

Class 2 Permit Modification Request

Clarify Language Regarding Liquid

Clarify Language Regarding Visual Examination

Clarify Language Regarding Nonconformances

**Waste Isolation Pilot Plant
Carlsbad, New Mexico**

WIPP HWFP Number - NM4890139088-TSDF

January 2010

Table of Contents

Overview of the Permit Modification Request.....	3
Item 1 Overview of the Permit Modification Request.....	4
Regulatory Crosswalk – Item 1	12
Attachment A Table of Changes – Item 1.....	16
Table of Changes – Item 1	17
Attachment B Proposed Revised Permit Text – Item 1.....	21
Proposed Revised Permit Text – Item 1	22
Attachment C Figures, Drawings and/or Supporting Supplemental Information – Item 1.....	34
Figure	35
Item 2 Overview of the Permit Modification Request.....	36
Regulatory Crosswalk – Item 2	41
Attachment A Table of Changes – Item 2.....	45
Table of Changes – Item 2	46
Attachment B Proposed Revised Permit Text – Item 2.....	49
Revised Permit Text – Item 2.....	50
Item 3 Overview of the Permit Modification Request.....	56
Regulatory Crosswalk – Item 3	60
Attachment A Table of Changes – Item 3.....	64
Table of Changes – Item 3	65
Attachment B Proposed Revised Permit Text – Item 3.....	66
Revised Permit Text – Item 3.....	67
B6 Checklists Proposed Changes for Item 1, Item 2, and Item 3.....	69

Acronyms and Abbreviations

AK	acceptable knowledge
CBFO	Carlsbad Field Office
CFR	Code of Federal Regulations
CIS	Characterization Information Summary
DOE	U.S. Department of Energy
DQO	Data Quality Objective
HWDU	Hazardous Waste Disposal Unit
L	Liter
mL	milliliter
NCR	nonconformance report
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
Permit	Hazardous Waste Facility Permit
Permittees	Carlsbad Field Office and Washington TRU Solutions LLC
PMR	Permit Modification Request
QAPD	Quality Assurance Program Document
RCRA	Resource Conservation and Recovery Act
SPM	Site Project Manager
TRU	transuranic
VE	visual examination
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan
WIPP	Waste Isolation Pilot Plant
WSPF	Waste Stream Profile Form
WTS	Washington TRU Solutions LLC

Overview of the Permit Modification Request

This document contains three Class 2 Permit Modification Requests (**PMR**) to the Hazardous Waste Facility Permit (**Permit**) at the Waste Isolation Pilot Plant (**WIPP**), Permit Number NM4890139088-TSDF hereinafter referred to as the Permit.

This PMR is being submitted by the U.S. Department of Energy (**DOE**), Carlsbad Field Office (**CBFO**) and Washington TRU Solutions LLC (**WTS**), collectively referred to as the Permittees, in accordance with the Permit, Condition I.B.1 (20.4.1.900 New Mexico Administrative Code (**NMAC**) incorporating Title 40 Code of Federal Regulations (**CFR**) §270.42(b)). Modifications to the Permit are requested for the following items:

1. Clarify language regarding liquid
2. Clarify language regarding visual examination (**VE**)
3. Clarify language regarding nonconformances.

Each of these items will be addressed separately within this Class 2 package.

These changes do not reduce the ability of the Permittees to provide continued protection to human health and the environment.

The requested modification to the WIPP Permit and related supporting documents are provided in this PMR. Each item contains an Attachment A which is a Table of the Changes being made and an Attachment B which contains the exact changes proposed by this item. Item 1 also contains an Attachment C containing information that supports the proposed changes. The proposed changes to the B6 Checklists for Item 1, Item 2, and Item 3 are attached at the end of this package. The Permittees have adopted the following conventions within this proposed modification:

- Added text has been identified using **red text** and a double underline,
- Deleted text is shown using a ~~strikeout~~ font
- Direct quotes are indicated by italicized text.

Item 1

Overview of the Permit Modification Request

This PMR is being submitted by the DOE, and WTS, collectively referred to as the Permittees, in accordance with the Permit, Condition I.B.1 (20.4.1.900 NMAC incorporating 40 CFR §270.42(b)). This Item proposes the following:

1. Change the liquid prohibition and clarify the associated language:
 - Impose an overall 1 percent liquid limit for a waste container
 - Define a de minimus liquid volume for small internal containers
 - Prohibit overpacking and redistribution of untreated liquid as a means to mitigate liquid in excess of the liquid limit.
2. Define the terms with regard to the liquid prohibition:
 - Observable liquid
 - Internal container.
3. Clarify the following terms associated with the liquid prohibition and with characterization by radiography or VE; “payload container,” “inner container,” “internal container,” and “residual liquid.”
4. Make editorial changes applicable to this PMR (e.g., “liquids” to “liquid”).

These changes do not reduce the ability of the Permittees to provide continued protection to human health and the environment.

The requested modification to the WIPP Permit and related supporting documents are provided in this PMR along with a description of the exact change being sought and the rationale for the changes. The following information specifically addresses how compliance has been achieved with Permit Condition I.B.1 for submission of this Class 2 PMR.

1. **20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(1)(i)), requires the applicant to describe the exact change to be made to the permit conditions and supporting documents referenced by the permit.**

This PMR proposes new definitions for “observable liquid,” and “internal container.”

This PMR also proposes clarifying language regarding the liquid prohibition in Permit Condition II.C.3, Permit Attachment B, Section B-1c and Permit Attachment F, Section F-1c. It includes the following changes:

- In the first bullet in Section B-1c, change “liquid waste” to “Liquid waste is not acceptable at WIPP.” This change retains the overall prohibition against the disposal of liquid waste at the WIPP facility while accommodating the changes to volume limits for liquid proposed in this PMR. This is consistent with the proposed language in Condition II.C.3.a.
- The liquid prohibition is clarified by changing “liquids” to “liquid”; by delineating the liquid volume allowed by the Permit; and by presenting the prohibition as a list of bullets that delineates the liquid prohibition.
 - The overall 1 percent observable liquid limit for the waste container is unchanged.
 - A 3 percent by volume observable liquid limit is specified for internal containers.
 - An allowable de minimus liquid volume of 60 milliliters (mL) is proposed for internal containers. This means that internal containers with 60 mL or less liquid will not be prohibited, even if the volume of liquid in the internal container exceeds the 3 percent liquid volume limit for internal containers.
 - However, more than 3 percent liquid will be allowed in internal containers in situations where acceptable knowledge (**AK**) can demonstrate that the liquid does not exhibit the characteristic of ignitability, corrosivity, or reactivity, and where justification is included in the Characterization Information Summary (**CIS**).
 - This PMR proposes language to clarify that overpacking or redistributing untreated liquid within the container will not be used as a method for meeting the liquid prohibition volume limits.

