



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

MAY 27 2015

Mr. John E. Kieling, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87508-6303

Ms. Kathryn Roberts, Director
Resource Protection Division
New Mexico Environment Department
Harold Runnels Building
1190 Saint Francis Drive, Room 4050
Santa Fe, NM 87502-5469

Subject: Standard Operating Procedures for the Underground Derived Waste Storage Plan

Reference: Department of Energy Carlsbad Field Office Memorandum, CBFO:EPD:GTB:MN:14-2666:UFC 5486.00 from Jose Franco, CBFO, to John E. Kieling, NMED and Butch Tongate, NMED, dated January 6, 2015, Subject: Information Regarding the Underground Derived Waste Storage Plan

Dear Mr. Kieling and Ms. Roberts:

The purpose of this letter is to transmit Standard Operating Procedures (SOPs) WP 05-WH1811 *Underground Site-Derived Mixed Waste Storage Area Inspections* and WP 05-WH1836 *Underground Site-Derived Mixed Waste Handling*, in accordance with the above-referenced correspondence. These SOPs incorporate comments made by the New Mexico Environment Department (NMED) on the Underground Derived Waste Storage Plan. The SOPs are enclosed in this submittal.

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our 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 our knowledge and belief, true, accurate, and complete. We are 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, please contact Mr. George T. Basabilvazo at (575) 234-7488.

Sincerely,

Original Signatures on File

Jose R. Franco, Manager
Carlsbad Field Office

Robert L. McQuinn, Project Manager
Nuclear Waste Partnership LLC

Enclosures (2)

cc: w/enclosures
R. Maestas, NMED *ED
S. Holmes, NMED ED
C. Smith, NMED ED
J. Sales, EPA ED
CBFO M&RC
*ED denotes electronic distribution

WP 05-WH1811

Revision 1

Underground Site-Derived Mixed Waste Storage Area Inspections

Technical Procedure

EFFECTIVE DATE: 04/29/15

Craig Suggs
APPROVED FOR USE

WORKING COPY VERIFICATION
Revision Checked:
Page count:
Name:
Signature:
Date and Time:

TABLE OF CONTENTS

CHANGE HISTORY SUMMARY	3
INTRODUCTION.....	4
REFERENCES.....	4
PRECAUTIONS AND LIMITATIONS	5
PREREQUISITE ACTIONS.....	5
PERFORMANCE	5
1.0 PREOPERATIONAL UNDERGROUND SITE-DERIVED MIXED WASTE STORAGE AREA INSPECTIONS (ATTACHMENT 1)	5
2.0 REVIEW	6
3.0 WEEKLY SITE-DERIVED MIXED WASTE STORAGE AREA INSPECTIONS (ATTACHMENT 2).....	7
4.0 VALIDATION	8
5.0 WASTE VOLUME TRACKING (ATTACHMENTS 3, 4).....	8
Attachment 1 – Preoperational Underground Site-Derived Mixed Waste Storage Area Inspections	9
Attachment 2 – Weekly Underground Site-Derived Mixed Waste Storage Area Inspections	11
Attachment 3 – Waste Volume Tracking Checklist for Site-Derived Storage Area, E-140 between S-2520 and S-2750.....	13
Attachment 4 – Waste Volume Tracking Checklist for Site-Derived Storage Area, Panel 7 Room 2	15

CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	12/02/14	<ul style="list-style-type: none">• New document.
1	04/29/15	<ul style="list-style-type: none">• Deleted in steps 1.1 and 3.2, and in attachments 1 and 2, references to S-700 site-derived storage location.• Added step 3.1 regarding notifying RES if inspection cannot be performed once every seven days.• Added rows in attachment 1 for Area Ventilation Rate and container inspections.• Deleted attachment 3 regarding S-700 site-derived storage location.

INTRODUCTION

This procedure provides guidance for performing inspections of Underground (U/G) Site-Derived Mixed Waste Storage Areas.

Performance of this procedure generates the following record(s), as applicable. Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules.

- Attachment 1, Preoperational Underground Site-Derived Mixed Waste Storage Area Inspections
- Attachment 2, Weekly Underground Site-Derived Mixed Waste Storage Area Inspections
- Attachment 3, Waste Volume Tracking Checklist for Site-Derived Storage Area, E-140 between S-2520 and S-2750
- Attachment 4, Waste Volume Tracking Checklist for Site-Derived Storage Area, Panel 7 Room 2

REFERENCES			
DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
Title 40 <i>Code of Federal Regulations</i> (CFR) Part 264, Subpart I, "Use and Management of Containers"	✓		
40 CFR §264.15, "General Inspection Requirements"	✓		
40 CFR Part 761, Subpart C, "Marking of PCBs and PCB Items"	✓		
DOE/WIPP-07-3372, <i>Waste Isolation Pilot Plant Documented Safety Analysis</i>	✓		
DOE/WIPP-07-3373, <i>Waste Isolation Pilot Plant Technical Safety Requirements</i>	✓		
Hazardous Waste Facility Permit, EPA Identification Number NM4890139088-TSDF	✓		
00CD-0001, <i>WIPP Mine Ventilation Plan</i>	✓		
WP 04-AU1007, <i>Underground Openings Inspections</i>		✓	
WP 13-1, <i>Nuclear Waste Partnership LLC Quality Assurance Program Description</i>	✓		
WP 15-GM1002, <i>Issues Management Processing of WIPP Forms</i>		✓	
JHA PROD-825, <i>CH Underground Area Inspections</i>	✓		
Underground Derived Waste Storage Plan	✓		

CONTINUOUS USE

PRECAUTIONS AND LIMITATIONS

- Only personnel qualified as a CH Floor, Yard and Emplacement Technician/CH Waste Handling Technician/Engineer (FY&E/WHT/WHE) or trainees operating under direct supervision of a qualified CH FY&E/WHT/WHE are authorized to perform CH Waste Handling activities specified in this procedure.

