

United States Government

Department of Energy

# memorandum

Carlsbad Field Office  
Carlsbad, New Mexico 88221

DATE: APR 01 2005

REPLY TO  
ATTN OF: CBFO:QA:ALH:LC:05-0920:UFC:2300.00

SUBJECT: Audit A-05-04 of the Performance Demonstration Program

to: Kerry Watson, Assistant Manager, Office of Characterization and Transportation



The Carlsbad Field Office (CBFO) conducted an audit of the Performance Demonstration Program on March 14-23, 2005. The audit team concluded that, overall, the Performance Demonstration Program (PDP) was adequate in accordance with the CBFO Quality Assurance Program Document and the WIPP Hazardous Waste Permit. The audit team also concluded that PDP processes were being marginally implemented and were effective. The CBFO audit report is attached.

There were five CBFO Corrective Action Reports issued under separate cover as a result of the audit. Two observations and two recommendations were presented to management for consideration.

If you have any questions or comments concerning this report, please contact me at (505) 234-7423.

A handwritten signature in black ink, appearing to read 'Ava L. Holland'.

Ava L. Holland  
Quality Assurance Manager

Attachment

cc w/attachment:

- I. Triay, CBFO \*ED
- M. Brown, CBFO ED
- L. Chism, CBFO ED
- M. Eagle, EPA ED
- S. Zappe, NMED ED
- C. Watkins, CTAC ED
- B. Oates, CTAC ED
- K. Martin, CTAC ED
- N. Frank, CTAC ED
- W. Verret, CTAC ED

CBFO M&RC

WIPP Operating Records, MS 486-06

050403



U.S. DEPARTMENT OF ENERGY  
CARLSBAD FIELD OFFICE

AUDIT REPORT  
OF THE

PERFORMANCE DEMONSTRATION PROGRAM  
AUDITED IN FOUR LOCATIONS:

PORTAGE ENVIRONMENTAL, INC.  
RICHLAND, WA, MARCH 14, 2005

PORTAGE ENVIRONMENTAL, INC.  
PLEASANT VIEW, UT, MARCH 16, 2005

PORTAGE ENVIRONMENTAL, INC.  
IDAHO FALLS, ID, MARCH 18, 2005

CARLSBAD FIELD OFFICE AND  
CARLSBAD FIELD OFFICE TECHNICAL ASSISTANCE CONTRACTOR  
CARLSBAD, NM, MARCH 22-23, 2005

AUDIT NUMBER A-05-04



Prepared by:

*Norman C. Frank*  
Norman C. Frank, CTAC  
Audit Team Leader

Date:

*4/1/05*

Approved by:

*Ava L. Holland*  
Ava L. Holland, CBFO  
Quality Assurance Manager

Date:

*4-1-05*

## 1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Audit A-05-04 was conducted to evaluate the adequacy, implementation, and effectiveness of the Waste Isolation Pilot Plant (WIPP) Performance Demonstration Program (PDP) management and oversight activities. The audit was conducted to verify compliance to the requirements detailed in the Waste Isolation Pilot Plant Hazardous Waste Facility Permit (HWFP), and the Quality Assurance Program Document (QAPD). The audit was conducted in four locations: Portage Environmental, Inc. (Portage) in Richland, WA, on March 14, 2005; Portage in Pleasant View, UT, on March 16, 2005; Portage in Idaho Falls, ID, on March 18, 2005; and the CBFO and Carlsbad Field Office Technical Assistance Contractor (CTAC) in Carlsbad, NM, on March 22-23, 2005. The audit team concluded that the Quality Assurance (QA) and technical activities of the PDP were adequate, marginally implemented, and effective. Programmatic direction and oversight activities by the DOE/CBFO and CTAC/Portage, as specified in the PDP plans and CTAC implementing procedures, were adequate, marginally implemented, and effective.

The PDP was separately audited at Argonne National Laboratory-East (ANL-E) (Audit A-04-18, June 8-9, 2004) for the headspace gas PDP sample preparation and distribution, and at Environmental Resource Associates (Audit A-05-03, November 10, 2004) for Resource Conservation and Recovery Act (RCRA) sample preparation and distribution.

