ACRONYMS and ABBREVIATIONS

%	percent
αLLW	alpha low-level waste
AEA	Atomic Energy Act
AMWTF	Advanced Mixed Waste Treatment Facility
AMWTP	Advanced Mixed Waste Treatment Project
ANL-E	Argonne National Laboratory - East
ASB	air-support building
ASTM	American Society for Testing and Materials
BBWI	Bechtel BWXT, Idaho, LLC
CFR	Code of Federal Regulations
CMMS	computerized maintenance management system
CPR	cardiopulmonary resuscitation
DCSRS	Drum Core Sample Retrieval System
DEQ	Department of Environmental Quality
DMS	Data Management System
DOE	Department of Energy
DOE-ID	Department of Energy-Idaho Operations Office
DOT	Department of Transportation
DVS	drum venting system
EAL	emergency action limits
EC	Emergency Coordinator
EOC	Emergency Operations Center
EMT	Emergency Medical Technician
EPA	Environmental Protection Agency
ERO	emergency response organization
ERPGs	Emergency Response Planning Guide
FACP	fire alarm control panel
FRP	fiberglass reinforced plywood
ft	foot or feet
ft^2	square feet
gal	gallon

GFI	ground fault interrupter
HAZMAT	Hazardous Material
HAZWOPER	hazardous waste operator
HDPE	high-density polyethylene
HEPA	high efficiency particulate air
hr	hour
HVAC	heating, ventilation, and air conditioning
HW	hazardous waste
HWD	hazardous waste determination
HWMA	Hazardous Waste Management Act of 1983, as amended
HWN	EPA hazardous waste number
IDAPA	Idaho Administrative Procedures Act
IDC	item description code
INM	inorganic nonmetallic waste
in.	inch or inches
INL	Idaho National Laboratory
IS	Interim Status
LCM	lead/cadmium metal
LDR	Land Disposal Restrictions
LLD	Lower limit of detection
LLW	low-level waste
m^3	cubic meters
M&O	management and operations
mg/m^3	milligram per cubic meter
MW	mixed waste
MWMU(s)	mixed waste management unit(s)
nCi/g	nanocuries per gram
NFPA	National Fire Protection Association
OJT	on-the-job training
OSC	On-scene Commander
PAGs	Protective Action Guide
PM	preventative maintenance
PPE	personal protective equipment

ppm	parts per million
psi	pounds per square inch
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RFETS	Rocky Flats Environmental Technology Site
RGN	reactivity group numbers
RGW	retrieval generated waste
RMF	Retrieval Modification Facility
ROW	radioactive only waste
RSSC	Recycled Shielded Storage Container
RTR	real time radiography
RWMC	Radioactive Waste Management Complex
RWSA	retrieved waste storage area
S	soil
SI	solidified inorganic(s)
SO	solidified organic(s)
SW	salt waste
SW-846	The EPA manual titled "Test Methods for Evaluating Solid Waste: Physical/Chemical methods," current edition
SWB	Standard Waste Box
SWEPP	Stored Waste Examination Pilot Plant
TCLP	Toxicity Characteristic Leaching Procedure
TDOP	Ten-Drum Overpack
TRU	transuranic
TRUPACT	transuranic package transporter
TSD	treatment, storage, or disposal
TSA	Transuranic Storage Area
TSA-RE	Transuranic Storage Area-Retrieval Enclosure
TSCA	Toxic Substances Control Act
UHCs	underlying hazardous constituents
UL	Underwriters Laboratory
UM	uncategorized metal
U.S.	nited States

WAC	waste acceptance criteria
WAP	Waste Analysis Plan
WCC	Warning Communications Center
WG	waste group
WIPP	Waste Isolation Pilot Plant
WMF	Waste Management Facility
WSF	Waste Storage Facility

MAIL THE COMPLETED FORM TO: The appropriate EPA Regional or State Office.	**United States Environmental Protection Agency** **RCRA SUBTITLE C SITE IDENTIFICATION FORM**	

1. Reason for Submittal (See instructions on page 25)

CHECK CORRECT BOX(ES)

Reason for Submittal:

- ❑ To provide initial notification (to obtain an EPA ID Number for hazardous waste, universal waste, or used oil activities).
- ❑ To provide subsequent notification (to update site identification information).
- ❑ As a component of a First RCRA Hazardous Waste Part A Permit Application.
- ☒ As a component of a Revised RCRA Hazardous Waste Part A Permit Application **(Amendment #: Volume 1a - Revision May 2005).**
- ❑ As a component of the Hazardous Waste Report.

2. Site EPA ID Number (See instructions on page 26)

EPA ID Number: **ID4890008952**

3. Site Name (See instructions on page 26)

Name: **IDAHO NATIONAL LABORATORY**

4. Site Location Information (See instructions on page 26)

Street Address:

City, Town, or Village: **SCOVILLE**	**State:** **ID**
County Name: **BUTTE, CLARK, JEFFERSON, BONNEVILLE, BINGHAM**	**Zip Code:** **83415**

5. Site Land Type (See instructions on page 26)

Site Land Type: ❑ Private ❑ County ❑ District ☒ Federal ❑ Indian ❑ Municipal ❑ State ❑ Other

6. North American Industry Classification System (NAICS) Code(s) for the Site (See instructions on page 26)

A. **92411**	B. **54171**
C. **336992**	D. **Not Applicable**

7. Site Mailing Address (See instructions on page 27)

Street or P. O. Box: **1955 FREMONT AVENUE, IDAHO FALLS**

State: **ID**

Country: **USA**	**Zip Code:** **83401**

8. Site Contact Person (See instructions on pages 27)

First Name: **DONALD**	**MI:** **N**	**Last Name:** **RASCH**
Phone Number: **(208) 526-1511**		**Phone Number Extension:** **Not Applicable**

9. Legal Owner and Operator of the Site (See instructions on pages 27 and 28)

A. Name of Site's Legal Owner: **US DEPARTMENT OF ENERGY IDAHO OPERATIONS OFFICE**	**Date Became Owner (mm/dd/yyyy):** **01/01/1952**
Owner Type: ❑ Private ❑ County ❑ District ☒ Federal ❑ Indian ❑ Municipal ❑ State ❑ Other	
B. Name of Site's Operator: **BECHTEL BWXT IDAHO, LLC.**	**Date Became Operator (mm/dd/yyyy):** **05/01/2005**
Operator Type: ☒ Private ❑ County ❑ District ❑ Federal ❑ Indian ❑ Municipal ❑ State ❑ Other	

EPA ID No. I D 4 8 9 0 0 0 8 9 5 2

10. Type of Regulated Waste Activity (Mark 'X' in the appropriate boxes. See instructions on pages 28 to 32)

A. Hazardous Waste Activities

1. Generator of Hazardous Waste

(choose only one of the following three categories)

☒ a. LQG: Greater than 1,000 kg/mo (2,200 lbs./mo.) of non-acute hazardous waste; or

❑ b. SQG: 100 to 1,000 kg/mo (220 - 2,200 lbs./mo.) of non-acute hazardous waste; or

❑ c. CESQG: Less than 100 kg/mo (220 lbs./mo.) of non-acute hazardous waste

In addition, indicate other generator activities (check all that apply)

❑ d. United States Importer of Hazardous Waste

☒ e. Mixed Waste (hazardous and radioactive) Generator

For Items 2 through 6, check all that apply:

☒ **2. Transporter of Hazardous Waste**

☒ **3. Treater, Storer, or Disposer of Hazardous Waste (at your site)** Note: A hazardous waste permit is required for this activity.

☒ **4. Recycler of Hazardous Waste (at your site)** Note: A hazardous waste permit is required for this activity.

5. Exempt Boiler and/or Industrial Furnace

❑ a. Small Quantity On-site Burner Exemption

❑ b. Smelting, Melting, and Refining Furnace Exemption

❑ **6. Underground Injection Control**

B. Universal Waste Activities

1. Large Quantity Handler of Universal Waste (accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste generated and/or accumulated at your site. (check all boxes that apply):

	Generated	Accumulated
a. Batteries	☒	☒
b. Pesticides	❑	❑
c. Thermostats	❑	❑
d. Lamps	☒	☒
e. Other (specify)_____	❑	❑
f. Other (specify)_____	❑	❑
g. Other (specify)_____	❑	❑

❑ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

1. Used Oil Transporter - Indicate Type(s) of Activity(ies)

❑ a. Transporter

❑ b. Transfer Facility

2. Used Oil Processor and/or Re-refiner - Indicate Type(s) of Activity(ies)

❑ a. Processor

❑ b. Re-refiner

❑ **3. Off-Specification Used Oil Burner**

4. Used Oil Fuel Marketer - Indicate Type(s) of Activity(ies)

❑ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner

❑ b. Marketer Who First Claims the Used Oil Meets the Specifications

11. Description of Hazardous Wastes (See instructions on page 33)

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

See Item 10 on the Hazardous Waste Permit Information Form (OMB #: 2050-0034)

EPA ID No.	I	D	4	8	9	0	0	0	8	9	5	2

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed for waste codes.

12. Comments (See instructions on page 33)

13. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with 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. **(See instructions on page 33)**

Signature of owner, operator, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)
	Frank M. Russo, Vice President, Idaho Completion Project, Bechtel BWXT Idaho, LLC.	
	Elizabeth D. Sellers, Manager, Department of Energy Idaho Operations Office	

United States Environmental Protection Agency

HAZARDOUS WASTE PERMIT INFORMATION FORM

1. Facility Permit Contact (See instructions on page 35)	**First Name:** DONALD	**MI:** N	**Last Name:** RASCH	
	Phone Number: (208) 526-1511		**Phone Number Extension:** Not Applicable	
2. Facility Permit Contact Mailing Address (See instructions on page 35)	**Street or P.O. Box:** 1955 FREMONT AVENUE			
	City, Town, or Village: IDAHO FALLS			
	State: ID			
	Country: USA		**Zip Code:** 83401	
3. Legal Owner Mailing Address and Telephone Number (See instructions on page 36)	**Street or P.O. Box:** 1955 FREMONT AVENUE			
	City, Town, or Village: IDAHO FALLS			
	State: ID			
	Country: USA	**Zip Code:** 83401	**Phone Number:** (208) 526-5665	
4. Operator Mailing Address and Telephone Number (See instructions on page 36)	**Street or P.O. Box:** P.O. BOX 1625			
	City, Town, or Village: IDAHO FALLS			
	State: ID			
	Country: USA	**Zip Code:** 83415	**Phone Number:** (208) 526-8556	
5. Facility Existence Date (See instructions on page 36)	**Facility Existence Date (mm/dd/yyyy):** 06/01/1949			

6. Other Environmental Permits (See instructions on page 36)

A. Permit Type *(Enter code)*	B. Permit Number												C. Description
R	I	D	4	8	9	0	0	0	8	9	5	2	Final AMWTP HWMA/RCRA Storage Permit
R	I	D	4	8	9	0	0	0	8	9	5	2	Final AMWTP HWMA/RCRA Treatment Permit
P	P	T	C		0	2	3		0	0	0	0	1	AMWTF Permit to Construct (Air Pollution Source)
P	P	T	C		0	2	3		0	0	0	0	1	TSA-RE Permit to Construct (Air Pollution Source)
P														Title V Operation Permit Application (Permit Pending)
P						P	-	0	3	0	5	4	2	AMWTP Permit to Construct (Air Pollution Source) for Standby Generator

7. Nature of Business (Provide a brief description; see instructions on page 37)

The Transuranic Storage Area (TSA) is a 56-acre area in the southern part of the Idaho National Laboratory (INL) dedicated to the temporary storage of contact-handled radioactive-only and mixed wastes. Advanced Mixed Waste Treatment Project (AMWTP) HWMA/RCRA units at the TSA store, treat, and characterize waste pending further disposition, such as treatment at WMF-676 and/or transport to a disposal facility. Specific information per IDAPA 58.01.05.012 [40 CFR 270.13(a) and (m)] is presented in Attachment 1 of the AMWTP HWMA/RCRA Storage Permit.

8. Process Codes and Design Capacities (See instructions on page 37)

A. PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in Item 9.

B. PROCESS DESIGN CAPACITY- ***For each code entered in column A, enter the capacity of the process.***

1. AMOUNT - ***Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.***

2. UNIT OF MEASURE - ***For each amount entered in column B(1), enter the code in column B(2) from the list of unit of measure codes below that describes the unit of measure used. Select only from the units of measure in this list.***

C. PROCESS TOTAL NUMBER OF UNITS - ***Enter the total number of units for each corresponding process code.***

PROCESS CODE		APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	Disposal:	
D79	Underground Injection Well Disposal	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet; Hectare-meter; Acres; Cubic Meters; Hectares; Cubic Yards
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day or Liters Per Day
D83	Surface Impoundment Disposal	Gallons; Liters; Cubic Meters; or Cubic Yards
D99	Other Disposal	Any Unit of Measure Listed Below
	Storage:	
S01	Container	Gallons; Liters; Cubic Meters; or Cubic Yards
S02	Tank Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S05	Drip Pad	Gallons; Liters; Acres; Cubic Meters; Hectares; or Cubic Yards
S06	Containment Building Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure Listed Below
	Treatment:	
T01	Tank Treatment	Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour
T02	Surface Impoundment Treatment	Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Day; Liters Per Hour; or Million Btu Per Hour
T80	Boiler	Gallons; Liters; Gallons Per Hour; Liters Per Hour; Btu Per Hour; or Million Btu Per Hour
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds
T82	Lime Kiln	Per Hour; Short Tons Per Hour; Kilograms
T-83	Aggregate Kiln	Per Hour; Metric tons Per Day; Metric
T-84	Coke Over	Tons Per Hour; Short Tons Per Day; Btu Per
T-85	Phosphate Kiln	Hour; Liters Per Hour; Kilograms Per
T-86	Blast Furnace	Hour; or Million Btu Per Hour
T-87	Smelting, Melting, or Refining Furnace	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms
T-88	Titanium Oxide Chloride Oxidation Reactor	Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per
T-89	Methane Reforming Furnace	Hour; Gallons Per Hour; Liters Per Hour; or Million Btu Per Hour
T-90	Pulping Liquor Recovery Furnace	
T-91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid	
T-92	Halogen Acid Furnaces	
T-93	Other Industrial Furnaces Listed In 40 CFR §260.10	
T-94	Containment Building - Treatment	Cubic Yards; Cubic Meters; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
	Miscellaneous (Subpart X):	
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour;Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; Kilograms Per Hour; Gallons Per Hour; Liters Per Hour, or Gallons Per Day
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; or Million Btu Per Hour
X04	Geologic Repository	Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters
X99	Other Subpart X	Any Unit of Measure Listed Below

Unit of Measure	Unit of Measure Code
Gallons	G
Gallons Per Hour	E
Gallons Per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V

Unit of Measure	Unit of Measure Code
Short Tons Per Hour	D
Metric tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds Per Hour	J
Kilograms Per Hour	R
Million Btu Per Hour	X

Unit of Measure	Unit of Measure Code
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu Per Hour	I

8. Process Codes and Design Capacities (continued)

EXAMPLE FOR COMPLETING Item 8 (shoun in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.

Line Number		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY (1) Amount (Specify)	B. (2) Unit of Measure (Enter code)	C. Process Total Number of Units	For Official Use Only
X	1	S	0	2	5 3 3 . 7 8 8	G	0 0 1	
	1	S	0	1	** 2 4, 6 7 8, 6 5 8 .	G	003	
	2				.			
	3				.			
	4				.			
	5				.			
	6				.			
	7				.			
	8				.			
	9				.			
1	0				.			
1	1				.			
1	2				.			

NOTE: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (i.e., D99, S99, T04 and X99) in Item 9.

9. Other Processes (See instructions on page 37 and follow instructions from Item 8 for D99, S99, T04 and X99 process codes)

Line Number (Enter #s in sequence with Item 8)		A. Process Code Code (From List Above)			B. PROCESS DESIGN CAPACITY (1) Amount (Specify)	B. (2) Unit of Measure (Enter code)	C. Process Total Number of Units	D. Description of Process
X	1	T	0	4				In-situ Vitrification
	1							
	2							
	3							
	4							

**** Radioactive Mixed Waste**

Supplement A to Item 8.
'Process Codes and Design Capacities'

LINE NUMBER	PROCESS TYPE UNIT NAME		PROCESS DESIGN CAPACITY
1	**S01 – RWMC CONTAINER STORAGE includes:**		
	- TSA-1/TSA-R		*20,237,720 gallons
	- TSA-2		*4,440,938 gallons
	- TSA-RE RMF		**24,678,658 gallons
		LINE 1 TOTAL:	**24,678,658 gallons**

* The capacity for these units will be incorporated into the capacity of the TSA-RE RMF.
** The TSA-RE RMF – this unit includes the capacities for the TSA-1/TSA-R and TSA-2 storage units.

10. Description of Hazardous Wastes (See instructions on page 37)

A. EPA HAZARDOUS WASTE NUMBER - ***Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR Part 261, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.***

B. ESTIMATED ANNUAL QUANTITY - ***For each listed waste entered in column A, estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A, estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.***

C. UNIT OF MEASURE - ***For each quantity entered in column B, enter the unit of measure code. Units of measure which must be used and the appropriate codes are:***

ENGLISH UNIT OF MEASURE	*CODE*	*METRIC UNIT OF MEASURE*	*CODE*
POUNDS	*P*	*KILOGRAMS*	*K*
TONS	*T*	*METRIC TONS*	*M*

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure, taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Items 8A and 9A on page 3 to indicate the waste will be stored, treated, and/or disposed at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Items 8A and 9A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. Enter the first two as described above.
2. Enter "000" in the extreme right box of Item 10.D(1).
3. Use additional sheet, enter line number from previous sheet, and enter additional code(s) in Item 10.E.

2. PROCESS DESCRIPTION: ***If a code is not listed for a process that will be used, describe the process in Item 10.D(2) or in Item 10.E(2).***

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.

2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.

3. Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING Item 10 (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operations. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number		*A. EPA Hazardous Waste No. (Enter Code)*				*B. Estimated Annual Quantity of Waste*	*C. Unit of Measure (Enter code)*	*D. PROCESSES*								*(2) PROCESS DESCRIPTION (If a code is not entered in D(1))*
								(1) PROCESS CODES (Enter code)								
X	1	K	0	5	4	900	P	T	0	3	D	8	0			
X	2	D	0	0	2	400	P	T	0	3	D	8	0			
X	3	D	0	0	1	100	P	T	0	3	D	8	0			
X	4	D	0	0	2											Included With Above

Item 10. 'Description of Hazardous Wastes' CONTENTS

Facility Area and Unit Name

RADIOACTIVE WASTE MANAGEMENT COMPLEX

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number		A. EPA Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	D	0	0	1	83,978	T	S	0	1							TSA-1/TSA-R
	2	D	0	0	2												Included with above
	3	D	0	0	4												Included with above
	4	D	0	0	5												Included with above
	5	D	0	0	6												Included with above
	6	D	0	0	7												Included with above
	7	D	0	0	8												Included with above
	8	D	0	0	9												Included with above
	9	D	0	1	0												Included with above
1	0	D	0	1	1												Included with above
1	1	D	0	1	8												Included with above
1	2	D	0	1	9												Included with above
1	3	D	0	2	0												Included with above
1	4	D	0	2	1												Included with above
1	5	D	0	2	2												Included with above
1	6	D	0	2	3												Included with above
1	7	D	0	2	4												Included with above
1	8	D	0	2	5												Included with above
1	9	D	0	2	6												Included with above
2	0	D	0	2	7												Included with above
2	1	D	0	2	8												Included with above
2	2	D	0	2	9												Included with above
2	3	D	0	3	0												Included with above
2	4	D	0	3	1												Included with above
2	5	D	0	3	2												Included with above
2	6	D	0	3	3												Included with above
2	7	D	0	3	4												Included with above
2	8	D	0	3	5												Included with above
2	9	D	0	3	6												Included with above
3	0	D	0	3	7												Included with above
3	1	D	0	3	8												Included with above
3	2	D	0	3	9												Included with above
3	3	D	0	4	0												Included with above

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number	A. EPA Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D 0 4 1				**Included with TSA-1/TSA-R, Page 5 (B-1) of 6, line 1**
2	D 0 4 2				Included with above
3	D 0 4 3				Included with above
4	F 0 0 1				Included with above
5	F 0 0 2				Included with above
6	F 0 0 3				Included with above
7	F 0 0 4				Included with above
8	F 0 0 5				Included with above
9	F 0 0 6				Included with above
10	F 0 0 7				Included with above
11	F 0 0 9				Included with above
12	F 0 3 9				Included with above
13	P 0 0 5				Included with above
14	P 0 1 2				Included with above
15	P 0 1 5				Included with above
16	P 0 2 2				Included with above
17	P 0 2 4				Included with above
18	P 0 2 7				Included with above
19	P 0 2 8				Included with above
20	P 0 3 0				Included with above
21	P 0 3 1				Included with above
22	P 0 5 6				Included with above
23	P 0 7 3				Included with above
24	P 0 7 5				Included with above
25	P 0 7 7				Included with above
26	P 0 9 8				Included with above
27	P 1 0 4				Included with above
28	P 1 0 5				Included with above
29	P 1 0 6				Included with above
30	P 1 1 3				Included with above
31	P 1 1 6				Included with above
32	P 1 1 9				Included with above
33	P 1 2 0				Included with above

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number	A. EPA Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U002				**Included with TSA-1/TSA-R, Page 5 (B-1) of 6, line 1**
2	U003				Included with above
3	U004				Included with above
4	U007				Included with above
5	U009				Included with above
6	U012				Included with above
7	U014				Included with above
8	U019				Included with above
9	U020				Included with above
10	U032				Included with above
11	U037				Included with above
12	U043				Included with above
13	U044				Included with above
14	U048				Included with above
15	U052				Included with above
16	U069				Included with above
17	U070				Included with above
18	U072				Included with above
19	U078				Included with above
20	U079				Included with above
21	U080				Included with above
22	U081				Included with above
23	U083				Included with above
24	U084				Included with above
25	U102				Included with above
26	U103				Included with above
27	U105				Included with above
28	U108				Included with above
29	U116				Included with above
30	U117				Included with above
31	U120				Included with above
32	U122				Included with above
33	U123				Included with above

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number	A. EPA Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U127				**Included with TSA-1/TSA-R, Page 5 (B-1) of 6, line 1**
2	U128				Included with above
3	U131				Included with above
4	U133				Included with above
5	U134				Included with above
6	U135				Included with above
7	U138				Included with above
8	U140				Included with above
9	U144				Included with above
10	U145				Included with above
11	U147				Included with above
12	U151				Included with above
13	U154				Included with above
14	U159				Included with above
15	U162				Included with above
16	U165				Included with above
17	U169				Included with above
18	U170				Included with above
19	U171				Included with above
20	U182				Included with above
21	U188				Included with above
22	U190				Included with above
23	U191				Included with above
24	U196				Included with above
25	U201				Included with above
26	U204				Included with above
27	U207				Included with above
28	U208				Included with above
29	U209				Included with above
30	U210				Included with above
31	U211				Included with above
32	U215				Included with above
33	U217				Included with above

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number		A. EPA Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	U	2	1	8												Included with TSA-1/TSA-R, Page 5 (B-1) of 6, line 1
	2	U	2	1	9												Included with the above
	3	U	2	2	0												Included with the above
	4	U	2	2	5												Included with the above
	5	U	2	2	6												Included with the above
	6	U	2	2	7												Included with the above
	7	U	2	2	8												Included with the above
	8	U	2	3	9												Included with the above
	9	U	3	2	8												Included with the above
1	0																
1	1																
1	2																
1	3																
1	4																
1	5																
1	6																
1	7																
1	8																
1	9																
2	0																
2	1																
2	2																
2	3																
2	4																
2	5																
2	6																
2	7																
2	8																
2	9																
3	0																
3	1																
3	2																
3	3																

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number		A. EPA Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	D	0	0	1	15,955	T	S	0	1							TSA-2 (Earthen Covered)
	2	D	0	0	2												Included with above
	3	D	0	0	4												Included with above
	4	D	0	0	5												Included with above
	5	D	0	0	6												Included with above
	6	D	0	0	7												Included with above
	7	D	0	0	8												Included with above
	8	D	0	0	9												Included with above
	9	D	0	1	0												Included with above
1	0	D	0	1	1												Included with above
1	1	D	0	1	8												Included with above
1	2	D	0	1	9												Included with above
1	3	D	0	2	0												Included with above
1	4	D	0	2	1												Included with above
1	5	D	0	2	2												Included with above
1	6	D	0	2	3												Included with above
1	7	D	0	2	4												Included with above
1	8	D	0	2	5												Included with above
1	9	D	0	2	6												Included with above
2	0	D	0	2	7												Included with above
2	1	D	0	2	8												Included with above
2	2	D	0	2	9												Included with above
2	3	D	0	3	0												Included with above
2	4	D	0	3	1												Included with above
2	5	D	0	3	2												Included with above
2	6	D	0	3	3												Included with above
2	7	D	0	3	4												Included with above
2	8	D	0	3	5												Included with above
2	9	D	0	3	6												Included with above
3	0	D	0	3	7												Included with above
3	1	D	0	3	8												Included with above
3	2	D	0	3	9												Included with above
3	3	D	0	4	0												Included with above

