Building 371, for the most part, and procedures are almost identical. GGTP activities may be included in the scope of a future audit.

The adequacy, implementation, and effectiveness of the GGTP activities were deemed to be indeterminate.

## **6.0 CORRECTIVE ACTIONS, OBSERVATIONS, AND RECOMMENDATIONS**

### **6.1 Corrective Action Reports**

During the audit, the audit team may identify conditions adverse to quality (CAQ) and document such condition(s) on corrective action reports (CAR).

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, compliance demonstration, or the effective implementation of the QA program.

One condition adverse to quality resulted in the issuance of the following CAR.

#### **6.1.1 CBFO CAR 03-009**

Two-liter cans containing sand, slag, and crucibles were opened, but were not emptied and sorted to determine if prohibited items were present, as required by procedure.

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

During the audit, the audit team may identify conditions adverse to quality (CAQ). 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 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 a CDA.

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

No CDAs resulted from the audit.

### **6.3 Observations**

An Observation documents marginally acceptable conditions that, if not controlled, might later escalate into a deficiency.

No Observations were presented as a result of the audit.

### **6.4 Recommendations**

The following recommendations were provided to RFETS management during the audit.

#### **Recommendation 1**

A full explanation of VE activities should be recorded on the VE Log (e.g., Batch Report VE-2003, Drum DB8374, Can Z81552). Originally there were three cans inside each

other. Only two were put in the output container. This was not recorded on the VE Log, nor was the actual resulting weight recorded.

**Recommendation 2**

A statement should be made on the videotape that the drum label is being used as the test pattern. The procedure requires that a test pattern be recorded and checked. The batch report indicates the check was done and was satisfactory. There is no mention of the test being done on the audio portion of the videotape.

**7.0 LIST OF ATTACHMENTS**

Attachment 1: Personnel Contacted During the Audit

Attachment 2: Summary Table of Audit Results

Attachment 3: Table of Audited RFETS Implementing Procedures



**PERSONNEL CONTACTED DURING THE AUDIT**

<b>RFETS PERSONNEL CONTACTED DURING AUDIT A-03-02</b>				
<b>NAME</b>	<b>ORG/TITLE</b>	<b>PREAUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST-AUDIT MEETING</b>
Ballenger, R. J.	KH; TRU Program	X	X	X
Barber, Dave	ANL W	X	X	
Brugh, Mark	NSS-B559; Manager, Labs	X	X	X
Edmiston, Douglas	LATA; GGT Manager	X	X	
Eschenbaum, Roberta	TRU Program	X		
Ferrera, Carol	KH TWCP QAO	X	X	X
Fisher, Doug	371 Waste Operations; 371 Technical Team Lead		X	
Grady, Frank	RMRS/TRU Waste Projects; TRU Project Engineer	X	X	X
Guthrie, David E.	QA-B559; LPQAO		X	X
Hubbard, Laura	Wastren, TRU V&V			X
Kirschenmann, Harley	MSQA, Manager	X		
Leifer, John	TRU Projects; Scientist		X	
McCarthy, Ed	MS; B44 Operations	X	X	
Miranda, Sue	MS; Technical Support	X	X	
O'Leary, Jerry	KH/TRU Waste Project Manager	X		X
Pigeon, Paul	Material Stewardship; TWCP Training Officer	X		
Podolsky, Stewart	TSC; QA Lead B559		X	X
Rivera, Mike	TRU Program	X	X	
Robledo, Ron	LATA; TRU Programs	X	X	
Springer, Joe	RFFO; DOE Projects	X		

<b>RFETS PERSONNEL CONTACTED DURING AUDIT A-03-02</b>				
<b>NAME</b>	<b>ORG/TITLE</b>	<b>PREAUDIT MEETING</b>	<b>CONTACTED DURING AUDIT</b>	<b>POST-AUDIT MEETING</b>
Timbers, Peter J.	LATA GGT; Chemist/GGT SME	X	X	
Tressell, John	MSQA; Alt. PQAO	X		
Winkler, Paul	TSC; Chemist		X	
Xuan, Lam	DOE/RFFO/ERWM; WIPP Coordinator	X		X

### SUMMARY TABLE OF AUDIT RESULTS

Documents	Concern Classification				QA Evaluation		Technical
	CARs	CDAs	Obs	Rec	Adequacy	Implementation	Effectiveness
<b>Activity</b>							
VISUAL EXAMINATION	03-009			1, 2	A	S	E
VERIFICATION AND VALIDATION					A	S	E
PCB ANALYSIS					I	I	I
GAS GENERATION					I	I	I
RECORDS/DOCUMENT CONTROL					A	S	E
QUALITY IMPROVEMENT					A	S	E
TRAINING					A	S	E
<b>TOTALS</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>A</b>	<b>S</b>	<b>E</b>

**Definitions**

E = Effective  
 S = Satisfactory  
 I = Indeterminate  
 M = Marginal

CAR = Corrective Action Report  
 CDA = Corrected During the Audit  
 NE = Not Effective  
 Obs = Observation

Rec = Recommendation  
 A = Adequate  
 NA = Not Adequate

**RFETS DOCUMENTS AUDITED FOR A-03-02**

No.	Procedure Number	Title
1.	PRO-1608-VECRTR-371, R0	RTR Visual Examination Confirmation, Building 371
2.	PRO-940-WIPP-010, R15	WIPP TRU Waste Characterization Project Level Data Review and Reporting
3.	95-QAPJP-0050, R6	TRU Waste Characterization Program Quality Assurance Project Plan (TWCP QAPJP)
4.	1-MAN-008-WM-001, R5	Transuranic (TRU) Waste Management Manual (TWMM)
5.	L4171-F	Determination of PCBs in Solids, Aqueous, and Solid Waste Samples by GC
6.	L-4046-A	WIPP Data Review and Validation for PCBs
7.	RS-020-001, R2	Gas Generation Testing Program QAPJP
8.	PRO-440-RS-0149, R2	GGTP Drum Selection and Batching
9.	PRO-N01-RES-030-001, R4	Heated Gas Test Canister Operations
10.	PRO-962-MGSS-001, R0	Mobile Gas Generation Testing Sampling System
11.	PRO-963-MGSS-002, R0	Mobile Gas Generation Testing Sampling System Data Calculation
12.	PRO-860-RS-0156, R1	Solid Sampling, Building 371
13.	PRO-1654-NHGGT-1983, R0 (draft)	Non-Heated Gas Test Canister Operations
14.	PRO-1655-HGGT-1954, R0 (draft)	Heated Gas Test Canister Operations