Furthermore, the PDP analysis and participation was evaluated as part of the participating site certification/recertification audits performed at Rocky Flats Environmental Technology Site (RFETS) (Audit A-04-10, May 30 through June 2, 2004), Hanford Site (Audit A-04-19, June 15-18, 2004), Savannah River Site (Audit A-05-01, October 26-29, 2004), Advanced Mixed Waste Treatment Facility (Audit A-04-22, August 16-20, 2004), Idaho National Engineering and Environmental Laboratories analytical laboratories (Audit A-04-17, May 25-27, 2004), ANL-E/Central Characterization Project (CCP) (Audit A-04-03, October 6-9, 2003), Nevada Test Site/CCP (Audit A-04-04, October 6-9, 2003), Hanford/CCP (Audit A-04-20, September 13-17, 2004), and Los Alamos National Laboratory/CCP (Audit A-04-25, May 4-7, 2004). Any deficiencies pertaining to the PDP work noted during these audits were corrected by the sites as part of these audits.

The audit team identified five conditions adverse to quality that required the issuance of CBFO corrective action reports (CARs). No isolated deficiencies were identified that required only remedial action. Two Observations were identified concerning processes that, if continued, could result in a CAR in the future. Two Recommendations are offered for CTAC/Portage management's consideration. The CARs, Observations, and Recommendations are described in section 6.0.

## 2.0 SCOPE

The audit team evaluated the adequacy, implementation, and effectiveness of technical and QA activities related to the PDP. The audit covered work done by the DOE/CBFO and the CTAC/Portage Program Manager and PDP coordinators, including sample receipt, data scoring, and results analysis. The requirements for the PDP come from the HWFP and the QAPD, and flow down into the PDP Management Plan, PDP Plans for Analysis of Simulated Headspace Gases, RCRA Constituent Analysis of Solidified Wastes, and Nondestructive Assay (NDA), and also into Portage and CBFO implementing procedures. The evaluation of the program documentation was based on the following documents:

DOE/CBFO-01-3107, Revision 0, *Performance Demonstration Program Management Plan*

DOE/CAO-95-1076, Revision 3, *Performance Demonstration Program Plan for Analysis of Simulated Headspace Gases*

CAO-95-1077, Revision 4, *Performance Demonstration Program Plan for RCRA Constituent Analysis of Solidified Wastes*

DOE/CBFO-01-1005, Revision 1, *Performance Demonstration Program Plan Nondestructive Assay of Drummed Wastes for The TRU Waste Characterization Program*

DOE/CBFO-01-1006, Revision 0, *Performance Demonstration Program Plan for Nondestructive Assay of Boxed Wastes for the TRU Waste Characterization Program*

The programmatic and technical checklists were developed from the above documents and the following CTAC implementing procedures:

CTAC Management Procedure (MP) 2.5, Revision 0, *Conduct of the Headspace Gas Performance Demonstration Program*

CTAC MP 2.6, Revision 0, ICN #2, *Conduct of the RCRA Performance Demonstration Program*

CTAC MP 2.7, Revision 0, ICN #1, *Conduct of the NDA Performance Demonstration Program*

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

The following people performed or observed the audit:

#### **AUDITOR/TECHNICAL SPECIALIST**

Norman C. Frank    Audit Team Leader, CTAC  
William J. Verret    Auditor and Technical Specialist, CTAC

#### **OBSERVERS**

None

### **4.0 AUDIT PARTICIPANTS**

Individuals contacted during the audit are listed in Attachment 1. A preaudit meeting was held at each site prior to that portion of the audit. A postaudit meeting was also held at each site at the conclusion of audit activities to discuss issues and deficiencies. The postaudit meeting with the CBFO was considered the final postaudit meeting for the audit.

---

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

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

The audit team concluded that the PDP QA program was adequate for the work being performed and, with the exceptions noted in the CARs, was marginally implemented in accordance with the program documents delineated in section 2.0. The technical areas evaluated were determined to be effective.

#### **5.2 SPECIFIC QA PROGRAM AUDIT ACTIVITIES**

The details of the audit activities, along with the specific objective evidence reviewed, are contained in the audit checklists. The checklists are maintained as QA Records.

##### **5.2.1 CBFO Management and Overview**

CBFO's oversight of the PDP was audited in Carlsbad, NM. The audit team reviewed Task Plans, approval letters of PDP participation, e-mails and memoranda between the CBFO and contractors, document reviews and approvals of the Management Plan and PDP Plans, determination of quality levels, and PDP QA records packages at the CBFO Mail and Records Center. Scoring reports and other documentation were not being sent by the CBFO as specified in CTAC MPs 2.5, 2.6, and 2.7 (CAR 05-021). The CBFO management and oversight of the PDP was determined to be adequate, marginally implemented, and effective.