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number		A. EPA Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)								(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	D	0	4	1											**Included with TSA-2, Page 5 (C-1) of 6, line 1**
	2	D	0	4	2											Included with above
	3	D	0	4	3											Included with above
	4	F	0	0	1											Included with above
	5	F	0	0	2											Included with above
	6	F	0	0	3											Included with above
	7	F	0	0	4											Included with above
	8	F	0	0	5											Included with above
	9	F	0	0	6											Included with above
1	0	F	0	0	7											Included with above
1	1	F	0	0	9											Included with above
1	2	F	0	3	9											Included with above
1	3	P	0	0	5											Included with above
1	4	P	0	1	2											Included with above
1	5	P	0	1	5											Included with above
1	6	P	0	2	2											Included with above
1	7	P	0	2	4											Included with above
1	8	P	0	2	7											Included with above
1	9	P	0	2	8											Included with above
2	0	P	0	3	0											Included with above
2	1	P	0	3	1											Included with above
2	2	P	0	5	6											Included with above
2	3	P	0	7	3											Included with above
2	4	P	0	7	5											Included with above
2	5	P	0	7	7											Included with above
2	6	P	0	9	8											Included with above
2	7	P	1	0	4											Included with above
2	8	P	1	0	5											Included with above
2	9	P	1	0	6											Included with above
3	0	P	1	1	3											Included with above
3	1	P	1	1	6											Included with above
3	2	P	1	1	9											Included with above
3	3	P	1	2	0											Included with above

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number		A. EPA Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)								D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	U	0	0	2											Included with TSA-2, Page 5 (C-1) of 6, line 1
	2	U	0	0	3											Included with above
	3	U	0	0	4											Included with above
	4	U	0	0	7											Included with above
	5	U	0	0	9											Included with above
	6	U	0	1	2											Included with above
	7	U	0	1	4											Included with above
	8	U	0	1	9											Included with above
	9	U	0	2	0											Included with above
1	0	U	0	3	2											Included with above
1	1	U	0	3	7											Included with above
1	2	U	0	4	3											Included with above
1	3	U	0	4	4											Included with above
1	4	U	0	4	8											Included with above
1	5	U	0	5	2											Included with above
1	6	U	0	6	9											Included with above
1	7	U	0	7	0											Included with above
1	8	U	0	7	2											Included with above
1	9	U	0	7	8											Included with above
2	0	U	0	7	9											Included with above
2	1	U	0	8	0											Included with above
2	2	U	0	8	1											Included with above
2	3	U	0	8	3											Included with above
2	4	U	0	8	4											Included with above
2	5	U	1	0	2											Included with above
2	6	U	1	0	3											Included with above
2	7	U	1	0	5											Included with above
2	8	U	1	0	8											Included with above
2	9	U	1	1	6											Included with above
3	0	U	1	1	8											Included with above
3	1	U	1	2	0											Included with above
3	2	U	1	2	2											Included with above
3	3	U	1	2	3											Included with above

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number		A. EPA Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	U	1	2	7												Included with TSA-2, Page 5 (C-1) of 6, line 1
	2	U	1	2	8												Included with above
	3	U	1	3	1												Included with above
	4	U	1	3	3												Included with above
	5	U	1	3	4												Included with above
	6	U	1	3	5												Included with above
	7	U	1	3	8												Included with above
	8	U	1	4	0												Included with above
	9	U	1	4	4												Included with above
1	0	U	1	4	5												Included with above
1	1	U	1	4	7												Included with above
1	2	U	1	5	1												Included with above
1	3	U	1	5	4												Included with above
1	4	U	1	5	9												Included with above
1	5	U	1	6	2												Included with above
1	6	U	1	6	5												Included with above
1	7	U	1	6	9												Included with above
1	8	U	1	7	0												Included with above
1	9	U	1	7	1												Included with above
2	0	U	1	8	2												Included with above
2	1	U	1	8	8												Included with above
2	2	U	1	9	0												Included with above
2	3	U	1	9	1												Included with above
2	4	U	1	9	6												Included with above
2	5	U	2	0	1												Included with above
2	6	U	2	0	4												Included with above
2	7	U	2	0	7												Included with above
2	8	U	2	0	8												Included with above
2	9	U	2	0	9												Included with above
3	0	U	2	1	0												Included with above
3	1	U	2	1	1												Included with above
3	2	U	2	1	5												Included with above
3	3	U	2	1	7												Included with above

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number		A. EPA Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	U	2	1	8												Included with TSA-2, Page 5 (C-1) of 6, line 1
	2	U	2	1	9												Included with the above
	3	U	2	2	0												Included with the above
	4	U	2	2	5												Included with the above
	5	U	2	2	6												Included with the above
	6	U	2	2	7												Included with the above
	7	U	2	2	8												Included with the above
	8	U	2	3	9												Included with the above
	9	U	3	2	8												Included with the above
1	0																
1	1																
1	2																
1	3																
1	4																
1	5																
1	6																
1	7																
1	8																
1	9																
2	0																
2	1																
2	2																
2	3																
2	4																
2	5																
2	6																
2	7																
2	8																
2	9																
3	0																
3	1																
3	2																
3	3																

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number		A. EPA Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)								(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	D	0	0	1	6,006	T	S	0	1						Retrieval Modification Facility (RMF)
	2	D	0	0	2											Included with above
	3	D	0	0	4											Included with above
	4	D	0	0	5											Included with above
	5	D	0	0	6											Included with above
	6	D	0	0	7											Included with above
	7	D	0	0	8											Included with above
	8	D	0	0	9											Included with above
	9	D	0	1	0											Included with above
1	0	D	0	1	1											Included with above
1	1	D	0	1	8											Included with above
1	2	D	0	1	9											Included with above
1	3	D	0	2	0											Included with above
1	4	D	0	2	1											Included with above
1	5	D	0	2	2											Included with above
1	6	D	0	2	3											Included with above
1	7	D	0	2	4											Included with above
1	8	D	0	2	5											Included with above
1	9	D	0	2	6											Included with above
2	0	D	0	2	7											Included with above
2	1	D	0	2	8											Included with above
2	2	D	0	2	9											Included with above
2	3	D	0	3	0											Included with above
2	4	D	0	3	1											Included with above
2	5	D	0	3	2											Included with above
2	6	D	0	3	3											Included with above
2	7	D	0	3	4											Included with above
2	8	D	0	3	5											Included with above
2	9	D	0	3	6											Included with above
3	0	D	0	3	7											Included with above
3	1	D	0	3	8											Included with above
3	2	D	0	3	9											Included with above
3	3	D	0	4	0											Included with above

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number		A. EPA Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)								(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	D	0	4	1											**Included with RMF, Page 5 (D-1) of 6, line 1**
	2	D	0	4	2											Included with above
	3	D	0	4	3											Included with above
	4	F	0	0	1											Included with above
	5	F	0	0	2											Included with above
	6	F	0	0	3											Included with above
	7	F	0	0	4											Included with above
	8	F	0	0	5											Included with above
	9	F	0	0	6											Included with above
1	0	F	0	0	7											Included with above
1	1	F	0	0	9											Included with above
1	2	F	0	3	9											Included with above
1	3	P	0	0	5											Included with above
1	4	P	0	1	2											Included with above
1	5	P	0	1	5											Included with above
1	6	P	0	2	2											Included with above
1	7	P	0	2	4											Included with above
1	8	P	0	2	7											Included with above
1	9	P	0	2	8											Included with above
2	0	P	0	3	0											Included with above
2	1	P	0	3	1											Included with above
2	2	P	0	5	6											Included with above
2	3	P	0	7	3											Included with above
2	4	P	0	7	5											Included with above
2	5	P	0	7	7											Included with above
2	6	P	0	9	8											Included with above
2	7	P	1	0	4											Included with above
2	8	P	1	0	5											Included with above
2	9	P	1	0	6											Included with above
3	0	P	1	1	3											Included with above
3	1	P	1	1	6											Included with above
3	2	P	1	1	9											Included with above
3	3	P	1	2	0											Included with above

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number		A. EPA Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	U	0	0	2												Included with RMF, Page 5 (D-1) of 6, line 1
	2	U	0	0	3												Included with above
	3	U	0	0	4												Included with above
	4	U	0	0	7												Included with above
	5	U	0	0	9												Included with above
	6	U	0	1	2												Included with above
	7	U	0	1	4												Included with above
	8	U	0	1	9												Included with above
	9	U	0	2	0												Included with above
1	0	U	0	3	2												Included with above
1	1	U	0	3	7												Included with above
1	2	U	0	4	3												Included with above
1	3	U	0	4	4												Included with above
1	4	U	0	4	8												Included with above
1	5	U	0	5	2												Included with above
1	6	U	0	6	9												Included with above
1	7	U	0	7	0												Included with above
1	8	U	0	7	2												Included with above
1	9	U	0	7	8												Included with above
2	0	U	0	7	9												Included with above
2	1	U	0	8	0												Included with above
2	2	U	0	8	1												Included with above
2	3	U	0	8	3												Included with above
2	4	U	0	8	4												Included with above
2	5	U	1	0	2												Included with above
2	6	U	1	0	3												Included with above
2	7	U	1	0	5												Included with above
2	8	U	1	0	8												Included with above
2	9	U	1	1	6												Included with above
3	0	U	1	1	8												Included with above
3	1	U	1	2	0												Included with above
3	2	U	1	2	2												Included with above
3	3	U	1	2	3												Included with above

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number	A. EPA Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U127				Included with RMF, Page 5 (D-1) of 6, line 1
2	U128				Included with above
3	U131				Included with above
4	U133				Included with above
5	U134				Included with above
6	U135				Included with above
7	U138				Included with above
8	U140				Included with above
9	U144				Included with above
10	U145				Included with above
11	U147				Included with above
12	U151				Included with above
13	U154				Included with above
14	U159				Included with above
15	U162				Included with above
16	U165				Included with above
17	U169				Included with above
18	U170				Included with above
19	U171				Included with above
20	U182				Included with above
21	U188				Included with above
22	U190				Included with above
23	U191				Included with above
24	U196				Included with above
25	U201				Included with above
26	U204				Included with above
27	U207				Included with above
28	U208				Included with above
29	U209				Included with above
30	U210				Included with above
31	U211				Included with above
32	U215				Included with above
33	U217				Included with above

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

Line Number		A. EPA Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	U	2	1	8												**Included with RMF, Page 5 (D-1) of 6, line 1**
	2	U	2	1	9												Included with the above
	3	U	2	2	0												Included with the above
	4	U	2	2	5												Included with the above
	5	U	2	2	6												Included with the above
	6	U	2	2	7												Included with the above
	7	U	2	2	8												Included with the above
	8	U	2	3	9												Included with the above
	9	U	3	2	8												Included with the above
1	0																
1	1																
1	2																
1	3																
1	4																
1	5																
1	6																
1	7																
1	8																
1	9																
2	0																
2	1																
2	2																
2	3																
2	4																
2	5																
2	6																
2	7																
2	8																
2	9																
3	0																
3	1																
3	2																
3	3																

11. Map (See instructions on page 38)

Attach to this application a topographic map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.

12. Facility Drawing (See instructions on page 39)

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

13. Photographs (See instructions on page 39)

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

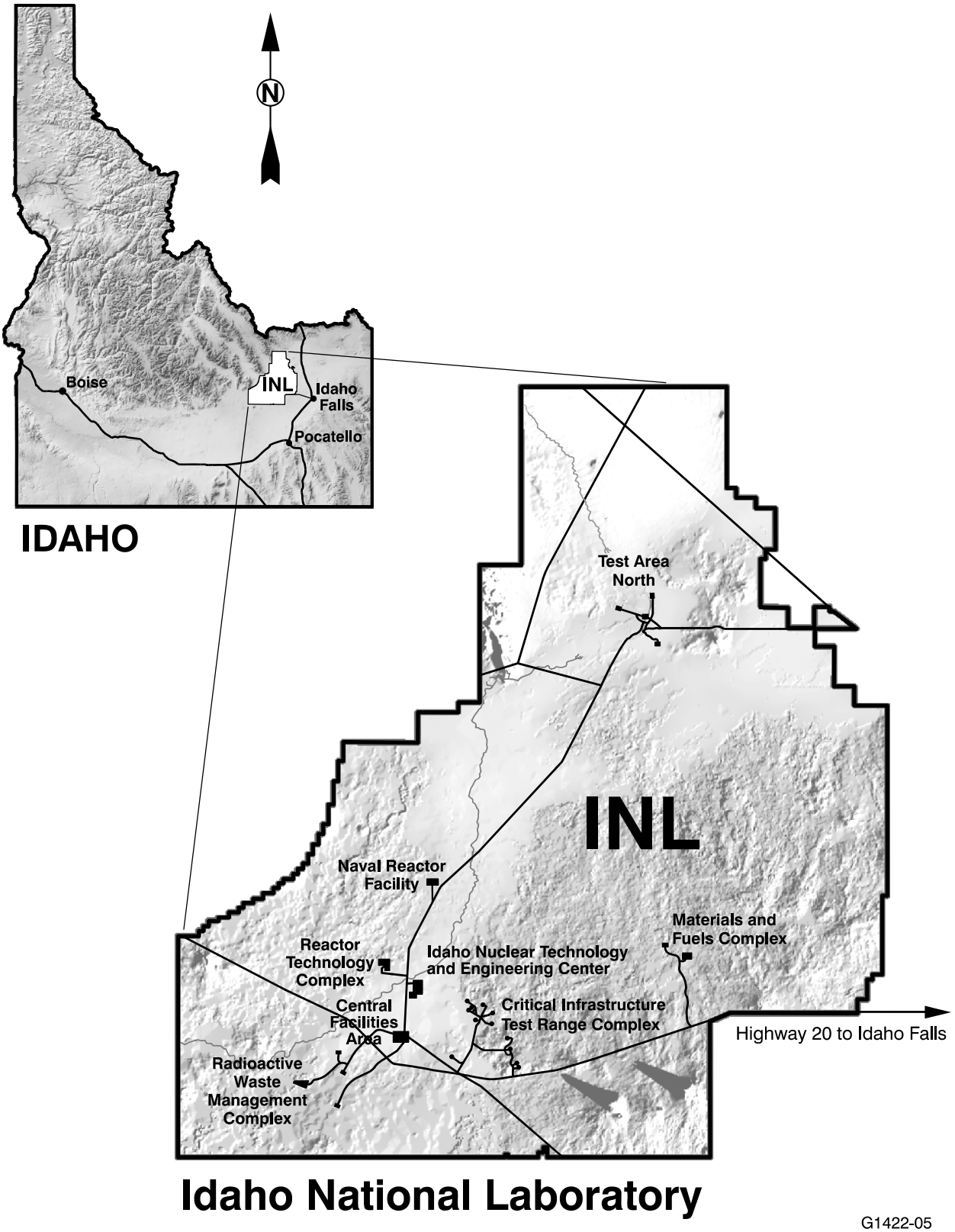
14. Comments (See instructions on page 39)

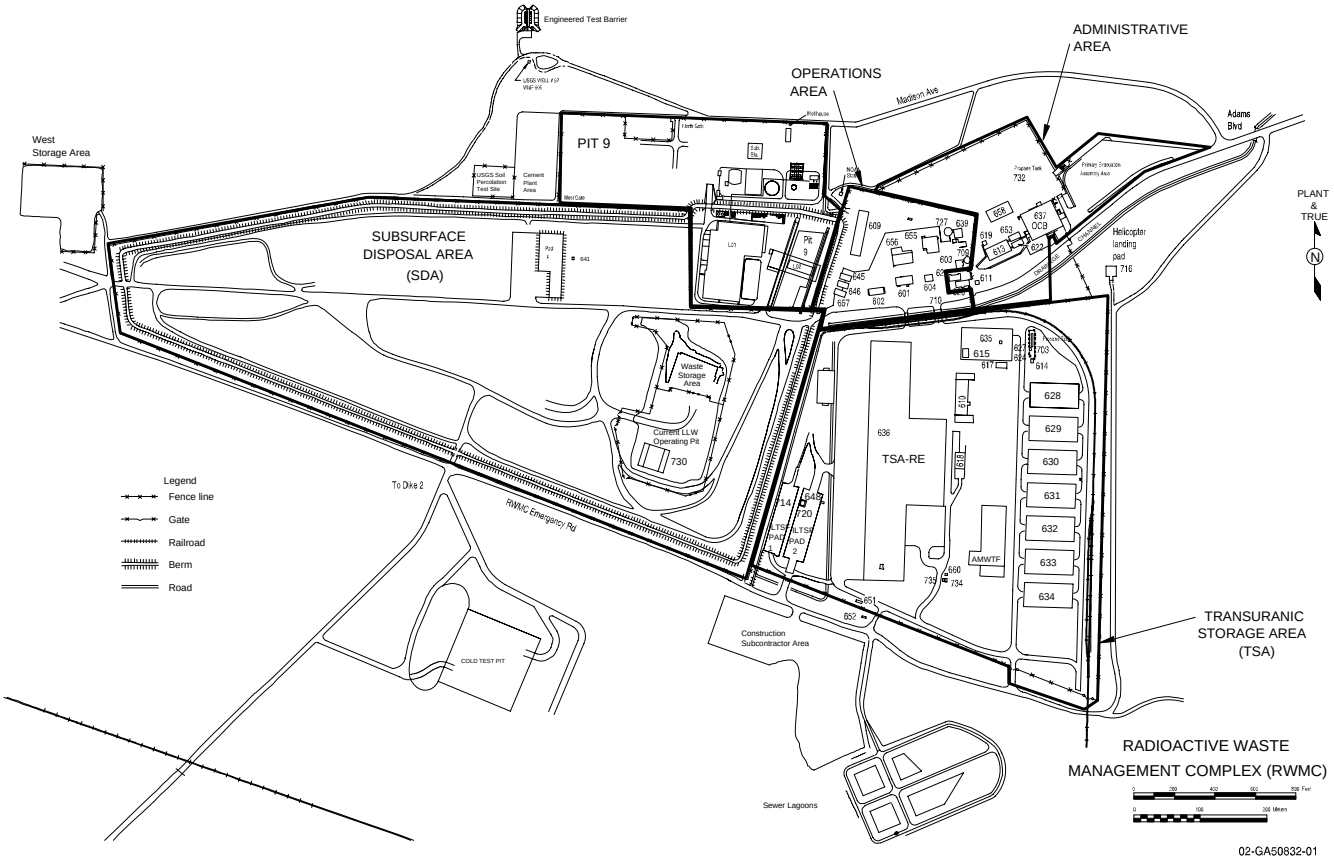
ITEM 11. RWMC TOPOGRAPHIC MAP

(in sheet protector following)

ITEM 12. RWMC FACILITY DRAWINGS

Drawing Number	Drawing Description	Page Number
G1422-05	Map of the INL showing major facility locations	Page 6c of 6
02-GA-50832-01	RWMC Facility Drawing	Page 6d of 6


N
Boise
INL
Idaho Falls
Pocatello
IDAHO
Test Area North
INL
Naval Reactor Facility
Materials and Fuels Complex
Reactor Technology Complex
Idaho Nuclear Technology and Engineering Center
Central Facilities Area
Critical Infrastructure Test Range Complex
Highway 20 to Idaho Falls
Radioactive Waste Management Complex
Idaho National Laboratory
G1422-05


Engineered Test Barrier
ADMINISTRATIVE AREA
OPERATIONS AREA
Madison Ave
Adams Blvd
West Storage Area
PIT 9
USGS Soil Percolation Test Site
Cement Plant Area
SUBSURFACE DISPOSAL AREA (SDA)
Waste Storage Area
Current LLW Operating Pit
730
TSA-RE
AMWTF
Helicopter landing pad
716
PLANT & TRUE N
Legend
Fence line
Gate
Railroad
Berm
Road
To Dike 2
RWMC Emergency Rd
COLD TEST PIT
Construction Subcontractor Area
Sewer Lagoons
TRANSURANIC STORAGE AREA (TSA)
RADIOACTIVE WASTE MANAGEMENT COMPLEX (RWMC)
02-GA50832-01

Item 13. RWMC Photographs

Photo Number	Photo Description – Unit Process Code(s)	Date of Photo	Page Number
Photo 1	Interior of TSA-1/TSA-R (showing stored containers of waste) – S01	6/99	6f of 6
Photo 2	View of Northwest corner of TSA-RE (TSA-1/TSA-R within) – S01	6/99	6f of 6
Photo 3	View of Southeast corner of TSA-RE (TSA-2 and TSA-R within) – S01	6/99	6g of 6
Photo 4	View of South Interior of TSA-2 (showing retrieval equipment) – S01	Not available	6g of 6
Photo 5	View of top of waste stack of TSA-2 (showing soil conveying equipment) – S01	6/99	6h of 6
Photo 6	Aerial View of the RWMC with WMF-676 Graphically Superimposed	Not available	6i of 6

Photo 1. Interior of TSA-1/TSA-R (Showing stored containers of waste)

Photo 2. View of Northwest corner of TSA-RE (TSA-1/TSA-R within)

Photo 3. View of Southeast corner of TSA-RE (TSA-2 and TSA-R within)

Photo 4. View of South Interior of TSA-2 (showing retrieval equipment)

Photo 5. View of top of waste stack of TSA-2 (showing soil conveying equipment)

Photo 6. Aerial View of the RWMC with WMF-676 Superimposed

ITEM 14. ADDITIONAL INFORMATION

HAZARDOUS WASTE DEBRIS CATEGORIES

IDAPA 58.01.05.012 [40 CFR 270.13(n)] requires a description of the debris categories to be treated, stored, or disposed of at a facility, to be submitted in the Part A Permit Application. Debris defined by 40 CFR 268.2 means a solid material exceeding a 60-mm particle size that is intended for disposal and that is: 1) a manufactured object; 2) plant or animal matter; 3) natural geologic material. Debris storage at the INL includes waste in all three general categories. The following is a list of examples in each debris category that may be stored at the INL.

Category I - Manufactured Objects

Glass
Concrete
Masonry and refractory bricks
Paper
Plastic
Rubber
Cloth
Pavement
Metal Debris
- Pipes
- Valves
- Scrap Metal

Other Heterogeneous Debris
- Non-intact containers
- Tanks
- Appliances
- Industrial Equipment

Category II - Plant and Animal Matter

Biological Debris
- Animal carcasses
- Other plant matter

Wood Debris
- Wood
- Plant stumps

Category III - Natural Geologic Material

Rock
Cobbles
Boulders
Asbestos

SECTION B

FACILITY DESCRIPTION

(For Information Only)

TABLE OF CONTENTS

LIST OF EXHIBITS

B. FACILITY DESCRIPTION

B-1 General Description [Idaho Administrative Procedures Act (IDAPA) 58.01.05.009; Title 40 Code of Federal Regulations (CFR) 265]

The Advanced Mixed Waste Treatment Project (AMWTP) Transuranic Storage Area (TSA)-Retrieval Enclosure (TSA-RE), commonly known as Waste Management Facility (WMF)-636, is located at the Radioactive Waste Management Complex (RWMC) on the Idaho National Laboratory (INL). Exhibit B-1 is a map of the INL showing the major area locations and buildings. The TSA-RE, which is not regulated per the Hazardous Waste Management Act (HWMA) of 1983, as amended or the Resource Conservation and Recovery Act (RCRA), is a metal structure that encloses asphalt pads, which are regulated per HWMA/RCRA Interim Status (IS) regulations in IDAPA 58.01.05.009 (40 CFR Part 265). These asphalt pads contain covered stacks of retrievably stored transuranic (TRU) and alpha low-level waste (αLLW), which may be mixed waste (MW) or radioactive only waste (ROW). Exhibit B-2 is a diagram that defines the waste types managed at the TSA IS Units. The TSA-RE contains two IS container storage units (i.e., TSA-1/TSA-R and TSA-2). These units, along with the TSA-RE Retrieval Modification Facility (RMF), make up the TSA IS Units. The TSA IS Units are operated by Bechtel BWXT, Idaho, LLC (BBWI) under contract with the United States (U.S.) Department of Energy-Idaho Operations Office (DOE-ID).

Because the HWMA/RCRA-regulated wastes managed at the TSA are MW, references to radiological and radiochemical data are made throughout the TSA IS Document. Information on radiological and radiochemical characteristics is provided for informational purposes only, as HWMA/RCRA applies only to the hazardous waste constituents of the MW. A portion of the waste also contains polychlorinated biphenyls (PCBs), which may be regulated by the Toxic Substances Control Act (TSCA). Discussion of TSCA-regulated waste is for informational purposes only, as PCBs are not subject to HWMA/RCRA.

Unless otherwise noted, sections referenced in this document refer to sections of this document. Tables and exhibits cited herein refer to portions of the section in which they are cited, unless otherwise noted.

AMWTP Process Description

The TSA stored waste slated for storage, characterization, and treatment at the AMWTP mixed waste management units (MWMUs) [i.e., the Advanced Mixed Waste Treatment Facility (AMWTF), Type II Modules (WMF-628 through 633), Waste Characterization Facility (WMF-634), the Stored

Waste Examination Pilot Plant (SWEPP), Type I Module (WMF-635), and the TSA IS Units] is retrieved from storage, characterized for storage and treatment or direct shipment, stored in preparation for treatment or shipment, pretreated (if necessary), treated (as required), then sent for packaging and certification (as required) for shipment to the Waste Isolation Pilot Plant (WIPP) or to another waste management unit. Containers are typically transported/transferred to, from, and within the AMWTP MWMUs using forklifts, trucks, trucks with trailers, conveyors, hand trucks, and other transport vehicles/devices. A schematic flow diagram of the processes for the AMWTP is shown in the process flow sheets, Exhibits I-1 and I-2, which are located in Appendix I of the AMWTP HWMA/RCRA Storage Permit. The process flow sheets represent the majority of the anticipated processes for the AMWTP and are based on design estimates.

Retrieval

Of the estimated 65,000 cubic meters (m^3) of waste stored at the TSA, approximately 11,700 m^3 of waste is stored in the MWMUs that are regulated under IDAPA 58.01.05.008 (40 CFR 264). A protective structure has been constructed over the remaining estimated 53,300 m^3 of waste located on the TSA IS Units, much of which is covered by an earthen berm. This structure, the TSA-RE, provides confinement and weather protection for retrieval operations. The location of the MWMUs are shown on the RWMC/AMWTP Topographic Map, which is located in the Part A Permit Application for the TSA IS Units.

