



**Department of Energy**  
 Carlsbad Field Office  
 P. O. Box 3090  
 Carlsbad, New Mexico 88221

SEP 28 2011



**ENTERED**

Mr. John Kieling, Acting Chief  
 Hazardous Waste Bureau  
 New Mexico Environment Department  
 2905 Rodeo Park Drive East, Building 1  
 Santa Fe, New Mexico 87505-6303

Subject: Transmittal of the Hazardous Waste Facility Permit Attachment C6 Audit Plan for Audit A-12-03 of the AMWTP Transuranic Waste Characterization and Certification Program

Dear Mr. Kieling:

This letter transmits the audit plan for the subject Carlsbad Field Office recertification audit to be conducted at the Idaho National Laboratory November 1-3, 2011 for work performed by the Advanced Mixed Waste Treatment Project (AMWTP), as required by the Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Section C4-3g. The audit plan identifies the audit team members as required by Section C6-3 of the Permit.

If you have any questions concerning this notification, please contact Mr. Randy Unger, Director of Quality Assurance, at (575) 234-7065.

Sincerely,

Edward Ziemianski  
 Interim Manager

Enclosure

cc: w/enclosure	
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CBFO QA File	
CBFO M&RC	

\*ED denotes electronic distribution

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## CARLSBAD FIELD OFFICE CERTIFICATION AUDIT PLAN

**Audit Number:** A-12-03

**Organization:** Advanced Mixed Waste Treatment Project (AMWTP)

**Organizations to be Notified:** Bechtel BWXT Idaho, LLC (BBWI)  
Idaho Treatment Group (ITG)  
New Mexico Environment Department  
Environmental Protection Agency  
Defense Nuclear Facilities Safety Board

**Date and Location:** November 1 – 3, 2011  
Idaho Falls, Idaho

**Audit Team:**

Courtland Fesmire	CBFO Quality Assurance Representative
Porf Martinez	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Jack Walsh	Auditor, CTAC
Katie Martin	Auditor, CTAC
Cindi Castillo	Auditor, CTAC
Norm Frank	Auditor, CTAC
Charlie Riggs	Auditor, CTAC
Earl Bradford	Auditor, CTAC
Margie Martinez	Auditor, CTAC
Priscilla Martinez	Auditor, CTAC
Paul Gomez	Technical Specialist, CTAC
Dick Blauvelt	Technical Specialist, CTAC
BJ Verret	Technical Specialist, CTAC
Rhett Bradford	Technical Specialist, CTAC
Jim Oliver	Technical Specialist, CTAC

### Audit Scope:

The audit team will evaluate the continued adequacy, implementation, and effectiveness of the AMWTP technical and quality assurance (QA) activities performed for characterizing contact-handled (CH) transuranic (TRU) waste. The QA and technical activities implemented at AMWTP for Summary Category Groups (SCGs) S3000 (homogeneous solids waste) and SCG S5000 (debris waste) will be audited to requirements in the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), the CBFO Quality Assurance Program Document (QAPD), and the Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WAC). In addition, the audit team will evaluate the Visual Examination process for characterizing CH SCG S3000 homogeneous solids waste.

The specific processes to be audited are identified below in the "Activities to be Audited" section and on the attached list, "Processes and Equipment to be Reviewed During Audit A-12-03."

### **Activities to be Audited:**

The following general areas from Attachment C6, Section C6-3 of the HWFP will be audited:

- Results of previous audits
- Changes in programs or operations
- New programs or activities being implemented
- Changes in key personnel

The following QA elements will be audited:

- Organization/QA Program Implementation
- Personnel Qualification and Training
- Quality Improvement (nonconformance reporting and corrective action)
- Documents and Records
- Work Processes
- Procurement
- Inspection and Testing (control of measuring and test equipment (M&TE) for data collection)
- Audits/Assessments
- Container Management
- Software Control
- Load Management

The following waste characterization technical elements will be audited:

- Acceptable Knowledge (AK) including waste certification (i.e., Waste Stream Profile Forms)
- Project-Level Data Validation and Verification (V&V)
- Solids Sampling and Analysis (SS&A)
- Headspace Gas Sampling and Analysis (HSG S&A)
- Real-time Radiography (RTR)
- Visual Examination (VE)
- Nondestructive Assay (NDA)
- WIPP Waste Information System/Waste Data System (WWIS/WDS)

### **Governing Documents/Requirements:**

Evaluation of adequacy of AMWTP documents will be based on the current revisions of the following documents:

- *Quality Assurance Program Document (QAPD)*, DOE/CBFO-94-1012
- Hazardous Waste Facility Permit, Waste Isolation Pilot Plant EPA No. NM4890139088-TSDF, the New Mexico Environment Department (HWFP)
- *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WAC)*, DOE/WIPP-02-3122

Programmatic and technical checklists will be developed from the current revisions of the following documents:

- *AMWTP Certification Plan for INL Contact-Handled Transuranic Waste, MP-TRUW-8.1*
- *AMWTP Quality Assurance Project Plan (QAPjP), MP-TRUW-8.2*
- Related AMWTP quality assurance and technical implementing procedures

**Schedule of Audit Activities:**

A pre-audit conference is scheduled for 8:00 a.m., Tuesday, November 1, 2011, at the in-town offices of the AMWTP.

