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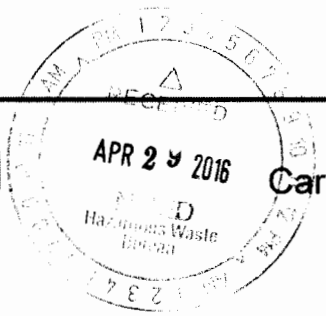
Department of Energy

memorandum



Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: APR 29 2016

REPLY TO ATTN OF: CBFO:TSTD:JRS:PG:16-1924:UFC 5900.00

SUBJECT: Expansion to the Advanced Mixed Waste Treatment Project - Recertification Audit A-14-01 Adding the Retrieval Box Assay System

TO: Benjamine B. Roberts, DOE-ID

The Carlsbad Field Office (CBFO) is expanding the current recertification memorandum CBFO:NTP:JRS:GL:14-1855:UFC: 5900.00 dated March 18, 2014 of the AMWTP transuranic waste program. This expansion reflects the U.S. Environmental Protection Agency (EPA) approval of the following:

The CBFO requested a Tier 1 change to add the Retrieval Box Assay System (RBAS) prior to its implementation as a certified non-destructive assay process. The EPA issued the approval on October 19, 2015 (Docket No: A-98-49; II-A4-200). Some of the supporting documentation are:

- INST-OI-15, *Box Assay Operation*
- MP-TRUW-8.8, *Level I Validation*
- MP-TRUW-8.9, *Level II Validation*
- INST-TRUW-8.1.3, *Box Assay Post-Maintenance Calibration and Verification*
- BII-5112-TMU-001, *Total Measurement Uncertainty Report* and
- PSC-5431-CCR-001, *Calibration Confirmation Report.*

The CBFO also requested a Tier 1 change to allow the assembly of contact-handled waste payloads at the AMWTP to include compacted containers (pucks) that cannot be directly measured. The EPA issued the analysis and concurrence letter on May 13, 2015.

- MP-TRUW-8.5, *TRU Waste Certification*
- MP-TRUW-8.11, *Data Reconciliation*, and
- RPT-TRUW-83, *AK Summary for Supercompacted Waste*

TRU waste characterization and certification activities, using significantly revised or new processes, procedures, or systems must be evaluated by the CBFO prior to their implementation. Included in this memorandum are the following attachments:

- *Attachment 1* describes the certification program status;
- *Attachment 2* contains the list of certified and deactivated processes/equipment from Table 1 of this memorandum certified at the site;

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- *Attachment 3* contains the list of certified and deactivated procedures/documents; and
- *Attachment 4* describes specific waste characterization process elements that must be reported to the EPA. These process elements are identified as Tier 1 changes and Tier 2 changes. The AMWTP shall not ship for disposal at the WIPP any wastes affected by a Tier 1 process element change without prior CBFO approval, and the AMWTP shall report Tier 2 changes to CBFO on a quarterly basis.

If you have any questions, please contact Mr. J.R. Stroble, Director, CBFO TRU Sites and Transportation Division, at (575) 234-7313.

Todd A. Shrader, Manager
Carlsbad Field Office

Attachments (4)