Retrieval operations, in part, may involve sampling soil within the TSA-RE; removing the soil, sheeting, and wood components from the container stacks; removing the waste containers from the stacks; inspecting, monitoring, and barcoding containers; overpacking or repairing containers, as necessary; then transporting containers to other AMWTP MWMUs.

Preliminary Characterization

Characterization typically occurs within WMF-634, but may also occur in WMF-628, WMF-610, or WMF-635. WMF-634 houses real time radiography (RTR) units, drum assay units, a box assay unit, a combined drum venting system (DVS) and headspace gas sampling unit, portable headspace gas sampling units, a unit for the treatment (via addition of absorbent to containers with liquids, decanting liquids, neutralization of liquids, or by repackaging of waste, or by the sizing of waste) and visual examination of containers, and a drum core sample retrieval system (DCSRS). Containers are received at WMF-634 for characterization and/or treatment. Waste is stored in WMF-634 while awaiting characterization, treatment (as required), and transport to the Type II Modules (e.g., WMF-628 through WMF-633) or the

TSA IS Units for storage, pending disposition. Select drums pass through the DVS and DCSRS in WMF-634 prior to routing for further disposition.

Typically, retrieved containers undergo RTR examination to determine physical waste parameters (e.g., metals, cellulosics, rubber, plastics, soil, sludge) and to detect prohibited items (e.g., liquids, elemental mercury, etc.). The visual examination of RTR images also validates existing characterization data, or, in the case of containers with unknown contents, helps to correlate the contents of the container with known waste types. Characterization activities are described in more detail in the AMWTP HWMA/RCRA Storage Permit.

Storage

After preliminary characterization, containers are usually taken to the Type II Modules, where the containers are typically stored by parameters such as waste group (WG), container type, and fissile material content. The purpose of this storage is to decouple treatment from retrieval and characterization operations and to build up an inventory of waste to facilitate efficient treatment sequence strategies.

Direct Shipment

Once characterized, certain waste containers may be determined suitable for direct shipment to the WIPP [e.g., meet the WIPP waste acceptance criteria (WAC)] or another waste management unit.

Pretreatment

Waste containers to be treated in WMF-676 (primarily debris waste) are transported from storage to the waste receiving and storage areas of WMF-676. The containers are then transferred within WMF-676 to the pretreatment areas, or directly to treatment. See the AMWTP HWMA/RCRA Treatment Permit for further information on the processes in WMF-676.

Treatment in the Storage MWMUs

Five methods of treatment are Permitted in WMF-629 through WMF-635. These methods of treatment are absorption, decanting, neutralization, repackaging of waste, and the sizing of waste which are performed individually or in conjunction with each other to treat the waste in the most effective manner possible. A brief description of each treatment activity is provided below. See the AMWTP HWMA/RCRA Storage Permit for further information on the treatment methods.

Absorption. Liquid waste is absorbed with a compatible absorbent. Absorption of liquids in containers may occur after decanting, to absorb any liquids that have not been decanted. Absorption of liquids that have previously been decanted (and potentially co-mingled) or neutralized may also occur. Co-mingling only occurs after compatibility of the wastes has been addressed.

Decanting. Liquid wastes are decanted from containers into another container. The decanted wastes are then neutralized and/or absorbed. Co-mingling of decanted liquids or absorbed wastes may occur, as applicable, after compatibility of the wastes has been addressed.

Neutralization. Corrosive liquids are neutralized either prior to absorption or absorbed with a neutralizing absorbent. Co-mingling of neutralized liquids or the absorbed neutralized liquids may occur, as applicable, after compatibility of the wastes has been addressed.

Repackaging. Waste from a container may be repackaged either into another container, or into multiple containers. Waste from multiple containers may be collected in a single container, after compatibility of the wastes has been addressed. While repackaging the waste, items that are prohibited for disposal at a waste management unit or prohibited for processing in the various AMWTP waste management units (e.g., supercompactor) may be removed. Repackaging may also be utilized to aid in the characterization of waste (e.g., visual examination to confirm container contents, etc.).

Sizing. Waste from a container may be sized for repackaging into the original container or into another container. Co-mingling of wastes will occur after the compatibility of the wastes has been addressed. An item that may be used for the sizing of waste includes, but is not limited to, shears, nibblers, scrapers, etc.

TSA IS Units Description

The TSA-RE is an existing engineered metal building that encloses the covered stacks of retrievably stored waste. The TSA-RE encompasses approximately 313,000 square feet (ft^2) and encloses the TSA IS Units. Each of the TSA IS asphalt pads is made up of a number of storage cells. See Exhibit B-3 for the location of the TSA IS asphalt pads in reference to the floor plan of the TSA-RE. Over 100,000 containers are stored on these asphalt pads; it is estimated that approximately 90 percent (%) of these containers are drums. The majority of the waste stacks are covered with wood, plastic or polyvinyl sheeting, and soil.

TSA-1/TSA-R Storage Pads

TSA-1 was the first pad constructed at the TSA. Initially, the pad was 150 feet-(ft) wide by 400-ft long and surfaced with an asphalt pad. The length of TSA-1 was extended to approximately 730 ft in 1972. The pad is divided into cells of varying lengths separated by soil firewalls. The first waste was placed onto TSA-1 in November 1970, and the last waste was received for storage at TSA-1 in October 1975.

TSA-R was built in December 1976 to provide storage of waste that was removed from earthen covered storage at the RWMC and repackaged in drums, steel bins, or metal cargo containers. The TSA-R pad is composed of an asphalt pad over a compacted base, approximately 150-ft wide by 435-ft long, and is divided into three storage cells. Cell 1 is covered with wood, tarp, and soil, and Cells 2 and 3 are covered only with tarps. Waste was received for storage on Pad R until 1989.

TSA-2 Storage Pad

TSA-2 is of similar construction as TSA-1; it is approximately 150-ft wide by 400-ft long with an asphalt layer over a gravel base. Each of the four cells that make up TSA-2 are paved with asphalt and isolated from the adjacent cell by a soil firewall. An air-support building (ASB) was erected over the asphalt pad, on the first storage cell at the southern end of TSA-2, to permit all-weather operations. After a cell was filled, the ASB was moved to the north to a new empty cell. Using this method, three storage cells (1, 1A, and 2) were filled with waste and subsequently covered with wood, tarp, and soil. In 1981, the ASB was moved to a position over Cell 3 of the TSA-2 area. Cell 3 of TSA-2 (i.e., ASB II) contained HWMA/RCRA-regulated waste up until 1997 when the waste was transferred to the RWMC Waste Storage Facility (WSF). After removal of the HWMA/RCRA-regulated waste, Cell 3 of TSA-2 was typically used for storage of vehicles and equipment until its closure in 1999.

TSA-RE Retrieval Modification Facility

The TSA-RE RMF has IS for container storage, but has not yet been constructed. The unit was planned as an area to store waste retrieved from the TSA IS Units, pending transfer to other waste management units. When containers in a portion of the TSA IS Units were removed, the area would be surveyed, sampled, and decontaminated. The structures, asphalt pads, and contiguous underlying soils would then be checked for radiological contamination. Areas to be modified for container storage would have the asphalt pad removed, the area regraded, and a concrete floor slab installed for interior storage. Two storage areas, each 200-ft wide by 150-ft long, were initially planned. Up to six additional storage areas of similar size were to be added in the future, for a total of eight. AMWTP operational needs will determine if the TSA-RE RMF will be constructed in the future.

ARA	=	Auxiliary Reactor Area
CFA	=	Central Facilities Area
CTF	=	Containment Test Facility
EBR-I	=	Experimental Breeder Reactor I (Historical Monument)
INTEC	=	Idaho Nuclear Technology and Engineering Center
IEF	=	Initial Engine Test
MFC	=	Materials & Fuels Complex
NRF	=	Naval Reactors Facility
PBF	=	Power Burst Facility
RTC	=	Reactor Technologies Complex
RWMC	=	Radioactive Waste Management Complex
TAN	=	Test Area North
TSF	=	Technical Support Facility
WRRTF	=	Water Reactor Research Test Facility

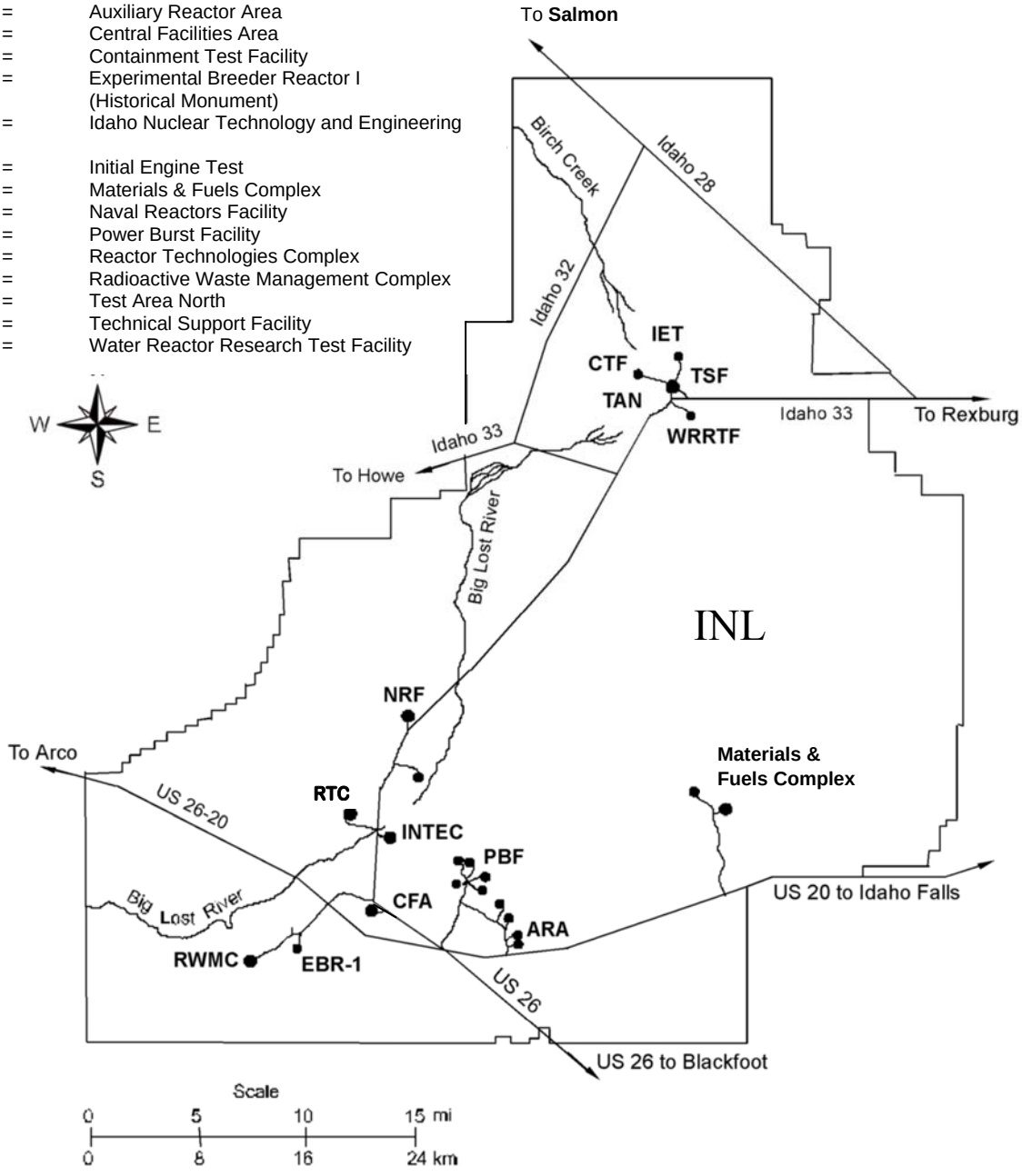
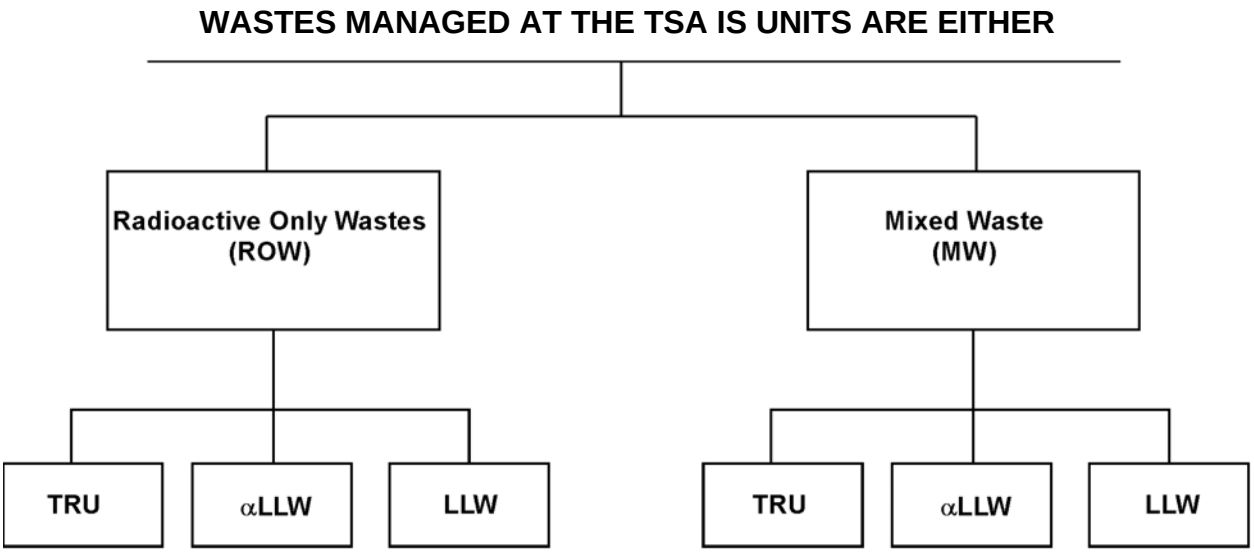


Exhibit B-1. Map of INL Showing Major Area Locations



ROW Radioactive only wastes are wastes that are not HWMA/RCRA regulated as defined by IDAPA 58.01.05.005 (40 CFR 261). ROW may also be commingled with TSCA-regulated PCB wastes.

MW Mixed wastes are hazardous wastes as defined by IDAPA 58.01.05.005 (40 CFR 261) that are radiologically contaminated. MW may be commingled with TSCA-regulated PCB wastes.

TRU Transuranic wastes contain more than 100 nanocuries per gram (nCi/g) of TRU nuclides.

LLW Low-level wastes (LLW) contain less than 10 nCi/g of TRU nuclides.

LLD Lower limit of detection (LLD) waste, which includes both LLW and αLLW.

Exhibit B-2. TSA IS Units Waste Types

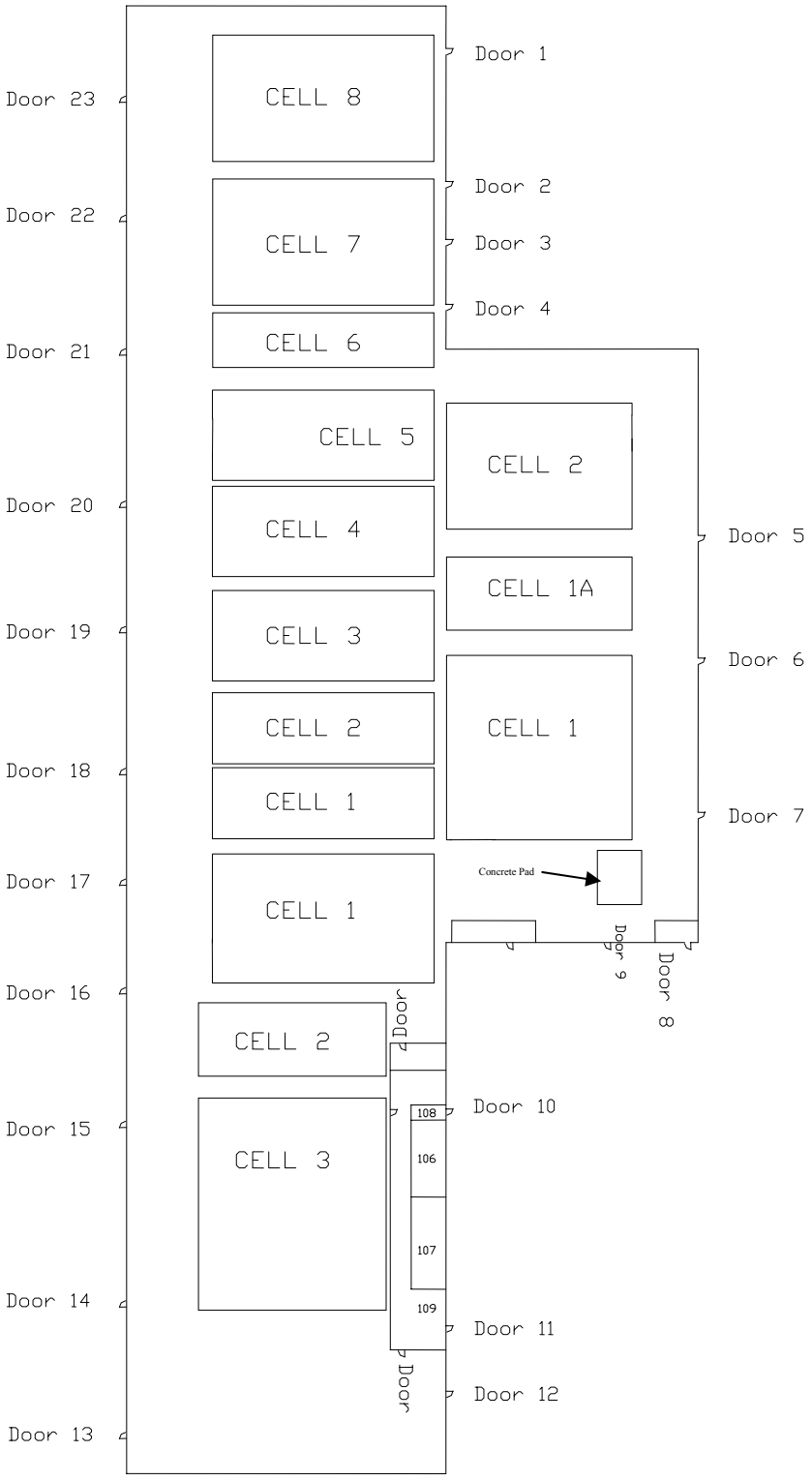


Exhibit B-3. Retrieval Enclosure Floor Plan

SECTION C

WASTE CHARACTERISTICS

TABLE OF CONTENTS

LIST OF TABLES

C. WASTE CHARACTERISTICS

This section describes the overall waste characteristics of the MW stored in the TSA IS Units. The bulk of the waste that is stored at the TSA IS Units is MW. The TSA IS Units were originally established at the RWMC to provide storage of TRU wastes. Table C-1 lists the existing waste streams that are stored within the TSA IS Units and their associated Environmental Protection Agency (EPA) hazardous waste numbers (HWNs) have been assigned based on "Advanced Mixed Waste Treatment Project Waste Stream Designations," RPT-TRUW-12, (RPT-TRUW-12). RPT-TRUW-12 is maintained in the Operating Record and updated as new characterization information becomes available, as required. Table C-1 also provides estimates of the volumes of waste currently stored in the TSA IS Units and the WSF. The individual waste streams have been grouped into seven debris WGs and four non-debris WGs. The debris WGs are lead/cadmium metal (LCM), uncategorized metal (UM), inorganic nonmetallic waste (INM), graphite (G), filters (F), combustible waste (CW), and heterogeneous debris (HD). The non-debris WGs are solidified inorganic (SI), solidified organic (SO), salt waste (SW), and soils.

General WAC

Only MW with HWNs listed in the TSA IS Units Part A Permit Application is accepted for storage in the TSA IS Units. Waste accepted for storage at the TSA IS Units must meet the following WAC:

- Containers must be numbered or coded for tracking purposes with a unique barcode identifier linked to the appropriate item description code (IDC) and container-specific information maintained within with the Operating Record, to the extent known.
- Waste must not contain known:
    - Explosive or pyrophoric material, except for pyrophoric forms of radionuclides,
    - Department of Transportation (DOT) Class 1 explosives, or
    - Reactive metals or forbidden materials per 49 CFR 173.21.
- Containers with known TSCA-regulated waste (regulated under 40 CFR 761) must be identified and marked appropriately.
- The process knowledge, to the extent known, regarding the waste stream is documented in the operating record.
- For each container received at the TSA IS Units, the following information is included in the Operating Record:
    - An IDC (may be 000 for unknown wastes, 00A for unknown sludge or other non-debris waste, or 00B for unknown debris waste),

- Known HWNs (may be designated as undetermined), and
- Known retrieval and storage history.

Table C-1. Waste Stored at the TSA IS Units [a,b,c,d,e, f]

Generator	IDC	Description	EPA HWNs	55-gal Drums	83-gal Drums	Boxes	Bins	WG[e,]
ANL-E	100	General Plant Waste	D001, F003				316	HD
ANL-E	101	Cut Up Gloveboxes	D008				56	HD
ANL-E	102	Absorbed Liquids	D001, F003				11	SI
ANL-E	104	Alpha Hot Cell Waste	ROW				1	HD
Battelle	201	Noncombustible Solids	D005-D009, D011, F001, F002, F005	42			27	HD
Battelle	202	Combustible Solids, Paper, Cloth	D005-D009, D011, F001, F002, F005	3			5	HD
Battelle	203	Paper, Cloth, Metals, Glass	D005-D009, D011, F001, F002, F005	26			4	HD
Battelle	204	Solidified Solutions	D005-D009, D011, F001, F002, F005	5				SI
Bettis	010	Combustibles (Rags, Gloves, Poly)	F002	877	52			CW
Bettis	020	Noncompressible, Noncombustible[g]	D002, F002	794				HD
Bettis	030	Solidified Grinding Sludge, etc.	F002	45				SI
Bettis	040	Solid Binary Scrap Powder, etc.	ROW (lead for shielding only)	105				UNK
INEEL	150	Laboratory Waste[g]	D002, D008	16				HD
INEEL	152	Plutonium Neutron Sources	ROW	6				RH
INEEL	153	Combustible Lab Waste	ROW (lead for shielding only)	1				HD
INEEL	154	Sample Fuel	ROW (lead for shielding only)	2				INM
INEEL	155	TRU Scrap	ROW (lead for shielding only)	5		1		HD
INEEL	156	Chem Cell Rip-Out	None Identified			9		HD
Mound	801	Rags, Paper, Wood, etc.	ROW	31				HD
Mound	802	Dry-Box Gloves and O-Rings	D008	89				HD
Mound	803	Metal, Equip., Pipes, Valves, etc.	D009	129				HD
Mound	804	Plastic, Tygon, Mani-Boots, etc.	D009	156				HD
Mound	805	Asbestos Filters[g]	D001, D002, D009	31				HD
Mound	810	Glass, Flasks, Sample Vials, etc.	D009	9				HD
Mound	811	Evaporator and Dissolver Sludge	D001, D009	4				SI
Mound	813	Glass Filters and Fiberglas[g]	D001, D002, D009	3				HD
Mound	814	Waste Graphite	D009	2				HD
Mound	824	Equipment Boxes, Noncombustible	D005-D011			303		HD
Mound	825	Equipment Drums, Noncombustible	D005-D011	79		1		HD
Mound	826	Equipment Boxes, Combustible	D009			19		HD
Mound	834	High Level Acid[g]	D001, D002, D007-D009, F001, F002	859				SI
Mound	835	High Level Caustic[g]	D002, D007-D009, F001, F002	1213				SI
Mound	836	High Level Sludge/Cement[g]	D002, D006-D011, F001-F003	3184				SI
Mound	838	<10 nCi/g Noncombustible	None Identified	1				HD
Mound	842	Contaminated Soil[g]	D002, D006-D011			36		S
Mound	847	LSA <100 nCi/g Combustible	D008, D009	524				HD
Mound	848	LSA <100 nCi/g Noncombustible	D001, D002, D005-D011	125				INM
RFETS	001	First Stage Sludge	D004-D011, D022, F001-F003, F005-F007, F009	7533	415			SI

Table C-1. Waste Stored at the TSA IS Units (continued)

Generator	IDC	Description	EPA HWNs	55-gal Drums	83-gal Drums	Boxes	Bins	WG[e,f]
RFETS	002	Second Stage Sludge	D004-D011, D022, F001-F003, F005-F007, F009	10940	640			SI
RFETS	003	Organic Setups, Oil Solids	D005, D011, D022, D029, D036, F001-F003, F005	6150	126	6		SO
RFETS	004	Special Setups (Cement)	D006, D008, D011, F001-F003, F005	1372	208	1		SI
RFETS	005	Evaporated Salts	D001	23		1		SW
RFETS	090	Dirt	F001-F004	305	8			S
RFETS	095	Sludge	None Identified	42	2			SI
RFETS	241	Americium Process Residue[g]	D001, D002, D008, F002, F003	277				HD
RFETS	290	Sludge, Filter[g]	D002, D006, D008, F001-F003	5				SI
RFETS	292	Cemented Sludge[g]	D002, D004-D011, D022, F001-F003, F005-F007, F009	225				SI
RFETS	300	Graphite Molds	D008, D029, D040, F001, F002, F005	1086	44			G
RFETS	301	Graphite Cores	D008, D029, D040, F001, F002, F005	34				G
RFETS	302	Benelex and Plexiglas	D005, D008, F001	17		18		CW
RFETS	310	Graphite Scarfings	ROW	30				G
RFETS	311	Graphite Heels	None Identified	9		2		SI
RFETS	320	Heavy Nonspecial Source Metal	D008, F001, F002, F005	453				LCM
RFETS	330	Paper and Rags-Dry	D006-D009, D011, D022, F001-F003, F005-F007, F009	9932	161	2609		CW
RFETS	335	Filters, Absolute 8 x 8	D005, D007, D009, D011, D022, F001-F003, F005-F007, F009	137				F
RFETS	336	Paper and Rags-Moist[g]	D002, D006-D009, D011, D022, F001-F003, F005-F007, F009	11048	219	10		CW
RFETS	337	Plastic, Teflon, Wash, PVC	D006-D009, D011, D022, F001-F003, F005-F007, F009	2821	64	9		CW
RFETS	338	Insulation and CWS Filter Media	D001, D005, D007, D009, D011, F001, F002	256		85		F
RFETS	339	Leaded Rubber Gloves and Aprons	D008, D022, F001-F003, F005-F007, F009	596		0		CW
RFETS	360	Insulation	D005, D007, D009, D011, F001, F002	474	11	1		F
RFETS	361	Insulation Heel	ROW	2				SI
RFETS	370	Crucible, LECO	ROW	153				INM
RFETS	371	Brick, Fire	D004-D011, F001-F003, F005, F007, F009	1994	12	32		INM
RFETS	372	Grit	D007	5				INM
RFETS	374	Blacktop, Concrete, Dirt, & Sand	D004-D011, D018, F001-F003, F005-F007, F009	1065		49		HD
RFETS	375	Oil-Dri Residues from Incinerator	D004-D011, D022, F001-F003, F005	15				SI
RFETS	376	Cemented Insulation and Filter Media	D005, D007-D009, D011, D022, F001, F002, F005-F007, F009	888		5		F
RFETS	391	Crucible and Sand	ROW	19				INM