## **5.2.2 CTAC/Portage Management and Overview**

Technical oversight and coordination of the PDP by CTAC/Portage was audited at the Portage offices in Richland, WA, Pleasant View, UT, and Idaho Falls, ID. E-mails providing documentation of completion of required actions were being retained on computer hard drives, which were backed up but not retained. A computer crash could cause the loss of documentation (Observation 1). There were conflicting requirements regarding approval authority for CTAC MPs (Observation 2). Training records, procurement documentation, document preparation and control documentation, and PDP QA records were also reviewed. The technical oversight and coordination of this program was determined to be adequate, marginally implemented, and effective.

## **5.3 Technical Activities**

### **5.3.1 Headspace Gas Analysis**

The Portage HSG PDP Coordinator ensures preparation and distribution of PDP samples; audits the Sample Preparation Contractor; and receives, evaluates, and scores analytical data submitted by the HSG PDP participants. Based on the scoring results, the HSG PDP coordinator identifies in the scoring report the "pass/fail" status of each participant. QA documentation for HSG PDP Sample Cycles 18A and 19A including travelers, scoring report, training records, software, and transmittal documentation were reviewed. E-mails providing documentation of completion of required actions were being retained on computer hard drives, which were backed up but not retained. A computer crash could cause the loss of documentation (Observation 1). Scoring reports and other documentation were not being sent by the CBFO as specified in CTAC MP 2.5 (CAR 05-021). The Portage HSG Program Coordinator adequately and effectively implemented the HSG PDP.

### **5.3.2 RCRA Constituent Analysis**

#### **Portage RCRA PDP Coordinator**

The Portage RCRA PDP Coordinator ensures preparation and distribution of PDP samples; audits the Sample Preparation Contractor; and receives, evaluates, and scores analytical data submitted by the WIPP RCRA PDP participants. Based on the scoring results, the RCRA PDP coordinator identifies in the scoring report the "pass/fail" status of each participant. QA documentation for PDP Sample Cycles 11A and 12A, including travelers, worksheets, scoring reports, training records, software, procurement, and transmittal documentation were reviewed. E-mails providing documentation of completion of required actions were being retained on computer hard drives, which were backed up but not retained. A computer crash could cause the loss of documentation

(Observation 1). The MS Excel scoring worksheet had not been successfully validated. The RCRA PDP Plan and CTAC MP 2.6 need to be revised to address the use of worksheets as the sole reporting method (Recommendation 1). Scoring reports and other documentation were not being sent by the CBFO as specified in CTAC MP 2.6 (CAR 05-021). The Portage RCRA Program Coordinator adequately and effectively implemented the RCRA PDP.

### 5.3.3 Nondestructive Assay

#### Portage NDA PDP Coordinator

The Portage NDA PDP Coordinator ensures preparation of the NDA sample drums and boxes, and receives, evaluates, and scores assay data submitted by the NDA PDP participants. Based on the scoring results, the NDA PDP coordinator identifies in the scoring report the "pass/fail" status of each participant. The audit team reviewed QA documentation for PDP Sample Cycles 9A and 11A, including preparation of PDP NDA sample drums, travelers, worksheets, scoring report, training records, software, procurement, and transmittal documentation. Neither Excel worksheet used by the NDA PDP Coordinator had been validated. As a result, the QAPD requires that all values be checked by other means. This was not being done (CAR 05-020). Scoring reports and other documentation were not being sent by the CBFO as specified in CTAC MP 2.7 (CAR 05-021). A supplier, Custom Surrogate Matrices, Inc., (CSM) had not been evaluated as a supplier in over three years. The supplier has provided excellent products over that time, but an evaluation has not been documented (CAR 05-022). Hardware from suppliers is being receipt-inspected using very good checklists that are based on the procurement. A receiving inspection procedure or instruction, required by CTAC MP 7.1, *Procurement*, and approved by the CTAC Audits & Assessments Manager, has not been developed (CAR 05-023). CTAC MP 2.7, Rev. 0, does not reflect current work processes (CAR 05-024). The audit team subsequently evaluated the alternate work practices and determined that they were effective in achieving the goals of the NDA PDP. E-mails providing documentation of completion of required actions were being retained on computer hard drives, which were backed up but not retained. A computer crash could cause the loss of documentation (Observation 1). The CD training presentation for training of the Sample Preparation Team needs to be updated before it is used again (Recommendation 2).

