



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

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**AUG 26 2013**

August 22, 2013

**NMED  
 Hazardous Waste Bureau**

Mr. John E. Kieling, 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 Recertification Audit A-14-01 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 of the Advanced Mixed Waste Treatment Project (AMWTP) at the Idaho National Laboratory on October 1-3, 2013, 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.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to 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 fine and imprisonment for knowing violations.

If you have any questions concerning this notification, please contact Mr. Oba L. Vincent, Acting Director, Office of Quality Assurance, at (575) 234-7525.

Sincerely,

*Jose R. Franco*  
 Jose R. Franco, Manager  
 Carlsbad Field Office

Enclosure

cc: w/enclosure

O. Vincent, CBFO	* ED	C. Smith, NMED	ED
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T. Kliphuis, NMED	ED	WIPP Operating Record	ED
S. Holmes, NMED	ED	CBFO QA File	
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\*ED denotes electronic distribution



## CARLSBAD FIELD OFFICE AUDIT PLAN

**Audit Number:** A-14-01

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

**Organizations to be Notified:** Bechtel BWXT Idaho, LLC  
Idaho Treatment Group  
New Mexico Environment Department  
U.S. Environmental Protection Agency  
Defense Nuclear Facilities Safety Board

**Date and Location:** October 1–3, 2013  
Idaho National Laboratory (INL), Idaho Falls, Idaho and the  
AMWTP Energy Drive Facility, Idaho Falls, Idaho

**Audit Team:**

Martin Navarrete	Management Representative, Carlsbad Field Office (CBFO), Office of Quality Assurance
Cindi Castillo	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Randall Allen	Auditor, CTAC
Tammy Bowden	Auditor, CTAC
Harley Kirschenmann	Auditor, CTAC
Greg Knox	Auditor, CTAC
Katie Martin	Auditor, CTAC
Porf Martinez	Auditor, CTAC
Berry Pace	Auditor, CTAC
Charlie Riggs	Auditor, CTAC
Jim Schuetz	Auditor, CTAC
Roger Vawter	Auditor, CTAC
Dick Blauvelt	Technical Specialist, CTAC
Rhett Bradford	Technical Specialist, CTAC
Paul Gomez	Technical Specialist, CTAC
Priscilla Martinez	Technical Specialist, CTAC
Jim Oliver	Technical Specialist, CTAC
B.J. Verret	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 transuranic waste. The QA and technical activities implemented at AMWTP for Summary Category Group (SCG) 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*, and the *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*.

The specific processes to be audited are identified below and on the attached list entitled: *Processes and Equipment to be Reviewed During Audit A-14-01*.

**Activities to be Audited:**

The following general areas from Attachment C6, Section C6-3, of the WIPP 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 processes 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 measurement and test equipment for data collection)
- Audits/Assessments
- Container Management
- Software Control

The following waste characterization technical elements will be audited:

- Acceptable Knowledge, including waste certification (i.e., Waste Stream Profile Forms)
- Project-Level Data Validation and Verification
- Solids Sampling
- Headspace Gas Sampling and Analysis
- Real-time Radiography
- Visual Examination
- Nondestructive Assay
- WIPP Waste Information System/Waste Data System
- Load Management

**Governing Documents/Requirements:**

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

- *CBFO Quality Assurance Program Document, DOE/CBFO-94-1012*

- Waste Isolation Pilot Plant Hazardous Waste Facility Permit NM4890139088-TSDF
- *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*, 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*, MP-TRUW-8.2
- Related AMWTP QA and technical implementing procedures

**Schedule of Audit Activities:**

A pre-audit conference is scheduled for 8:30 a.m., Tuesday, October 1, 2013, at the AMWTP Energy Drive Facility in Idaho Falls, Idaho.

Audit team caucuses will be held at 3:30 p.m., Tuesday and Wednesday, October 1 and 2, 2013, and at 1:00 p.m. on Thursday, October 3, 2013.

The audit team leader will meet with AMWTP management to discuss audit concerns and audit progress at 8:30 a.m., Tuesday through Thursday, October 1-3, 2013.

A post-audit conference is scheduled for 3:00 p.m., Thursday, October 3, 2013.

All meeting locations will be identified in the daily audit schedule.