PREREQUISITE ACTIONS

- 1.0 **REVIEW** previous inspection results for outstanding Action Requests (ARs) and outstanding deficiencies.
- 2.0 If a required inspection goes delinquent, **PERFORM** the following:
 - 2.1 Immediately **NOTIFY** Site Environmental Compliance (SEC) of the delinquent inspection.
 - 2.2 **SCHEDULE** and complete the inspection.
 - 2.3 **DOCUMENT** the following in a letter to SEC within five working days:
 - The schedule for inspection
 - The reason(s) why inspection was not performed
 - Any measures taken to offset negative impacts resulting from not performing the inspection
 - Actions to prevent further delinquencies
 - 2.4 WHE, **GO TO** WP 15-GM1002, and initiate a WIPP Form.

PERFORMANCE

- 1.0 PREOPERATIONAL UNDERGROUND SITE-DERIVED MIXED WASTE STORAGE AREA INSPECTIONS (ATTACHMENT 1)
 - 1.1 **IF** personnel are to be working in active Underground Site Derived Waste Storage Areas 1 and/or 2, **THEN**, at start of shift, **INSPECT** areas per attachment 1, as follows:
 - 1.1.1 **ENTER** date and time of inspection in appropriate blocks.

- 1.1.2 **INSPECT** the applicable item/condition listed on attachment 1 **AND** enter check (✓) for satisfactory items/conditions, **U** for any unsatisfactory items/conditions, **N/A** for not inspected, **OR** actual value required.
- 1.1.3 **INITIAL** applicable block.
- 1.1.4 **IF** any item/condition is unsatisfactory, **THEN PERFORM** the following:
- **DESCRIBE** exact location and nature of deficiency in Remarks section.
 - **NOTIFY** WHE.
 - **INITIATE** and record AR for corrective action, as applicable.
- 1.1.5 **ENTER** printed name, signature, and initials on attachment 1 when inspection completed.
- 1.1.6 **MARK** "N/A" for any unused block on attachment 1.
- 1.2 **SUBMIT** inspection sheet to Reviewer upon completion of Preoperational Inspection.
- 2.0 REVIEW
- 2.1 Reviewer, **PERFORM** the following:
- 2.1.1 **REVIEW** attachment 1 for unsatisfactory conditions, corrective actions taken, and outstanding or newly generated ARs.
- 2.1.2 **ENTER** initials in block provided for specific day.
- 2.1.3 Upon completion of last inspection documented, **FORWARD** attachment 1 to WHE for validation.

3.0 WEEKLY SITE-DERIVED MIXED WASTE STORAGE AREA INSPECTIONS (ATTACHMENT 2)

NOTE

Weekly inspections are not required if waste is not stored in applicable areas or if area is inaccessible.

- 3.1 **IF** inspection CANNOT be performed at least once every seven days, **THEN NOTIFY**, in writing, Regulatory Environmental Services within 24 hours.
- 3.2 **IF** waste is stored, in active Underground Site-Derived Waste Storage Areas 1 and/or 2, **THEN** at least once every seven days or per WHM direction, **INSPECT** applicable areas per attachment 2 and perform the following:
- 3.2.1 **ENTER** date and time of inspection in appropriate blocks.
- 3.2.2 **INSPECT** the applicable items/conditions listed on attachment 2 and enter ✓ for satisfactory items/conditions, **U** for any unsatisfactory items/conditions, **N/A** for not applicable.
- 3.2.3 **ENTER** initials in block provided.
- 3.2.4 **IF** any inspection result is **NOT** satisfactory, **THEN PERFORM** the following:
- **DESCRIBE** exact location and nature of deficiency in Remarks section.
 - **NOTIFY** WHE.
 - **INITIATE** and record ARs for corrective action, as applicable.
- 3.2.5 Inspector, **PRINT** name, sign, and enter initials when inspection is completed.
- 3.2.6 **SUBMIT** inspection sheet to reviewer upon completion of Weekly Inspection.
- 3.2.7 Reviewer, **PROCEED** to section 2.0.

4.0 VALIDATION

4.1 WHE, **PERFORM** the following:

- 4.1.1 Upon completion of last inspection on attachments 1 and 2, **VERIFY** correctness of form. Validate inspection(s) by printing name, signing, and dating inspection sheet in spaces provided.
- 4.1.2 **REVIEW** attachments 1 and 2 weekly and forward completed attachments to Records Coordinator.

5.0 WASTE VOLUME TRACKING (ATTACHMENTS 3, 4)

5.1 WH, when a new container is placed into an underground Site-Derived Waste Storage Area, **INFORM** WHE of container ID number as it is introduced into the Site Derived Waste Storage Area.

5.2 WHE, **UPDATE** Waste Volume Tracking Checklist (attachments 3 and/or 4), on next available row, with the following:

- **ENTER** initials and date when container was introduced into Site-Derived Waste Storage Area, on Initial/Date block for applicable storage area.
- **ENTER** container ID number in Container ID block.
- **ENTER** container type in Container Type block. (SWB, 55 gallon or 85 gallon drum).

5.3 Performer, **ENTER** printed name, signature, and initials on attachment(s) 3 and/or 4.

Attachment 1 – Preoperational Underground Site-Derived Mixed Waste Storage Area Inspections

PREOPERATIONAL U/G SITE-DERIVED MIXED WASTE STORAGE AREA INSPECTION								
	DATE							
	TIME							
U/G Work Area Ground Control Inspection satisfactory in accordance with WP 04-AU1007	√/U*							
No evidence of adverse health/safety conditions	√/U*							
Unobstructed access to exposed face of containers	√/U*							
Area free of debris	√/U*							
No evidence of spills/leaks from containers	√/U*							
Containers in good condition								
Containers compatible with waste (drums/SWBs)	√/U*							
Containers are closed	√/U*							
Non-compatible waste is separated from compatible waste	√/U*							
Containers with liquid on containment pallet	√/U*							
Containment pallets in good condition								
Adjacent mine pager phones operational	√/U*							
U/G phone system operational	√/U*							
Warning signs posted	√/U*							
PCB warning signs posted (as applicable)	√/U*							
44 - inch minimum aisle space for Site-Derived Waste containers	√/U*							
Site-Derived Location 1 E140 between S-2520 and S-2750	√/U*							
Site-Derived Location 2 Panel 7 Room 2	√/U*							
PERFORMER INITIALS	xxxxxx							
REVIEWER INITIALS	xxxxxx							