This PMR clarifies the terms “payload container,” “inner container,” “internal container,” and “residual liquid” associated with the liquid prohibition and with characterization by radiography or VE.

- Definitions for “internal container” and “observable liquid” are being added as Permit Conditions I.D.17 and I.D.18 respectively.

Language regarding the liquid prohibition is also revised in Permit Attachment F, Section F-1c by removing the language that repeats the liquid prohibition and, instead, referring to Permit Attachment B, Section B-1c.

The Permittees have revised the Permit to clarify the aforementioned language in Permit Modules I and II as well as in Permit Attachments B, B1, B3, B4, B6, B7, E, F, H2, I3, and M1.

Editorial changes are being made to clarify Permit requirements made to be consistent with the liquid prohibition and the Waste Analysis Plan (**WAP**);

- Change “EPA hazardous waste number” to “EPA Hazardous Waste Number,”

“waste codes” to “waste numbers” and to change “liquids” to “liquid.” These changes are being made to ensure the consistent use of these terms and correct inconsistencies in the B6 Checklists.

- Change “be considered classified information” to “contain classified information” in Sections B1-3 and B7-1b. This change was made to re-assure that radiography forms will not contain classified information and will not require special handling.
- Delete “residual materials” from Sections B1-4 and B7-1c because this term is not defined in the Permit and may be confused with existing Permit language related to the term “residual liquids” that is being changed to “liquid.”

The Table of Changes and the redline strikeout in this modification describe each change that is being proposed. The redline strikeout also contains some changes related to Item 2 of this PMR package. Corresponding changes to the B6 Checklists are included as an attachment at the end of the Class 2 package.

2. 20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(1)(ii)), requires the applicant to identify that the modification is a Class 2 modification.

The proposed modification is classified as Class 2 Permit Modification for the reason indicated below:

“Changes to waste sampling or analysis methods: ...other changes...” in accordance with 20.4.1.900 NMAC incorporating 40 CFR §270.42 Appendix I, Item B.1.d.

3. 20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(1)(iii)), requires the applicant to explain why the modification is needed.

This modification is needed to clarify language in the Permit that has created confusion with regard to implementation. Specifically, the “liquid waste” prohibition in the current Permit contains language regarding pumping, pouring, and aspirating internal containers as a means of rendering them well-drained. While the Permittees have consistently applied this language to internal containers, the New Mexico Environment Department (**NMED**) recently pointed out that the language can also be interpreted as applying to any liquid, regardless of volume (such as liquid that desorbs from sludges) if such liquid is removable. Clarification is needed in three specific areas: what kind of liquid is allowed for disposal at the WIPP facility; how much liquid is allowed for disposal at the WIPP facility; what is the basis for measuring or estimating the volume of liquid. Reasons for the specific changes and explanations of how the changes provide the needed clarification are discussed below.

What kind of liquid is allowed at the WIPP facility?

Originally, the liquid prohibition was aimed at preventing liquid waste from being

shipped to WIPP for management and disposal. There were a number of reasons for this; however, the prohibition was primarily aimed at minimizing the potential for contamination should retrieval of the waste be necessary after the originally proposed "Pilot Plant" Phase. The prohibition allowed for "residuals" remaining after "reasonable" attempts were made to drain liquid waste from an internal container. The liquid prohibition used the term "residual liquid" to describe what is allowed. The term "residual liquid" has been a source of confusion especially with regards to sludge waste. In addition, the determination of 1 inch has been difficult to implement for internal containers in debris waste where the internal containers may have a random orientation in the waste container.

With regard to the term "residual liquid", it was first defined in the WIPP Waste Acceptance Criteria (**WAC**), WIPP-DOE-069, Revision 4.

Residual Liquid - Liquids in quantities of less than one volume percent of the waste container that result from: liquid residues remaining in well-drained internal containers; condensation of moisture; and liquid separation resulting from sludge or resin settling.

This is the version of the WAC that was used in preparing the original Permit Application and the definition is the Permittees' operable definition for residual liquid. Although the definition itself was not codified in the Permit, it is used throughout.

Based on this definition, the Permittees considered the requirement for well drained containers as applying to internal containers in debris waste and not liquids that occur in containers of soils and gravels or homogeneous solids. Program implementation at the generator sites was based on this interpretation.

The original definition specifically accommodated liquid in sludge waste differently than liquid in debris waste, but the current prohibition in the Permit does not explicitly have this accommodation. To correct this, the term "residual liquid" is replaced with "observable liquid" or "liquid." Observable liquid is liquid that can be seen by a trained radiography operator or by a trained operator performing visual examination of the waste. This terminology can be implemented consistently during characterization regardless of waste type.

The operator no longer has to determine the source of the liquid, nor be concerned with the removability of the liquid or if the generator's efforts to remove the liquid were reasonable. The operator only needs to "observe" the liquid and estimate the volume.

Related to the question "What kind of liquid is allowed at the WIPP facility?" is the determination of ignitable, corrosive, or reactive waste. These are prohibited for management at the WIPP facility. Part of the process for determining that these prohibited items are not present is the determination that the Permit liquid volume limit is met. This process was included in the Permit based on an interpretation for the "RCRA empty container" definition (40 CFR 261.7).

Therefore, the answer to the question “What kind of liquid is allowed at the WIPP facility?” is “observable liquid in quantities that do not exceed 1 percent by volume of the outermost container at the time of radiography or visual examination (subject to other prohibitions regarding specific hazardous waste numbers).”

How much liquid is allowed for disposal at the WIPP facility?

There are three separate considerations in answering this question. First, there is an overall limit of 1 percent observable liquid in a waste container (the definition of a waste container is the next topic). Second, there is a 60 mL volume that is set as a de minimus value for liquid consideration. Third, there is a 3 percent limit for internal containers when the acceptable knowledge record does not indicate the absence of D001, D002 or D003 waste.

Overall volume limits: The Environmental Protection Agency has imposed a repository waste liquid limit of 1 percent based on calculations performed as part of WIPP repository compliance with 40 CFR 191, Subparts B and C. This limit is met by enforcing a 1 percent liquid limit on any waste shipped to the WIPP facility for disposal. There is a historical basis for the 1 percent and it has not posed an implementation problem for the Permittees. In the proposed modification, the Permittees retain this volume limit and apply it to the contents of a waste container. This means that the sum of all observable liquid, whether in internal containers or not, cannot exceed 1 percent of the volume of the outermost container at the time of radiography or VE.