CBFO:TSTD:JRS:PG:16-1924:UFC 5900.00

cc: w/attachments

D.C. Gadbury, CBFO	*ED
W. Mouser, CBFO	ED
G. Basabilvazo, CBFO	ED
A. Stone, CBFO	ED
J.R. Stroble, CBFO	ED
M. Brown, CBFO	ED
D. Miehls, CBFO	ED
M. Navarrete, CBFO	ED
G. Birge, CBFO	ED
T. Carver, CBFO	ED
N. Castaneda, CBFO	ED
H. Cruickshank, CBFO	ED
C. Fesmire, CBFO	ED
M. Willcox, DOE-ID	ED
G. Byram, ITG	ED
T. Clements, ITG	ED
D. Haar, ITG	ED
G. Tedford, ITG	ED
E. Feltcorn, EPA	ED
R. Joglekar, EPA	ED
T. Peake, EPA	ED
J. Kieling, NMED	ED
R. Maestas, NMED	ED
K. Roberts, NMED	ED
C. Smith, NMED	ED
B. Allen, NWP	ED
B. Broomfield, NWP	ED
B. Carlsen, NWP	ED
J. Carter, NWP	ED
R. Chavez, NWP	ED
D. Cook, NWP	ED
A.J. Fisher, NWP	ED
R. Galbraith, NWP	ED
E. Gulbransen, NWP	ED
J. Harvill, NWP	ED
J. Haschets, NWP	ED
L. Jones, NWP	ED
I. Joo, NWP	ED
R. Kantrowitz, NWP	ED
C. Kirkes, NWP	ED
R. Lee, NWP	ED
C. Luoma, NWP	ED
S. Martinez, NWP	ED
R. McGinnis, NWP	ED
J. Morrison, NWP	ED
W. Most, NWP	ED
L. Oberbeck, NWP	ED
S. Offner, NWP	ED
C. P'Pool, NWP	ED
M. Ramirez, NWP	ED
A. Ray, NWP	ED
R. Reeves, NWP	ED
F. Romo, NWP	ED
R. Romo, NWP	ED
P. Schilling Davis, NWP	ED
C. Simmons, NWP	ED
F. Sharif, NWP	ED
M. Strum, NWP	ED
K. Urquidez, NWP	ED
D. Wade, NWP	ED
M. Walentine, NWP	ED
R. Allen, CTAC	ED
P. Hinojos, CTAC	ED
P. Martinez, CTAC	ED
B. Pace, CTAC	ED
G. White, CTAC	ED
M. Carter, LANL	ED
P. Gilbert, LANL	ED
G. Lyshik, LANL	ED
W. Weyerman, LANL	ED
S. Pearcy, TFE, Inc.	ED
WIPP Operating Record	ED
CBFO M&RC	

*ED denotes electronic distribution

Table 1
AMWTP Certified Waste Characterization Processes

Characterization Process[2]	CH S3000 Homogenous solids		CH S5000 Debris	
	Newly-generated	Retrievably-Stored	Newly-generated	Retrievably-Stored
Acceptable Knowledge (AK)	N/A	Approved	Approved	Approved
Load Management	N/A	Approved	Approved	Approved
Data Validation & Verification (V&V)	Approved	Approved	Approved	Approved
Visual Examination (VE)	Approved	Approved	Approved	Approved
Nondestructive Assay (NDA)	Approved[1]	Approved	Approved	Approved
Real-time Radiography (RTR)	Approved	Approved	Approved	Approved
WIPP Waste Information System/Waste Data System (WWIS/WDS)	Approved	Approved	Approved	Approved

[1] Nondestructive Assay (NDA) of newly generated S3000 waste is authorized for assaying using **ONLY** IWAS units Z-211-102 and Z-211-103.

[2] Characterization Processes in this Table may not be completely listed in Attachment 2.

*EPA Tier 1 approval adding Hanford legacy waste to the existing AMWTP BN-510 Waste Stream dated June 10, 2010, Docket No. A-98-49; II-A4-127.

*EPA Tier 1 approval adding ANL and MFC waste dated February 27, 2013, Docket No. A-98-49; II-A4-169.

*EPA Tier 1 approval adding SDA waste dated July 9, 2013, Docket No. A-98-49; II-A4-174.

*EPA Tier 1 approval adding LANL waste to the supercompacted BN510.2 Waste Stream dated September 16, 2013, Docket No. A-98-49; II-A4-178.

*EPA Tier 1 approval adding the INL Generated CH TRU S3000 Homogenous Solids and S5000 Debris Wastes dated February 11, 2014, Docket No. A-98-49; II-A4-180.

*EPA Tier 1 approval adding the RBAS dated October 19, 2015, DOCKET No. A-98-49; II-A4-200.