* √ = Satisfactory U = Unsatisfactory N/A = Not Inspected

Performers enter Printed Name, Signature, and Initials:

CONTINUOUS USE

ISSUED

Attachment 1 – Preoperational Underground Site-Derived Mixed Waste Storage Area Inspections

Printed Name	Signature	Initials
--------------	-----------	----------

REMARKS: _____

VALIDATION: _____ / _____ / _____
WHE (Print Name) Signature Date

Attachment 2 – Weekly Underground Site-Derived Mixed Waste Storage Area Inspections

WEEKLY U/G SITE-DERIVED MIXED WASTE STORAGE AREA INSPECTION								
	DATE							
	TIME							
U/G Work Area Ground Control Inspection satisfactory in accordance with WP 04-AU1007	√/U*							
No evidence of adverse health/safety conditions	√/U*							
Unobstructed access to exposed face of containers	√/U*							
Area free of debris	√/U*							
No evidence of spills/leaks from containers	√/U*							
Adjacent mine pager phones operational	√/U*							
U/G phone system operational	√/U*							
Warning signs posted	√/U*							
PCB warning signs posted (as applicable)	√/U*							
44 - inch minimum aisle space for Site-Derived Waste containers	√/U*							
Site-Derived Location 1 E140 between S-2520 and S-2750	√/U*							
Site-Derived Location 2 Panel 7 Room 2	√/U*							
PERFORMER INITIALS	xxxxxx							
REVIEWER INITIALS	xxxxxx							

* √ = Satisfactory **U** = Unsatisfactory **N/A** = Not Inspected

Performers enter Printed Name, Signature, and Initials:

Printed Name	Signature	Initials

CONTINUOUS USE

ISSUED

WP 05-WH1811

Rev. 1

Page 12 of 16

Attachment 2 – Weekly Underground Site-Derived Mixed Waste Storage Area
Inspections

REMARKS: _____

VALIDATION: _____ / _____ / _____

WHE (Print Name) Signature Date

Attachment 3 – Waste Volume Tracking Checklist for Site-Derived Storage Area, E-140 between S-2520 and S-2750

Container Type and Volume Reference Guide

Container Type	Container Volume
55-Gallon Drum	0.21 m ³
85-Gallon Drum	0.32 m ³
Standard Waste Box (SWB)	1.88 m ³

Performer’s Name (print)	Signature	Initials
---------------------------------	------------------	-----------------

REMARKS: _____

VALIDATION: _____	WHE Name (print)	Signature	Date
--------------------------	-------------------------	------------------	-------------

Attachment 4 – Waste Volume Tracking Checklist for Site-Derived Storage Area,
Panel 7 Room 2

Container Type and Volume Reference Guide

Container Type	Container Volume
55-Gallon Drum	0.21 m ³
85-Gallon Drum	0.32 m ³
Standard Waste Box (SWB)	1.88 m ³

Performer's Name (print)	Signature	Initials
---------------------------------	------------------	-----------------

REMARKS: _____

VALIDATION:	WHE Name (print)	Signature	Date
--------------------	-------------------------	------------------	-------------

WP 05-WH1836

Revision 1

Underground Site-Derived Mixed Waste Handling

Technical Procedure

EFFECTIVE DATE: 05/18/15

Craig Suggs
APPROVED FOR USE

WORKING COPY VERIFICATION
Revision Checked:
Page count:
Name:
Signature:
Date and Time:

TABLE OF CONTENTS

CHANGE HISTORY SUMMARY	3
INTRODUCTION.....	4
REFERENCES.....	4
EQUIPMENT	6
PRECAUTIONS AND LIMITATIONS	7
PREREQUISITE ACTIONS.....	9
PERFORMANCE	10
1.0 UNDERGROUND SITE-DERIVED WASTE CONTAINER PREPARATION	10
2.0 UNDERGROUND SITE-DERIVED WASTE ITEM INSPECTION AND CONTAINERIZATION	12
3.0 LIQUID WASTE COLLECTION	14
4.0 SOLIDIFICATION OF LIQUID WASTE	15
5.0 CONTAINER IDENTIFICATION REQUIREMENTS	18
6.0 COMPLETION OF RECORD PACKAGE	19
7.0 SEALING CONTAINERS	19
8.0 VERIFICATION OF RECORD PACKAGE.....	20
Attachment 1 – Waste Container Log Sheet	22
Attachment 2 – Underground Site-Derived Waste Criteria Compliance Tag	23
Attachment 3 – WDS/WWIS Input Data Sheet, Underground Site-Derived Waste	24

CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
0	12/02/14	<ul style="list-style-type: none">• New document.
1	05/18/15	<ul style="list-style-type: none">• Minor changes throughout for clarity/consistency.• Added Precautions bullet for container placement.• Deleted step 4.18 and last bullet of step 4.23 regarding recording waste description.• Moved step 4.34 to step 4.31.• Added new steps 7.1 and 7.5.

INTRODUCTION

This procedure provides instructions for managing underground site-derived transuranic (TRU) waste (liquid and/or solid) at the Waste Isolation Pilot Plant (WIPP). Entry into this procedure is as described in Hazardous Waste Facility Permit (the Permit) Attachment A, section A-5, which states that the resulting waste that may be classified as underground site-derived waste. Underground site-derived waste may include, but is not limited to, the following materials contaminated with TRU Waste characterized for disposal at WIPP in accordance with the Waste Analysis Plan (WAP).

- Decontaminating liquids
- Water
- Salt
- High-Efficiency Particulate Air (HEPA) filters
- Swipes
- Protective Clothing (PC) and Personal Protective Equipment (PPE)
- Soil
- Wastes from spill response, sampling and decontamination activities
- Rags, wipes

If the underground site-derived waste has been determined to be from a waste stream containing Polychlorinated Biphenyls (PCBs), refer to the Underground Derived Waste Storage Plan for regulatory notifications and compliance with the Polychlorinated Biphenyls Condition of Approval waste storage areas requirements.

Performance of this procedure generates the following record(s), as applicable. Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules.