Table C-1. Waste Stored at the TSA IS Units (continued)

Generator	IDC	Description	EPA HWNs	55-gal Drums	83-gal Drums	Boxes	Bins	WG[e,f]
RFETS	392	Sand, Slag, and Crucibles	ROW	11				INM
RFETS	393	Sand, Slag, and Crucible Heels	D007	17				SI
RFETS	410	Molten Salts, 30% Pulverized	ROW	22				SW
RFETS	411	Electrorefining Salt	ROW	1				SW
RFETS	420	Ash, Incinerator (Virgin)	D004-D011, D029, F001-F003, F005	16				SI
RFETS	421	Heels, Ash (>2% G/G)	D004-D011, D029, F001, F002, F005	100				SI
RFETS	422	Soot	D004-D011, D029, F001-F003, F005	21				SI
RFETS	430	Resin, Ion Column - Unleached	D001	43	12			CW
RFETS	431	Resin, Leached	ROW	12				CW
RFETS	432	Resin, Leached and Cemented	D007, D008, D029, F001, F002, F005	209				CW
RFETS	440	Glass[g]	D002, D005, D008, D009, D022, F001, F002, F005	1396	86	3		INM
RFETS	441	Raschig Rings, Unleached[g]	D002, D008, F001, F002	1648				INM
RFETS	442	Raschig Rings, Leached	D008, F001, F002	502				INM
RFETS	460	Washables, Rubber, Plastics	F001, F002	6	6			CW
RFETS	463	Leaded Rubber Gloves and Aprons	D008, F001, F002	62	45			CW
RFETS	464	Benelex and Plexiglas	D005, D008, F001	80	6			CW
RFETS	480	Metal, Scrap (Nonspecial Source)	D001, D006-D009, D011, D028, F001-F003, F005-F007, F009	2514	136	3878		LCM
RFETS	481	Metal, Leached (Nonspecial Source)	D006-D009, D011, D028, F001-F003, F005-F007, F009	784		22		LCM
RFETS	490	Filters, CWS	D005, D007-D009, D011, D022, F001, F002, F005-F007, F009	101	9	991		F
RFETS	900	LSA Paper, Plastic, etc.	D004-D011, D029, F001-F003, F005	787	8	7		CW
RFETS	950	LSA Metal, Glass, etc.	D004-D011, F001, F002, F005	425		420		LCM
RFETS	960	Concrete, Asphalt, etc.	D004-D011, F001, F002, F005	1279	27	194		HD
RFETS	970	Wood	D008, F001-F003, F005	30		90		CW
RFETS	976	Bldg. 776 Process Sludge	D006-D009, D022, F001-F003	7		20		SI
RFETS	978	Laundry Sludge	D006-D009, D022, F001-F003			11		SI
RFETS	980	Equipment (May Contain Sludge)	D008, F001, F002	2				UNK
RFETS	990	Dirt	F001-F004	713	7			S
RFETS	995	Sludge	ROW	366	5	8		SI
Various	000[h]	Not Recorded	Unidentified	14472	2511		17	UNK

ANL-E = Argonne National Laboratory – East

RFETS = Rocky Flats Environmental Technology Site

S = Soil

UNK = Unknown

a. The number and type of containers listed in this table are based on current data as of August 19, 2005. Volumes are calculated using the following conversion factors: (a) 0.208 m^3/55-gal drum, (b) 0.314 m^3/83-gal drum, (c) 3.172 m^3/box, and (d) 3.398 m^3/bin.

b. Only two of the IDCs are currently identified as TSCA-regulated waste in RPT-TRUW-12: RFETS 003 and Battelle 203.

c. The number of containers may change, based upon actual waste retrieved.

d. Blanks in the table indicate zero containers present in the inventory.

e. Based upon additional characterization information obtained, the WG may change.

f. The WG may be determined from RTR results.

g. Potential corrosives if liquids exceed 1%.

h. Following RTR, drums with the 000 IDC are typically assigned the 00A or 00B IDC for unknown sludge or other non-debris waste and unknown debris, respectively.

C-1 Chemical and Physical Analyses [IDAPA 58.01.05.009; 40 CFR 265.13(a)]

This section provides data on chemical and physical characteristics of waste stored in the TSA IS Units. The AMWTP waste characterization program extensively uses generator-supplied process information. Verification of generator-supplied data for existing waste stored at the TSA IS Units has been an ongoing activity since 1980. Activities previously conducted for waste verification included:

1. Visits to generator sites, completion of questionnaires, review of generator records, and generator personnel interviews to confirm potential hazards associated with the wastes;
2. Waste sampling and gas generation studies of waste to verify compliance with the WIPP WAC;
3. Detailed characterization using information obtained from waste shipment records, and observing waste-generating processes to verify for each IDC: the waste form, the generation source of the waste, waste packaging and handling practices, waste container preparation, assay methods, and waste constituents;
4. Examination of more than 17,000 containers via RTR; and
5. Return of more than 260 containers to the Rocky Flats Environmental Technology Site (RFETS), formerly the Rocky Flats Plant, to be reopened and visually examined for free liquids (presence and volume), sludges, particulate quantities, presence of pyrophoric, toxic, or corrosive materials, correspondence of contents with previous documentation, and physical description of the waste form.

The results from these studies are documented and serve as the basis for the HWNs assigned in RPT-TRUW-12. The majority of the waste presently stored at the TSA IS Units was generated off-Site at other Department of Energy (DOE) operated facilities. Most of the waste has been received from the RFETS in Colorado. Other sources of waste include the Mound Facility in Ohio, the Argonne National Laboratory-East (ANL-E) in Illinois, the Battelle Columbus Laboratory in Ohio, and the Bettis Atomic Power Laboratory in Pennsylvania, while a portion of the waste was generated on-Site at INL facilities.

Descriptions of containers used for storing waste at the TSA IS Units are provided in Section D-1a(1). Except for some overpacking and repackaging of retrieved containers that are damaged and for containerizing contaminated soil/wood/plastic/tarps from retrieval operations, waste is primarily packaged by non-AMWTP generators. Characterization of the physical forms and chemical compositions of wastes are further detailed in Sections C-2 and C-3.

The following sections summarize the characterization strategy for existing waste. Section C-1a focuses on the characterization of the MW. Section C-2 presents the specifics of the planned waste characterization activities. Additional analyses pertaining to Land Disposal Restrictions (LDR) for final waste forms are discussed in Section C-3.

The sampling and analysis frequencies specified below and in Sections C-2 and C-3 are the frequencies that are implemented when operations first begin. These initial frequencies are statistically re-evaluated to determine whether the sampling frequencies need to be increased or decreased. The statistical method for determining the analytical frequency is done in accordance with the WAC of the facility that will be accepting the waste for final disposal.

C-1a Containerized Wastes [IDAPA 58.01.05.009; 40 CFR 265, Subpart I]

Table C-1 lists the waste that is expected to be retrieved from the TSA IS Units by WG, generator name, and IDC. The HWNs shown for each IDC have been assigned based on a combination of process knowledge gathered from waste generators, waste-generator supplied data, and results of waste sampling and analysis. These data sources and the basis for assigning the HWNs are described in RPT-TRUW-12. See Appendix X of the AMWTP HWMA/RCRA Storage Permit for additional information.

Retrieved waste is characterized using process knowledge, where available, non-intrusive techniques, and/or sampling and analysis. Further information on characterization activities is available in Attachment 2 of the AMWTP HWMA/RCRA Storage Permit. All determinations involved in assigning WGs, IDCs, and/or HWNs are documented in the Operating Record, typically via the Data Management System (DMS).

C-2 Waste Analysis Plan [IDAPA 58.01.05.009; 40 CFR 265.13(b) and (c)]

This waste analysis plan (WAP) describes the methods for conducting characterization of the TSA IS Units waste. The characterization of secondary waste generated during retrieval and other operations conducted in the TSA IS Units is conducted in accordance with this WAP. The objectives of this WAP are to:

- Ensure that sufficient information is available for safe and compliant handling, storage, treatment, and disposition of wastes and residues;
- Establish uniform and comparable waste characterization requirements;
- Generate information regarding the waste (from waste characterization, process knowledge, and waste profiles) in the Operating Record for all wastes stored at the AMWTP MWMUs;
- Ensure AMWTP generated wastes are characterized in accordance with regulatory requirements; and
- Ensure that waste is characterized to meet the disposal waste management unit's WAP.

C-2a Parameters and Rationale [IDAPA 58.01.05.009; 40 CFR 265.13(b)(1)]

Table C-2 summarizes the general parameters evaluated for the AMWTP secondary waste and the rationale for their selection. The general parameters in Table C-2 are selected to ensure that adequate characterization is available to satisfy the requirements of HWMA/RCRA. Waste information is updated based upon waste characterization analysis performed.

The primary method used to characterize waste from the TSA IS Units is process knowledge, which serves as the basis for the HWNs assigned to IDCs. Materials used in the waste stacks (e.g., plywood and tarps) are characterized utilizing process knowledge of the surrounding waste. If process knowledge is not acceptable, then sampling and analysis may be performed. MW generated from normal operations, leaks or spills, and/or closure processes are characterized by the methods described in this section. Leaks and spills are characterized utilizing process knowledge based upon the source of the leak or spill. For example, the same HWNs that are assigned to the source of the leak or spill are assigned to the waste generated during the clean up activities, as applicable. In the event that the source is unknown, or the HWNs are not known for the source, sampling and analysis may be used. All determinations involved in assigning IDCs, WGs, and/or HWNs are documented in the Operating Record, typically via the DMS.

C-2b Test Methods [IDAPA 58.01.05.009; 40 CFR 265.13(b)(2)]

Table C-3 summarizes the minimum characterization parameters, sampling methods, and frequencies used for stored waste and secondary waste. Table C-4 summarizes the characterization/analytical methods that may be used to analyze the secondary waste. These analyses are performed in accordance with the methods specified in the EPA manual "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," current edition (SW-846), American Society for Testing and Materials (ASTM) analytical methods, or other EPA-approved methods. Typically, the analyses are performed at a contracted analytical laboratory.

C-2c Sampling Methods [IDAPA 58.01.05.005 and 58.01.05.009; 40 CFR Part 261, Appendix I and 265.13(b)(3)]

As described earlier, waste generated from normal operations and/or closure processes [e.g., personal protective equipment (PPE), floor sweepings, rags/wipes from routine maintenance/decontamination activities, and equipment] is normally characterized based on the process knowledge of the original waste that comes into contact with the generated waste (see Table C-3). When this is not possible, the waste may be physically sampled (see Table C-5 for sampling equipment and strategies) and analyzed.

Contaminated disposable sampling equipment is managed in the same manner as the waste sampled. Reusable equipment is thoroughly decontaminated prior to reuse. Waste generated from decontamination activities is managed appropriately depending on either process knowledge characterization or the contaminant levels identified through the sampling and analysis.

C-2d Frequency of Analysis [IDAPA 58.01.05.009; 40 CFR 265.13(b)(4)]

The expected frequency of analysis is included in Table C-3. The frequencies listed are those established when operation begins. However, these frequencies may be adjusted up or down, based upon operational experience and the consistency of analytical results, as required to maintain operational efficiencies. A statistical evaluation for determining the frequency of analysis is done in accordance with the WAC of the facility that will be accepting the waste for final disposal. New waste characterization data or more frequent analyses are required when:

- A new waste stream is generated by AMWTP operations, or
- Analytical data show that a waste stream that was expected to have a consistent composition is actually highly variable.

The statistical method for re-determining analytical frequencies for waste is based upon methods described in SW-846, Volume II, Chapter 9.

C-2e Additional Requirements for Waste Generated Off-Site [IDAPA 58.01.05.009; 40 CFR 265.13(c)]

Waste generated off-Site is not received at the TSA IS Units; therefore, this section is not applicable. Any waste received by the AMWTP from off-Site is received at the WSF per Attachment 2 of the AMWTP HWMA/RCRA Storage Permit.

C-2f Additional Requirements for Ignitable, Reactive, or Incompatible Wastes [IDAPA 58.01.05.009; 40 CFR 265.13(b)(6) and 265.17]

No waste in the existing TSA inventory is assigned HWN D003 by RPT-TRUW-12. Historically, IDCs RFETS-480 and -481 were the only wastes for which small amounts of pyrophoric, unoxidized plutonium were identified as potential problems. Further examination of the documented process knowledge (Report No. WM-F1-82-021, "Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes") revealed that this was a concern only for RFETS-481. However, the referenced report states that any pyrophoric plutonium fines present in the waste were washed off the metal debris prior to packaging. Thus, no wastes are currently identified as containing pyrophoric radionuclides. Any IDCs that are determined to contain pyrophoric radionuclides are addressed under the Atomic Energy Act (AEA) and procedures for their management are implemented. However, any such wastes are not designated as HWN D003 reactive wastes since the pyrophoric/reactive characteristic is associated strictly with the AEA regulated portion of the waste.

A waste compatibility evaluation was performed for the AMWTP using the EPA guidance manual "A Method for Determining the Compatibility of Hazardous Wastes," EPA-600/2-80-076, April 1980. The methodology involves classifying IDCs into 41 reactivity group numbers (RGNs) and then, using a chemical compatibility chart, determining the compatibility of each potential binary combination of reactivity groups. The compatibility evaluation covered the waste IDCs identified in RPT-TRUW-12, and the results are presented in, "Chemical Compatibility Evaluation of Transuranic Waste for the AMWTP," BNFL-5232-RPT-ESH-014 (RPT-ESH-14). RPT-ESH-014 is maintained in the Operating Record and updated as new characterization information becomes available, as required. This evaluation determines the incompatibilities for the storage and treatment (e.g., commingling) of the waste IDCs identified in RPT-TRUW-12.

Extensive waste profiles are developed for each IDC documenting the existing characterization information and the results of the compatibility evaluations. As the waste characterization efforts progress, the compatibility evaluations are updated and the wastes are re-categorized into the 41 RGNs to identify any new incompatible binary combinations. If additional incompatibilities are identified or data validation/waste characterization eliminates potential incompatibilities, additional precautions may be implemented or certain practices may be relaxed, as warranted.

Table C-2. Summary of General Parameters for Wastes and the Rationale for Selection

Waste Parameter(s)	Media Type	Rationale for Selection
IDC/WG	Debris and non-debris	Determine if HWNs can be assigned based on RPT-TRUW-12.
HWNs and hazardous constituents	Debris and non-debris	Verify HWNs are included in the TSA IS Units Part A Permit Application.
Reactivity, ignitability, and compatibility evaluations	Debris and non-debris	Identify potential reactivity and health and safety precautions prior to retrieval/storage.

Table C-3. Minimum Characterization Parameters for Newly-Generated Waste

Waste Stream	Sampling Method	Sampling Frequency	Analytes and Analytical Methods
Used PPE, rags, decon debris, etc.	NA	NA	PK—cleanup debris characterization and treatment identical to waste being handled; PCB-contaminated rags are managed per TSCA regulations.
Wood and tarps	NA	NA	PK—characterization identical to waste being handled.
Leaks and spills	NA	NA	PK—characterization identical to waste being handled.
Sample Residues	NA	NA	PK-characterization identical to waste being handled.
Contracted analytical lab absorbed liquid residues	NA	NA	PK-characterization prior to direct ship, identical to waste being handled.

Note: Sampling and analysis may be used if PK is not available and/or adequate.

PK = process knowledge

NA = not applicable

Table C-4. Potential Waste Characterization Methods

Parameters	Analyte	Characterization/Analytical Method [a,b]
IDC/WG	NA	PK, RTR
HWNs	NA	PK and/or waste analysis results
HWMA/RCRA listed wastes, waste constituents, composition	Volatile organics	PK; 8015, 8021, 8260
	Semi-volatile organics	PK; 8100, 8270, 8275, 8410
	Metals	PK; 6010, 7060/7061, 7080/7081, 7130/7131, 7190/7191, 7195/7196/7197/7198, 7420/7421, 7470/7471, 7740/7741, 7760/7761, 7840/7841
Toxicity characteristic constituents (TCLP may be used for final waste form LDR status determinations)	TCLP metals	PK; TCLP 1311 and:
	-Arsenic	PK; 6010, 7060/7061
	-Barium	PK; 6010, 7080
	-Cadmium	PK; 6010, 7130/7131
	-Chromium	PK; 6010, 7190/7191, 7195/7196/7197/7198
	-Lead	PK; 6010, 7420/7421
	-Mercury	PK; 6010, 7470/7471
	-Selenium	PK; 6010, 7740/7741
	-Silver	PK; 6010, 7760/7761
	TCLP organics	PK; 1311 (solids only), 8260, 8270
Other parameters	Free liquids	PK; RTR
	Cyanide, total & amenable	PK; 9010/9012
	Thallium	PK; 6010, 7840/7841
	Antimony	PK; 6010, 7040/7041
	Beryllium	PK; 6010, 7090/7091
	Nickel	PK; 6010, 7520/7521
	Vanadium	PK; 6010, 7910/7911
	Zinc	PK; 6010, 7950/7951
Debris/non-debris	Physical Matrix	PK, RTR, visual examination
Compatibility [c]	Compatibility	PK; waste characterization results, compatibility evaluations; ASTM D5058-90 Test Method A
Ignitability	Ignitability	RTR; PK; 1010, 1020, 1030; ASTM D93, D3828
Corrosivity	Corrosivity	RTR; PK; 9040, 9041

a. Methods are from SW-846 unless otherwise stated. In addition to the methods specified, other EPA-approved methods may be used to obtain the desired analytical information. Instances where alternative analytical methods are used are documented in the Operating Record.

b. For further information on the specified characterization/analytical method, refer to Attachment 2 of the AMWTP HWMA/RCRA Storage Permit.

c. Compatibility determinations are made by a combination of process knowledge; analysis; compatibility evaluations per "A Method for Determining the Compatibility of Hazardous Wastes" (EPA-600/2-80-076), compatibility groupings in 40 CFR 265, Appendix VI, compatibility by hazard class in accordance with DOT; and/or waste-to-waste compatibility testing.

PK = process knowledge

NA = not applicable

TCLP = toxicity characteristic leaching procedure

Table C-5. Methods and Strategies for Sampling Debris/Secondary Waste

Waste Composition	Sampling Equipment	Sampling Strategies
Soils and interstitial media	Shredder, scissors, shears, scoop, spoon Rotating coring device	Shredding, cutting, or size-reducing an appropriately-sized sample. Size-reduced composite sample, where applicable.
Plastic bags, PPE	Shredder, scissors, shears, scoop, spoon	Shredding, cutting, or size-reducing an appropriately-sized sample (size-reduced composite sample, where applicable).
Wood and tarps	Shredder, scissors, shears, scoop, spoon Rotating coring device	Shredding, cutting, or size-reducing an appropriately-sized sample. Size-reduced composite sample, where applicable.
Paper, cloth	Shredder, scissors, shears, scoop, spoon	Shredding, cutting, or size-reducing an appropriately-sized sample (size-reduced composite sample, where applicable).
Drums, cans, furniture, motors/pumps, construction hardware (nails, screws, etc.)	Drill, rotating coring device, surface swipes, grab sample	Size-reduced composite sample, grab sample, or swipe analysis.

C-3 Waste Analysis Requirements Pertaining to Land Disposal Restrictions [IDAPA 58.01.05.009 and 58.01.05.011; 40 CFR 265.13 and 268.7]

MW managed at the TSA IS Units that is destined for disposal at waste management units other than the WIPP is assumed to be restricted waste subject to LDR requirements. Information presented in this section describes how the AMWTP characterizes, documents, and certifies LDR subject wastes.

In cases where the AMWTP determines that an LDR waste does not meet the applicable treatment standards set forth in IDAPA 58.01.05.011 (40 CFR 268, Subpart D), or exceeds the applicable prohibition levels set forth in IDAPA 58.01.05.011 (40 CFR 268, Subpart C), the AMWTP provides a one-time written notice with the initial shipment. The following information is included with the initial waste shipment:

- HWNs and shipping information;
- Notification that the waste is subject to LDRs and listing the constituents of concern for HWNs F001-F005, and F039, and underlying hazardous constituents (UHCs), unless the waste is treated and monitored for all constituents. If all constituents are treated and monitored, there is no requirement to list those constituents on the LDR notice;
- The notice must include the applicable wastewater/non-wastewater category {see IDAPA 58.01.05.011 [40 CFR 268.2(d) and (f)]} and subdivisions made within a HWN based on waste-specific criteria (such as HWN D003 reactive cyanide);
- Waste analysis data when available;
- Notification for hazardous debris, indicating that the hazardous contaminants are being treated to comply with 268.45; and
- For contaminated soil subject to LDRs as provided in 268.49(a), the constituents subject to treatment as described in 268.49(d), and the following statement:

  > "This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with] soil treatment standards as provided by 268.49(c) or the universal treatment standards."

Copies of all LDR-required notices are retained as part of the Operating Record per IDAPA 58.01.05.009 (40 CFR 265.73).

C-3a Waste Characterization [IDAPA 58.01.05.009 and 58.01.05.011; 40 CFR 265.13 and 268.7]

For the characterization of secondary wastes generated at the TSA IS Units, existing process knowledge/waste characterization information supplemented by waste verification and analysis information are used to make LDR determinations. The supporting data used to make LDR determinations are maintained in the Operating Record, as described earlier.

C-3b Sampling and Analytical Procedures [IDAPA 58.01.05.009 and 58.01.05.011; 40 CFR 265.13(b)(2) and (3), and 268.7]

LDR waste forms generated by the AMWTP are sampled and analyzed (Tables C-4 and C-5) using only EPA-approved methods, as stated in Sections C-2b and C-2c

C-3c Frequency of Analysis [IDAPA 58.01.05.009 and 58.01.05.011; 40 CFR 265.13(b)(4) and 268.7]

LDR wastes are characterized at frequencies specified in, or designed to meet, the selected waste management unit's WAP. In accordance with IDAPA 58.01.05.009 (40 CFR 265.13), wastes treated at the AMWTP are subjected to a full characterization whenever:

- A new waste stream is generated or received,
- A generating process changes, or
- Waste characteristics exhibit temporal variations.

Analytical frequencies for LDR purposes are re-evaluated in accordance with the WAC of the facility that will be accepting the waste for final disposal.

SECTION D

PROCESS DESCRIPTION

(For Information Only)

TABLE OF CONTENTS

LIST OF EXHIBITS

D. PROCESS DESCRIPTION

D Process Information and Building Design

Process Information

Generally, the TSA-1/TSA-R waste stack appears as a mound of soil on the north end and tarp covered containers on the south end. The soil mound is relatively flat across the top, and then slopes down. The TSA-2 soil mound merges with the east side of the TSA-1 mound. The waste containers on TSA-1 and TSA-2 consist primarily of 55-gal drums and fiberglass reinforced plywood (FRP) boxes, while the waste containers on TSA-R consist primarily of 55-gal drums, metal and FRP boxes, and metal bins.

During the initial storage of waste on TSA-1, waste drums were stacked horizontally with approximately nine drums high at the centerline of the pad and to a lesser height near the east/west edges of the pad. In addition, boxes were used to outline the sides of each cell on the asphalt pad. Beginning with Cell 5, the drums were stacked vertically. These containers were stacked about 16-ft high up to a point within about 30 ft of the asphalt pad east/west edges, where the stack height was limited to about 12 ft. Typically, a sheet of wood was placed between the layers of vertical drums in order to stabilize the stacking surface and increase overall stack rigidity. As the TSA-1 pad was filled, the waste containers were covered with wood, a tarp or plastic sheeting, other miscellaneous materials, and 3 to 4 ft of soil on top with sloped side burden soils. Side burden soil was originally placed along the sides of each cell and between adjacent cells to act as a firebreak. Side burden soil averages around 16-ft thick to the top edge of the cells, although some areas have nearly vertical slopes held in place by wooden retaining walls. The soil in the area between cells is about 4-ft thick.

Waste stored on the TSA-2 pad was configured in a similar manner. See Exhibit D-1 for an example waste stack configuration.

TSA-R Cell 1 is a unique configuration in that it contains primarily cargo containers stacked two high that are loaded with 55-gal drums. Metal bins stacked two high form the perimeter of this cell. Also, Cell 1 is the only cell on TSA-R covered with wood, tarp, and soil; Cells 2 and 3 are covered only with plastic or a tarp.