De minimus volume limit: The Permittees have concluded that there are numerous occasions when a generator must open a container for remediating very small volumes of liquid simply because the amount of liquid, though small, exceeds the current limit for an internal container. For example, Attachment C shows a small container in a 55-gallon drum of waste from the Savannah River Site. The amount of liquid was estimated by the operator to be 3 tablespoons (45 mL). It was the only liquid in the 55-gallon drum, and was, therefore, well below the 1 percent limit for the waste container (2,000 mL). However, under the current Permit, the small container had to be removed and drained because it contained greater than 1 inch of liquid. A 2 liter (L) container with the same quantity of liquid (45 mL) would have been acceptable for disposal because it would amount to less than 1 inch of liquid in the bottom of the 2 L container. The radiation hazards associated with remediating this small amount of liquid could have been avoided if a de minimus volume existed for internal containers, as proposed in this PMR. Similar waste streams are anticipated in the future as well as waste streams with vials, capillary-type labware, and other small containers.

In order to accommodate these types of debris waste, the Permittees are proposing that if a “small container” has less than 60 mL observable liquid (e.g., Attachment C) it would not be prohibited. Small containers are typically 2 L or less. This limit is based on several considerations. First, commonly used vials, such as scintillation vials typically range in size up to 40 mL. Second, a common type of container found in transuranic debris waste is the 2 L poly bottle. Because of its common occurrence, the Permittees

are proposing the 2 L size as the upper limit for “small containers” and consequently define the de minimus volume as 3 percent of a 2-liter container, or 60 mL.

While capillary-type labware (e.g. pipettes) is used to contain liquid for specific purposes, it is not typically drained prior to disposal and therefore is excluded from the definition of an internal container.

While this proposed provision for a de minimus volume of liquid may allow liquid in small containers in quantities that were previously prohibited to be emplaced in the WIPP repository, it does not allow the repository limit of 1 percent or the individual waste container limit of 1 percent to be exceeded.

Volume limit for internal containers: The Permittees are proposing to define the volume limit for internal containers to 3 percent. The rationale for this is related to the definition of a Resource Conservation and Recovery Act (**RCRA**) empty container in 20.4.1.200 NMAC (incorporating 40 CFR §261.7(b)(iii)). The regulations indicate that no more than 3 percent of the total capacity of the container may remain if the container is less than or equal to 119 gallons in size. Therefore, if a waste was generated with the 3 percent limit in mind, imposing a stricter limit may result in unnecessary remediation of a container that is otherwise acceptable for disposal.

Related to this, the Permittees are proposing that internal containers can have more liquid in them (up to 100% percent) as long as the generator can produce documentation from the AK record indicating that the liquid is not otherwise prohibited as ignitable, corrosive or reactive waste and the total volume of liquid in the waste container does not exceed 1 percent and justification is included in the CIS. For example, a 2 L container of liquid in a 55-gallon drum that has been radiographed may be acceptable if this is the only liquid present in the 55-gallon drum. The generator storage site will have to submit appropriate justification for this allowance with the CIS attached to the Waste Stream Profile Form submitted to the Permittees for approval. A Waste Stream Profile Form cannot be approved by the Permittees without this justification. Once again, the purpose of this revised condition is to avoid the hazards associated with unnecessary remediation of containers that are otherwise acceptable for disposal. Note that utilization of this exemption is expected to be rare, and will be utilized only where clear justification is available in the AK.

While this proposed provision for a greater than 3 percent volume of liquid may allow liquid in internal containers in quantities that were previously prohibited to be emplaced in the WIPP repository, it does not allow the repository limit of 1 percent or the individual waste container limit of 1 percent to be exceeded.

Therefore, the answer to the question “How much liquid is allowed for disposal at the WIPP facility?” is “no more than 1 percent in a waste container, no more than 3 percent in an internal container unless the internal container is small and the volume of observable liquid is 60 mL or less, or there is documentation that the liquid is not prohibited.”

What is the basis for measuring or estimating the volume of liquid?

This question is directly related to the definition of a “container” as it is used in the WAP regarding characterization. In the WAP a waste container is a unit for characterization subject to radiography or VE. In implementing the liquids prohibition there has been confusion with regard to the role of containers in evaluating the liquid volume limits. Similarly, there has been confusion regarding debris items such as flashlights and plastic bags when evaluating compliance with the liquid prohibition. To mitigate this confusion regarding containers, the Permittees are proposing to three measures:

- Define explicitly what container the 1 percent limit applies to
- Define what constitutes an internal container
- Minimize the use of terms such as “inner containers” and “payload containers.”

In this regard, the PMR proposes the following:

- The first bullet of the liquid prohibition clarifies that the 1 percent observable liquid prohibition applies to the outermost container at the time of radiography or visual examination.
- The term “internal container” is defined as a container inside a waste container. Drum liners, liner bags, plastic bags used for contamination control, capillary-type labware, and debris not intended to hold liquid at the time of original waste packaging are not internal containers.
- In Permit Attachment B, Section B-3c the term “payload container” has been replaced with “container being characterized using VE” or “container being characterized using radiography or VE” in discussions related to using radiography or VE to evaluate the observable liquid content. These changes are required to correspond with the liquid prohibition changes relative to the outermost container at the time of radiography or visual examination.
- The term “inner container” has been changed to “internal container.”

In addition to the above definitions, the Permittees are proposing that overpacking a waste container or redistributing untreated liquid within the container shall not be used as a mechanism to meet the liquid volume limit. Therefore, the answer to the question “What is the basis for measuring or estimating the volume of liquid?” is:

- For the overall limit of 1 percent it is the waste container, which is the outer container that holds the waste during radiography or visual examination.
- For containers inside waste containers it is the volume of each internal container.