*EPA Tier 1 concurrence assembly of contact-handled waste payloads at the AMWTP to include compacted containers (pucks) that cannot be directly measured dated March 13, 2015 (via letter and enclosure).

CERTIFICATION PROGRAM STATUS
at the Advance Mixed Waste Treatment Project

The Carlsbad Field Office (CBFO) Director of the Transuranic (TRU) Sites and Transportation Division and the CBFO Director of the Quality Assurance Division have evaluated the documentation supporting the compliance of the Advanced Mixed Waste Treatment Project (AMWTP) TRU waste program.

PROGRAM STATUS

- All program elements remain complete.
- The following site program documents are current and comply with the CBFO requirements[1]:
  - **MP-TRUW-8.1, Revision 27,** *Certification Plan for INL Transuranic Waste*, Memorandum CBFO:TSTD:JRS:PG:15-1100:UFC 5900.00 approved October 2, 2015; and,
  - **MP-TRUW-8.2, Revision 18,** *AMWTP Quality Assurance Project Plan,* Memorandum CBFO:TSTD:JRS:GL:15-1080:UFC 5900.00 approved September 16, 2015.
- Certified Systems - See Attachment 2 List of Processes/Equipment from Table 1 of this memorandum that is certified and used by the AMWTP.
- Standard operating procedures - See Attachment 3 for the complete list of certified procedures/documents used by the AMWTP.
- Tiering of the contact-handled (CH) TRU Waste Characterization Processes – See Attachment 4 for the implementation by AMWTP (based on EPA Baseline Inspections).
- AMWTP participated in the following performance demonstration programs (PDPs)[2]:
  - **NDA PDP – Cycle 22A approval** for analysis of TRU waste drums using the DAS-100 (AM03/AMN3), DAS-101 (AM04/AMN4), DAS-102 (AM01/AMN1), and DAS-103 (AM02/AMN2).
    Memorandum CBFO:TSTD:NC:MT:15-1003:UFC 5900.00 dated July 6, 2015.

[1] Note that the program documents listed above are the current revision and may not be the revision that was audited.

[2] Note that the PDP cycles listed above are the current revision and may not be the revision that was audited.

NDA PDP – Cycle 15A approval for radio assay of WIPP wastes contained in SWBs, using the RBAS (AM05/AMN5).
Memorandum CBFO:TSTD:NC:MT:15-1145:UFC 5900.00 dated November 9, 2015.

- The CBFO conducted recertification audit A-14-01 of the AMWTP on October 1-3, 2013.
  - No Corrective Action Reports (CARs) were issued.
  - The Interim Audit Report was issued on October 24, 2013.
  - The Final Audit Report was issued to NMED on December 9, 2013.
  - The NMED approval of the Final Audit Report was issued on January 27, 2014.

- The CBFO conducted the initial certification of the RBAS during Audit A-16-01 on October 27-29, 2015.
  - The Interim Audit Report was issued on November 19, 2015.

- The CBFO requested a Tier 1 change adding the Retrieval Box Assay System on April 13, 2015.
  - The EPA issued approval on October 19, 2015, (Docket No: A-98-49; II-A4-200).

- The CBFO audited the assembly of contact-handled waste payloads at the AMWTP to include compacted containers (pucks) that cannot be directly measured during Audit A-15-01 on October 7-9, 2014.
  - The Interim Audit Report was issued on October 30, 3014.
  - The Final Audit Report was issued on November 25, 2014.

- The CBFO requested a Tier 1 change from the EPA to allow the assembly of contact-handled waste payloads at the AMWTP to include compacted containers (pucks) that cannot be directly measured.
  - The EPA provided the analysis of the submitted information and concludes that AMWTP can proceed to implement its plan under their currently approved program on May 13, 2015.

- The EPA issued concurrence on the draft recertification memo on April 18, 2016.