- Container Data Report
- Copy of “emplacement complete” notification email
- Attachment 1, Waste Container Log Sheet
- Attachment 2, Underground Site-Derived Waste Criteria Compliance Tag
- Attachment 3, WDS/WWIS Input Data Sheet, Underground Site-Derived Waste

REFERENCES			
DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
Title 40 <i>Code of Federal Regulations</i> (CFR) Part 761, “Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions”	✓		
Hazardous Waste Facility Permit, EPA Identification Number NM4890139088-TSDF	✓		

REFERENCES			
DOCUMENT NUMBER AND TITLE	BASELINE DOCUMENT	REFERENCED DOCUMENT	KEY STEP
DOE/WIPP-02-3122, <i>Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant</i>	✓	✓	
DOE/WIPP-07-3372, <i>Waste Isolation Pilot Plant Documented Safety Analysis</i>	✓		
DOE/WIPP-07-3373, <i>Waste Isolation Pilot Plant Technical Safety Requirements</i>	✓		
WP 02-RC3110, <i>Low-Level and Mixed Low-Level Waste Characterization for Off-Site Release for Disposal</i>	✓		
WP 05-WH.02, <i>WIPP Waste Handling Operations WDS User's Manual</i>	✓	✓	
WP 05-WH1025, <i>CH Waste Downloading and Emplacement</i>		✓	
WP 05-WH1810, <i>Underground Transuranic Mixed Waste Disposal Area Inspections</i>	✓		
WP 05-WH1811, <i>Underground Site-Derived Mixed Waste Storage Area Inspections</i>		✓	
WP 05-WH4401, <i>Waste Handling Operator Event Response</i>		✓	
WP 08-PT.01, <i>Standard Waste Box Handling and Operation Manual</i>	✓		
WP 12-ER4903, <i>Surface Radiological Event Response</i>	✓		
WP 12-HP1100, <i>Radiological Surveys</i>	✓		
WP 12-HP3600, <i>Radiological Work Permits</i>	✓		
WP 12-HP4000, <i>Emergency Radiological Control Responses</i>		✓	
WP 13-1, <i>Nuclear Waste Partnership LLC Quality Assurance Program Description</i>	✓		
JHA PROD-439, <i>General Hazard Analysis</i>	✓		
JHA PROD-783, <i>SWB, TDOP Operations</i>	✓		
JHA PROD-816, <i>Solidification of Site-Derived Liquid Waste</i>	✓		
Underground Derived Waste Storage Plan	✓		

EQUIPMENT

- For Waste Collection:
 - Containers that meet U.S. Department of Transportation (DOT) Type 7A, or equivalent, packaging requirements may be used for underground site-derived waste collection. Container types and equipment used for the collection of derived waste are:
 - 55-gallon drums
 - 85-gallon drums
 - Standard Waste Boxes (SWBs)
 - Drum and SWB filters that meet the applicable acceptance criteria and specifications of DOE/WIPP-02-3122
 - Poly liners/bags
 - Tape
 - Bench scale (as needed)
 - Floor scale (as needed)
 - Permanent marker
 - In-line load cell (as needed)
 - Sockets and wrenches for drums
 - Allen head sockets for SWB
 - Ratchet
 - Torque wrenches (as needed)
 - Calculator
- For Solidification:
 - PPE as per Industrial Safety/Industrial Hygiene (IS/IH)
 - Measure of acidity and alkalinity (pH) meter with pH seven buffer or litmus paper

- Trisodium phosphate and monosodium phosphate (for pH control)
- 150 to 300 lb AQUASET/drum
- Stirrer paddle
- Bags/Tape

PRECAUTIONS AND LIMITATIONS

- Liquids shall be collected and solidified in 55/85-gallon drums.
- If stored, underground site-derived waste containers shall be stored on spill tray, or equivalent.
- Only personnel qualified as Waste Handling Technician/Engineer/Radiological Control Technician (WHT/WHE/RCT), or trainees operating under direct supervision of qualified WHT/WHE/RCT, are authorized to perform waste handling activities specified in this procedure.
- Abnormal events that require cessation of this procedure are to be performed in accordance with WP 12-HP4000 and WP 05-WH4401.
- All containers used for storing underground site-derived waste must be new.
- Containers storing underground site-derived waste must be kept closed except when adding, removing, or sampling waste.
- All weight measurements must be recorded in kilograms (kg).
- Radiological Work Permits (RWPs) and other administrative controls provide protective measures to help ensure new hazardous constituents will not be added during decontamination activities. Site Environmental Compliance (SEC) must be consulted to ensure hazardous waste numbers are appropriately applied to the derived waste.
- Radiological control personnel and the WHE shall be contacted prior to opening an underground site-derived waste collection container for adding, removing, or sampling waste.
- Each drum must have at least one filter installed. Each SWB must have at least two filters installed, and vacant ports must be plugged, per DOE/WIPP-02-3122.
- Shielding **MUST NOT** be used to meet the 200 millirem per hour (mR/h) limit.

- The following radiological values **MUST NOT** be exceeded:
 - Contact dose rate of 200 mR/h at any point on underground site-derived waste containers.
 - 20 disintegrations per minute (dpm)/100 cm² alpha loose surface contamination on exterior of waste container.
 - 200 dpm/100 cm² beta/gamma loose surface contamination on exterior of waste container.
- A gross weight of 1,000 lb (454 kg) per 55/85-gallon drum **MUST NOT** be exceeded.
- A gross weight of 4,000 lb (1,814 kg) per SWB **MUST NOT** be exceeded.
- Fire extinguisher charging cartridges will be removed, **OR** verified fully discharged and clearly punctured, prior to inclusion in underground site-derived mixed waste.
- The following items are prohibited in underground site-derived waste containers destined for emplacement underground:
 - Compressed gasses
 - Corrosives
 - Explosives
 - Ignitable and Reactive Waste
 - Pyrophorics
 - Pressurized containers
 - Free liquids
 - Noncompatible materials
 - Hazardous waste having U. S. Environmental Protection Agency (EPA) hazardous waste numbers other than those listed in Part A of the Permit
- If the cumulative Pu-239 FGE of the combined original waste containers exceeds 200 grams, Nuclear Safety must be contacted.
- Liquid transfer shall not exceed 40 gallons per 55-gallon drum.