Soil Removal

The retrieval process starts with the removal of overburden soil (i.e., the soil on top of the waste cells) in order to gain access to a given section of waste containers. Before removal, a portion of the soil

is sampled for analysis of contaminants (e.g., organics, PCBs, heavy metals, and radionuclides) and surveyed for radiological contamination. The majority of the soil is expected to be uncontaminated (estimated at 95% of the total volume of the overburden). Soil identified as uncontaminated is removed in two phases. Initially, the bulk of the uncontaminated soil overburden is removed with equipment on top of the waste stacks. The equipment is used to transport soil from the top of the waste stack and into a transport vehicle. Soil is managed appropriately, depending upon soil sampling results and as directed by DOE. Dust suppression within the TSA-RE is achieved by using water spray and/or a surfactant.

The final 6 to 12 inches (in.) of uncontaminated overburden soil, side burden soil, and interstitial soil may be removed using various vacuum systems or other equipment. Occasionally, during soil removal operations, contaminated soil may be encountered. Contaminated soil may be removed and deposited into a container using designated soil vacuum systems or other equipment.

Removal of Plastic, Tarp, Wood, and Miscellaneous Materials

Once the overburden soil has been removed, the plastic, tarp, and wood may be removed. In addition, miscellaneous materials (e.g., steel I-beams, wooden joists, etc.) may also be encountered which require removal. Upon removal, these materials may be returned to DOE for further use, or the material may be deemed to be a solid waste. At or near the dig face, miscellaneous materials, tarp, plastic, soil, and/or wood deemed to be a solid waste, hereinafter referred to as retrieval generated waste (RGW), is visually inspected [i.e., perform a hazardous waste determination (HWD) as described below] to determine if the RGW has come into contact with MW. If visual evidence indicates that the RGW may have come into contact with MW then the RGW may be partially sized, if required, at that time to remove the MW portion of the waste item from the non-MW portion, prior to placing the MW portion into a HWMA/RCRA compliant temporary accumulation area or a storage area.

Performing a HWD on RGW

A HWD is performed on all RGW managed during retrieval activities. This HWD is primarily based upon visual examination for evidence of contact with released MW (e.g., staining) from the containers in storage at the TSA IS Units. Additionally, a HWD, including sampling and analysis as required, is conducted to verify that the waste items themselves are not inherently hazardous. All HWD related documentation is maintained in the Operating Record.

All RGW is visually examined for evidence of staining at the point of generation, and the surrounding area is inspected to determine if any released MW has come into contact with the RGW. Visual evidence of staining from weathering (e.g., rainwater, condensation, etc.) or corrosion (e.g., rust) of containers that appears on RGW will not be considered MW or hazardous waste (HW) unless there is

additional evidence to support a release. Additionally, a radiological survey is performed to determine if the RGW is contaminated with radiological constituents. Areas of radiological or hazardous constituent contamination may be fixed to the RGW using paint or other fixatives to prevent the spread of contamination during subsequent management activities. Based upon the visual examination and radiological survey results, a HWD is performed as described below:

- **Not Regulated Under HWMA/RCRA With No Radiological Contamination.** If there is no visual evidence of staining, no radiological contamination is detected, and the RGW is not inherently hazardous, then the RGW is not regulated as HWMA/RCRA waste, and will be dispositioned appropriately.

- **Regulated Under HWMA/RCRA With No Radiological Contamination.** If visual evidence of staining is found on the RGW and there is no evidence of radiological contamination, then that portion of the waste item with visual evidence of staining is declared as HW. At this point, the RGW may be sized to remove the HWMA/RCRA-regulated portion from the unregulated portion of the waste item. Sizing of RGW may include using a shredder or other mechanical means to size the waste, if required. Sized RGW is placed into an appropriate container pending further disposition (e.g., storage, treatment, additional sizing, etc.), and the HWMA/RCRA-regulated portion of the waste stream is assigned the applicable HWNs based upon process knowledge and analytical data, as applicable. The RGW that is not regulated by HWMA/RCRA is managed appropriately.

- **Regulated Under HWMA/RCRA With Radiological Contamination.** If radiological contamination and visual evidence of staining is found on the RGW, then that portion exhibiting evidence of staining and radiological contamination is declared MW. At this point, the RGW may be sized to remove the HWMA/RCRA regulated portion from the unregulated portion of the waste item. Sized MW is placed into appropriate containers pending further disposition, and the applicable HWNs are assigned to the HWMA/RCRA regulated portion based upon process knowledge and analytical data, as applicable. The RGW that is not regulated by HWMA/RCRA is managed appropriately.

- **RGW Declared MW.** If it is impractical, from an operational perspective, to use visual evidence of staining (i.e., it is difficult to determine if the staining on RGW is due to contact with MW, weather, or other degradation resulting from long term storage), then the RGW may be classified as MW and managed as described above, or sampling and analysis may be performed to confirm whether or not the RGW is MW.

- **Not Regulated Under HWMA/RCRA With Radiological Contamination.** If there is no visual evidence of staining, but radiological contamination is present, then the RGW may be managed as ROW.

Waste Container Handling

After the soil and RGW have been removed, a portion of the waste stack is exposed. Waste containers are then typically retrieved as follows:

- Survey the area around the container for radiation.
- Assess the integrity of the container. Visually inspect the container before lifting it off the stack. Evaluate conditions such as corrosion of the container, stains on wood, etc. Repair or overpack damaged containers as necessary.
- All external areas of a container that are suspected of being contaminated with hazardous constituents may be painted in order to fix the contamination to the container. Containers with large amounts of external contamination of hazardous constituents may be overpacked.
- Lift the container up a few inches to verify the integrity of the underside.
- Remove the container from the waste stack.
- Transfer the container from the dig face to the inspection station or to a retrieved waste storage area (RWSA). Containers with questionable integrity are placed into an RWSA, and secondary containment is provided.
- Inspect the container for identification information.
- Perform rapid assay scanning, as applicable.
- Weigh box containers (e.g., boxes, bins) and enter relevant information into the Operating Record.
- Apply barcode labels and enter container identification information into the Operating Record. If original labeling can be used to identify the container, query the existing database to identify the radioactive and hazardous constituents in the waste container.

After retrieval, containers are typically loaded and transferred to the appropriate waste management unit, usually the characterization facility (WMF-634).

Container Integrity

During retrieval activities, a visual inspection is performed to verify the integrity of a container to determine if the container requires further management prior to additional handling or prior to transferring the container out of the TSA-RE. Containers may require further management due to breaches or poor container integrity. Based upon the outcome of the visual inspection, a number of actions may be taken. The primary action is to repair the container integrity deficiencies (e.g., breaches, structural defects, etc.) to the extent possible using various materials (e.g., adhesive tape, polyethylene patch with glue, metallic patch with glue, wood, etc.) without overpacking the container. All actions taken to repair the integrity of a container are recorded in the Operating Record. If the integrity of a container is such that it causes a threat of a release and this threat cannot be reduced such that AMWTP personnel can safely manage the container, then the container will be overpacked or repackaged.

Breached Container and Leak/Spill Management

During retrieval operations, it is expected that breached containers will be discovered on a routine basis. This expectation is based upon the estimated retrieval rate (approximately 120 containers per day) from the TSA IS Units, and the contractual assumption that approximately 1% of containers stored at the TSA IS Units are breached. The number of breached containers estimated to be in the TSA IS Units is based upon past retrieval activities. Given the estimated retrieval rate and assumed breached container totals, it is expected that operations personnel will discover a breached container at least once a day. Due to the expectation that a breached container, and any subsequent releases resulting from a breach, are encountered daily, managing breached containers and any corresponding clean up activities is considered a routine operation. Upon discovery of a release, routine retrieval operations within the immediate area will be temporarily suspended pending investigation into the extent of the release. AMWTP personnel will evaluate the parameters of the release, and document all relevant information in the Operating Record. Typical items that may be documented include the location of the release, estimated volume of the release, correlation to container(s) involved in the release, activities performed and equipment used to manage the release, etc. Additionally, any methods used to clean, decontaminate, and/or fix a release to the asphalt pad of the TSA IS Units will be noted in the Operating Record. A determination will then be performed to determine if the TSA IS HWMA/RCRA Contingency Plan must be implemented. Based upon the extent of the release, one of six responses will be taken:

- **Release of MW to soil, which requires the implementation of the TSA IS HWMA/RCRA Contingency Plan or notification of the State of Idaho Department of Environmental Quality (DEQ).** If at any time, HWMA/RCRA-regulated constituents are released to the soil located off of the outside edges of the TSA IS Units asphalt pad or to the soil located under

the TSA IS Units (through a crack in the asphalt pad) then the TSA IS HWMA/RCRA Contingency Plan will be implemented, or the DEQ will be otherwise notified of the proposed path forward, if the release is minor. The TSA IS HWMA/RCRA Contingency Plan is only implemented for "new" or observed releases to the soil. Historical releases to the soil do not require the implementation of the TSA IS HWMA/RCRA Contingency Plan.

- **Small release to the TSA IS Units managed under normal operating procedures, which does not require the implementation of the TSA IS HWMA/RCRA Contingency Plan.** If the release is small, localized, does not pose a threat to human health or the environment, and does not require the use of special safety equipment to facilitate cleanup (such as a containment tent), then implementation of the TSA IS HWMA/RCRA Contingency Plan is not required and normal operating procedures, which includes a spill response procedure, may be used to address these small releases.

- **Large release to the TSA IS Units managed under normal operating procedures, which does not require the implementation of the TSA IS HWMA/RCRA Contingency Plan.** If the release is large, has the potential to threaten human health and/or the environment, does not exceed the bounds of safety equipment designated for routine operations, and is within normal operating parameters [as determined by the AMWTP Emergency Coordinator (EC) and/or Environmental Personnel], then implementation of the TSA IS HWMA/RCRA Contingency Plan is not required and normal operating procedures may be used to address the release. Additional safety equipment [e.g., supplied air respirators, high efficiency particulate air (HEPA) ventilation system, tent for enclosing an area, etc.] may be required. Any additional safety equipment required for mitigating large releases as part of routine operations will be readily available and not classified as emergency equipment.

- **Significant release not managed under normal operating procedures, which may require the implementation of the TSA IS HWMA/RCRA Contingency Plan.** The release is significant, has the potential to threaten human health and/or the environment, and exceeds the bounds of safety equipment designated for routine operations or is determined to be outside of normal operating parameters (as determined by the AMWTP EC and/or Environmental Personnel). In this case, implementation of the TSA IS HWMA/RCRA Contingency Plan may be required. Additional safety equipment (e.g., supplied air respirators, HEPA ventilation system, tent for enclosing an area, etc.) may also be required.

- **Fire or explosion that involves MW, which requires the implementation of the TSA IS HWMA/RCRA Contingency Plan.** This case involves a fire and/or explosion that occurs in

the TSA IS Units which involves MW or is in the immediate vicinity of MW, or threatens human health and/or the environment. In this case, implementation of the TSA IS HWMA/RCRA Contingency Plan is required.

- **Release that exceeds the emergency action limits (EALs), as specified in the AMWTP Emergency Plan/Contingency Plan, and requires the implementation of the TSA IS HWMA/RCRA Contingency Plan.** If at any time the EALs in the AMWTP Emergency Plan/Contingency Plan are exceeded, then the TSA IS HWMA/RCRA Contingency Plan will be implemented.

In all situations where evidence indicates that a release of HWMA/RCRA-regulated constituents has occurred, the TSA IS HWMA/RCRA Contingency Plan will be implemented, as described above. However, if there are no visible signs of a release of HWMA/RCRA-regulated waste (e.g., liquids, debris, etc.) and only radiological contamination can be found, then implementation of the TSA IS HWMA/RCRA Contingency Plan is not required.

Decontamination of Equipment

During retrieval activities, there is the potential for equipment (e.g., shovels, forklifts, loaders, trailers, etc.) to become contaminated with MW constituents by coming into contact with MW. Before any equipment is placed out of service, stored for later use, disposed, or removed from the TSA-RE; the equipment is visually inspected for signs of staining and is surveyed to determine if radiological constituents are present. Based upon these results, the equipment is cleaned and/or decontaminated, as required, using standard radiological practices for decontaminating equipment. Any HWMA/RCRA-regulated wastes generated during cleaning/decontaminating are managed appropriately.

RWSA

Upon retrieval of a container from the TSA IS Units, the container may either be placed onto a conveyor pending transfer out of the TSA-RE, or the container may be placed into a RWSA. A RWSA may be located on any portion of the asphalt pad of the TSA IS Units, which has been cleared (e.g., removal of soil, wood, etc.) and designated for use as a storage area. All containers placed into a RWSA are managed in accordance with the applicable requirements of IDAPA 58.01.05.009 (40 CFR 265).

At any point in time, there may be up to five types of containers managed in a RWSA. Containers will not be tracked by container type, as described below, and all types of containers may be managed within the same RWSA as long as the segregation, separation, and secondary containment requirement, as described below, are met. Type I containers are containers of waste that have been removed from the TSA IS Units waste stacks and placed directly into a RWSA. Typically, limited

information about a container's contents is known when the container is retrieved from a waste stack depending upon the condition of the container and the existing marking/labeling, including metal tags, security seals, etc., that provide information on the contents of the container. Based on this information, separation or segregation of containers is not performed unless information from any marking or labeling provides sufficient information to conclude that separation/segregation is required. See Section F-5 for additional information on separation/segregation requirements. Secondary containment is not provided for Type I containers unless the integrity of the container is degraded to a condition such that secondary containment is required to contain any potential releases from the container.

A Type II container is a container of waste that has been removed from a TSA IS Unit waste stack, transported out of the TSA-RE, and has been transferred back to a TSA IS Unit. At a minimum, this type of container has been characterized to determine specific information about the container's contents (e.g., free liquids, IDC, WG, HWNs, etc.). Based upon the characterization information obtained, segregation, separation, or secondary containment may be required. All Type II containers identified as containing free liquids are provided with secondary containment, typically using portable secondary containment pallets.

A Type III container contains newly-generated waste, generated from an AMWTP related process. Characterization information for Type III containers is based primarily on process knowledge. From this characterization information, separation/segregation of containers is performed, as required. Type III containers that contain free liquids are provided with secondary containment.

Type IV containers contain non-AMWTP newly-generated waste received from generators on or off the INL or contain "true-unknown" existing waste, as defined in Section F-5a. Type IV containers are only accepted for management at the TSA IS Units after notification to the DEQ has been provided. Type IV containers are separated, segregated, and/or provided with secondary containment, as required.

Type V containers contain existing waste received from AMWTP treatment processes or existing waste stored in the Type II Modules and/or Type I Module. Typically, these containers are received from activities such as sorting, sizing, absorbing, supercompacting, sampling, packaging, etc. in the AMWTP MWMUs. Type V containers are separated, segregated, and/or provided with secondary containment, as required.

Waste Loading and Transport

Retrieved Waste

Once a container has been retrieved and inspected and all appropriate information has been entered into the Operating Record, the container is then typically transported by conveyor to a loading area. This loading area may or may not be located on the asphalt pad of the TSA IS Units. All portions of the conveyor that are not located on the asphalt pad have a secondary containment system located directly under the conveyor. Containers located on a transport vehicle are not required to have secondary containment. The containers, staged off of the TSA IS Units on the conveyor and associated transport vehicles, are subject to daily inspections for leaks/spills and may only be staged for a maximum of 10 calendar days. The 10-day staging period starts when a barcode is applied to a container and the barcode is scanned at the inspection station. The container must be transferred to an approved HWMA/RCRA unit before the end of the 10^{th} calendar day.

MW Off-Site Shipment

Once a container has been characterized and determined to be MW that is LLD, it may be processed for shipment to an off-Site facility in the TSA IS Units. This process includes labeling, DOT packaging, storage, loading/unloading of transport packages and vehicles, and staging of transport packages and vehicles prior to off-Site shipment. For the purpose of this section, packaging is referred to as DOT approved packages (e.g., CONEX box, cargo container, etc.), and is not meant to imply a treatment process regulated by HWMA/RCRA.

Loading of transport packages and vehicles may occur on or off the TSA IS Unit asphalt pads. Locations off of the asphalt pads include anywhere within the TSA-RE building structure, or any asphalted area outside but adjacent to Door #7 or #9 of the TSA-RE building structure. See Exhibit B-3 for additional information on the TSA-RE building structure door locations. Containers are loaded into transport packages, which may be staged on the ground, or onto transport vehicles, as necessary. Once loaded, transport packages and vehicles may be staged on the asphalt directly south of Pad 2 or west of the TSA-RE building structure. All loaded transport packages will have a hazardous waste manifest for that transport package. To facilitate shipment activities, any single trailer or transport package may be stored for up to 10 calendar days. Three-ft aisle space is provided on all sides of each transport vehicle or transport package to allow personnel and/or equipment access for visual inspection, monitoring, and emergency response activities. The west side of the TSA-RE and the west side of the Type I Module are utilized to store TRUPACTs loaded on trailers. See the AMWTP HWMA/RCRA Storage Permit for

additional information on the staging locations for the TRUPACTs loaded on trailers. The maximum staging capacity for the west side of the TSA-RE, the west side of the Type I Module, and the south side of Pad 2 is such that any combination of loaded transport trailers, transport packages, and loaded TRUPACTs on trailers may be staged, as long as the total number of trailers and transport packages does not exceed a total of 50 units (i.e., transport packages, loaded transport trailers, or loaded TRUPACTs on trailers) between the previously mentioned areas. Loaded TRUPACTs on trailers may not be staged on the asphalted areas adjacent to Door #7 or #9 of the TSA-RE. The trailers and transport packages are inspected each day for leakage, and corrective actions are initiated as required. If any leakage is noted, spill response will be completed in accordance with Section G and the closure of the trailer/transport package staging areas will be addressed during closure of the TSA IS Units.

Building Structure

The TSA-RE is a "T" shaped, engineered metal building with an area of about 313,000 ft^2. As can be seen on Exhibit B-3 in Section B, the TSA-RE encloses the TSA IS Units. The primary structure, which is oriented north-south, encloses TSA-1 and TSA-R and is approximately 200-ft wide by 1,180-ft long, with an average eave height of approximately 35 ft. A secondary structure encloses the earthen covered portion of TSA-2, which is approximately 185-ft wide by 430-ft long, with an eave height of approximately 33.5 ft. More detailed information on TSA-RE building and the TSA IS Units are as follows.

Base

The TSA IS Unit pads are composed of a 2-to-4 in. thick asphalt surface on a compacted gravel base. Each pad slopes laterally toward the center-line across the width and longitudinally at a grade of approximately 1%. TSA-1 and TSA-2 are sloped to the north, and TSA-R is sloped to the south. The slope helps prevent water from accumulating around the stored waste. The TSA-RE building is located on a continuous concrete grade beam foundation around the perimeter of both the primary building and the TSA-2 pad enclosure.

Walls and Ceilings

The entire TSA-RE is constructed of metal siding and roofing installed over a steel frame. The enclosure is insulated. A continuous sheet metal liner is affixed to the interior of the steel girts for the wall sections and to the underside of purlins that span between the bottom chords of the roof trusses for the ceilings. The structural steel columns are framed and enclosed with a sheet metal liner.

Doors and Entry Structure

Twelve overhead doors are installed in the primary enclosure; eleven spaced along the west wall, and one in the east wall near the north corner. Two overhead doors are installed in the TSA-2 pad wing, one in the east wall, and one in the south wall. One portable entry structure is available and is designed to connect to the TSA-RE building, enclosing the overhead door and personnel access door nearest the active work area during retrieval operations. Eleven personnel access doors are located along the west wall of the primary enclosure, while seven personnel access doors are located along the east wall. The TSA-2 pad enclosure has five personnel access doors; two on the south wall and three on the east wall.

Utilities

Utilities include an electrical distribution; standby power; propane heating; lighting; instrument air; emergency notification; DMS access; potable water; heating, ventilation, and air conditioning (HVAC); and sewer systems.

Heating System

No general space heating is provided for the TSA-RE. Special purpose rooms that are routinely occupied by personnel, and/or rooms that house equipment that must be freeze protected are provided with locally mounted and controlled space heaters. The rooms in the change room area, the head-end room, the compressor room, and the fire riser rooms are all provided with space heaters.

Ventilation System

No general ventilation of the TSA-RE building is provided. An extensive ventilation system is installed, but it is of limited capacity. Localized ventilation may be provided during retrieval activities by equipment such as a HEPA-filtered tent.

Process Drainage

Process drainage for the TSA-RE is designed to collect runoff from the fire water system. The system encompasses four separate systems, each terminating in a 20,000-gallon (gal) double-walled collection tank located underground outside the enclosures perimeter. Cast-in-place concrete drainage troughs lead to collection basins, which are served by 12-in. diameter drainage pipes that end at the collection tank. The drainage trenches are covered with louvered sheet metal grating over their full length, except at doors, where fabricated steel or precast concrete covers protect the trenches.

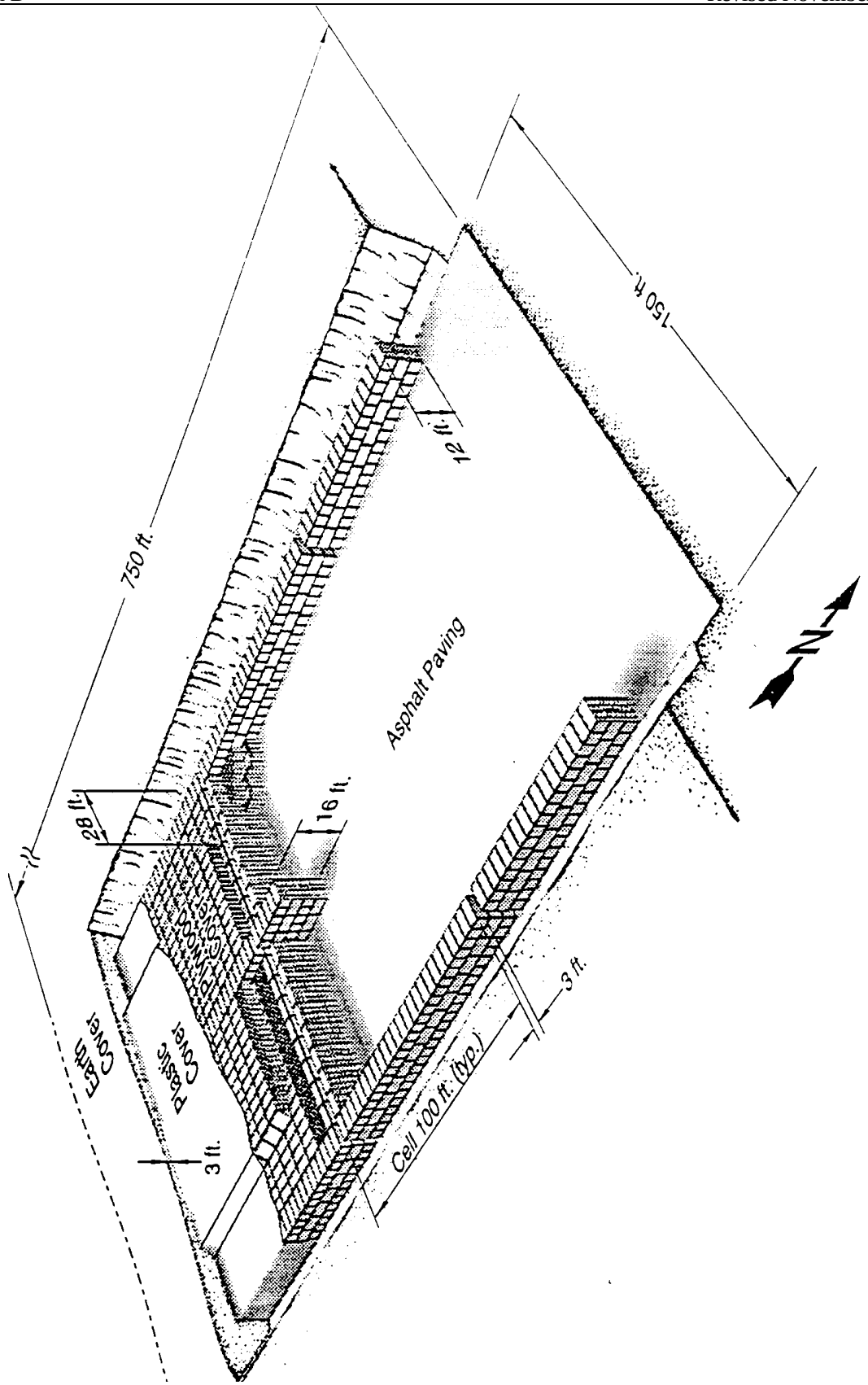


Exhibit D-1. Example Waste Stack Configuration

D-1 Containers

D-1a Containers with Free Liquids

The waste stored at the TSA IS Units generally contains either (1) no free liquids or (2) free liquids at less than 1% of the total container volume. However, storage of containers with free liquids is expected. Containers with known free liquids, as verified by RTR or visual examination, are provided with secondary containment, typically by using portable secondary containment pallets, when stored in a RWSA. See Section D for additional information on the requirements for storing containers in an RWSA.

D-1a(1) Description of Containers [IDAPA 58.01.05.009; 40 CFR 265.171 and .172]

The containers, which are expected to be encountered during retrieval operations from the TSA IS Units, are listed below.