RECOMMENDATION

The recommendation to the CBFO Manager is for the AMWTP to continue the authority for characterization and certification activities and to include the EPA Tier 1 approval to add the Retrieval Box Assay System (RBAS) as a certified non-destructive assay system and to allow the assembly of contact-handled waste payloads at the AMWTP to include compacted containers (puck) that cannot be directly measured to the AMWTP waste streams into their certified program. Attachments 2 and 3 list the systems and procedures that constitute the bounds of this authority. Attachment 4 is the CH Tiering of TRU Waste Characterization Processes Implemented by the AMWTP.

CONCURRENCE

J.R. Stroble

J. R. Stroble, Director
CBFO TRU Sites and Transportation Division

4-11-16
Date

Mike Brown

Mike Brown, Acting Director
CBFO Quality Assurance Division

4/14/2016
Date

AMWTP LIST OF CERTIFIED EQUIPMENT/PROCESSES					
WIPP #	**Site Equipment #**	**Equipment Description**	**Components**	**Software**	**NDA Calibrated Range, Operating Range and TMU**
NONDESTRUCTIVE ASSAY					
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	• Broad Energy Germanium (BEGe) gamma detectors • 122 helium-3 tubes used in passive neutron coincidence counting modality and the active neutron differential die-away modality • Cf-252/Cs-137 Add-A-Source (AAS) correction source • 14 MeV neutron generator • Fast Neutron Detector Packs (FNDP)	• 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.
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	• Broad Energy Germanium (BEGe) gamma detectors • 122 helium-3 tubes used in passive neutron coincidence counting modality and the active neutron differential die-away modality • Cf-252/Cs-137 Add-A-Source (AAS) correction source • 14 MeV neutron generator • Fast Neutron Detector Packs (FNDP)	• 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.
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	• Broad Energy Germanium (BEGe) gamma detectors • 122 helium-3 tubes used in passive neutron coincidence counting modality and the active neutron differential die-away modality • Cf-252/Cs-137 Add-A-Source (AAS) correction source	• 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-

AMWTP LIST OF CERTIFIED EQUIPMENT/PROCESSES					
WIPP #	**Site Equipment #**	**Equipment Description**	**Components**	**Software**	**NDA Calibrated Range, Operating Range and TMU**
			• 14 MeV neutron generator • Fast Neutron Detector Packs (FNDP)		0055, Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems, Revision 1, July 30, 2003.
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	• Broad Energy Germanium (BEGe) gamma detectors • 122 helium-3 tubes used in passive neutron coincidence counting modality and the active neutron differential die-away modality • Cf-252/Cs-137 Add-A-Source (AAS) correction source • 14 MeV neutron generator • Fast Neutron Detector Packs (FNDP)	• 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.
9RBAS1	Z-212-105	Pajarito Scientific Company (PSC) Retrieval Box Assay System (RBAS) Method described in INST-OI-15	• Broad Energy Germanium (BEGe) gamma detectors • 84 six foot helium-3 tubes used in passive neutron coincidence counting modality and the active neutron differential die-away modality • Eu-152 Source Gamma check source • 14 MeV neutron generator • 4 Flux monitor assemblies	• PSC RBAS.exe • PSC RWARS software package	The calibration of the RBAS was verified and documented in PSC-5431-CCR-001, Calibration Confirmation Report. The determination of TMU for the RBAS unit is documented BII-5112-TMU-001, AMWTP Retrieval Box Assay System Total Measurement Uncertainty Report.
NON-DESTRUCTIVE EXAMINATION					
9RR1	Z-213-101	Real-Time Radiography System Method described in INST-OI-12	RTR System	Waste Tracking System (WTS)	N/A

AMWTP LIST OF CERTIFIED EQUIPMENT/PROCESSES					
WIPP #	**Site Equipment #**	**Equipment Description**	**Components**	**Software**	**NDA Calibrated Range, Operating Range and TMU**
9RR2	Z-213-106	Real-Time Radiography System Method described in procedure INST-OI-12	RTR System	Waste Tracking System (WTS)	N/A
9RR3	RTR-RTR-1001	Real-Time Radiography System Method described in procedure IINST-OI-12	RTR System	Waste Tracking System (WTS)	N/A
VISUAL EXAMINATION					
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