Approved By: Cindi Castillo Date: 8/15/13  
Cindi Castillo, CTAC  
Audit Team Leader

Approved By: D. J. Mills Date: 8-20-13  
Director, CBFO Office of Quality Assurance

**Processes and Equipment to be Reviewed During Audit A-14-01**

WIPP #	Site Equipment #	Equipment Description	Components	Software	NDA Calibrated Range, Operating Range and TMU
<b>HEADSPACE GAS (for data collected prior to the Class 2 PMR dated March 13, 2013)</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
<b>NONDESTRUCTIVE ASSAY</b>					
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>	<ul style="list-style-type: none"> <li>• NDA 2000</li> <li>• Canberra's Genie 2000</li> <li>• Multi-Group Analysis (MGA)</li> <li>• Multi-Group Analysis-Uranium (MGA-U)</li> </ul>	<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>
9DA2	Z-211-103	Canberra Integrated Waste Assay System (IWAS) for assay and isotopics on 55-gallon and 83/85-gallon drums  DAS-103 - PDP Registration # AM02/AMN2 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>	<ul style="list-style-type: none"> <li>• NDA 2000</li> <li>• Canberra's Genie 2000</li> <li>• Multi-Group Analysis (MGA)</li> <li>• Multi-Group Analysis-Uranium (MGA-U)</li> </ul>	<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-14-01**

<b>WIPP #</b>	<b>Site Equipment #</b>	<b>Equipment Description</b>	<b>Components</b>	<b>Software</b>	<b>NDA Calibrated Range, Operating Range and TMU</b>
9DA3	Z-390-100	Canberra Integrated Waste Assay System (IWAS) - DAS3 – 55-gallon drums  DAS-100 – PDP Registration # AM03/AMN3 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>	<ul style="list-style-type: none"> <li>• NDA 2000</li> <li>• Canberra's Genie 2000</li> <li>• Multi-Group Analysis (MGA)</li> <li>• Multi-Group Analysis-Uranium (MGA-U)</li> </ul>	<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>
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>	<ul style="list-style-type: none"> <li>• NDA 2000</li> <li>• Canberra's Genie 2000</li> <li>• Multi-Group Analysis (MGA)</li> <li>• Multi-Group Analysis-Uranium (MGA-U)</li> </ul>	<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>
<b>NONDESTRUCTIVE EXAMINATION</b>					
9RR1	Z-213-101	Real Time Radiography (RTR) System  Method described in INST-OI-12	RTR System	Waste Tracking System (WTS)	N/A

**Processes and Equipment to be Reviewed During Audit A-14-01**

<b>WIPP #</b>	<b>Site Equipment #</b>	<b>Equipment Description</b>	<b>Components</b>	<b>Software</b>	<b>NDA Calibrated Range, Operating Range and TMU</b>
9RR2	Z-213-106	Real Time Radiography (RTR) System Method described in procedure INST-OI-12	RTR System	Waste Tracking System (WTS)	N/A
<b>SOLIDS (for data collected prior to the Class 2 PMR dated March 13, 2013)</b>					
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
<b>VISUAL EXAMINATION</b>					
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

**Processes and Equipment to be Reviewed During Audit A-14-01**

WIPP #	Site Equipment #	Equipment Description	Components	Software	NDA Calibrated Range, Operating Range and TMU
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

**AMWTP DEACTIVATED EQUIPMENT LIST**

WIPP #	Site Equipment #	Equipment Description	Date Deactivated
<b>HEADSPACE GAS</b>			
9HG1	Z-220-001A	Nuclear Filter Technology Drum Vent System – Mass Spectrometer, Unit A	8/6/06
9HG2	Z-220-001B	Nuclear Filter Technology Drum Vent System – Mass Spectrometer, Unit B	8/6/06
9HG3	Z-220-001C	Nuclear Filter Technology Drum Vent System – Mass Spectrometer, Unit C	8/6/06
9HG7	Z-221-001D	Consonant Technology Inc. (CTI) –Gas Chromatography/Mass Spectrometry (GC/MS) System	Used for spare parts
9HG6	Z-221-001C	Consonant Technology Inc. (CTI) –Gas Chromatography/Mass Spectrometry (GC/MS) System	4/14/08
9HG5	Z-221-001B	Consonant Technology Inc. (CTI) –Gas Chromatography/Mass Spectrometry (GC/MS) System	4/14/08
<b>VISUAL EXAMINATION</b>			
9VE9	N/A	Box Line Visual Examination (VEB) – Box to Drum Repackaging	Expired in WDS February 23, 2011
9VE11	N/A	Sludge Visual Examination Closure (VSC) – S3000 to a new container Method described in INST-FOI-22	2/6/12