- Liquid transfer shall not exceed 60 gallons per 85-gallon drum.
- Under no circumstances should containers be left open while personnel are not present.
- Efforts shall be taken to reduce the amount and toxicity (e.g., efforts to minimize the introduction of additional hazardous substances) of underground site-derived waste that is generated.
- All N/As (Not Applicable) on attachments 1, 2, and 3 must be initialed by the person performing the step.
- Containers can only be placed one-high in approved underground site-derived storage locations.

PREREQUISITE ACTIONS

NOTE

If upon inspection, a derived waste container is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, transfer the waste to a container in good condition, overpack the container, or repair/patch the container in accordance with the Permit, Attachment A2.

- 1.0 WHE, **OBTAIN** RWP prior to handling (pumping, pouring, transferring, etc.) radiologically contaminated waste.
- 2.0 WHE, **VERIFY** adequate waste handling operations staff and others from organizations designated to support planned activities as specified in the procedure.
- 3.0 WHE, **ENSURE** the underground site-derived waste storage area inspections have been completed per WP 05-WH1811, as needed.

PERFORMANCE

NOTE

Sections of this procedure do not have to be performed in the order written if deemed necessary by WHE. Attachments are required to be completed as the applicable step is completed.

1.0 UNDERGROUND SITE-DERIVED WASTE CONTAINER PREPARATION

NOTE

Adequate aisle space for passage of emergency equipment, emergency response actions, and/or container inspections must be maintained when placing containers in site-derived waste storage area (44 inches minimum).

1.1 PREPARE waste containers as follows:

- 1.1.1 **STAGE** approved waste containers on spill tray, or equivalent, in designated underground site-derived storage location(s).
- 1.1.2 **REMOVE** lid from container.
- 1.1.3 **LINE** waste container with poly bag to bottom and extending beyond top of container and record liner type (poly bag **AND/OR** rigid liner) on attachment 3.
- 1.1.4 **FOLD** bag back over top of receptacle and down the outside.
- 1.1.5 **N/A** shipment number on attachments 1, 2, and 3.
- 1.1.6 **N/A** Container ID (as received) on attachments 1, 2, and 3.
- 1.1.7 WHE, **ASSIGN** Waste Data System/WIPP Waste Information System (WDS/WWIS) waste container ID number by appending "WI" (the two-digit ID code for WIPP) and "SD" (the two-digit ID code for site-derived) to next sequential number from the WDS, and record on "Container ID (to be emplaced)" or "WIPP Site ID" line on attachments 1, 2, and 3

NOTE

More than one Waste Stream Profile (WSPF) number may be applied to the site-derived waste container.

- 1.1.8 If necessary, WHE, **CONTACT** WDS Data Administrator and SEC to create new WSPF number(s), for derived waste containers in the WDS, record new waste stream profile number(s), hazardous waste numbers, on attachments 1, 2, and 3.
- 1.1.9 **ENSURE** appropriate plug(s) are removed prior to installing filters.
- 1.1.10 **VENT** underground site-derived waste container using appropriate filters.
- 1.1.11 **RECORD** Torque Wrench serial number and calibration due date on attachment 1.
- 1.1.12 **TORQUE** filter(s) to 10 ft-lb (\pm 5 ft-lb).
- 1.1.13 **RECORD** filter model number(s) and serial number(s) on attachment 3.
- 1.1.14 **RECORD** filter(s) installation date on attachment 3.
- 1.1.15 Using the values from Table 1 below, **ENTER** empty container weight (kg) as the tare weight on attachment 3.

Table 1 Container Weight (kg)

Type Code	Description	CNTR WGT (kg)
1	55 Gallon Drum	28.6
2	SWB	290
21	85 Gallon Drum Tall	37.0

- 1.1.16 RCT, **OBTAIN** and **RECORD** radiological survey number on attachment 2.
- 1.1.17 **IF** collecting solid waste, **GO TO** section 2.0.

OR

IF collecting liquid waste, **GO TO** section 3.0.

2.0 UNDERGROUND SITE-DERIVED WASTE ITEM INSPECTION AND CONTAINERIZATION

WARNING

To prevent unnecessary exposure to radioactive, and/or hazardous materials, a sealed bag or container **MUST NOT** be opened for inspection unless there is reason to believe it contains prohibited items or contents cannot be otherwise identified.

NOTE

The lid to the underground site-derived waste container may be installed and removed, as necessary, for adding, removing, or sampling waste.

Waste is typically placed in bags during cleanup or decontamination of an area and then placed in site-derived waste containers.

- 2.1 If necessary, **RELOCATE** the underground site-derived container to work location.
- 2.2 **INSPECT** all items delivered to waste container, and ensure absence of prohibited items.
- 2.3 **IF** prohibited items are identified upon inspection, **THEN ISOLATE** and notify Site Environmental Compliance.
- 2.4 **RECORD** the following on the applicable attachment:
 - **ENTER** N/A for Origin, attachment 1.
 - **DOCUMENT** the **CONTENTS** of the bagged material as it is placed in the derived waste container, attachment 1. (e.g., anti-c clothing, leather gloves, rags, duct tape, brattice cloth)

NOTE

The sum of the figures provided for documenting waste material parameters are estimates only and should equal the gross bag weight (e.g., 5 kg of cellulose, 2 kg of rubber, 3 kg of plastics equal 10 kg gross bag weight) on attachment 3.

- 2.5 **ESTIMATE** the weight of each type of waste material parameter in each bag before placing the bag into the waste container.
- 2.6 **WEIGH** each bag containing waste materials on a calibrated scale and record the weight on "Individual Bag Weights" line on attachment 1 (if applicable).
- 2.7 RCT, **ENSURE** appropriate radiological labeling is affixed to exterior of waste container.
- 2.8 **PLACE** waste bag into waste container.
-

NOTE

Waste containers are only sealed after being placed in approved underground site-derived storage location.