AMWTP DEACTIVATED EQUIPMENT and Process LIST			
WIPP #	**Site Equipment #**	**Equipment Description**	**Date Deactivated**
HEADSPACE GAS			
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	4/08
9HG5	Z-221-001B	Consonant Technology Inc. (CTI) –Gas Chromatography/Mass Spectrometry (GC/MS) System	4/08
9HG4	Z-221-001-A	Consonant Technology Inc. (CTI) –Gas Chromatography/Mass Spectrometry (GC/MS) System	3/13
Solids Sampling			
9DC1	Z-250-802	Drum Coring and Sample Collection Glove Box	3/13
VISUAL EXAMINATION			
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	2/12

AMWTP LIST OF CERTIFIED PROCEDURES		
#	**Procedure Number**	**Procedure Title**
1.	CI-IDA-NDA-0035	Calibration Verification & Confirmation Procedure for the Integrated Waste Assay (IWAS) at AMWTP, Canberra Industries
2.	CI-IDA-NDA-0055	Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems, Canberra Industries
3.	INST-CD&M-11.1.2	Facility Modification Proposal Preparation
4.	INST-CD&M-11.2.1	Software Version Control
5.	INST-CD&M-11.2.2	Software Inventory Classification
6.	INST-CD&M-11.2.3	System Data Change Request
7.	INST-CD&M-11.2.6	Temporary Software Override
8.	INST-CMNT-10.5.1	Calibration and Control of Measuring and Test Equipment
9.	INST-CMNT-10.14.1	Testing In-Plant and Process Instrumentation
10.	INST-FOI-01	In-Plant Drum Assay Operations
11.	INST-FOI-17	Facility Visual Examination Operations
12.	INST-FOI-20	Supercompactor and Post-Compaction Operations
13.	INST-OI-09	Retrieval Inspection Station Operations
14.	INST-OI-11	Waste Container Handling
15.	INST-OI-12	Real-Time Radiography Operations (Drum)
16.	INST-OI-14	Drum Assay Operations
17.	INST-OI-15	Box Assay Operation
18.	INST-OI-34	Non-Facility Visual Examination Operations
19.	INST-OI-45	Drum Filter Installation
20.	INST-OI-50	WMF-615 Filter Insertion Operation
21.	INST-TRUW-8.1.1	Drum Assay Post Maintenance Calibration & Verification
22.	INST-TRUW-8.1.3	Box Assay Post-Maintenance Calibration and Verification
23.	LST-RTQP-03-IM	WIPP Training Requirements Implementation Matrix
24.	MP-CD&M-11.1	Change Control
25.	MP-CD&M-11.2	Software Quality Assurance
26.	MP-CMNT-10.5	Measuring and Test Equipment Program
27.	MP-CMNT-10.14	In-Plant and Process Instrumentation Testing Program
28.	MP-DOCS-18.1	Developing Written Work Instructions
29.	MP-DOCS-18.2	Records Management
30.	MP-DOCS-18.3	Developing Management Procedures
31.	MP-DOCS-18.4	Document Control
32.	MP-M&IA-17.1	Management Assessment
33.	MP-M&IA-17.2	Independent Assessment
34.	MP-M&IA-17.3	Quality Assurance Surveillance
35.	MP-PCMT-15.1	Acquisition of Material and Services
36.	MP-PCMT-15.21	Material Management
37.	MP-PRPL-22.1	Production Planning
38.	MP-Q&SI-5.1	Investigation and Root Cause Analysis
39.	MP-Q&SI-5.3	Corrective Action