1. The 30-gal drum (DOT 7A Type A, or equivalent) is a carbon-steel drum with a removable head, gasket, and bolt ring.
2. The 55-gal drum/90-mil high-density polyethylene (HDPE) liner combination (DOT 7A Type A, or equivalent) is a carbon-steel drum with a removable head, gasket, and bolt ring. The liner is constructed of 90-mil molded polyethylene, and has an open head with a sealable positive closure lid.
3. The 83/85-gal overpack drum is a carbon-steel drum with a removable head, gasket, and bolt ring.
4. The DOT 6M, or equivalent, packaging consists of a 55-gal drum or a 100-gal drum with fiberboard centering media and a DOT Specification 2R, or equivalent, inner containment vessel. The drum head, gasket, and bolt ring are removable. DOT 6M, or equivalent, packaging is acceptable for waste storage if the drum has a mechanism for filtered venting of the interior.
5. The DOT 2R, or equivalent, containment vessel is made of stainless or carbon steel per 49 CFR 178.104(3)(b). The height of the polyethylene liner is 7.5 in. less than the inside height of the drum. The maximum inside diameter of the container is 5.25 in. For Bettis Atomic Power Laboratory shipments, 5-in. Schedule 40 piping has been approved for use as a container. The Schedule 40 pipe ends are fitted with a screw-type closure or flanges to provide containment. One or both of the Schedule 40 pipe ends may also be permanently closed by a welded or brazed plate to provide containment.

6. The DOT 7A, or equivalent, steel bin (M series) meets the requirements of 49 CFR 178.350 (DOT 7A, or equivalent). It is a rectangular steel bin made of 12-gauge steel used for shipment of waste or DOT-approved containers of waste. When used as an overpack, it will hold eight 55-gal drums in two layers of four drums each, or 10 30-gal drums in two layers of five drums each. The bins are nominally 4-ft wide by 5-ft long by 6-ft high, although this series of bins covers a range of sizes and some structural variations.
7. The DOT 7A Steel Box, or equivalent, was designed at the Sandia National Laboratory. These boxes come in a range of sizes ranging from 68-to 88-in. long, 48-to 54-in. wide, and 71-to 98-in. high. The container is welded closed, once filled with waste.
8. The DOT 7A Steel Box TX-4, or equivalent, has been developed by the Lawrence Livermore National Laboratory for use in packaging CH TRU waste. The TX-4 is a mild-steel welded-construction box with a gasketed bolted closure. The container is fabricated from a steel sheet supported by an external framework of four 4-in. by 2-in. square tubing (the container corners are reinforced with 2-in. angle stock, skip welded). Four 3-in. steel channels support the container, allowing standard forklift handling. This box type comes in a range of sizes: 74-to 92-in. long, 46-to 52-in. wide, and 36-to 57-in. high. This type of box may be lined with two 40-mil or one 80-mil polyvinyl chloride (PVC) liners. The top of the liner is folded over the top and outside of the box and secured with duct tape.
9. The DOT 7A Type A Mark III box, or equivalent, is constructed of concrete with an integral polyethylene liner and a lead liner installed if necessary. The container is 96-in. long by 48-in. wide by 48-in. high. The polyethylene liner has a height of 5 in. less than the inside height of the concrete container. The polyethylene liner can be thermally sealed using electric current, and the concrete lid can be bolted down.
10. The DOT 7A, or equivalent, 55-gal drum is a carbon-steel drum constructed of 16-gauge material with a removable lid, gasket, and bolt ring.
11. The wooden boxes are constructed of plywood. At the time of use in the 1970s, these boxes met the DOT 19A packaging requirements. The boxes come in a range of sizes, but are generally 7-ft long by 4-ft wide by 2-or 4-ft high. The lids are either nailed or glued shut.
12. The FRP boxes are constructed in the same manner as the wooden boxes described above with the same range of dimensions. However, the exterior of the box is coated with at least 1/8 in. of fiberglass-reinforced polyester.
13. International cargo container, or equivalent, is typically of steel construction and comes in a ranges of size, but are typcially 20-ft long by-8 ft wide by 8-ft high.

After retrieval, characterization, and/or treatment, containers may be brought back into the TSA IS Units for storage. Some of the containers that may be used to store waste in the TSA IS Units after retrieval, characterization, and/or treatment include those containers listed above in addition to the containers listed below.

1. The TRU packaged transporter (TRUPACT) II Standard Waste Box (SWB) is a DOT 7A Type A, or equivalent, container, nominally 71-in. long by 55-in. wide by 37-in. high. This box is constructed of steel. This box may be used to package waste or to overpack any container that does not meet the WAC as long as the dimensions are compatible. The lid is bolted to the box.
2. The steel overpack box may be used for overpacking boxes. This box is constructed of carbon steel supported by an external framework of four 4-in. by 2-in. square tubing (container corners are reinforced with 2-in. angle stock). Two 2-in. by 1-in. steel channels support the container for forklift access. The dimensions of this box are 92-in. long by 56-in. wide by 55-in. high. A variety of other sizes may be used; special sizes are fabricated to handle a variety of overpack needs.
3. The UN1A2, or equivalent, 30-gal drum is a carbon-steel drum with a removable head, gasket, and bolt ring.
4. The UN1A2, or equivalent, 55-gal drum with 90-mil HDPE liner combination is a carbon-steel drum with a removable head, gasket, and bolt ring. The liner is constructed of 90-mil molded polyethylene and has an open head with a sealable positive closure lid.
5. The UN1A2, or equivalent, 55-gal drum is a carbon-steel drum with a removable head, gasket, and bolt ring.
6. The UN1A2, or equivalent, 83/85-gal overpack drum, that may include a roto-mold liner, is a carbon-steel drum with a removable head, gasket, and bolt ring.
7. The DOT 7A Type A, or equivalent, 71-gal drums are square steel drums with one of the following; a crimp type gasketed cover; removable head with gasket and bolt ring; or fully removable head with gasket and bolted closure.
8. The 55-gal Recycled Shielded Storage Container (RSSC), or equivalent, has stainless-steel inner and outer shells that encapsulate lead shielding with bolt-on end plates and rings. The RSSC is approximately 44.5-in. high by 36.1-in. maximum outside diameter.

9. The DOT 7A Type A, or equivalent, "B" series of filtered and non-filtered boxes come in various sizes, including the B-25 style bin (4.3-ft high by 4-ft wide by 6 ft-long) and B-52 style bin (3.5-ft high by 4.5-ft wide by 4.5-ft long).
10. The RH-TRU Shielded Overpack, or equivalent, are 30- & 55-gal drum overpack assemblies that are 25 in. inside diameter and 32 in. outside diameter steel cylinders with bolted steel flanges. This overpack design contains no lead as steel is used to provide shielding.
11. The AMWTP puck drum, or equivalent, is a carbon-steel container with a removable lid, gasket, and bolt ring. The drum is approximately 32-in. high with a 31-in. inner diameter. The puck drum has a capacity of approximately 100 gal and meets the WIPP stacking criteria.
12. The Ten-Drum Overpack (TDOP) is a welded steel, right circular cylinder, with a removable bolt lid on one end. The TDOP may be loaded directly or it may be loaded with 10 55-gal drums, up to six 85-gal drums, or one SWB.
13. The AMWTP LLW export box, or equivalent, is constructed of carbon steel. The container is approximately 96-in. wide by 48-in. high, and may be reinforced with steel bracing on the inside of the container.
14. Any other approved DOT container.

Exceptions to the above-specified containers do occur and are called nonstandard waste containers. These exceptions generally involve variations in dimensions and weight limits. Non-standard waste containers may be approved by the appropriate AMWTP personnel on a case-by-case basis.

After retrieval, all containers are labeled with HW labels, barcodes, appropriate radiation labels, and appropriate hazard labels as required. The barcode label is used to identify a container’s location and its contents. Radiation labels are used to identify the level(s) of radioactivity in the container. Hazard labels are used to identify specific chemical characteristics of the waste. Additional labels may be used to indicate the generator of the waste stream, the date of generation, the container number the lot number, or other data. Typical labels that may be affixed to containers include:

- Generator's name,
- Generator's address,
- Hazardous Waste,
- INL Tracking Numbers,
- Barcode (required),

- Awaiting analysis,
- Container pack date, and
- Generation date.

Containers with unknown contents are labeled with the words "Hazardous Waste" and a barcode label. Additional labels are affixed to those containers with unknown contents, as new information becomes available. For wastes received from off-site and subject to LDR requirements, the labels also include the date the wastes were placed into storage at the TSA IS Units.

D-1a(2) Container Management Practices [IDAPA 58.01.05.009; 40 CFR 265.173]

After retrieval, containers are managed and stored in a manner to prevent container rupture or leakage and to minimize radiation exposure to personnel. All containers are kept closed during retrieval, transfer, storage, and handling. AMWTP personnel follow procedures and instructions that establish operating practices designed to minimize the probability of accidents, which may result in a release of MW to the environment. Containers are visually inspected for integrity to determine if there are signs of pitting, leaks, or structural defects. Containers that fail this visual inspection for integrity are repaired, repackaged, vented or overpacked, as required. Containers used by the AMWTP are compatible with the types of wastes managed at the AMWTP.

Container loading and unloading activities are conducted in accordance with established procedures for:

- Work control;
- Transfer, storage, handling, and tracking of waste;
- Receipt, inspection, and documentation of waste;
- Logkeeping practices and checklists;
- Truck/trailer waste container loading/unloading; and
- Overpacked drum recovery.

Each container has a unique barcode attached. The barcodes are used to identify containers before and after any transfers to ensure the proper containers are moved and to identify their new location. This information is used to track the movement via a computer database and identify container location.

Security Sensitive Information
See Section L, Attachment 7, of the AMWTP RFP

SECTION F

PROCEDURES TO PREVENT HAZARDS

SECTION G

CONTINGENCY PLAN

TABLE OF CONTENTS

CONTINGENCY PLAN

LIST OF EXHIBITS

LIST OF TABLES

G. CONTINGENCY PLAN

G-1 General Information [IDAPA 58.01.05.009; 40 CFR 265.51]

This HWMA/RCRA Contingency Plan discusses emergency response for the TSA IS Units. Emergency actions addressed include the protection of human health, the environment, and RWMC/AMWTP buildings and equipment in the event of a release originating from or affecting the TSA IS Units. The "Emergency Plan/RCRA Contingency Plan for the AMWTP" contains the implementing documents for emergency response for the AMWTP and is written to comply with requirements that are in addition to those of HWMA/RCRA. This Contingency Plan provides the HWMA/RCRA requirements that are being implemented through the "Emergency Plan/RCRA Contingency Plan for the AMWTP."

The Contingency Plan addresses the actions to be taken to protect human health and the environment at the TSA IS Units, in the event of an emergency. When implemented, the Contingency Plan is designed to minimize the hazards from fires, explosions, or any unplanned significant release of MW, or chemical constituents of the waste to the air, soil, surface water, or groundwater. The Contingency Plan provides for emergency procedures, identifies authorities and responsibilities of emergency response personnel and organizations, and identifies the manpower, equipment and specialized services that are available to manage an emergency situation.

The Contingency Plan is maintained, at a minimum, in the TSA IS Units shift manager's office.

The Contingency Plan applies to all AMWTP personnel who are assigned to the TSA IS Units, support personnel who work at the TSA IS Units, or personnel who are providing assistance during an emergency. The plan also applies to visitors.

At a minimum, the Contingency Plan is amended, if necessary, whenever:

- The HWMA/RCRA TSA IS Documents are modified;
- The plan fails during an emergency;
- The design, construction, operation, maintenance, or other circumstances involving the TSA IS Units change, in a way that materially increases the potential for fires, explosions, or significant releases of MW or waste constituents, or changes the response necessary during an emergency;
- The list of ECs changes; or
- The list of emergency equipment changes.

General descriptions of the activities occurring in the TSA IS Units are provided in Sections B and D.

G-2 Emergency Coordinators [IDAPA 58.01.05.009; 40 CFR 265.52(d) and .55]

Table G-1 lists the names, addresses, and telephone numbers of the current AMWTP ECs.

The on-duty EC is the primary coordinator for emergency response activities. The other ECs assume responsibilities as alternates in the order that they are listed in Table G-1.

An EC and alternate EC shall be designated for every shift of the TSA IS Units operations to provide continuous emergency response management for the TSA IS Units. If an incident overlaps more than one shift, the active EC shall maintain the command until responsibility is officially passed to the incoming EC.

The AMWTP has an ERO that includes the EC position. The EC has managerial responsibilities and the technical knowledge of the TSA IS Units. The EC is knowledgeable of operational activities at the TSA IS Units, building controls and equipment, building layout, characteristics of waste being handled, and the personnel involved with the TSA IS Units. The EC also has the authority to commit the necessary resources to implement the Contingency Plan. This knowledge, leadership, and authority allows the EC to function quickly and effectively when responding to an emergency incident.

The EC, or designee, is responsible for:

- Ensuring that the emergency procedures are implemented when responding to a significant incident involving MW to mitigate or eliminate any immediate or potential hazard to personnel and/or the environment.
- Serving as primary lead in coordinating with the INL Fire Department and Emergency Medical Technician (EMT) Services, INL EOC, and the WCC for the proper support from these organizations, as required.

Table G-1. AMWTP Emergency Coordinators

Name	Work Phone	Home Phone	Pager	Home Address
Theodore Griffith (Primary)	208.557.7218	526.4444.3497	208.522.3407	367 Ruth Ave. Idaho Falls, ID 83404
Steve McNiven (Primary)	208.557.7222	526.4444.7484	208.523.7044	737 Clarence Court Idaho Falls, ID 83402
Brian Warner (Primary)	208.557.7239	526.4444.7663	208.785.7474	154 N. 380 W. Blackfoot, ID 83221
Joel Shokes (Primary)	208.557.7185	526.4444.7651	208.238.0834	175 Abraham Street Chubbuck, ID 83202
Rob Hamilton (Alternate)	208.557.7293	526.4444.5447	208.684.5201	992 West Highway 39 Blackfoot, ID 83221
William Verlanic (Alternate)	208.557.7223	526.4444.7680	208.785.5234	95 Cone Street Blackfoot, ID 83221
Michael Fogarty (Alternate)	208.557.7325	526.4444.6252	208.542.1372	4019 Nathan Drive Idaho Falls, ID 83404

Note: The above ECs listed as Primary are On-Duty according to the schedule maintained by the AMWTP Emergency Planner. Off-Duty Primary and Alternate EC's may assume EC duties to relieve an On-Duty EC or to take over in the EC capacity should the On-Duty EC become incapacitated.

G-3 Implementation [IDAPA 58.01.05.009; 40 CFR 265.52(a) and .56(d)]

The provisions of the Contingency Plan are implemented immediately whenever there is a fire, explosion, or unplanned significant release of MW constituents that threaten human health or the environment. Such an occurrence (incident) requires classification to aid in expediting the appropriate emergency response. Classification of an occurrence is done in accordance with the AMWTP Emergency Plan/RCRA Contingency Plan and/or DOE orders.

G-4 Emergency Response Procedure

G-4a Notification [IDAPA 58.01.05.009; 40 CFR 265.56(a)]

Regardless of classification, once an event is categorized as an emergency, the EC (or designated representative) immediately notifies all affected personnel at or around the TSA IS Units of the appropriate protective actions by activating the voice paging system, alarm system, and/or radio, phone, or by word-of-mouth.

Personnel in the TSA IS Units are notified of an emergency either by radio, phone, word-of-mouth, or by the evacuation and voice paging system. The paging system consists of a manually activated operator control system connected to the AMWTP local and global communications and alarms system.

Once activated, the paging system simultaneously distributes the same "page alert tone" (chimes), followed by a voice message, if required, to all speakers connected to the system. The system consists of indoor/outdoor weatherproof paging speakers to distribute the voice message to the TSA IS Units. Additionally, the TSA IS Units are equipped with telephones to allow for communications to both on- and off-Site for summoning emergency assistance.

Monitoring systems (e.g., fire, radiation) in the TSA IS Units are equipped with audible alarms to notify personnel of potential emergencies.

During an emergency, the EC informs the INL WCC of an event typically by using either a telephone or two-way radio. Normally, the WCC facilitates notifications to local, state, and/or federal authorities using the telephone and faxed notification forms. If the WCC is not able to facilitate notifications, the AMWTP EC initiates the notifications. The AMWTP EC or the designated alternate ensures that the proper notifications are made in an emergency situation.

If it is determined that the TSA IS Units have had a release, fire, or explosion which could threaten human health or the environment outside the TSA-RE, the AMWTP EC must immediately notify either the government official designated as the On-Scene Commander (OSC) for that geographical area (i.e., the State of Idaho Emergency Management System Communications Center), or the National Response Center. Appropriate State and/or local agencies with designated response roles will be notified if their help is needed.

The agencies that may be notified are:

- The management and operations (M&O) contractor emergency preparedness duty officer (the M&O contractor emergency preparedness duty officer may direct the WCC to contact the DOE-ID Manager Duty Officer and/or activate the EROs);
- INL EOC ERO personnel if an alert, site area, or general emergency has been declared;
- DOE-ID Emergency Management Program Administrator;
- Other affected INL EROs, as deemed necessary;
- State, local, and tribal agencies, if help is needed; and
- DOE Headquarters Emergency Management Team, as deemed necessary.

The notification includes the following information:

- Name and telephone number of reporter;
- Name and address of the affected TSA IS Unit;
- Time and type of incident (e.g., release, fire);
- Name and quantity of material(s) involved, to the extent known;
- The extent of injuries, if any; and
- Possible hazards to human health or the environment outside the TSA IS Unit.

The EC or the EOC also recommends to the appropriate local, state, or federal officials whether local areas should be evacuated.

G-4b Identification of Hazardous Materials [IDAPA 58.01.05.009; 40 CFR 265.56(b)]

A database containing information on the waste sent to the TSA IS Units is managed by AMWTP personnel. This database includes information, to the extent known, relative to the content of each waste container, the generator of the waste, volumes of waste, and locations of waste containers within the TSA IS Units. This database may be accessed to assist in the identification of waste materials involved in an emergency at the TSA IS Units.

Additionally, barcodes on containers are used as the containers are transferred to, from, and within the TSA IS Units. The container information, to the extent known, is maintained in the Operating Record. The Operating Record accounts for the waste types and provides a real time inventory of waste as it is being processed through the TSA IS Units. In the event of an emergency incident, the Operating Record may be used to retrieve information on the waste that may be involved in the incident.

Measured or estimated radiological/chemical concentrations in air, soil, and water (mainly contaminated fire water at the MWMU) or on surfaces are used to characterize and identify the magnitude of any released MW constituents. Also, monitoring for radiological and chemical hazards may be performed to track any spread of MW constituents. The data may be collected from fixed and/or portable radiation/chemical monitoring instrumentation.

G-4c Assessment [IDAPA 58.01.05.009; 40 CFR 265.56(c) and (d)]

As feasible, and as safety conditions warrant, information shall be gathered near the scene of the incident to aid in the assessment of an actual or imminent fire, explosion, or significant release of MW so that the appropriate protective actions can be implemented. INL firefighters approach the affected area if incident assessment information is essential to the control of the incident, and only if adequately safe conditions are present and can be maintained. Typically, the AMWTP EC and supporting personnel gather assessment information, when feasible, from remote locations. The following information can be used to assess the extent and consequences of an incident at the TSA IS Units.

<u>Specifics of an Actual Fire, Explosion, or Significant Release of MW:</u>

- Cause,
- Area involved,
- TSA IS Unit conditions, and
- Type and quantity of MW that may be involved in the incident.

<u>Specifics of an Imminent Fire, Explosion, or Significant Release of MW:</u>

- Equipment or article involved,
- Probable cause,
- Estimated area involved,
- TSA IS Unit conditions and measurements of monitoring instruments, and
- Location, type, and quantity of nearby MW that could be involved in the incident.

<u>Current Conditions that Could Affect the Control or Isolation of an Incident:</u>

- Status of fire suppression system/alarms;
- Status of TSA IS Unit equipment controls, safety features, or isolation controls; and
- Weather conditions (e.g., wind speed and direction, precipitation, temperature, etc.).

Exposure Assessments:

- Type and quantity of the substance initiating a fire/explosion or potential fire/explosion;
- Type and quantity of MW involved in the incident or potential incident;
- Duration of a release of MW (if applicable) and the duration of exposure;
- Measured or estimated radiological/chemical concentrations in the air, fire water, or surfaces; and
- Names, total number, location, and condition of exposed persons.

If the release involves radiological hazards, the protective action guide (PAG) exposure levels may be used to determine the appropriate response. See Tables G-2 and G-3 for examples of PAG exposure level values. If the release involves chemical hazards, the Emergency Response Planning Guide (ERPG) exposure levels may be used to determine the appropriate response. See Table G-4 for examples of ERPG exposure level values.

The EOC is responsible for the continued assessment of the emergency event. In developing protective actions and deciding on mitigative actions, the EOC considers both direct and indirect effects of the release (e.g., the effects of any toxic, irritating, asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-inducing explosions).

G-4d Control Procedures [IDAPA 58.01.05.009; 40 CFR 265.52(a)]

Fire. A fire at the TSA IS Units may arise from operations involving ignitable MW. A fire may also originate from the ignition of flammable or combustible equipment/fuels and then spread to involve or engulf nearby MW.

The TSA IS Units are constructed and designed to avoid the occurrence of a fire or control a fire if one starts. The TSA-RE and TSA IS Units contain fire extinguishers and a manual fire alarm system for notifying the INL fire department, and use of building materials and components that adhere to regulations/codes for fire prevention.

Explosion. An imminent explosion or actual explosion at the TSA IS Units may be detected by:

- Gauges, monitors, or instrumentation that indicates an enclosed vessel or line is accumulating an abnormally large build-up of pressure or temperature;
- Visual identification of a bulging or ruptured drum, cylinder, vessel or line; or

- An explosion that progresses into fire and smoke, which then activates a fire/smoke alarm within the TSA IS Units.

The TSA IS Units have few potential explosive hazards, and safety equipment and work practices reduce the probability of an explosion. An explosion at the TSA-RE or the TSA IS Units may originate from a rupture in a compressed gas cylinder, failure of a liquefied petroleum gas tank, or a break in a high-pressure line/vessel.

Significant Release of MW. A significant release of MW constituents at the TSA IS Units may result in an exposure to personnel or contamination of the surrounding environment. A significant release could occur from a spill of the MW during retrieval, storing, and/or moving operations. Also, water used to fight fires may become contaminated with MW constituents, imposing additional considerations when disposing of the water. Safe work practices are implemented to further reduce the potential of a MW release. Due to the nature of the conditions under which the containers on the TSA IS Units have been stored, it is expected that releases are a common operational occurrence. For the purposes of this document, a significant release of MW constituents shall require the implementation of this HWMA/RCRA Contingency Plan. Releases within the TSA-RE and TSA IS Units are classified in various groups, as defined in Section D. See Section D for further information on the classification of a release.

Released or residual waste (from a fire or explosion) that cannot be identified by labels, records, logbooks, identification numbers, or the Operating Record are sampled and analyzed to determine the chemical properties of the waste. The resulting information is used to determine the proper disposition of the waste.

Off-Site Services. If AMWTP personnel cannot extinguish a fire during the incipient stage, or an explosion or imminent explosion is detected, or a significant release of MW occurs at the TSA IS Units that requires the support of off-Site firefighting/hazardous material (HAZMAT) services, the INL Fire Department and, if needed, off-Site firefighting services are summoned for assistance. When the INL Fire Department or off-Site firefighting services respond, the tactical fire/explosion/release prevention and mitigation responsibilities are transferred to the responding fire chief. The fire chief assumes the authority and commensurate responsibilities of the OSC.

G-4e Prevention of Recurrence or Spread of Fires, Explosions, or Releases [IDAPA 58.01.05.009; 40 CFR 265.56(e) and (f)]

The AMWTP EC is responsible for taking all reasonable measures necessary to ensure fires, explosions, and significant releases do not occur, recur, or spread to other wastes at the TSA IS Units.

These measures may include, where applicable, stopping processes and operations, collecting and containing released waste constituents, and removing or isolating containers.

The AMWTP EC is also responsible for ensuring that the TSA IS Units and equipment contained within are monitored (as practical) for pressure build-up, gas generation, or rupture in valves, pipes, or other equipment.

The INL Fire Department is the primary responder to all fire and emergency situations at the RWMC, including the various AMWTP MWMUs.

Fires. The TSA IS Units have many pre-engineered features that reduce the likelihood for a fire to occur, recur, or spread to other wastes contained within the building. The TSA IS Units are equipped with fire extinguishers and manual fire alarms. Additional measures include careful management of flammable, combustible, and oxidizable waste or building materials; safe isolation of ignitable sources; and the establishment of safe work practices.

Explosions. Only existing wastes stored at the TSA IS Units and sealed containers have the potential for hydrogen gas build-up, which could result in an explosion. Unvented, sealed containers with the potential for pressure build-up are stored in the TSA IS Units prior to venting in the TSA-RE, the drum vent system (WMF-634), or the drum venting facility (WMF-635). In order to prevent pressure build-up due to radiolytically generated gas, filters are inserted into drums in one of the drum venting units. The drum venting unit in the TSA-RE is a manually operated piece of equipment that inserts a filter into the drum lid. See the AMWTP HWMA/RCRA Storage Permit for additional information on the WMF-634 and WMF-635 venting units. The following steps are implemented, as necessary, in response to an explosion at one of the TSA IS Units:

- Ensure notification to the INL Fire Department,
- Shut down equipment operating in the TSA IS Units,
- Evacuate the immediate area of the explosion, and
- Implement applicable emergency response procedures, as appropriate.

Significant Releases. A significant release of MW materials at the TSA IS Units is prevented or controlled through effective design and installation of monitoring equipment, safe and controlled handling of waste containers, careful management of waste throughout the TSA IS Units, and the establishment of safe work practices.

G-4f Storage and Treatment of Released Materials [IDAPA 58.01.05.009; 40 CFR 265.56(g)]

Waste resulting from the cleanup of a fire, explosion, or release of MW is contained and managed as a HWMA/RCRA-regulated waste, until such time that it can be determined otherwise. In most cases the MW inventory, as part of the Operating Record, and process knowledge allow a determination of the waste constituents. When necessary, however, samples of the waste may be collected and analyzed to determine applicable HWNs. Typically, EPA-approved sampling and analytical methods are used.