- 2.9 **WHEN** waste container is to be sealed, **THEN** WHE, **ENSURE** the following:
- Container does not contain free liquids.
 - If waste does contain free liquids, **GO TO** section 3.0 before proceeding.
- 2.10 **FOLD-AND-TAPE** or twist-and-tape (J-seal) inner plastic bag.
- 2.11 WHE, **ESTIMATE** volume of waste material (fill factor) in drum and record on attachment 3 (e.g., 20%, 30%, 95%).

2.12 **SECURE** lid on container.

- For a drum:
 - If container is outside of a site-derived storage area, **TIGHTEN** retaining bolt to approximately 40 ft lbs.
 - If container is in a site-derived storage area, **TIGHTEN** retaining bolt to approximately 20 ft lbs.
- For an SWB, **ENSURE** lid is in place and install four bolts hand tight.

2.13 RCT, **PERFORM** contamination and dose rate surveys of waste container exterior and record results on attachment 2.

SIGN-OFF RCT, attachment 2

2.14 **GO TO** section 5.0.

3.0 LIQUID WASTE COLLECTION

3.1 **GO TO** section 1.0 for waste container preparation, and **RETURN TO** step 3.2.

3.2 If required to reduce the amount of material handling, **RELOCATE** underground site-derived waste container to the work location.

NOTE

The lid to the underground site-derived waste container may be installed and removed, as necessary, for adding, removing, or sampling waste.

3.3 For small volumes of liquid, **PERFORM** the following:

3.3.1 **SPREAD** absorbent pellets, pads, pigs, or other absorbent material over liquid to absorb all liquid present.

3.3.2 **ALLOW** 30 minutes for liquid to be absorbed.

3.3.3 If necessary, **REAPPLY** additional absorbent over liquid until no free-standing liquid is present.

3.3.4 **SHOVEL** (or scoop) material and transfer to solid waste poly bag using flat shovel or scoop.

3.3.5 **WIPE** surfaces with absorbent pads.

REFERENCE USE

- 3.3.6 **PLACE** used pads in solid waste poly bag.
- 3.3.7 **CLOSE** bag by fold-and-seal or twist-and-tape (J-seal) method.
- 3.4 If using pump for large volume of liquid, **PERFORM** the following:
- 3.4.1 **RECORD** the following on attachment 1:
- N/A gross weight of bagged material
 - Origin (source of waste)
 - Description of liquid waste in contents section
 - Hazardous waste numbers (Site Environmental Compliance will provide)
- 3.4.2 **TRANSFER** liquid to liquid waste containers.
- [A] Ensuring that liquid transfer does not exceed 40 gallons per 55-gallon drum (approximately 24 inches from bottom).
- [B] Ensuring that liquid transfer does not exceed 60 gallons per 85-gallon drum (approximately 27 inches from bottom).
- 3.4.3 **WIPE** surface with absorbent pads.
- 3.4.4 **PLACE** used pads in solid waste poly bag.
- 3.4.5 **CLOSE** bag by fold-and-seal or twist-and-tape (J-seal) method.
- 3.5 **GO TO** section 2.0 for underground site-derived waste item inspection and containerization,
AND RETURN TO section 4.0, as applicable.

NOTE

It may be necessary to stir contents with a stir stick after adding AQUASET to ensure adequate absorption.

4.0 SOLIDIFICATION OF LIQUID WASTE

4.1 For liquid levels:

- **ENSURE** 55 gallon drum contents **DO NOT** exceed 40 gallons (24 inches from bottom) of liquid.

REFERENCE USE

- **ENSURE** 85 gallon drum contents **DO NOT** exceed 60 gallons (27 inches from bottom) of liquid.
- 4.2 **CONTACT** IS/IH to determine pH using pH meter or litmus paper and record on attachment 1 as initial pH level.
 - 4.3 **OBTAIN** neutralization instructions and compatibility information from IS/IH.
 - 4.4 If pH is greater than 2.0 and less than 5.0, **ADD** about 1/4 teaspoon of trisodium phosphate and stir liquid.
 - 4.5 If pH is greater than 9.0 and less than 12.5, **ADD** about 1/4 teaspoon of monosodium phosphate and stir liquid.
 - 4.6 **REPEAT** step 4.4 or step 4.5 until pH is between 5.0 and 9.0.
 - 4.7 **WHEN** pH is between 5.0 and 9.0,
THEN WIPE contaminated stirrer as it is removed from drum.
 - 4.8 **PLACE** used litmus paper, stirrer, and absorbent pad in solid waste poly bag for disposition.
 - 4.9 If liquid is present in solid waste bag, **ADD** one part AQUASET to three parts standing liquids.
 - 4.10 **CLOSE** solid waste bag by fold-and-seal or twist-and-tape (J-seal) method.
 - 4.11 **RECORD** pH level on attachment 1 at pH after neutralization.
 - 4.12 **SPREAD** entire contents of a 50 lb bag of AQUASET over surface of liquid as evenly as possible.
 - 4.13 **PLACE** empty AQUASET bag into a solid waste container or solid waste bag.
 - 4.14 **WAIT** approximately 30 minutes.
 - 4.15 **REPEAT** steps 4.12 and 4.13 two more times for a 55-gallon drum and four more times for an 85-gallon drum.
 - 4.16 **PLACE** lid on drum and secure with drum ring.
 - 4.17 **TIGHTEN** retaining bolt to the appropriate torque:

- If container is outside of a site-derived storage area, tighten retaining bolt to approximately 40 ft lbs.
 - If container is in a site-derived storage area, tighten retaining bolt to approximately 20 ft lbs.
- 4.18 **LET** stand for more than 24 hours.
- 4.19 **REMOVE** lid and inspect surface for any free-standing liquid.
- 4.20 If any free-standing liquid remains, **ADD** one part AQUASET to three parts standing water, by volume, to complete solidification process.
- 4.21 WHE, **ENSURE** there are no free liquids in container.
- 4.22 **CLOSE** bag by fold-and-seal or twist-and-tape (J-seal) method.
- 4.23 WHE, **PERFORM** the following for solidification of liquid waste:
- **RECORD** on attachment 1 date waste was solidified (date no more absorbent is required).
 - **ESTIMATE** volume of waste material (fill factor) in drum and record on attachment 3 (e.g., 20%, 30%, 95%).
- 4.24 **PLACE** lid on drum and seal drum ring, as per step 7.3.
- SIGN-OFF WHE, attachment 2**
- 4.25 RCT, **PERFORM** contamination and dose rate surveys of waste container exterior and record results on attachment 2.
- SIGN-OFF RCT, attachment 2**
- 4.26 RCT, **ENSURE** appropriate radiological labeling is affixed to exterior of waste container.
- 4.27 **RECORD** the following on attachment 3:
- Waste Type Code
 - Handling Code
 - Container Type Code
 - Liner Type (poly bag **AND/OR** rigid liner)
- 4.28 **WEIGH** sealed waste container.
- 4.29 **RECORD** gross weight on waste container and on attachment 3.