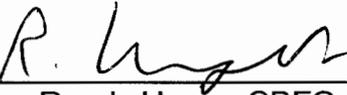
Audit team caucuses will be held at 4:00 p.m., Tuesday through Thursday, November 1 through 3, 2011, at the in-town offices of the AMWTP.

The audit team leader will meet with AMWTP management to discuss audit concerns and audit progress at 8:30 a.m., Wednesday and Thursday, November 2 and 3, 2011, at the in-town offices of the AMWTP.

A post-audit conference is scheduled for 4:00 p.m., Thursday, November 3, 2011, at the in-town offices of the AMWTP.

Approved By:  \_\_\_\_\_  
Porf Martinez, CTAC  
Audit Team Leader

Date: 9/14/2011

Approved By:  \_\_\_\_\_  
Randy Unger, CBFO  
Director, Office of Quality Assurance

Date: 26 Sep 11.

## Processes and Equipment to be Reviewed During Audit A-12-03

WIPP #	Site Equipment #	Equipment Description	Components	Software	NDA Calibrated Range, Operating Range and TMU
<b>NEW PROCESSES OR EQUIPMENT</b>					
TBD	N/A	Sludge Visual Examination Closure (VSC) – S3000 to a new container  Method described in INST-FOI-22	N/A	Waste Tracking System (WTS)	N/A
<b>PREVIOUSLY APPROVED PROCESSES OR EQUIPMENT</b>					
9HG4	Z-221-001-A	Consonant Technology Inc. (CTI) – Gas Chromatography/Mass Spectrometry (GC/MS) System  PDP ID # CTI-HGAS-A-001  Method described in procedure INST-OI-43	Agilent 5973N Network Mass Selective Detector – Unit 001	HGAS Software, Version 1.23	N/A
9DA1	Z-211-102	Canberra Integrated Waste Assay System (IWAS) for assay and isotopics on 55-gallon and 83/85-gallon drums  DAS –102 - PDP Registration # AM01/AMN1  Method described in procedure INST-OI-14	<ul style="list-style-type: none"> <li>➤ Broad Energy Germanium (BEGe) gamma detectors</li> <li>➤ 122 helium-3 tubes used in passive neutron coincidence counting modality and the active neutron differential die-away modality</li> <li>➤ Cf-252/Cs-137 Add-A-Source (AAS) correction source</li> <li>➤ 14 MeV neutron generator</li> <li>➤ Fast Neutron Detector Packs (FNDP)</li> </ul>	NDA 2000  Canberra's Genie 2000  Multi-Group Analysis (MGA)  Multi-Group Analysis-Uranium (MGA-U)	The calibration of IWAS system was verified and documented in the site acceptance reports CI-IDA-NDA-0051 through CI-IDA-NDA-0054  The determination of TMU for the IWAS unit is documented in CI-IDA-NDA-0055, Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems, Revision 1, July 30, 2003.

## Processes and Equipment to be Reviewed During Audit A-12-03

WIPP #	Site Equipment #	Equipment Description	Components	Software	NDA Calibrated Range, Operating Range and TMU
9DA2	Z-211-103	<p>Canberra Integrated Waste Assay System (IWAS) for assay and isotopics on 55-gallon and 83/85-gallon drums</p> <p>DAS-103 - PDP Registration # AM02/AMN2</p> <p>Method described in procedure INST-OI-14</p>	<ul style="list-style-type: none"> <li>➤ Broad Energy Germanium (BEGe) gamma detectors</li> <li>➤ 122 helium-3 tubes used in passive neutron coincidence counting modality and the active neutron differential die-away modality</li> <li>➤ Cf-252/Cs-137 Add-A-Source (AAS) correction source</li> <li>➤ 14 MeV neutron generator</li> <li>➤ Fast Neutron Detector Packs (FNDP)</li> </ul>	<p>NDA 2000</p> <p>Canberra's Genie 2000</p> <p>Multi-Group Analysis (MGA)</p> <p>Multi-Group Analysis- Uranium (MGA-U)</p>	<p>The calibration of IWAS system was verified and documented in the site acceptance reports CI-IDA-NDA-0051 through CI-IDA-NDA-0054</p> <p>The determination of TMU for the IWAS unit is documented in CI-IDA-NDA-0055, "Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems", Revision 1, July 30, 2003.</p>
9DA3	Z-390-100	<p>Canberra Integrated Waste Assay System (IWAS) - DAS3 – 55 gallon drums</p> <p>DAS-100 – PDP Registration # AM03/AMN3</p> <p>Method described in INST-FOI-01</p>	<ul style="list-style-type: none"> <li>➤ Broad Energy Germanium (BEGe) gamma detectors</li> <li>➤ 122 helium-3 tubes used in passive neutron coincidence counting modality and the active neutron differential die-away modality</li> <li>➤ Cf-252/Cs-137 Add-A-Source (AAS) correction source</li> <li>➤ 14 MeV neutron generator</li> <li>➤ Fast Neutron Detector Packs (FNDP)</li> </ul>	<p>NDA 2000</p> <p>Canberra's Genie 2000</p> <p>Multi-Group Analysis (MGA)</p> <p>Multi-Group Analysis- Uranium (MGA-U)</p>	<p>The calibration of IWAS system was verified and documented in the site acceptance reports CI-IDA-NDA-0051 through CI-IDA-NDA-0054</p> <p>The determination of TMU for the IWAS unit is documented in CI-IDA-NDA-0055, Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems, Revision 1, July 30, 2003.</p>