Editorial changes are being made to be consistent with the liquid prohibition and the WAP;

- Change “EPA hazardous waste number” to “EPA Hazardous Waste Number,” “waste codes” to “waste numbers” and to change “liquids” to “liquid.” These changes are being made to ensure the consistent use of these terms.
 - Change “be considered classified information” to “contain classified information” in Sections B1-3 and B7-1b. This change was made to re-assure that radiography forms will not contain classified information and will not require special handling.
 - Delete “residual materials” from Sections B1-4 and B7-1c because this term is not defined in the Permit and may be confused with existing Permit language related to “residual liquid” that is being changed to “liquid.”
- 4. 20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(1)(iv)), requires the applicant to provide the applicable information required by 40 CFR §§270.13 through 270.22, 270.62, 270.63, and 270.66.**

The regulatory crosswalk describes those portions of the Permit that are affected by this PMR. Where applicable, regulatory citations in this modification reference 20.4.1 NMAC revised March 1, 2009, incorporating 40 CFR (40 CFR Parts 264 and 270). Title 40 CFR §§270.16 through 270.22, 270.62, 270.63 and 270.66 are not applicable at WIPP. Consequently, they are not listed in the regulatory crosswalk table. Title 40 CFR §270.23 is applicable to the WIPP Hazardous Waste Disposal Units (**HWDUs**). This modification does not impact the conditions associated with the HWDUs.

- 5. 20.4.1.900 NMAC (incorporating 40 CFR §270.11(d)(1) and 40 CFR §270.30(k)), requires any person signing under paragraphs a and b must certify the document in accordance with 20.4.1.900 NMAC.**

The transmittal letter for this PMR contains the signed certification statement in accordance with Module I.F of the Permit.

Regulatory Crosswalk – Item 1

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
§270.13		Contents of Part A permit application	Attachment O, Part A		✓
§270.14(b)(1)		General facility description	Attachment A		✓
§270.14(b)(2)	§264.13(a)	Chemical and physical analyses	Attachment B	✓	
§270.14(b)(3)	§264.13(b)	Development and implementation of waste analysis plan	Attachment B	✓	
	§264.13(c)	Off-site waste analysis requirements	Attachment B	✓	
§270.14(b)(4)	§264.14(a-c)	Security procedures and equipment	Attachment C		✓
§270.14(b)(5)	§264.15(a-d)	General inspection requirements	Attachment D		✓
	§264.174	Container inspections	Attachment D		✓
§270.23(a)(2)	§264.602	Miscellaneous units inspections	Attachment D		✓
§270.14(b)(6)		Request for waiver from preparedness and prevention requirements of Part 264 Subpart C	NA		
§270.14(b)(7)	264 Subpart D	Contingency plan requirements	Attachment F		✓
	§264.51	Contingency plan design and implementation	Attachment F		✓
	§264.52 (a) & (c-f)	Contingency plan content	Attachment F		✓
	§264.53	Contingency plan copies	Attachment F		✓
	§264.54	Contingency plan amendment	Attachment F		✓
	§264.55	Emergency coordinator	Attachment F		✓
	§264.56	Emergency procedures	Attachment F		✓
§270.14(b)(8)		Description of procedures, structures or equipment for:	Attachment E		✓
§270.14(b)(8)(i)		Prevention of hazards in unloading operations (e.g., ramps and special forklifts)	Attachment E		✓
§270.14(b)(8)(ii)		Runoff or flood prevention (e.g., berms, trenches, and dikes)	Attachment E		✓
§270.14(b)(8)(iii)		Prevention of contamination of water supplies	Attachment E		✓
§270.14(b)(8)(iv)		Mitigation of effects of equipment failure and power outages	Attachment E		✓
§270.14(b)(8)(v)		Prevention of undue exposure of personnel (e.g., personal protective equipment)	Attachment E		✓
§270.14(b)(8)(vi) §270.23(a)(2)	§264.601	Prevention of releases to the atmosphere	Module II Module IV Attachment M2 Attachment N		✓
	264 Subpart C	Preparedness and Prevention	Attachment E		✓
	§264.31	Design and operation of facility	Attachment E		✓
	§264.32	Required equipment	Attachment E Attachment F		✓
	§264.33	Testing and maintenance of equipment	Attachment D		✓

Regulatory Crosswalk – Item 1

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
	§264.34	Access to communication/alarm system	Attachment E		✓
	§264.35	Required aisle space	Attachment E		✓
	§264.37	Arrangements with local authorities	Attachment F		✓
§270.14(b)(9)	§264.17(a-c)	Prevention of accidental ignition or reaction of ignitable, reactive, or incompatible wastes	Attachment E		✓
§270.14(b)(10)		Traffic pattern, volume, and controls, for example: Identification of turn lanes Identification of traffic/stacking lanes, if appropriate Description of access road surface Description of access road load-bearing capacity Identification of traffic controls	Attachment G		✓
§270.14(b)(11)(i) and (ii)	§264.18(a)	Seismic standard applicability and requirements	Part B, Rev. 6 Chapter B		✓
§270.14(b)(11)(iii-v)	§264.18(b)	100-year flood plain standard	Part B, Rev. 6 Chapter B		✓
	§264.18(c)	Other location standards	Part B, Rev. 6 Chapter B		✓
§270.14(b)(12)	§264.16(a-e)	Personnel training program	Permit Module II Attachment H	✓	
§270.14(b)(13)	264 Subpart G	Closure and post-closure plans	Attachment I & J		✓
§270.14(b)(13)	§264.111	Closure performance standard	Attachment I		✓
§270.14(b)(13)	§264.112(a), (b)	Written content of closure plan	Attachment I		✓
§270.14(b)(13)	§264.112(c)	Amendment of closure plan	Attachment I		✓
§270.14(b)(13)	§264.112(d)	Notification of partial and final closure	Attachment I		✓
§270.14(b)(13)	§264.112(e)	Removal of wastes and decontamination/dismantling of equipment	Attachment I		✓
§270.14(b)(13)	§264.113	Time allowed for closure	Attachment I		✓
§270.14(b)(13)	§264.114	Disposal/decontamination	Attachment I		✓
§270.14(b)(13)	§264.115	Certification of closure	Attachment I		✓
§270.14(b)(13)	§264.116	Survey plat	Attachment I		✓
§270.14(b)(13)	§264.117	Post-closure care and use of property	Attachment J		✓
§270.14(b)(13)	§264.118	Post-closure plan; amendment of plan	Attachment J		✓
§270.14(b)(13)	§264.178	Closure/containers	Attachment I		✓
§270.14(b)(13)	§264.601	Environmental performance standards-Miscellaneous units	Attachment I		✓
§270.14(b)(13)	§264.603	Post-closure care	Attachment I		✓
§270.14(b)(14)	§264.119	Post-closure notices	Attachment J		✓
§270.14(b)(15)	§264.142	Closure cost estimate	NA		✓
	§264.143	Financial assurance	NA		✓
§270.14(b)(16)	§264.144	Post-closure cost estimate	NA		✓
	§264.145	Post-closure care financial assurance	NA		✓