- 4.30 **SUBTRACT** tare weight from the gross weight of waste container or attachment 3 and record as waste weight on attachment 3.
- 4.31 **ENSURE** applicable steps for preoperational inspections per WP 05-WH1811 have been completed.
- 4.32 If waste container was moved to the work site, **MOVE** the waste container to the Underground Site-Derived Waste Storage Area.
- 4.33 **GO TO** section 2.0 for underground site-derived waste item inspection and containerization, if applicable.

SIGN-OFF WHE, attachment 2

5.0 CONTAINER IDENTIFICATION REQUIREMENTS

- 5.1 **RECORD** the following on attachment 3:
- Waste Type Code
 - Handling Code
 - Container Type Code
- 5.2 **WEIGH** sealed waste container.
- 5.3 **RECORD** gross weight (kg) of waste container on attachment 1.
- 5.4 **SUBTRACT** tare weight (kg) marked on waste container and/or attachment 3 from gross weight of waste container and record as waste weight on attachment 3.
- 5.5 **IF** waste container contains no liquid wastes, **THEN N/A** the following on attachment 1:
- Initial pH Level
 - pH level after neutralization
 - Date liquid waste solidified

NOTE

Bar code labels may be transmitted from the Data Administrator (DA) to the WHE via email.

- 5.6 WHE, **REFER TO** WP 05-WH.02 to create bar code labels.

- 5.7 WHE, **PRINT** the labels and apply container WDS/WWIS ID number bar code labels, or hand-write container ID numbers as follows:
- Drums - place three labels on side, near bottom, and spaced about 120 degrees apart.
 - SWBs - place labels on flat sides near top.
- 5.8 WHE, **OBTAIN** and **APPLY** hazardous material/waste decals on container(s), if applicable.

6.0 COMPLETION OF RECORD PACKAGE

- 6.1 All performers responsible for step completion on attachments 1 and 2, **ENTER** printed name, signature, initials, and date on applicable attachments.
- 6.2 **COMBINE** attachments 1, 2, and 3 to form record package.

NOTE

A container should be sealed when no more waste, as determined by WHE or WHM, will be placed in the container.

Containers must be placed in an approved storage location within 72 hours of being filled.

Containers that are sealed in section 7.0 will remain in temporary approved storage location(s) until approved for disposal in waste panels or shipped off-site as low-level waste.

7.0 SEALING CONTAINERS

- 7.1 WHE, **IF** no more waste will be put in a container, **THEN ENSURE** container is stored in or is relocated to an approved underground site-derived storage location.
- 7.1.1 **IF** an approved storage location is NOT accessible for placement of container within 72 hours, **THEN DOCUMENT** reason in comment section of attachment 1.
- 7.2 **RECORD** torque wrench number and calibration due date on attachment 1.
- 7.3 For drums:
- 7.3.1 **ENSURE** lock ring is on drum.

REFERENCE USE

- 7.3.2 **ENSURE** retaining bolt is installed and torque to 55-60 ft lbs.
- 7.4 For SWBs:
- 7.4.1 **ENSURE** lid is on SWB.
- 7.4.2 **INSTALL** and **TORQUE** all bolts per WP 08-PT.01.
- 7.5 **RECORD** date and time container was sealed on attachment 1.
- 8.0 VERIFICATION OF RECORD PACKAGE
- 8.1 WHE, **REVIEW** attachments 1, 2, and 3 for completion.
- 8.2 WHE, **ENSURE** container is properly labeled (bar code, hazardous waste, radiological).
- 8.3 WHE, **ENTER** printed name, signature, and date on attachments 1, 2, and 3.
- 8.4 Waste Handling Manager (WHM), **PERFORM** the following:
- 8.4.1 **VERIFY** waste meets waste form and packaging requirements.
- 8.4.2 **ENTER** printed name, signature, and date on attachments 1, 2, and 3.
- 8.4.3 **SCAN** the record package to a .pdf file and forward a copy of the record package via email to WDS/WWIS DA and Regulatory Environmental Services (RES) Point of Contact (POC).
- 8.5 WDS/WWIS DA, **PERFORM** the following:

NOTE

The completeness check will verify that all waste streams associated with the original waste container are recorded on attachments 2 and 3.

- 8.5.1 Using the WDS Test Instance, **USE** the information provided by Waste Handling to create a new waste steam profile to facilitate successful container data entry and to perform a completeness check of data on all attachments.
- 8.5.2 If the data on the attachments have missing or incomplete information or if container data cannot be successfully inserted in to the WDS, **CONTACT** the WHM.

NOTE

The WDS data comparison will verify that data is sufficient for successful submittal to the database. The data comparison will verify that ALL hazardous waste numbers assigned to the original waste container will be assigned to the underground site-derived waste container when the data are entered into the WDS production instance.

- 8.5.3 **PERFORM** a data comparison of WP 05-WH1836 criteria with the information that was recorded on each attachment.
 - 8.5.4 If issues are identified during the data comparison, **CONTACT** the WHM via email.
 - 8.5.5 If no issues are identified or issues are adequately addressed during the data comparison, **NOTIFY** the RES Manager via email that data comparison is complete.
-

NOTE

Container data for underground site-derived waste does not undergo the automated edit/limit checks. Data verification by RES will include an evaluation that the container meets the WIPP Waste Acceptance Criteria and Hazardous Waste Facility Permit requirements. Prior to notification to the data base administrator (DBA) to input the container data to the WDS production instance, data verification by RES and notification to WHM is required.