AMWTP LIST OF CERTIFIED PROCEDURES		
#	Procedure Number	Procedure Title
40.	MP-Q&SI-5.4	Identification of Nonconforming Conditions
41.	MP-Q&SI-5.6	Graded Approach
42.	MP-Q&SI-5.8	Qualifying Supply Chain Inspectors, Auditors, Lead Auditors and Technical Specialists
43.	MP-RTQP-14.4	Personnel Qualification and Certification
44.	MP-RTQP-14.6	Job Analysis
45.	MP-RTQP-14.16	Training Program Evaluation
46.	MP-RTQP-14.19	Training Records Administration
47.	MP-TRUW-8.1	Certification Plan for INL Transuranic Waste
48.	MP-TRUW-8.2	Quality Assurance Project Plan
49.	MP-TRUW-8.5	TRU Waste Certification
50.	MP-TRUW-8.8	Level I Data Validation
51.	MP-TRUW-8.9	Level II Data Validation
52.	MP-TRUW-8.11	Data Reconciliation
53.	MP-TRUW-8.12	Waste Receipt and Shipping Inspection
54.	MP-TRUW-8.13	Collection, Review, and Management of Acceptable Knowledge Documentation
55.	MP-TRUW-8.14	Preparation of Waste Stream Profile Forms
56.	MP-TRUW-8.26	Reports to Management
57.	PSC-5431-CCR-001	Calibration Confirmation Report
58.	RPT-TRUW-03	Drum Assay Technical Review Report

AMWTP LIST OF CANCELLED and DEACTIVATED PROCEDURES			
#	Procedure Number	Procedure Title	Deactivation Date
1.	MP-TRUW-8.6	Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH TRAMPAC) for HalfPACT (Incorporated into MP-TRUW-8.3)	12/04
2.	INST-OI-44	Sampling Port Installation	1/26/06
3.	INST-OI-48	Electronic TRUPACT-II Operations	2/2/06
4.	INST-CD&M-11.1.1	Facility Modification Screening	6/5/06
5.	MP-PCMT-15.4	Evaluation of Proposals (Superceded by MP-PCMT-15.21)	6/30/06
6.	MP-CMNT-10.3	Supply Chain Management (Superceded by MP-PCMT-15.21)	7/12/06
7.	MP-PCMT-15.6	Acceptance of Items and Services (Superceded by MP-PCMT-15.21)	7/12/06
8.	MP-Q&SI-5.7	Quality Inspections	7/12/06
9.	INST-OI-18	Gas Generation Testing Operations	8/15/06
10.	MP-TRUW-04-IM	TRU Waste Program Procedures Matrix for DOE-CBFO QAP	11/2/06
11.	INST-OI-49	Electronic Payload Assembly	12/11/06
12.	INST-TRUW-8.2.1	HSG Calibration	12/11/06
13.	MP-TRUW-8.19	RTR/VE Drum Selection	1/23/07
14.	MP-TRUW-8.16	WWIS Data Transfer (Incorporated into MP-TRUW-8.5)	7/3/07
15.	INST-OI-13	Drum Vent/Headspace Gas Sample Operations	8/07
16.	INST-OI-20	TRUPACT-II Operations	4/08
17.	INST-OI-21	Payload Assembly	4/08
18.	INST-OI-52	Re-Lidding and Over-pack Reconfiguration Operations	3/08
19.	MP-TRUW-8.3	Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC)	3/08
20.	MP-TRUW-8.4	Quality Assurance Project Plan for Gas Generation Testing Program	3/08
21.	MP-CMNT-10.10	TRUPACT-II Maintenance Program	4/08
22.	MP-TRUW-8.27	CH-TRUCON Management	3/08
23.	MP-TRUW-8.37	Long-Term Objective for Unified Flammable Gas Determination	3/08
24.	MP-PCMT-15.7	Vendor Qualification and Performance Evaluation	12/18/08
25.	INST-FOI-22	Visual Examination of S3000 Waste in the Facility	2/6/12
26.	INST-OI-16	Drum Coring Operations	5/2/3
27.	INST-OI-43	HGAS Sampling and Analysis Operations	5/6/13
28.	INST-OI-73	Manual Drum Coring Operations	5/2/13
29.	INST-OI-75	Container-in-Container Sampling	5/2/13
30.	INST-OI-81	Real-Time Radiography Operations (For WIPP Certification Boxes)	3/4/13
31.	MP-TRUW-8.17	Co-located Core Sampling Control Charts	6/10/13
32.	MP-TRUW-8.25	Random Selection of Containers for Headspace Gas and Solids Sampling Analysis	6/10/13
33.	MP-TRUW-8.34	WIPP Sample Transfer	6/10/13