Regulatory Crosswalk – Item 1

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
§270.14(b)(17)	§264.147	Liability insurance	NA		✓
§270.14(b)(18)	§264.149-150	Proof of financial coverage	NA		✓
§270.14(b)(19)(I), (vi), (vii), and (x)		Topographic map requirements Map scale and date Map orientation Legal boundaries Buildings Treatment, storage, and disposal operations Run-on/run-off control systems Fire control facilities	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(ii)	§264.18(b)	100-year floodplain	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(iii)		Surface waters	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(iv)		Surrounding Land use	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(v)		Wind rose	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(viii)	§264.14(b)	Access controls	Attachment O Part A Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(ix)		Injection and withdrawal wells	Attachment O Part A Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(xi)		Drainage on flood control barriers	Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(xii)		Location of operational units	Part B, Rev. 6 Chapter B		✓
§270.14(b)(20)		Other federal laws Wild and Scenic Rivers Act National Historic Preservation Act Endangered Species Act Coastal Zone Management Act Fish and Wildlife Coordination Act Executive Orders	Part B, Rev. 6 Chapter K		✓
§270.15	§264 Subpart I	Containers	Attachment M1		✓
	§264.171	Condition of containers	Attachment M1		✓
	§264.172	Compatibility of waste with containers	Attachment M1		✓
	§264.173	Management of containers	Attachment M1		✓
	§264.174	Inspections	Attachment D Attachment M1		✓
§270.15(a)	§264.175	Containment systems	Attachment M1	✓	

Regulatory Crosswalk – Item 1

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
§270.15(c)	§264.176	Special requirements for ignitable or reactive waste	Attachment E Permit Module II		✓
§270.15(d)	§264.177	Special requirements for incompatible wastes	Attachment E Permit Module II		✓
	§264.178	Closure	Attachment I		✓
§270.15(e)	§264.179	Air emission standards	Attachment E Attachment N		✓
§270.23	264 Subpart X	Miscellaneous units	Attachment M2		✓
§270.23(a)	§264.601	Detailed unit description	Attachment M2		✓
§270.23(b)	§264.601	Hydrologic, geologic, and meteorologic assessments	Permit Module IV Attachment M2		✓
§270.23(c)	§264.601	Potential exposure pathways	Permit Module IV Attachment M2 Attachment N		✓
§270.23(d)		Demonstration of treatment effectiveness	Permit Module IV Attachment M2 Attachment N		✓
	§264.602	Monitoring, analysis, inspection, response, reporting, and corrective action	Permit Module IV Attachment M2 Attachment N		✓
	§264.603	Post-closure care	Attachment J Attachment J1		✓
	264 Subpart E	Manifest system, record keeping, and reporting	Permit Module I Permit Module II Permit Module IV Attachment B		✓

Attachment A
Table of Changes – Item 1

Table of Changes – Item 1

Affected Permit Section	List of Changes
Module I, Condition I.D, Definitions	<p>Add the following definitions;</p> <p>I.D.17. Internal Container</p> <ul style="list-style-type: none"> • Internal container-A container inside the outermost waste container examined during radiography or visual examination (VE). Drum liners, liner bags, plastic bags used for contamination control, capillary-type labware, and debris not intended to hold liquid at the time of original waste packaging are not internal containers. <p>I.D.18. Observable Liquid</p> <ul style="list-style-type: none"> • Observable liquid-liquid that is observable using radiography or visual examination VE as specified in Permit Attachment B, Waste Analysis Plan.
Module II, Condition II.C.3.a.	<ul style="list-style-type: none"> • Revise liquid prohibition (see changes to Attachment B, Section B-1c below)
Attachment B, Section B-1c	<ul style="list-style-type: none"> • Change “liquid waste” to “Liquid waste is not acceptable at WIPP.” • Delete the liquid waste definition “waste (waste shall contain as little residuals liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers shall contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. (e.g., 55 gallon drum or standard waste box) may not exceed 1 percent volume of that container. Payload containers with U134 no detectable liquid.) • Add the following text: • “Liquid in the quantities delineated below is acceptable.” <ul style="list-style-type: none"> • Observable liquid shall be no more than 1 percent by volume of the outermost container at the time of radiography or visual examination (VE). • Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited. • However, internal containers with more than 60 milliliters or 3 percent by volume observable liquid are not prohibited if: <ul style="list-style-type: none"> • Acceptable knowledge states the liquid does not exhibit the characteristic of ignitability, corrosivity, and/or reactivity (EPA Hazardous Waste Numbers D001, D002, D003) • Justification for implementation is included in the Characterization Information Summary as required by Permit Attachment B3, Section B3-12b(2) • Containers with hazardous waste number U134 assigned shall have no observable liquid. • Overpacking the outermost container that was examined during radiography or visual examination or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits. • Editorial Change: Delete “of” and “or” to read “(EPA Hazardous

Table of Changes – Item 1	
Affected Permit Section	List of Changes
	Waste Numbers D001, D002, D003)
Attachment B, Section B-3c	<p>In paragraph 1:</p> <ul style="list-style-type: none"> • Add “observable” to read as “detect observable liquid” • Delete “wastes” and replace with “in excess of TSDF WAC limits” • Editorial Change “liquids” to read “liquid” • Add “in excess of TSDF WAC limits” • Change “waste codes” to “waste numbers” <p>In paragraph 2:</p> <ul style="list-style-type: none"> • Change “liquid waste” to “liquid” • Delete “inner” and replace with “internal” to read as “internal containers” • Add “internal” to read as “internal container”. In two sentences delete “payload” and add “being characterized using VE to read as “container being characterized using VE” • Delete “(e.g., 55 gal drum or SWB).” • Delete “payload” and add “being characterized using radiography or VE to read as “container being characterized using radiography or VE”
Attachment B, Section B-4a(1)	<ul style="list-style-type: none"> • Editorial change: Change “EPA hazardous waste number” to “EPA Hazardous Waste Numbers”
Attachment B, Table B-5	<ul style="list-style-type: none"> • Delete “free” in the example of the Waste acceptance criteria • Editorial Change “liquids” to read “liquid” • Add “in excess of TSDF-WAC limits” • Add “criteria” to read “Waste acceptance criteria”
Attachment B1, Section B1-3	<ul style="list-style-type: none"> • Editorial Change: Change “be considered classified information” to “contain classified information.”
Attachment B1, Section B1-4	<ul style="list-style-type: none"> • Delete “residual materials”
Attachment B3-12b(2)	<ul style="list-style-type: none"> • Add new bullet “When applicable, a justification for acceptability of internal containers with liquid greater than 60 mL or 3 percent by volume observable liquid whichever is greater as required by Permit Attachment B, Section B-1c.”
Attachment B4, Section B4-2b	<ul style="list-style-type: none"> • Add new bullet “Information regarding whether liquid in internal containers could exhibit the characteristics of ignitability, corrosivity, and/or reactivity (EPA Hazardous Waste Numbers D001, D002, D003)” • Delete “of waste (e.g., liquids exceeding TSDF-WAC limits, corrosives, ignitables, reactives, and incompatible wastes)”
Attachment B4, Section B4-3b	<ul style="list-style-type: none"> • Editorial Change: Delete “if” and “a” • Add “potential for the”