The audit team concluded that the PDP NDA plans for both drummed and boxed waste were being satisfactorily implemented, but CTAC MP 2.7 was not being satisfactorily implemented. Although the Portage NDA Program Coordinator unsatisfactorily implemented the CTAC MP 2.7, the results were effective in that accurate results were obtained and reported by alternate methods.

### 5.4 Quality Elements

Quality elements were evaluated as related to the technical aspects of the PDP. These included overviews of organization, training, procurement, implementing documents, document control, corrective actions, quality records, and assessments. The quality records system used by the CBFO at the M&RC was able to locate records using their database of records. The quality records system used by the CBFO at the 401 N. Canal facility was not able to locate records using their database of records. Although the records were sent to 401 N. Canal, the records could not be found using the search capabilities of their database. Except as noted in CARs 05-021, 05-022, and 05-023 the quality elements were being satisfactorily addressed.

## **6.0 CORRECTIVE ACTION REPORTS, DEFICIENCIES CORRECTED DURING THE AUDIT, OBSERVATIONS, AND RECOMMENDATIONS**

### **6.1 Corrective Action Reports**

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

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

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

No significant conditions adverse to quality were identified during the audit.

#### **6.1.1 CAR 05-20**

Neither Excel worksheet used by the NDA PDP Coordinator had been validated using the process given in the CBFO QAPD, section 6.0. This requires that every calculation be checked by some other means. For the scoring report worksheet, only 20% of the results are checked manually. For the Source Radioactivity Decay worksheet only one source in the entire report is checked for each cycle. In addition, the requirements given in CTAC MP 2.7, Rev. 0, ICN #1 are internally inconsistent.

#### **6.1.2 CAR 05-21**

The PDP Manager, coordinators, and PDP Appointee are not handling records as required by CTAC MPs 2.5, 2.6, 2.7, and 7.1.

- 1) Records are not being formally sent to the CBFO using a cover letter signed by the NDA PDP Coordinator, as required by CTAC MP 7.1 and CTAC MP 2.7.



- 2) Records are not being distributed as required by the records attachment of the CTAC MPs (MP 2.5, 2.6, and 2.7).
- 3) Records are not being forwarded to the CBFO client in a timely manner.
- 4) Three of seven travelers for headspace gas had not been signed by the PDP HSG Coordinator.

### **6.1.3 CAR 05-22**

CSM, Inc. provides unique products for the NDA sample drums and boxes. CSM, Inc. has not been evaluated as a supplier in over three years.

### **6.1.4 CAR 05-23**

There is no procedure or instruction approved by the CTAC Audits & Assessments Manager covering receipt inspection. The NDA PDP Coordinator, using a checklist based on the scope of work, performed receipt inspection of PE-NM02-365-01. The checklist was signed 1/15/03 as completed, but there were no preparation or approval signatures.

### **6.1.5 CAR 05-24**

CTAC MP 2.7, Rev. 0, ICN #1, does not reflect current work processes. The flowchart, Figure 1, does not show current processes. The Attachment II records are not being processed as required by Attachment II.

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

During the audit, the audit team may identify CAQs. Once a determination is made that the CAQ is not significant, the audit team member, in conjunction with the Audit Team Leader (ATL), determines if the CAQ is an isolated case requiring only remedial action and therefore can be corrected during the audit. Upon determination that the CAQ is isolated, the audit team member, in conjunction with the ATL, evaluates/verifies any objective evidence/actions submitted or taken by the audited organization and determines if the condition was corrected in an acceptable manner. Once it has been determined that the CAQ has been corrected, the ATL categorizes the condition as a 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 during this audit.

### **6.3 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 members, in conjunction with the ATL, evaluate these conditions and classify 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**

Two Observations are presented to PDP management.

##### **6.3.1.1 Observation Number 1**

E-mail messages are used to demonstrate the completion of required actions. Although these e-mail messages were available during the audit, they had not all been entered into the records system. It is possible that these messages would be lost if there were a hard drive crash.

##### **6.3.1.2 Observation Number 2**

There are conflicting requirements in DOE/CBFO-01-3107, Rev. 2, concerning whether the PDP Manager approves the CTAC MPs relating to the PDP (MPs 2.5, 2.6, and 2.7). Actual practice is for the PDP Manager to ensure they are prepared and to review the procedures. The CTAC Program Manager signs the MP, signifying approval for use. The conflicts appear in the "Introduction" and in "PDP Coordinator Personnel" sections.