G-4g Incompatible Waste [IDAPA 58.01.05.009; 40 CFR 265.56(h)(1)]

In the event of a significant waste release, the EC ensures that no wastes are received, treated, or stored in the affected areas until cleanup operations have been completed. This procedure ensures that incompatible wastes are not present in the vicinity of the significant release.

Abatement and cleanup waste generated as the result of a spill or release is evaluated to determine its compatibility with other wastes being managed in the storage areas. The evaluation identifies the material or waste that is spilled or released and determines its characteristics (e.g., ignitable, reactive, corrosive, and toxic). The waste generated by the abatement and cleanup activities are stored in that part of the storage area of the TSA IS Unit that has been established to manage wastes with which it is compatible.

Additional controls are implemented (as necessary) to ensure segregation/separation of wastes, as required.

The AMWTP EC does not allow MW operations to resume in the TSA IS Units if significant amounts of incompatible wastes/materials have been released, before ensuring that necessary post-emergency cleanup operations to remove potentially incompatible wastes/materials are completed.

G-4h Post-Emergency Equipment Maintenance [IDAPA 58.01.05.009; 40 CFR 265.56(h)(2)]

The AMWTP EC ensures that emergency equipment is available and ready for its intended use before operations resume. Any equipment that cannot be decontaminated may be discarded. Equipment or supplies that cannot be reused following an emergency are replaced. After the equipment has been cleaned, repaired, or replaced, a post-emergency TSA IS Unit and equipment inspection is performed, and the results are recorded in the Operating Record.

Cleaning and decontamination of equipment may be accomplished using non-hazardous materials, whenever possible, by physically removing gross or solid residue, rinsing with water or another non-hazardous liquid, and/or washing with detergent and water.

Decontamination and cleaning may be conducted in a confined area that is isolated from the environment. Care is taken to prevent wind dispersion of particles and spray. Liquid or particulate resulting from cleaning and decontamination of equipment is placed in clean, compatible containers.

After AMWTP personnel have completed any post-emergency cleanup of waste and waste residues from areas where TSA IS Unit operations are ready to resume, and the AMWTP EC has ensured that all emergency equipment used in managing the emergency has been cleaned or replaced and is ready for use, notifications are made to the following: EPA Regional Administrator, the Director of the Idaho DEQ, and any relevant local authorities. This post-emergency notification complies with IDAPA 58.01.05.009 [40 CFR 265.56(i)].

G-4i Container Spills and Leakage [IDAPA 58.01.05.009; 40 CFR 265.52(b), 265.171, and 265.175(b)]

Storage areas and waste stacks at the TSA IS Units are inspected per a set schedule, as described in Section F-2. Corrective or mitigative action is taken when container integrity is significantly deteriorated or compromised.

Additionally, AMWTP personnel can repair, repackage, or overpack a leaking container, or place it in a drip pan before repairing, repackaging, or overpacking, to prevent continued leakage into a storage area that may affect other stored wastes. Damaged or leaking containers are repaired, repackaged, or overpacked before acceptance for storage in the TSA IS Units.

Table G-2. Example Protective Action Guides on Dose Limits for Workers Performing Emergency Services

Dose Limit[a] (rem)	Activity	Condition
5 (0.05 sieverts)	All emergency services	None
10 (0.1 sieverts)	Protecting valuable property	Where lower dose not practicable
25 (0.25 sieverts)	Lifesaving or protection of large populations	Where lower dose not practicable
>25 (0.25 sieverts)	Lifesaving or protection of large populations	Only on a voluntary basis to persons fully aware of the risks involved

a. Sum of the external effective dose equivalent and the committed effective dose equivalent to non-pregnant adults from exposure and intake during an emergency situation. Workers performing services during emergencies should limit the dose to the lens of the eye to 3 times the listed values and the dose to any other organ (including skin and extremities) to 10 times the listed value. The limits apply to all doses from an incident, except those received in unrestricted areas as members of the public during the intermediate phase of the incident. No specific upper limit is given for thyroid exposure.

Table G-3. Protective Action Guides for the Early Phase of a Nuclear Incident

Protective Action	PAG (Projected Dose)	Comments
Evacuation (or sheltering)[a]	1-5 rem[b] (0.01 – 0.05 sieverts)	Evacuation (or for some situations, sheltering) should normally be initiated at 1 rem.
Evacuation (or sheltering)[a]	1-10 rem[b] (0.01 – 0.1 sieverts)	Where evacuation is impractical or for particularly vulnerable populations (e.g., those who are not readily mobile).
Evacuation (or sheltering)[a]	50-250 rem (skin) (0.5 – 2.5 sieverts)	Exposure to the skin should seldom, if ever, be the controlling pathway for protective action.

a. Sheltering may be the preferred protective action when it will provide protection equal to or greater than evacuation based on consideration of factors, such as source term characteristics and temporal or other Site specific conditions.

b. The sum of the effective dose equivalent resulting from exposure to external sources and the committed effective dose equivalent from all significant inhalation exposure pathways during the early phase.

Table G-4. Example Emergency Response Planning Guides

Chemical	ERPG-1	ERPG-2	ERPG-3
Acrolein	0.1 ppm	0.5 ppm	3 ppm
Acrylic Acid	2 ppm	50 ppm	750 ppm
Allyl Chloride	3 ppm	40 ppm	300 ppm
Ammonia	25 ppm	200 ppm	1000 ppm
Benzyl Chloride	1 ppm	10 ppm	25 ppm
Bromine	0.2 ppm	1 ppm	5 ppm
1,3-Butadiene	10 ppm	50 ppm	5000 ppm
n-Butyl Isocyanate	0.01 ppm	0.05 ppm	1 ppm
Carbon Disulfide	1 ppm	50 ppm	500 ppm
Carbon Tetrachloride	20 ppm	100 ppm	750 ppm
Chlorine	1 ppm	3 ppm	20 ppm
Dimethylamine	1 ppm	100 ppm	500 ppm
Formaldehyde	1 ppm	10 ppm	25 ppm
Hydrogen Chloride	3 ppm	20 ppm	100 ppm
Hydrogen Cyanide	NA	10 ppm	25 ppm
Hydrogen Fluoride	5 ppm	20 ppm	50 ppm
Hydrogen Sulfide	0.1 ppm	30 ppm	100 ppm
Isobutyronitrile	10 ppm	50 ppm	200 ppm
Methanol	200 ppm	1000 ppm	5000 ppm
Methyl Chloride	NA	400 ppm	1000 ppm
Phenol	10 ppm	50 ppm	200 ppm
Phosgene	NA	0.2 ppm	1 ppm
Sulfur Dioxide	0.3 ppm	3 ppm	15 ppm
Sulfuric Acid (Oleum, Sulfur Trioxide, and Sulfuric Acid)	2 mg/m^3	10 mg/m^3	30 mg/m^3
Tetrafluoroethylene	200 ppm	1000 ppm	10,000 ppm
Trimethylamine	0.1 ppm	100 ppm	500 ppm
Vinyl Acetate	5 ppm	75 ppm	500 ppm

ERPG-1: The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hr without experiencing other than mild transient adverse health effects or perceiving a clearly defined objectionable odor.

ERPG-2: The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hr without experiencing or developing irreversible or other serious health effects that could impair their ability to implement protective action determinations.

ERPG-3: The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hr without experiencing or developing life-threatening health effects.

NA = not applicable

ppm = parts per million

mg/m^3 = milligram per cubic meter

Note: In the event a hazardous substance involved in an incident does not have a published ERPG value, protective action determinations are formed based on the best readily available technical information.

G-5 Emergency Equipment [IDAPA 58.01.05.009; 40 CFR 265.52(e)]

The types, locations, and capabilities of emergency equipment available in the TSA IS Units are listed in Table G-5.

Communications systems used by the AMWTP include commercial telephone, commercial cellular telephones, and radio networks. These communications systems, though not dedicated to emergency response, are available at the RWMC/AMWTP to provide prompt communications.

The RWMC evacuation siren and take-cover alarm, as well as the emergency voice paging system, are operated from any one of the emergency notification system control panels located in WMF-637, WMF-620, WMF-610, WMF-601, and the Operator Control Stations in WMF-634 and WMF-636. Take-cover and evacuation alarms are audible in all areas of the TSA IS Units.

Table G-5. Emergency Equipment for the TSA IS Units

Location	Equipment
Pad 2 (South Wall) Portable Air Lock Enclosure Pad R (Center of South Wall) Pad R (Near Door 12) Pad R (Near Door 13) Pad R (Near Door 14) Pad R (Near Door 16) Pad 1 (Near Door 20) Pad 1 (Near Door 22)	Fire Extinguishers (ABC Type)
Pad 2 (South Wall) Pad R (Center of South Wall)	Spill Response Equipment • Acid Neutralizer, • Caustic Neutralizer, • Solvent Absorber, • Vermiculite/absorbent, • Spill Disposal Plastic Bags, • Scraper/scoop, • pH Paper, • Shovel/Broom, • Spill Pads

G-6 Coordination Agreements [IDAPA 58.01.05.009; 40 CFR 265.52(c) and .37]

The AMWTP has access to INL resources, such as on-Site security, medical, and fire assistance, on a 24-hr basis. The INL Fire Department would be the primary initial responder to an emergency event originating at the TSA IS Units.

If additional resources are necessary, off-Site assistance is requested through the AMWTP and/or INL EOC. Off-Site interfaces for providing emergency response support are coordinated through DOE-ID. DOE-ID has mutual aid agreements in place with federal, state, local, and tribal agencies that define cooperative emergency policies and procedures and the roles of the participants. A listing of these agreements is included in Table G-6.

Copies of the Contingency Plan are provided to the local police, fire departments, and emergency response personnel (i.e., hospitals, paramedics, etc.). These agencies are provided the opportunity to participate in on-Site and off-Site drills and exercises, which include walkthroughs and orientation sessions, to familiarize them with the layout of the TSA IS Units, properties of waste handled at the TSA IS Units, associated hazards and locations where personnel would normally be working, entrances to and roads inside the TSA IS Units, and possible evacuation routes.

Area hospital personnel participate in orientation sessions to familiarize them with the properties of wastes handled at the AMWTP TSA IS Units and the types of injuries or illnesses that might occur from fires, explosions, or the release of wastes.

Table G-6. Off-Site Agencies Having Memorandum of Agreements/Memorandum of Understandings with the INL

Title of Memorandum
Memorandum of Understanding between State of Idaho and DOE-ID Radiological Assistance Response for DOE and/or Non-DOE Incidents in Public Access Areas.
Memorandum of Understanding between the Bingham County Sheriff's Department and DOE-ID.
Memorandum of Understanding between the Bonneville County Sheriff's Department and DOE-ID.
Memorandum of Understanding between the Butte County Sheriff's Department and DOE-ID.
Memorandum of Understanding between the Clark County Sheriff's Department and DOE-ID.
Memorandum of Understanding between the Jefferson County Sheriff's Department and DOE-ID.
Memorandum of Understanding between Bingham County Disaster Services and DOE-ID.
Memorandum of Understanding between Bonneville County Emergency Management and DOE-ID.
Memorandum of Understanding between Butte County Emergency services and DOE-ID.
Memorandum of Understanding between Clark County Civil Defense and DOE-ID.
Memorandum of Understanding between Jefferson County Civil Defense and DOE-ID.
Memorandum of Understanding between DOE-ID and Bannock Regional Medical Center.
Memorandum of Understanding by and between DOE-ID and Eastern Idaho Regional Medical Center.
Memorandum of Understanding between DOE-ID and Pocatello Regional Medical Center.
Memorandum of Understanding (MOU) between DOE-ID and Bingham Memorial Hospital.
Working Agreement between DOE-ID and the Shoshone-Bannock Tribes.
Memorandum of Understanding between DOE-ID and the Idaho Transportation Department.
Memorandum of Understanding for Mutual Fire Aid between DOE, INEL, and the Upper Snake River Ecosystem Bureau of Land Management.
Environmental Oversight and Monitoring Agreement between DOE and the State of Idaho.
Interagency Agreement between the U.S. Department of Energy Idaho Operations Office and the National Park Service.
Reciprocal Fire Fighting Assistance Agreement between the Rexburg City/Madison County Fire
Department, City of Arco Fire Department, City of American Falls Fire Department, City of Blackfoot
Fire Department, City of Chubbuck Fire Department, Jefferson Central Fire District, City of Pocatello
Fire Department, City of Rigby Fire Department, and Shelly/Firth Fire District and DOE-ID.
Reciprocal Fire Fighting Assistance Agreement between the City of Idaho Falls and DOE-ID.
Mutual Fire Aid between U.S. Department of Agriculture Salmon-Challis National Forest and DOE-ID.

G-7 Evacuation Plan [IDAPA 58.01.05.009; 40 CFR 265.52(f)]

Personnel are notified to take cover and/or evacuate by alarms and voice paging messages. Evacuation routes are through the nearest unobstructed emergency exit. Exhibit G-1 provides the location of evacuation routes for AMWTP personnel at the RWMC.

AMWTP personnel are notified of an emergency by the internal communications and alarm system (voice or signal). This system is connected to and compatible with the existing RWMC communications and alarm system. Different audible signals are sounded for fire or building evacuation.

The evacuation routes for the TSA IS Units are through the nearest personnel exit or egress doors. Exhibit G-2 shows evacuation routes and the locations of the personnel egress doors in the TSA IS Units. The TSA IS Units layout provides adequate emergency evacuation routes through aisles around stored waste. Upon evacuating the TSA IS Units, personnel exit the RWMC through the south gate designated for the AMWTP, unless directed otherwise. Personnel evacuate to a designated assembly area, normally the south gate evacuation assembly area. During an evacuation of the RWMC or the AMWTP, AMWTP personnel typically use buses or privately owned vehicles to evacuate the site.

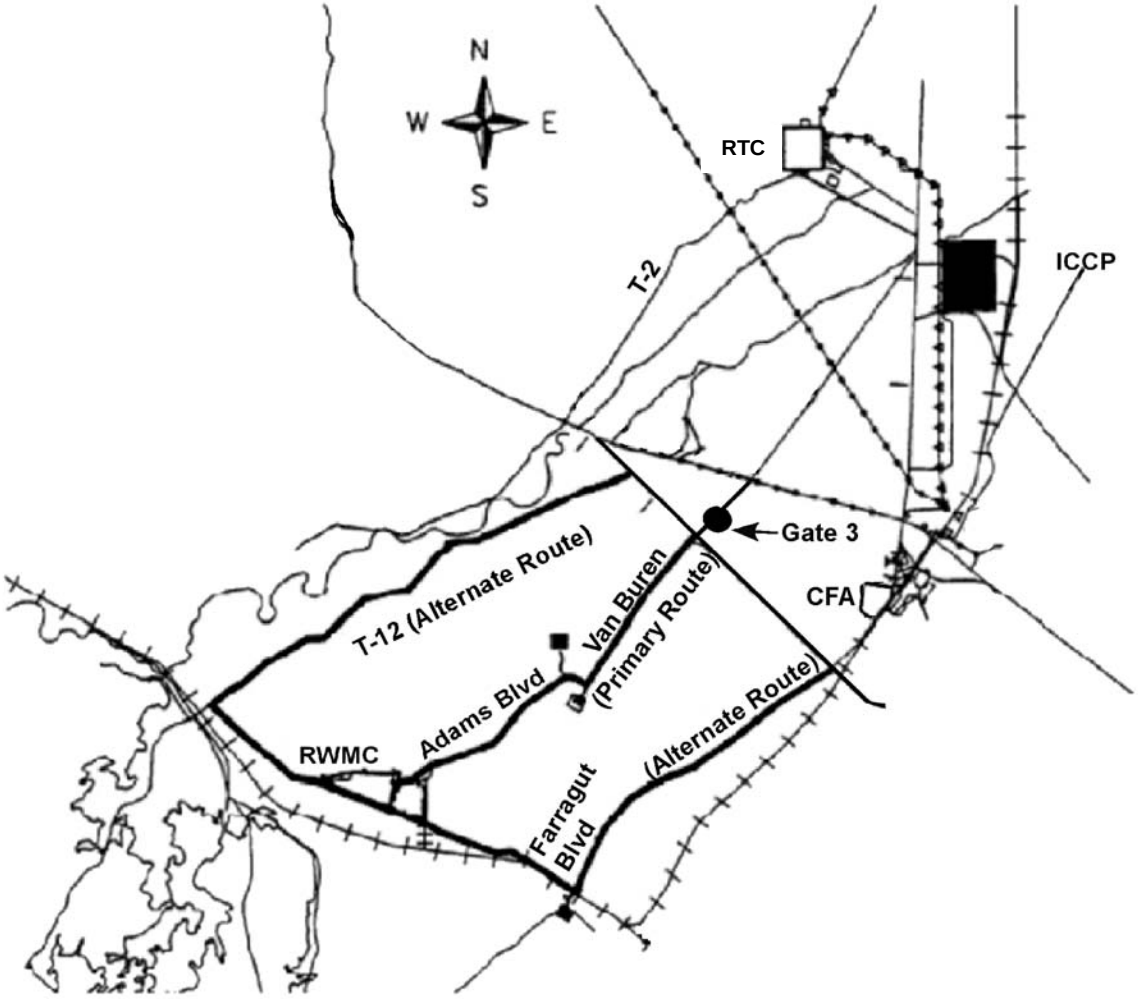


Exhibit G-1. AMWTP Evacuation Routes

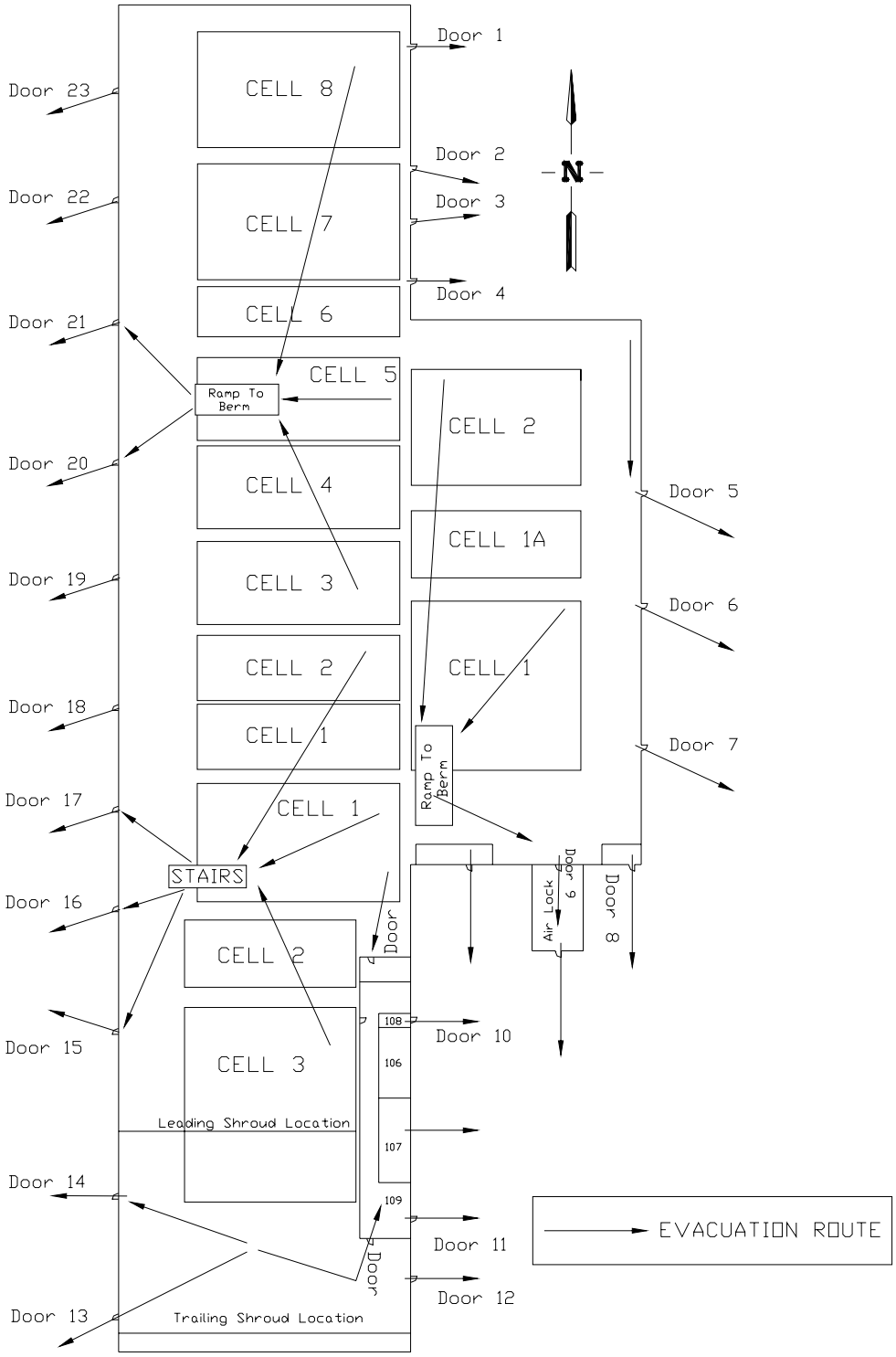


Exhibit G-2. Evacuation Routes for the TSA IS Units

G-8 Required Reports [IDAPA 58.01.05.009; 40 CFR 265.56(j)]

Emergency logs and records are considered part of the TSA IS Units Operating Record and are maintained per IDAPA 58.01.05.009 (40 CFR 265.73). Information is used to provide the details necessary to submit a written report on the incident, if necessary, to the Director of the Idaho DEQ and the EPA Regional Administrator within 15 days of the event.

Such reports include, as a minimum, the following:

- Name, address, and telephone number of the MWMU owner or operator;
- Name, address, and telephone number of the MWMU;
- Date, time, and type of incident (e.g., fire, explosion);
- Name and quantity of material(s) involved;
- Extent of any injuries, if any;
- Assessment of any actual or potential hazards to human health or the environment; and
- Estimated quantity and disposition of material recovered from the incident.

SECTION H

PERSONNEL TRAINING

TABLE OF CONTENTS

H. PERSONNEL TRAINING

H-1 Outline of the Training Plan [IDAPA 58.01.05.009; 40 CFR 265.16(a)(1)]

This section describes the Training Plan for the AMWTP personnel who work at the TSA IS Units. This Training Plan assists AMWTP personnel in performing their assigned duties in a safe manner, and it includes the required introductory and continuing training. The required training is tailored to each position title responsible for management of MW to cover the various tasks and responsibilities of the AMWTP personnel. Successful implementation of the Training Plan enhances the overall safety program and contributes to safe operations involving MW management activities at the TSA IS Units. The Training Plan satisfies the requirements of IDAPA 58.01.05.009 (40 CFR 265.16) and 29 CFR 1910.120 (p).

Personnel involved in MW handling, management, and operations at the TSA IS Units participate in a comprehensive Training Plan. In general, these employees receive training on operations, proper handling and management of MW, emergency response procedures, and other HWMA/RCRA related topics.

The following section outlines the Training Plan for employees involved in MW management, handling, or operations at the TSA IS Units. The training consists of a combination of self-study, classroom instruction, computer-based training, and on-the-job training (OJT) in conjunction with qualification programs. Qualified personnel who have expertise in the subject provide the OJT.

H-1a Job Title/Job Description [IDAPA 58.01.05.009; 40 CFR 265.16(d)(1) and (d)(2)]

The AMWTP Training Organization maintains the following documents as part of the Operating Record:

- The job title and position description, including requisite skills, education, qualifications, and duties for each position related to the management of MW and the names of the employee filling each job.
- Written descriptions of the type and amount of both introductory and continuing training required by each person filling a job position involved with the management of MW at the TSA IS Units.

- Records that document that the minimum training and qualification requirements for the AMWTP personnel involved with management of MW have been successfully completed.

H-1b Training Plan Content, and Scheduling [IDAPA 58.01.05.009; 40 CFR 265.16(c) and 265.16(d)(3)]

The Training Director, or designee, ensures all AMWTP personnel working at the TSA IS Units are appropriately trained prior to initiating any work that may cause the employee to be potentially exposed to MW. The Training Director, or designee, with assistance from management, is responsible for the scheduling and completion of all required training. All AMWTP personnel directly involved with activities at the TSA IS Units receive access orientation. Access orientation is designed to familiarize all employees with the information and protocols necessary to maintain a safe work environment within the TSA IS Units. Access orientation covers:

- General description of the TSA IS Units,
- Waste management activities performed in TSA IS Units,
- Contingency Plan contents,
- Access and security requirements, and
- Hazards associated with the TSA IS Units.

The Contingency Plan training addresses emergency equipment use, availability, and locations; alarms, evacuation procedures and routes; and other relevant emergency procedures.

AMWTP personnel, physically involved with the management of MW, receive annual HWMA/RCRA refresher training. This training is conducted to review the Contingency Plan (See Section G), inspections required, MW management procedures, and other relevant topics.

AMWTP personnel working at the TSA IS Units also receive additional training if their job involves potential exposure to MW. These workers receive Hazardous Waste Operations and Emergency Response (HAZWOPER) training for treatment, storage, or disposal (TSD) facilities (24-hr initial), as specified in 29 CFR 1910.120(p).

Additionally, some AMWTP personnel involved in MW operations, described at 29 CFR 1910.120 (p) may receive training in:

- Respirator use and fit test,
- Radiation worker training,

- First aid, and
- Cardiopulmonary resuscitation (CPR).

AMWTP craft personnel and certain technicians receive specialized training in the areas applicable to their job assignments. This training is required for acquiring and maintaining certification in their trade, or validating proficiency to perform certain tasks. Certification/Proficiency training may be required for personnel responsible for such duties as fitters, mechanics, electricians, equipment operators, instrument technicians, vehicle technicians, and waste handling operators.