Table of Changes – Item 1	
Affected Permit Section	List of Changes
	<ul style="list-style-type: none"> • Editorial Change: Add “to” and “the” • Add “of ignitability, corrosivity, and/or reactivity” • Add “if the waste”
Attachment B7, Section B7-1a	<ul style="list-style-type: none"> • Editorial Change: “liquids” to read “liquid”. • Add “in excess of TSDF-WAC limits”
Attachment B7, Section B7-1b	<ul style="list-style-type: none"> • Editorial Change: Change “be considered classified” to “contain classified information.”
Attachment B7, Section B7-1c	<ul style="list-style-type: none"> • Delete “residual materials” • Delete “residual” and change “liquids” to “liquid”
Attachment E, Section E-2b	<ul style="list-style-type: none"> • Delete “nonliquid waste; in some cases, the Permit allows up to” • Add “no more than” • Delete “residual” • Change “liquids” to “liquid”
Attachment F, Section F-1c	<ul style="list-style-type: none"> • Change “Liquid waste” to “Waste”, change “liquids” to read “liquid”, and change the sentence to read: “Waste, including “derived waste,” containing liquid, in excess of the TSDF-WAC limits will not be emplaced in the WIPP (See Permit Attachment B, Section B-1c)” • Delete the following; “TRU mixed waste for emplacement in the WIPP shall contain as little residual liquid as is reasonably achievable. All internal containers (e.g., bottles, cans, etc.) will be well-drained, but may contain residual liquids. As a guideline, residual liquids in well drained containers will be restricted to approximately one percent of the volume of the internal container. In no case shall the total liquid equal or exceed one volume percent of the waste container (i.e., drum, standard waste box [SWB], ten-drum overpack, or canister).”
Attachment F, Section F-4i	<ul style="list-style-type: none"> • Revise the example to delete “no free liquids and less” and to make the changes listed below; • Add “no more” • Delete “residual” • Editorial Change: “liquids” to read “liquid”
Attachment H2, Section H2	<p>Radiography Level 1</p> <ul style="list-style-type: none"> • Editorial Change: “liquids” to read “liquid” • Delete “excess residual” • Editorial Change: “liquids” to read “liquid” • Delete “as defined in” • Add “excess of the limits in” <p>Radiography Level 2</p> <ul style="list-style-type: none"> • Delete “excess residual”

Table of Changes – Item 1	
Affected Permit Section	List of Changes
	<ul style="list-style-type: none"> • Editorial Change: “liquids” to read “liquid” • Delete “as defined” • Add “excess of the limits in” • Delete “excess residual” • Add “excess of the limits” <p>Visual Examination (Level 1)</p> <ul style="list-style-type: none"> • Delete “excess residual” • Editorial Change: “liquids” to read “liquid” • Add “excess of the limits in” <p>Visual Examination (Level 2)</p> <ul style="list-style-type: none"> • Editorial Change: “liquids” to read “liquid” • Delete “as defined in the” • Add “in excess of the limits in the”
Attachment I3, Section I3-3b	<ul style="list-style-type: none"> • Delete “Liquid waste” and replace with “Waste with liquid in excess of the TSDF-WAC limits ” • Change: “liquids” to read “liquid” and add “in excess of TSDF-WAC” to read “liquid in excess of the TSDF-WAC”.
Attachment M1, Section M1-1a	<ul style="list-style-type: none"> • Delete “liquid” • Delete “This prohibition is enforced as a maximum residual liquids requirement. In no case shall the total liquid equal or exceed” • Add “with liquid in excess of”
Attachment B6, Table B6-1	<ul style="list-style-type: none"> • Revised B6-1 Waste Analysis (WAP) Checklist to be consistent with WAP changes described above. The proposed changes to the B6 Checklists for Item 1 are attached at the end of this Class 2 package.

Attachment B
Proposed Revised Permit Text – Item 1

Item - 1. Liquid

I.D.17. Internal Container

Internal container - A container inside the outermost container examined during radiography or visual examination (VE). Drum liners, liner bags, plastic bags used for contamination control, capillary-type labware, and debris not intended to hold liquid at the time of original waste packaging are not internal containers.

I.D.18. Observable Liquid

Observable liquid - liquid that is observable using radiography or VE as specified in Permit Attachment B, Waste Analysis Plan.

- II.C.3.a. Liquids - liquid waste is not acceptable at WIPP. Liquid in the quantities delineated below is acceptable. ~~Waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers shall contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any payload container (e.g., 55-gallon drum, standard waste box, etc.) may not exceed 1 percent volume of that container.~~
- Observable liquid shall be no more than 1 percent by volume of the outermost container at the time of radiography or visual examination.
 - Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited.
 - However, internal containers with more than 60 milliliters or 3 percent by volume observable liquid are not prohibited if acceptable knowledge states the liquid does not exhibit the characteristic of ignitability, corrosivity, and/or reactivity (EPA Hazardous Waste Numbers D001, D002, D003) and the requirements in Permit Attachment B, Section B-1c are met.
 - Containers with Hazardous Waste Number U134 assigned shall have no observable liquid.
 - Overpacking the outermost container that was examined during radiography or visual examination or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.