#### **6.3.2 Recommendations**

Two recommendations are presented for PDP management consideration.

##### **6.3.2.1 Recommendation Number 1**

The goal of the PDP RCRA Coordinator is to use the scoring worksheet in MS Excel as the only method of reporting the results. The worksheets have not been successfully validated to show they produce valid results. At this time, both the PDP RCRA Coordinator and an Independent Reviewer check all numbers and results. The RCRA PDP Plan and CTAC MP 2.6 do not address the use of worksheets as the sole reporting

method. The audit team recommends that these documents be revised to address validation of worksheets as provided by the CBFO QAPD, Section 6.

#### **6.3.2.2 Recommendation Number 2**

A CD training presentation was used for the initial training for the NDA Sample Preparation Teams at each site in 2001/2002. Subsequent training at the Advanced Mixed Waste Treatment Facility used a slide presentation and a live presenter. Before the CD training is used again, it needs to be updated to reflect current methods and requirements.

### **7.0 LIST OF ATTACHMENTS**

Attachment 1: Personnel Contacted During the Audit

**PERSONNEL CONTACTED DURING THE AUDIT**

| <b>Personnel Contacted During the Audit<br/>Portage Environmental, Inc., in Richland, WA<br/>March 14, 2005</b> |  |                         |                               |                          |
|---|--|-------------------------|-------------------------------|--------------------------|
| <b>Name</b>   | <b>Org/Title</b>                                       | <b>Preaudit Meeting</b> | <b>Contacted During Audit</b> | <b>Postaudit Meeting</b> |
| Cliff Watkins   | CTAC/Portage PDP<br>Manager and HSG<br>PDP Coordinator | X                       | X                             | X                        |

| <b>Personnel Contacted During the Audit<br/>Portage Environmental, Inc., in Pleasant View, UT<br/>March 16, 2005</b> |  |                         |                               |                          |
|--|--|-------------------------|-------------------------------|--------------------------|
| <b>Name</b>  | <b>Org/Title</b>                             | <b>Preaudit Meeting</b> | <b>Contacted During Audit</b> | <b>Postaudit Meeting</b> |
| Berta Oates  | CTAC/Portage<br>RCRA PDP<br>Coordinator      | X                       | X                             | X                        |
| Stacy Nottestad  | CTAC/Portage<br>RCRA Independent<br>Reviewer | X                       | X                             | X                        |

| <b>Personnel Contacted During the Audit<br/>Portage Environmental, Inc., in Idaho Falls, ID<br/>March 18, 2005</b> |   |                         |                               |                          |
|--|---|-------------------------|-------------------------------|--------------------------|
| <b>Name</b>  | <b>Org/Title</b>                                      | <b>Preaudit Meeting</b> | <b>Contacted During Audit</b> | <b>Postaudit Meeting</b> |
| Kerry Martin   | CTAC/Portage NDA<br>PDP Coordinator                   | X                       | X                             | X                        |
| Dana Storms  | Portage<br>Procurement/<br>Contracts<br>Administrator |                         | X                             | X                        |

| <b>Personnel Contacted During the Audit<br/>CBFO in Carlsbad, NM<br/>March 22-24, 2005</b> |   |                         |                               |                          |
|--|---|-------------------------|-------------------------------|--------------------------|
| <b>Name</b>  | <b>Org/Title</b>                                      | <b>Preaudit Meeting</b> | <b>Contacted During Audit</b> | <b>Postaudit Meeting</b> |
| Mike Brown   | CBFO<br>Transportation<br>Packaging Manager           | X                       | X                             | X                        |
| Cliff Watkins  | CTAC/Portage PDP<br>Manager                           | X                       | X                             | X                        |
| Meg Milligan   | CBFO Chief<br>Information Officer                     |                         | X                             |                          |
| Heather Evans  | Portage<br>Procurement/<br>Contracts<br>Administrator |                         | X                             |                          |
| Alberta Farmer   | L & M Mail and<br>Records Clerk                       |                         | X                             |                          |
| D. Biscaino  | L & M Mail and<br>Records Clerk                       |                         | X                             |                          |
| Lolly Espinoza   | L & M Mail and<br>Records Clerk                       |                         | X                             |                          |
| Kathleen Lunsford  | L&M Technical<br>Writer/Records                       |                         | X                             |                          |
| Debra Medina   | CTAC/SM Stoller<br>Technical Editor                   |                         | X                             |                          |