## Processes and Equipment to be Reviewed During Audit A-12-03

WIPP #	Site Equipment #	Equipment Description	Components	Software	NDA Calibrated Range, Operating Range and TMU
9DA4	Z-390-101	Canberra Integrated Waste Assay System (IWAS) - DAS4 – 55 gallon drums  DAS-101 – PDP Registration # AM04/AMN4  Method described in INST-FOI-01	<ul style="list-style-type: none"> <li>➤ Broad Energy Germanium (BEGe) gamma detectors</li> <li>➤ 122 helium-3 tubes used in passive neutron coincidence counting modality and the active neutron differential die-away modality</li> <li>➤ Cf-252/Cs-137 Add-A-Source (AAS) correction source</li> <li>➤ 14 MeV neutron generator</li> <li>➤ Fast Neutron Detector Packs (FNDP)</li> </ul>	NDA 2000  Canberra's Genie 2000  Multi-Group Analysis (MGA)  Multi-Group Analysis- Uranium (MGA-U)	The calibration of IWAS system was verified and documented in the site acceptance reports CI-IDA-NDA-0051 through CI-IDA-NDA-0054  The determination of TMU for the IWAS unit is documented in CI-IDA-NDA-0055, Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems, Revision 1, July 30, 2003.
9RR1	Z-213-101	Real Time Radiography System – 55 gallon drums, 83 gallon drums and SWBs  Method described in INST-OI-12 and INST-OI-81	RTR System	Waste Tracking System (WTS)	N/A
9RR2	Z-213-106	Real Time Radiography System – 55 gallon drums, 83 gallon drums and SWBs  Method described in procedure INST-OI-12 and INST-OI-81	RTR System	Waste Tracking System (WTS)	N/A

## Processes and Equipment to be Reviewed During Audit A-12-03

WIPP #	Site Equipment #	Equipment Description	Components	Software	NDA Calibrated Range, Operating Range and TMU
9DC1	Z-250-802	Drum Coring and Sample Collection Glove Box  Method – BN-MDC  Method described in procedure INST-OI-16, INST-OI-73, and INST-OI-75	Drum Coring and Sample Collection Glove Box	Waste Tracking System (WTS)	N/A
9VE2	N/A	Visual Examination (in lieu of RTR) (VEC)  Method described in INST-OI-34	N/A	Waste Tracking System (WTS)	N/A
9VE3	N/A	Newly Generated Waste Visual Examination Closure (VNC)  Method described in INST-OI-34	N/A	Waste Tracking System (WTS)	N/A
9VE5	N/A	Visual Examination (in lieu of RTR) (VEC)  Method described in INST-FOI-17	N/A	Waste Tracking System (WTS)	N/A
9VE6	N/A	Newly Generated Waste Visual Examination Closure (VNC)  Method described in INST-FOI-17	N/A	Waste Tracking System (WTS)	N/A
9VE7	N/A	Box Line Visual Examination (VEB) – Box to drum repackaging  Method described in INST-FOI-17	N/A	Waste Tracking System (WTS)	N/A
9VE8	N/A	Box Line Visual Examination (VEB) – Drum to new drum repackaging  Method described in INST-FOI-17	N/A	Waste Tracking System (WTS)	N/A
9VE10	N/A	Box Line Visual Examination (VEB) – Drum to new drum repackaging  Method described in INST-OI-34	N/A	Waste Tracking System (WTS)	N/A

## Processes and Equipment to be Reviewed During Audit A-12-03

WIPP #	Site Equipment #	Equipment Description	Components	Software	NDA Calibrated Range, Operating Range and TMU
N/A	N/A	Load Management Method described in MP-TRUW-8.13	N/A	N/A	N/A
N/A	N/A	Acceptable Knowledge Method described in MP-TRUW-8.11, MP-TRUW-8.13 & MP-TRUW-8.14	N/A	N/A	N/A
N/A	N/A	Data Generation and Project Level Validation & Verification (V&V) Method described in MP-TRUW-8.9	N/A	N/A	N/A