B-1c Waste Prohibited at the WIPP Facility

The following TRU mixed waste are prohibited at the WIPP facility:

- liquid waste is not acceptable at WIPP. Liquid in the quantities delineated below is acceptable (waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers shall contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any payload container (e.g., 55 gallon drum or standard waste box) may not exceed 1 percent volume of that container. Payload containers with U134 waste shall have no detectable liquid)
- Observable liquid shall be no more than 1 percent by volume of the outermost container at the time of radiography or visual examination (VE).
- Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited.
- However, internal containers with more than 60 milliliters or 3 percent by volume observable liquid are not prohibited if:
 - Acceptable knowledge states the liquid does not exhibit the characteristic of ignitability, corrosivity, and/or reactivity (EPA Hazardous Waste Numbers D001, D002, D003)
 - Justification for implementation is included in the Characterization Information Summary as required by Permit Attachment B3, Section B3-12b(2)
- Containers with Hazardous Waste Number U134 assigned shall have no observable liquid
- Overpacking the outermost container that was examined during radiography or visual examination or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.
- non-radionuclide pyrophoric materials, such as elemental potassium
- hazardous wastes not occurring as co-contaminants with TRU mixed wastes (non-mixed hazardous wastes)
- wastes incompatible with backfill, seal and panel closures materials, container and packaging materials, shipping container materials, or other wastes
- wastes containing explosives or compressed gases
- wastes with polychlorinated biphenyls (**PCBs**) not authorized under an EPA PCB waste disposal authorization
- wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (EPA Hazardous Waste Numbers of D001, D002, or D003)
- waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8, unless specifically approved through a Class 3 permit modification
- any waste container from a waste stream (or waste stream lot) which has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment, as described

in Permit Attachment B7

- any waste container from a waste stream which has not been preceded by an appropriate, certified WSPF (see Section B-1d)

B-3c Radiography and Visual Examination

Radiography is a and visual examination (VE) are nondestructive qualitative and quantitative techniques that involves X-ray scanning of waste containers used to identify and verify waste container contents as specified in Permit Attachment B1. ~~Visual examination (VE) constitutes opening a container and physically examining its contents.~~ Generator/storage sites shall perform radiography or VE of 100 percent of CH TRU mixed waste containers in waste streams except for those waste streams for which the Permittees approve a Scenario 1 or Scenario 2 Determination Request. No RH TRU mixed waste will be shipped to WIPP for storage or disposal without documentation of radiography or VE of 100 percent of the containers as specified in Permit Attachment B1. Radiography and/or ~~visual examination~~ VE will be used, when necessary, to examine a waste container to verify its physical form. These techniques can detect observable liquid wastes in excess of TSDF-WAC limits and containerized gases, which are prohibited for WIPP disposal. The prohibition of liquids in excess of TSDF-WAC limits and containerized gases prevents the shipment of corrosive, ignitable, or reactive wastes. Radiography and/or VE are also able to confirm that the physical form of the waste matches its waste stream description (i.e. Homogeneous Solids, Soil/Gravel, or Debris Waste [including uncategorized metals]). If the physical form does not match the waste stream description, the waste will be designated as another waste stream and assigned the preliminary hazardous waste numbers associated with that new waste stream assignment. That is, if radiography and/or VE indicates that the waste does not match the waste stream description arrived at by acceptable knowledge characterization, a non-conformance report (NCR) will be completed and the inconsistency will be resolved as specified in Permit Attachment B4 and the NCR will be dispositioned in accordance with Permit Attachment B3, Section B3-13. The proper waste stream assignment will be determined (including preparation of a new WSPF), the correct hazardous waste codes numbers will be assigned, and the resolution will be documented. Refer to Permit Attachment B4 for a discussion of acceptable knowledge and its verification process.

~~Generator/storage sites may conduct visual examination of waste containers in lieu of radiography. For generator/storage sites that choose to use visual examination in lieu of radiography,~~ the detection of any liquid waste in non-transparent inner internal containers, detected from shaking the internal container, will be handled by assuming that the internal container is filled with liquid and adding this volume to the total liquid in the ~~payload~~ being characterized using VE (e.g., 55 gallon drum or SWB). The ~~payload~~ being characterized using VE would be rejected and/or repackaged to exclude the internal container if it is over the TSDF-WAC limits. When radiography is used, or visual examination of transparent containers is performed, if any liquid in inner internal containers is detected, the volume of liquid shall be added to the total for the ~~payload~~ being characterized using radiography or VE. Radiography, or the equivalent, will be used as necessary on the existing/stored waste containers to verify the physical characteristics of the TRU mixed waste correspond with its waste stream identification/waste stream Waste Matrix Code and to identify prohibited items. Radiographic examination protocols and QA/QC methods are provided in Permit Attachment B1. Radiography and VE shall be subject to the Permittees' Audit and Surveillance Program (Permit Attachment B6).

B-4a(1) Data Quality Objectives

- Headspace-Gas Sampling and Analysis
 - To identify VOCs and quantify the concentrations of VOC constituents in waste containers to resolve the assignment of EPA Hazardous Waste Numbers

**TABLE B-5
SUMMARY OF PARAMETERS, CHARACTERIZATION METHODS, AND RATIONALE
FOR TRANSURANIC MIXED WASTE (STORED WASTE)**

Waste Matrix Code Summary Categories	Waste Matrix Code Groups	Characterization Parameter	Method	Rationale
S3000-Homogeneous Solids S4000-Soil/Gravel	<ul style="list-style-type: none"> • Solidified inorganics • Salt waste • Solidified organics • Contaminated soil/debris 	Physical waste form	Acceptable knowledge, radiography, and/or visual examination	<ul style="list-style-type: none"> • Determine waste matrix • Demonstrate compliance with waste acceptance criteria (e.g., no <u>free liquids in excess of TSDF-WAC limits</u>, no incompatible wastes, no compressed gases)
		Hazardous constituents <ul style="list-style-type: none"> • Listed • Characteristic 	Acceptable knowledge or statistical sampling ^a (see Tables B-3 and B-4)	<ul style="list-style-type: none"> • Determine characteristic metals and organics • Resolve the assignment of EPA hazardous waste numbers
S5000-Debris Waste	<ul style="list-style-type: none"> • Uncategorized metal (metal waste other than lead/cadmium) • Lead/cadmium waste • Inorganic nonmetal waste • Combustible waste • Graphite waste • Heterogeneous debris waste • Composite filter waste 	Physical waste form	Acceptable knowledge, radiography, and/or visual examination	<ul style="list-style-type: none"> • Determine waste matrix • Demonstrate compliance with waste acceptance <u>criteria</u> (e.g., no <u>free liquids in excess of TSDF-WAC limits</u>, no incompatible wastes, no compressed gases)
		Hazardous constituents <ul style="list-style-type: none"> • Characteristic • Listed 	Statistical gas sampling and analysis ^a (see Table B-2)	<ul style="list-style-type: none"> • Resolve the assignment of EPA hazardous waste numbers
		Hazardous constituents <ul style="list-style-type: none"> • Characteristic 	Acceptable knowledge	<ul style="list-style-type: none"> • Determine characteristic metals and organics

TABLE B-5 (CONTINUED)
SUMMARY OF PARAMETERS, CHARACTERIZATION METHODS, AND RATIONALE
FOR TRANSURANIC MIXED WASTE (NEWLY GENERATED WASTE)