Personnel may be given written and/or oral examinations, operational evaluations, and reviews to ensure that they are adequately trained commensurate to their job positions. Examinations and evaluations meet performance-based training criteria. Results of examinations, evaluations, and reviews are documented. Completed checklists, examinations, and evaluations are placed in each individual's training record.

Occasionally, AMWTP personnel attend training classes conducted by outside vendors. In order to verify personnel attendance at such a course, a copy of the class certification or other documentation is maintained in the training files.

H-1c Training Director [IDAPA 58.01.05.009; 40 CFR 265.16(a)(2)]

The AMWTP Training Director, or designee, is responsible for fulfilling the requirements of the Training Director as specified at IDAPA 58.01.05.009 [40 CFR 265.16(a)(2)]. The Training Director, or designee, is responsible for ensuring that personnel at the AMWTP are trained in programs and procedures for management of MW, environmental requirements, industrial and radiation safety, Contingency Plan, operational skills, and technical training.

The Training Director, or designee, is responsible for the development or approval of the training courses provided to AMWTP employees. The Training Director, or designee, reviews lesson plans and instructor’s qualifications to validate the acceptance of the training course.

The Training Director, or designated trainers, is/are qualified to instruct AMWTP personnel about the subject matter that is being presented in training. Such trainers have satisfactorily completed a Training Plan for teaching the subject(s), or they have the academic credentials and instructional experience necessary for teaching the subject(s).

The Training Director and designated trainers are trained in MW management procedures. The Training Director, or designee, ensures the MW management training (including training on the implementation of the Contingency Plan) is provided to the AMWTP personnel that are working at the TSA IS Units and that the training is relevant to the positions in which they are assigned. The Training Director, or designee, is trained and qualified in the management of MW. In addition, the Training Director, or designee, provides overall leadership and management direction to the AMWTP training organization. The Training Director's, or designee's, duties include the following:

- Provide direction to the training organization,
- Ensure training personnel performance is evaluated,
- Provide direction for and approval of the AMWTP Training Plan,
- Ensure AMWTP personnel receive training appropriate to their positions,
- Ensure all program objectives and requirements are satisfied, and
- Ensure the Training Plan meets the requirements of IDAPA 58.01.05.009 (40 CFR 265.16) and 29 CFR 1910.120.

H-1d Relevance of Training to Job Position [IDAPA 58.01.05.009; 40 CFR 265.16(a)(2)]

Individual Training Plan profiles are prepared for each AMWTP position description that requires a formal Training Plan. Each profile serves as a training guide to identify the minimum requirements for achieving and maintaining required qualifications and certifications. The profile also serves as a checklist to ensure training record completeness. Training requirements for each position are maintained in the Operating Record.

At a minimum, each individual Training Plan identifies the following:

- Job description,
- Qualifications, and
- Training requirements.

Profiles identify typical qualification and certification requirements. Some positions may require specialized training (e.g., HWMA/RCRA Secondary Containment System Repair Procedure, Container Repair Procedure, etc.). Special-case training is documented in the training records. Profiles include requirements for hazardous and MW management and emergency response training. The AMWTP

Training Director, or designee, is responsible for monitoring the status of personnel qualifications and certifications.

Persons who have the responsibility for evaluating training requirements for AMWTP personnel include, but are not limited to, the AMWTP Training Director, or designee, and the appropriate supervisor or manager.

Individuals who demonstrate an equivalency for specific requirements or prerequisites identified in the training profile may be exempted from the associated training. The Training Director, or designee, consults with the employee's manager/supervisor to review the claim for exemption or completion of equivalent training prior to approving the exemption or equivalency. Each exemption/equivalency is granted in writing and documented in the individual's training record.

H-1e Training for Emergency Response [IDAPA 58.01.05.009; 40 CFR 265.16(a)(3)]

Emergency response training is provided to all AMWTP personnel that work at the TSA IS Units, including specialized training for the AMWTP ERO. All personnel requiring unescorted access to the TSA IS Units receive training on the appropriate response to take when a fire, explosion, or significant release of MW is occurring or imminent at the TSA IS Units. This training provides instructions on controlling or responding to the incident and safe evacuation from the building/area. The Training Plan includes the following, as applicable:

- Procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment;
- Use of communications or alarm systems;
- Response to fires or explosions; and
- Shutdown of operations.

Documentation that the AMWTP personnel working at the TSA IS Units have received initial emergency response training, annual training, and specialized training is maintained in their training records.

H-2 Implementation of Training Plan [IDAPA 58.01.05.009; 40 CFR 265.16(b), 265.16(d)(4), and 265.16(e)]

In conjunction with TSA IS Units access orientation, designated employees enter a qualification or certification program specific to their job assignments. AMWTP personnel holding qualifications and certifications are retrained or evaluated so they may retain their qualifications or certifications. Job assignments, which require the completion of a qualification or certification program, have time requirements associated with the Training Plan.

Initial training requirements are completed within six months of the individuals date of employment or assignment to a TSA IS Unit work location when their position involves the management of MW. Employees do not work in unsupervised positions involving MW until they have completed the minimum specified training requirements.

Training files include documentation of completed training, such as class rosters, signed checklists, completed exams, data base printouts, and other documents verifying training. For training provided by organizations external to the AMWTP, the original training records are typically maintained by the presenting organizations, and a copy of corresponding records is forwarded to the AMWTP Training Director, or designee. This information is entered into the individuals training record.

A training record includes the person's name, identification number, job title/position, and associated training documentation. Each training file includes the person's individual training profile, which identifies the minimum required introductory and continuing training for the calendar year. The form is updated annually.

Training records for AMWTP personnel are maintained as part of the Operating Record per IDAPA 58.01.05.009 (40 CFR 265.73).

Hazardous Waste Management Act/Resource Conservation and Recovery Act Closure Plan for the Transuranic Storage Area Interim Status Units (TSA-1, TSA-2, TSA-R)

Section I of the Transuranic Storage Area Interim Status Document (BNFL-5232-TSA-01, Rev. 2)

TABLE OF CONTENTS

SECTION I

LIST OF TABLES

ACRONYMS and ABBREVIATIONS

AMWTP	Advanced Mixed Waste Treatment Project
ASTM	American Society for Testing and Materials
CFR	Code of Federal Regulations
DEQ	Department of Environmental Quality
DOE-ID	Department of Energy-Idaho Operations Office
EPA	Environmental Protection Agency
gal	gallon
HEPA	high efficiency particulate air
HW	hazardous waste
HWMA	Hazardous Waste Management Act of 1983, as amended
IDAPA	Idaho Administrative Procedures Act
INL	Idaho National Laboratory
IS	Interim Status
m^3	cubic meters
MW	mixed waste
PPE	personal protective equipment
QAPjP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RMF	Retrieval Modification Facility
RWMC	Radioactive Waste Management Complex
SW-846	The EPA manual titled "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods," current edition
TRU	transuranic
TSD	treatment, storage, and disposal
TSA	Transuranic Storage Area
TSA-RE	Transuranic Storage Area-Retrieval Enclosure
U.S.	United States

I. CLOSURE REQUIREMENTS [Idaho Administration Procedures Act (IDAPA) 58.01.05.009; Title 40 of the Code of Federal Regulations (CFR) Part 265, Subpart G]

The Advanced Mixed Waste Treatment Project (AMWTP) Transuranic (TRU) Storage Area (TSA)-Retrieval Enclosure (TSA-RE), commonly known as WMF-636, is located at the Radioactive Waste Management Complex (RWMC) on the Idaho National Laboratory (INL). The TSA-RE, which is not regulated by the Hazardous Waste Management Act (HWMA)/Resource Conservation and Recovery Act (RCRA), is a metal structure that encloses three asphalt pads (TSA-1, TSA-2, and TSA-R) that underlie covered stacks of retrievably stored radioactive only and mixed waste (MW). Hereinafter these pads combined with the TSA-RE Retrieval Modification Facility (RMF) are collectively referred to as the TSA Interim Status (IS) Units. Closure of the TSA-RE RMF will be addressed separately from this Closure Plan. The TSA IS Units are operated by BNFL Inc. under contract with Department of Energy-Idaho Operations Office (DOE-ID).

This Closure Plan, hereinafter referred to as the "Plan," satisfies the requirements at IDAPA 58.01.05.009 [40 CFR 265.112(a)], which requires a facility to have a written closure plan. None of the additional requirements at IDAPA 58.01.05.009 [40 CFR 265.111(c)] apply to the closure of the TSA IS Units. This Plan specifies the performance standards and describes the process for final closure of the TSA IS Units. Upon termination of operation, the owner/operator shall willfully close the TSA IS Units in accordance with the applicable HWMA/RCRA closure requirements promulgated at IDAPA 58.01.05.009 (40 CFR Part 265, Subpart G). The activities and closure performance standards described herein apply only to wastes and waste constituents regulated under HWMA/RCRA; references to radiological parameters are included for informational purposes only. In this Plan, the term *decontamination* refers to the removal of HWMA/RCRA-regulated wastes and waste constituents. Standards and methods for the management of residual radiological contamination (e.g., plutonium) that may be present at the TSA IS Units and disposition of radiologically contaminated government-furnished equipment shall follow the DOE-ID requirements governing the management and disposal of radiologically contaminated materials.

Although closure under HWMA/RCRA is primarily concerned with the hazardous waste (HW) constituents in the MW managed at the TSA IS Units, closure is performed with full cognizance of the radiological component and the threat to human health and the environment engendered by that component. Closure will be performed to ensure the safety of personnel, as follows:

- Qualified AMWTP personnel supervise and perform closure activities in compliance with established safety procedures,

- Personnel are equipped with appropriate personal protective equipment (PPE) and trained in applicable safety procedures, and
- The use of established radiological control procedures to ensure personnel and equipment are clean of radiological contamination before leaving any contaminated area.

While closure employs technologies to safeguard workers, treatment technologies that minimize the generation of aerosols and other particulates are preferentially selected.

I-1 Closure Plan [IDAPA 58.01.05.009; 40 CFR 265.112(b)]

This section of the Plan describes the closure process, closure performance standards, inventory removal, and activities related to decontamination, disposal, and sampling, and analysis. The design and operation of the TSA IS Units and the waste types managed are detailed in Sections B, C, and D of the TSA IS document.

I-1a Partial Closure Activities [IDAPA 58.01.05.009; 40 CFR 265.112(b)(1 - 6)]

Upon removal of all the stored waste on a TSA IS Unit, an evaluation of options will be performed as to how the TSA IS Unit will be managed. Options to be evaluated include the following:

- Permit the TSA IS Unit in accordance with IDAPA 58.01.05.008 and .012 (40 CFR Part 264 and 270),
- Continue operations of the TSA IS Unit under the IS requirements of IDAPA 58.01.05.009 (40 CFR Part 265), or
- Closure of the TSA IS Unit in accordance with this Plan.

I-1b Closure Performance Standard [IDAPA 58.01.05.009; 40 CFR 265.111, .112(b)(1), and .112(b)(2)]

Closure of the TSA IS Units is conducted in accordance with the closure performance standards specified at IDAPA 58.01.05.009 (40 CFR 265.111). Furthermore, all HWMA/RCRA-regulated waste and waste constituents removed during closure of the TSA IS Units are managed in accordance with the applicable requirements of IDAPA 58.01.05.005 through 58.01.05.012 (40 CFR Parts 261 through 270). Refer to Table I-1 for the specifics on how closure of the TSA IS Units satisfies the standards at IDAPA 58.01.05.009 (40 CFR 265.111).

I-1c Maximum Waste Inventory [IDAPA 58.01.05.009; 40 CFR 265.112(b)(3)]

The estimated total maximum HWMA/RCRA-regulated waste inventory at the TSA IS Units is 93,419 cubic meters (m^3) [24,678,658 gallons (gal)]. HWMA/RCRA-regulated waste is stored in a variety of containers as described in Section D of the TSA IS Document. The estimated waste inventory for TSA-1/TSA-R is 76,608 m^3 (20,237,720 gals) and for TSA-2 is 16,811 m^3 (4,440,938 gals). Details on the methods for removing, transporting, treating, storing, or disposing of HWMA/RCRA regulated waste is found in Section I-1d of this Plan.

I-1d Disposal or Decontamination of Equipment, Structures, and Soils [IDAPA 58.01.05.009; 40 CFR 265.112(b)(4) and .114]

Because operational methods at the TSA IS Units place emphasis on the containment and timely response to spills, and because of the TSA IS Units design, releases to the environment from the TSA IS Units are unlikely. Therefore, disposal of contaminated soils located off the TSA IS Units pursuant to this Plan is not anticipated. However, if soil contamination is found underlying the TSA IS Units, or other unexpected locations, it shall be addressed via the Federal Facilities Agreement/Consent Order under the direction of DOE-ID with concurrence from the Idaho Department of Environmental Quality (DEQ). The following subsections provide a description of the actions necessary to manage the disposal or decontamination of equipment or structures contaminated with HWMA/RCRA-regulated waste or waste constituents. Before beginning closure activities, all waste will be removed from the TSA IS Units.

I-1d(1) Sampling and Analysis

All sampling and analysis performed for closure is performed in accordance with the quality standards established in a Closure Quality Assurance Project Plan (QAPP), which will be submitted with the closure notification 45 days before closure of the TSA IS Units begins. The Closure QAPP will detail sampling and analysis procedures in accordance with the current edition of the United States (U.S.) Environmental Protection Agency (EPA) manual titled "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *current edition (*SW-846*)*, the American Society for Testing and Materials (ASTM) Annual Book of ASTM Standards, or other EPA-approved methods.

I-1d(2) Disposal of Equipment

Typically, contaminated equipment from the TSA IS Units that is to be disposed is decontaminated in accordance with the required treatment standards, or other technologies available and approved for such use at the time of closure, for hazardous debris [IDAPA 58.01.05.011 (40 CFR 268.45) to attain a clean debris surface standard.

An assessment of the Operating Record will be conducted to determine the extent of potential contamination. Per this assessment, contaminated equipment will be decontaminated for all HWMA/RCRA-regulated hazardous constituents of concern that are present. The specific technology or technologies will be selected at the time of closure and during closure, based upon the hazardous constituents of concern present and the effectiveness of the selected technology in attaining the closure performance standard. Equipment for which the contaminated surface is not readily visible (e.g., pipe) will be treated by an appropriate alternative treatment standard for hazardous debris (e.g., macroencapsulation) per IDAPA 58.01.05.011 (40 CFR 268.45, Table 1) requirements.

Disposal of decontaminated equipment will be performed in accordance with the applicable HWMA/RCRA requirements.

I-1d(3) Equipment and Structures to be Reused

To be protective of human health and the environment, ancillary equipment and structures designated for reuse are decontaminated to meet the closure performance standard, as verified by sampling and analysis. An assessment of the Operating Record will be conducted to determine the extent of potential contamination. Contaminated equipment and structures are decontaminated to meet the closure performance standard as verified by confirmatory sampling and analysis (as described in the Closure QAPjP). The following section provides additional details for closure of the TSA IS Units.

I-1d(4) TSA IS Closure Procedures

Ventilation systems are maintained during closure, as required, to provide contamination control. Portable containment, such as tents or glove bags, may be used to protect workers and control the spread of airborne and surface contamination if closure activities disturb residual contamination.

Cleaning/decontamination. The TSA IS Units are designed and constructed to prevent migration of MW constituents. Spills and leaks are cleaned up in a timely manner and documented appropriately.

After operations cease and all waste remaining in the TSA IS Units has been removed, the TSA IS Units shall be thoroughly cleaned. The asphalt pads are swept or vacuumed using vacuum cleaners equipped with high efficiency particulate air (HEPA) filters, if required.

Following cleaning, qualified personnel shall visually inspect the TSA IS Units for evidence that hazardous constituents still exist. Additionally, the Operating Record will be reviewed to determine if further cleaning and/or decontamination is required. Any HWMA/RCRA-regulated waste residues generated during

cleaning/decontamination are placed in approved containers and managed in accordance with the applicable HWMA/RCRA requirements.

Cleaning/decontamination verification. Confirmatory sampling and analysis (as outlined in the Closure QAPP) will follow cleaning/decontamination of the TSA IS Units, until it is established that decontamination actions have removed hazardous constituents of concern to the closure performance standard. If verification testing detects hazardous constituents of concern above the closure performance standard, the contaminated equipment, structure, or areas are decontaminated again, followed by confirmatory sampling and analysis. Closure is achieved when the TSA IS Units satisfy the standards at IDAPA 58.01.05.009 (40 CFR 265.111).

Cracked or unsealed surfaces. The TSA IS Units are inspected on a regular basis to identify structural problems that could result in migration of MW constituents (see Section F of the TSA IS Document for inspection schedules). If the visual inspection identifies TSA IS Unit surfaces that are cracked or unsealed, the following actions are performed to meet the closure performance standard at IDAPA 58.01.05.009 (40 CFR 265.111):

- Review the Operating Record to determine if HWMA/RCRA-regulated hazardous constituents of concern may be present,
- Decontaminate/remediate as appropriate for the HWMA/RCRA-regulated hazardous constituents of concern using a technology appropriate for the hazardous constituents of concern, and
- Sample and analyze the decontaminated surface in accordance with the Closure QAPP until the standards at IDAPA 58.01.05.009 (40 CFR 265.111) are satisfied.

Decontamination materials and equipment. Spent decontamination materials and residues (e.g., swabs, wipes, PPE, sampling equipment and residue, HEPA vacuum cleaner filters) are characterized per process knowledge or sampled and analyzed in accordance with the Closure QAPP. Based on the results of analysis, closure wastes are managed to ensure proper handling, treatment, storage, and disposal (TSD). Equipment used for closure cleanup/decontamination is managed using the same methods and standards described above.

Any decontamination liquids are contained within the work area, collected in containers, and characterized by process knowledge in accordance with the Closure QAPP. Spill booms, spill control pillows, swabs, or other absorbent material(s) may be used to contain the decontamination liquids and to facilitate removal. Spent decontamination materials and other wastes may be treated by an AMWTP

technology (see discussion below for the order of closure) or packaged for transport to another waste management unit. Following decontamination, the work area is sampled and analyzed, as required, in accordance with the Closure QAPP.

I-1d(5) Order of Closure

To the extent practicable, closure activities associated with the closure of the TSA IS Units are accomplished utilizing other HWMA/RCRA-permitted facilities at the AMWTP, including treatment or storage at other AMWTP waste management units. Decontamination activities are performed in a step-wise fashion to maximize the use of the AMWTP waste management units and thereby minimize the quantity of HWMA/RCRA-regulated decontamination wastes requiring subsequent management. The major steps in the closure of the TSA IS Units include:

- Removal of waste inventory followed by treatment, to the extent practicable;
- Cleaning/decontamination in accordance with this Plan;
- Inspection and verification in accordance with this Plan and the Closure QAPP to assure that the closure performance standards at IDAPA 58.01.05.009 (40 CFR 265.111) are satisfied;
- Management of HWMA/RCRA-regulated newly-generated waste in accordance with this Plan and the Closure QAPP; and
- Closure certification.

I-1e Amendment of Plan [IDAPA 58.01.05.009; 40 CFR 265.112(c)]

Amendments to this Plan will be in accordance with IDAPA 58.01.05.009 [40 CFR 265.112(c)]. A copy of the Plan and supporting documentation is maintained as part of the Operating Record. The Plan will be amended in the future:

- At the time of closure to address the schedule for closure, changes to regulatory standards for cleanup, sampling based on the Operating Record, decontamination methods/technologies to be employed, changes to how and where disposal of equipment and structures will take place, and other changes necessary to accomplish the closure performance standard specified at IDAPA 58.01.005.009 (40 CFR 265.111);
- If it becomes desirable or necessary to close the TSA IS Units in advance of the schedule included in the Plan;
- Whenever changes in the TSA IS Units' operating plans or design affect the Plan;

- If there is a change in the expected year of closure;
- If, when conducting closure activities, an unexpected event requires an amendment;
- If a change in HWMA/RCRA regulations require amending the Plan; or
- At the request of the Director.

The Permittee will submit a written notification that includes a copy of the amended Plan to the Director 60 days before a proposed change in the operation or design of one or more of the TSA IS Units that affects the Closure Plan; or no later than 60 days after an unexpected event occurs that affects the Plan; or no later than 30 days after an unexpected event occurs during closure.

I-1f Schedule and Notification of Closure [IDAPA 58.01.05.009; 40 CFR 265.112(b)(6) and .112(d)]

The AMWTP will complete its mission in approximately 2018. The following schedule assumes closure in 2019; if the decision is made to operate any of the TSA IS Units beyond that date, this Plan will be amended as previously described. The Director will be notified at least 45 days before the planned start of closure activities. Refer to Table I-2 for a tabulated summary of the schedule calendar.

Table I-1. Closure Performance Standards

Closure Performance Standard	Attainment Strategy
The owner or operator must close the facility in a manner that: a) Minimizes the need for further maintenance.	Prior to and during closure all HWMA/RCRA-regulated waste and waste constituents will be removed from the TSA IS Units. No waste will be accepted in the TSA IS Units once closure has commenced.
b) Controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous constituents, leachates, contaminated runoffs, or hazardous waste decomposition products to groundwater, surface water, or the atmosphere.	The TSA IS Units will be closed by the removal of HWMA/RCRA-regulated hazardous waste, hazardous waste constituents, and waste decomposition products, as well as the elimination of any source material that could generate contaminated leachates or runoff. In addition, pursuant to IDAPA 58.01.05.009 [40 CFR 265.110(b)] the HWMA/RCRA post-closure requirements at IDAPA 58.01.05.009 (40 CFR 265.116 through 40 CFR 265.120, and 40 CFR 265, Subpart H) are not applicable to the closure of the TSA IS Units.
c) Complies with the closure requirements of IDAPA 58.01.05.009 (40 CFR §§ 265.197, .228, .258, .280, .310, .351, and .1102).	The Plan describes the processes used to close the TSA IS Units in accordance with IDAPA 58.01.05.009 (40 CFR 265, Subpart G) closure requirements. None of the additional requirements apply to closure of the TSA IS Units.

Table I-2. Closure Schedule

Activity	Day
Notify the Director	45 days before closure initiation
Initiate closure activities	Day 0
Complete equipment decontamination	Day 100
Complete decontamination of affected surfaces	Day 140
Decontaminate tools, complete waste assessments, remove closure waste materials	Day 160
Verify closure performance standard has been met	Day 180
Inspect and certify closure	Day 180
Complete all closure activities	Day 180
Submit closure certification to the Director	By 60 days after closure

I-2 Extensions for Closure Time [IDAPA 58.01.05.009; 40 CFR 265.113(a) and (b)]

The schedule presented in Section I-1f and Table I-2 indicates closure of the TSA IS Units occurring within the 180 days recommended at IDAPA 58.01.05.009 (40 CFR 265.113). No extension is requested at this time. However, it is recognized that this schedule may be ambitious, and that an extension may be required. That determination will be made closer to the time of closure based on the operating history of the TSA IS Units; or during closure based on how rapidly closure activities are being accomplished. If an extension becomes necessary in the future, it will be presented in the amended Plan (if based on operating history) or a request will be submitted at least 30 days before day 180 (if the need for an extension is identified during closure).

I-3 Certification of Closure [IDAPA 58.01.05.009; 40 CFR 265.115]

An independent Idaho-registered professional engineer will be present during critical closure activities and will certify closure at the conclusion of the closure process. The certification will document that the TSA IS Units have been closed in accordance with the approved Plan. The certification is submitted for approval to the Director within 60 days of completion of closure. Upon Director approval, closure will be considered complete.

I-4 Post-Closure Requirements [IDAPA 58.01.05.009; 40 CFR 265, Subpart G]

Pursuant to IDAPA 58.01.05.009 [40 CFR 265.110(b)] the HWMA/RCRA post-closure requirements at 58.01.05.009 (40 CFR 265.116 through 40 CFR 265.120) are not applicable.

I-5 Closure Financial Requirements [IDAPA 58.01.05.009; 40 CFR Part 265, Subpart H]

I-5a Closure Cost Estimates [IDAPA 58.01.05.009; 40 CFR 265.142]

DOE-ID, the owner of the TSA IS Units, as a federal government unit is exempt from the closure cost estimate requirement, in accordance with IDAPA 58.01.05.009 [40 CFR 265.140(c)].

I-5b Financial Assurance for Closure [IDAPA 58.01.05.009; 40 CFR 265.143]

DOE-ID, the owner of the TSA IS Units, as a federal government unit is exempt from providing a financial assurance mechanism for closure, in accordance with IDAPA 58.01.05.009 [40 CFR 265.140(c)].

I-5c Liability Requirements [IDAPA 58.01.05.009; 40 CFR 265.147 and .148]

DOE-ID, the owner of the TSA IS Units, as a federal government unit is exempt from the liability requirements for closure, in accordance with IDAPA 58.01.05.009 [40 CFR 265.140(c)].

I-5d Use of State Required Financial Mechanisms [IDAPA 58.01.05.009; 40 CFR 265.149]

DOE-ID, the owner of the TSA IS Units, as a federal government unit is exempt from the state required financial mechanism requirements for closure, in accordance with IDAPA 58.01.05.009 [40 CFR 265.140(c)].

I-5e State Assumption of Responsibility [IDAPA 58.01.05.009; 40 CFR 265.150]

DOE-ID, the owner of the TSA IS Units, as a federal government unit is exempt from the state assumption of responsibility requirements for closure, in accordance with IDAPA 58.01.05.009 [40 CFR 265.140(c)].

I-6 Post-Closure Financial Requirements [IDAPA 58.01.05.009; 40 CFR Part 265, Subpart H]

Pursuant to IDAPA 58.01.05.009 [40 CFR 265.140(b)], the HWMA/RCRA post-closure financial requirements at 58.01.05.009 (40 CFR 265.144 through .146) are not applicable to the TSA IS Units.