- 8.6 DA, **INPUT** container data in the WDS production instance and notify the DBA.
- 8.7 DBA, **NOTIFY** DA and WHM and RES manager when container data is available for emplacement.
- 8.8 DA, **GENERATE** a Container Data Report for the waste container and forward to WHM and RES Manager or designee via email.
- 8.9 WHE, **PRINT** a copy of the Container Data Report from the WDS/WWIS dashboard.
- 8.10 WHE, **FORWARD** attachments 1, 2, and 3 and WDS/WWIS Container Data Report to Waste Handling Records Coordinator.
- 8.11 WHE, **COORDINATE** with DBA to electronically emplace container in the WDS.

Attachment 1 – Waste Container Log Sheet

WASTE CONTAINER LOG SHEET			Page ___ of ___	
Shipment Number ^(1.1.5) :				
Container ID (as received) ^(1.1.6) :				
Container ID (to be emplaced) ^(1.1.7) :				
Waste Stream Profile (WSPF) # ^(1.1.8) :				
Gross Weight of Bagged Material (if applicable) ^(3.4.1) :				
Individual Bag Weights ^(2.6) :				
Origin ^(2.4, 3.4.1) :				
Contents ^(2.4, 3.4.1) :				
Hazardous Waste Numbers (if applicable) ^(3.4.1, Error! Reference source not found.) :				
Initial pH Level (if applicable) ^(4.2, 5.5) :				
pH Level After Neutralization (if applicable) ^(4.11, 5.5) :				
Date Liquid Waste Solidified (if applicable) ^(4.23, 5.5) :				
Container Filter Torque Wrench Serial Number/Calibration Due Date ^(1.1.11) :				
Container Locking Ring Bolt/Lid Bolts Torque Wrench Serial Number/Calibration Due Date ^(7.1) :				
Date/Time Container was Sealed:				
Comments:				
Performers responsible for each step completion, enter printed name, signature, initials, and date below:				
Print Name		Signature	Initials	Date
REVIEW				
WHE (Print Name)		Signature		Date
VALIDATION				
WHM (Print Name)		Signature		

Attachment 2 – Underground Site-Derived Waste Criteria Compliance Tag

WIPP UNDERGROUND SITE-DERIVED WASTE CRITERIA COMPLIANCE TAG		Page ____ of ____	
Shipment Number ^(1.1.5) :			
Container ID (as received) ^(1.1.6) :			
Container ID (to be emplaced) ^(1.1.7) :			
WSPF # ^(1.1.8) :			
Radiological Survey Number ^(1.1.16) :			
Date Sealed:			CONTAINS NO PROHIBITED MATERIAL
WHE (Print Name)	Signature	Date	
MAXIMUM CONTACT DOSE RATE		MAXIMUM SURFACE REMOVABLE CONTAMINATION	
β-γ	_____ mR/h	a	_____ dpm/100cm ²
ñ	_____ mR/h	β-γ	_____ dpm/100cm ²
RCT (Printed Name)	Signature	Date	
Performers responsible for each step completion enter printed name, signature, initials, and date below:			
Print Name	Signature	Initials	Date
REVIEW:			
WHE (Print Name)	Signature	Date	
VALIDATION			
WHM (Print Name)	Signature	Date	

Attachment 3 – WDS/WWIS Input Data Sheet, Site-Derived Waste

WDS/WWIS INPUT DATA SHEET, UNDERGROUND SITE-DERIVED WASTE		Page ___ of ___
FIELDS APPLICABLE TO DERIVED WASTE		
Shipment Number ^(1.1.5)		
Container ID ^(1.1.6)	Container ID as received ID #	Data will be input to waste container comments in the WDS/WWIS
WIPP Site ID ^(1.1.7)	Two-digit identification code assigned to WIPP (WI) plus container ID number as received ID #	WI Data will be input to CNTR-NUM in the WDS/WWIS
WSPF Number ^(1.1.8)	WSPF ID #	Data will be input to waste container comments in the WDS/WWIS
Filter Model Number Serial Number ^(1.1.13)	Vendor model/serial number of filter(s) used to vent container	
Filter Installation Date ^(1.1.14)	Date filter was installed in waste container	
Fill Factor ^(2.11, 4.23)	Estimated percentage of waste container volume occupied by the waste	
Date Sealed	Date waste container was closed	
Waste Type Code ^(4.27, 5.1)	Code is "TRU" for nonmixed waste and "MTRU" for mixed waste	
Handling Code ^(4.27, 5.1)	Code is "CH" for contact-handled TRU waste	
Container Type Code ^(4.27, 5.1)	3-digit container type code: 1 - 55-gallon drum; 2 – SWB; 21 – 85-gallon drum	
Liner Type ^(1.1.3, 4.27)	Identifies type of container liner, if applicable	
Gross Weight ^(4.29)	Gross Weight of a container	
Tare Weight ^(1.1.15)	Tare Weight of empty container	
Waste Weight ^(4.30)	Weight of waste inside container	

REFERENCE USE

Attachment 3 – WDS/WWIS Input Data Sheet, Site-Derived Waste

List of Material Parameters ^{3,4}		Page ___ of ___
WDS/WWIS Data Entry Code	Waste Material Parameter	Material Parameter Weight (kg)
1	Iron-based metals/alloys	
2	Aluminum-based metals/alloys	
3	Other metals	
4	Other inorganic materials	
5	Cellulosics	
6	Rubber	
7	Plastic	
8	inorganic matrix	
9	organic matrix	
10	Soils/gravel	
11	Steel (packaging materials)	
12	Plastics (packaging materials)	
13	Cellulosic packaging material	
14	Magnesium oxide	
15	Steel emplacement material	
16	Cellulosic emplacement material	
17	Rubber emplacement material	
18	Plastic emplacement material	

Description of Solidified Waste ^(4.23)

REVIEW

WHE (Print Name)	Signature	Date
------------------	-----------	------

VALIDATION

WHM (Print Name)	Signature	Date
------------------	-----------	------