Table 1. Tiering of CH TRU Waste Characterization Processes Implemented by AMWTP (Based on March 28–30 and April 11–13, 2006, Baseline Inspection and Subsequent T1 Evaluations, Updated February 2014)

Process Elements	AMWTP CH Waste Characterization Processes – T1 Changes	AMWTP CH Waste Characterization Processes – T2 Changes*
Acceptable Knowledge, including Load Management	Any new waste category Any waste from sources other than the Mound Site; Rocky Flats Environmental Technology Site; Battelle Columbus Laboratories; Bettis Atomic Power Laboratory; Argonne National Laboratory-East; Los Alamos National Laboratory debris; and Idaho National Laboratory, including the Materials and Fuel Complex and pre-1980 INL-exhumed Subsurface Disposal Area waste Load management of any new or unapproved waste stream	Notification to EPA upon completion of or substantive modification** to: • Implementation of procedures and related documentation that formalize NDA-AK communication requirements • AK accuracy reports (annually, at a minimum) • All final WSPFs with related attachments (e.g., CIS), including updates or additions to waste streams within approved SCGs and summaries of radiological data for those containers included on the CIS drum list • New and revised AKSRs and generator-site-specific AK documents (e.g., RPT-TRUW-79, RPT-TRUW-89, RPT-TRUW-06, RPT-TRUW-83) • Item description code inclusion memoranda • The load management status of approved waste streams • Site procedures requiring CBFO approval • Any waste identified outside of the waste profiles included in the 2002 Transuranic Waste Baseline Inventory Report, when applicable • RPT-TRUW-05, RPT-TRUW-07 and RPT-TRUW-12
Nondestructive Assay	New equipment or substantive physical modifications to approved equipment** Extension of or changes to the approved calibration range for approved equipment, including recalibration of EPA-approved equipment	Notification to EPA upon substantive modification** to: • Site procedures requiring CBFO approval • Software for approved equipment • Operating ranges upon CBFO approval
Real-Time Radiography	None	Notification to EPA upon: • Substantive modification** to site procedures requiring CBFO approval • New equipment or substantive physical modifications** to approved equipment
Visual Examination and Visual Examination Technique	Changes in the vendor performing visual examination or visual examination technique	Notification to EPA upon: • Substantive modification** to site procedures requiring CBFO approval • Addition of a new waste category • Addition of a new procedure or site equipment identifier

Table 1. Tiering of CH TRU Waste Characterization Processes Implemented by AMWTP (Based on March 28–30 and April 11–13, 2006, Baseline Inspection and Subsequent T1 Evaluations, Updated February 2014) (Continued)

Process Elements	AMWTP CH Waste Characterization Processes – T1 Changes	AMWTP CH Waste Characterization Processes – T2 Changes*
WIPP Waste Data System	Changes to Waste Data System algorithms specific to load management	Notification to EPA upon substantive modification** to: • Site procedures requiring CBFO approval • The load management status of approved waste streams

New T1s, T2s and significant modifications to existing T1s or T2s are in **bold** text; T1s or T2s that were only revised for style are not shown in bold.

* AMWTP will report all T2 changes to EPA every three months.

** "Substantive modification" refers to a change with the potential to affect AMWTP's CH waste characterization processes or documentation of them, excluding changes that are solely related to the environment, safety and health; nuclear safety; or the Resource Conservation and Recovery Act; or that are editorial in nature or are required to address administrative concerns. EPA may request copies of new references that DOE adds during a document revision.