Waste Matrix Code Summary Categories	Waste Matrix Code Groups	Characterization Parameter	Method	Rationale
S3000-Homogeneous Solids S4000-Soil/Gravel	<ul style="list-style-type: none"> • Solidified inorganics • Salt waste • Solidified organics • Contaminated soil/debris 	Physical waste form	Acceptable knowledge, radiography, and/or visual examination	<ul style="list-style-type: none"> • Determine waste matrix • Demonstrate compliance with waste acceptance criteria (e.g., no free liquids <u>in excess of TSDf-WAC limits</u>, no incompatible wastes, no compressed gases)
		Hazardous constituents <ul style="list-style-type: none"> • Listed • Characteristic 	Statistical sampling ^a (see Tables B-3 and B-4)	<ul style="list-style-type: none"> • Determine characteristic metals and organics • Resolve the assignment of EPA hazardous waste numbers
S5000-Debris Waste	<ul style="list-style-type: none"> • Uncategorized metal (metal waste other than lead/cadmium) • Lead/cadmium waste • Inorganic nonmetal waste • Combustible waste • Graphite waste • Heterogeneous debris waste • Composite filter waste 	Physical waste form	Acceptable knowledge, radiography, and/or visual examination	<ul style="list-style-type: none"> • Determine waste matrix • Demonstrate compliance with waste acceptance <u>criteria</u> (e.g., no free liquids <u>in excess of TSDf-WAC limits</u>, no incompatible wastes, no compressed gases)
		Hazardous constituents <ul style="list-style-type: none"> • Characteristic • Listed 	Statistical gas sampling and analysis ^a (see Table B-2)	<ul style="list-style-type: none"> • Resolve the assignment of EPA hazardous waste numbers
		Hazardous constituents <ul style="list-style-type: none"> • Characteristic 	Acceptable knowledge	<ul style="list-style-type: none"> • Determine characteristic metals and organics

^a Applies to waste streams that require sampling.

B1-3 Radiography

For containers which contain classified shapes and undergo radiography, the radiography video and audio recording will be considered classified. The radiography data forms will not contain ~~be considered~~ information.

B1-4 Visual Examination

In lieu of radiography, the The waste container contents may be verified directly by visual examination (VE) of the waste container contents. Visual examination may be performed on waste containers to verify the Waste Matrix Code and to verify that the container is properly included in the appropriate waste stream. Visual examination shall be conducted on a waste container to identify and describe all contents of a waste container, clearly identifying all discernible waste items, residual materials, packaging materials, or and waste material parameters in the waste container. All Visual examination activities shall be documented on video/audio media, or alternatively, by using a second operator to provide additional verification by reviewing the contents of the waste container to ensure correct reporting. When VE is performed using a second operator, each operator performing the VE shall observe for themselves the waste being placed in the waste container or the contents within the examined waste container when waste is not removed. The results of all ~~visual examination~~ VE shall be documented on ~~visual examination~~ VE data forms.

Visual examination video/audio media of containers which contain classified shapes shall be considered classified information. Visual examination data forms or packaging logs records will not be considered contain classified information.

B3-12b(2) Characterization Information Summary

- When applicable, a justification for acceptability of internal containers with liquid greater than 60 milliliters or 3 percent by volume observable liquid whichever is greater as required by Permit Attachment B, Section B-1c.

B4-2b Required TRU Mixed Waste Stream Information

- Information regarding whether liquid in internal containers could exhibit the characteristics of ignitability, corrosivity, and/or reactivity (EPA Hazardous Waste Numbers D001, D002, D003)

The acceptable knowledge written record shall include a summary that identifies all sources of waste characterization information used to delineate the waste stream. The basis and rationale for delineating each waste stream, based on the parameters of interest, shall be clearly summarized and traceable to referenced documents. Assumptions made in delineating each waste stream also shall be identified and justified. If discrepancies exist between required information, then sites shall apply all hazardous waste numbers indicated by the information to the subject waste stream unless the sites choose to justify an alternative assignment and document the justification in the auditable record. The Permittees shall obtain from each site, at a minimum, procedures that comply with the following acceptable knowledge requirements:

- Procedures for identifying and assigning the physical waste form of the waste
- Procedures for delineating waste streams and assigning Waste Matrix Codes
- Procedures for resolving inconsistencies in acceptable knowledge documentation

- Procedures for headspace gas sampling and analysis, visual examination and/or radiography, and homogeneous waste sampling and analysis, if applicable
- For newly generated waste, procedures describing process controls used to ensure prohibited items (specified in the WAP, Permit Attachment B) are documented and managed
- Procedures to ensure radiography and visual examination include a list of prohibited items that the operator shall verify are not present in each container of waste (e.g., liquids exceeding TSDf-WAC limits, corrosives, ignitables, reactives, and incompatible wastes)
- Procedures to document how changes to Waste Matrix Codes, waste stream assignment, and associated Environmental Protection Agency (EPA) hazardous waste numbers based on material composition are documented for any waste
- Procedures for assigning EPA hazardous waste numbers to TRU mixed waste streams
- Procedures for estimating waste material parameter weights

B4-3b Acceptable Knowledge Assembly and Compilation

- Review the required information to determine if the potential for the waste to exhibit a the hazardous characteristic of ignitability, corrosivity, and/or reactivity or if the waste may contain hazardous constituents included in the toxicity characteristics specified in 20.4.1.200 NMAC (incorporating 40 CFR §261), Subpart C. If a toxicity characteristic contaminant is identified and is not included as a listed waste, assign the toxicity characteristic number unless data are available that demonstrate that the concentration of the constituent in the waste is less than the toxicity characteristic regulatory level. When data are not available, the toxicity characteristic hazardous waste number for the identified hazardous constituent shall be applied to the mixed waste stream.

B7-1a Permittees' Confirmation of a Representative Subpopulation of the Waste

The Permittees' waste confirmation encompasses ensuring that the physical characteristics of the TRU mixed waste correspond with its waste stream description and that the waste does not contain liquids in excess of TSDf-WAC limits or compressed gases. These techniques can detect liquids that exceed 1 percent volume of the container and containerized gases, which are prohibited from storage or disposal at the WIPP facility. The prohibition of liquids in excess of the TSDf-WAC limits and containerized gases prevents the storage or disposal of ignitable, corrosive, or reactive wastes. Radiography and/or visual examination will ensure that the physical form of the waste matches its waste stream description (i.e., Homogeneous Solids, Soil/Gravel, or Debris Waste). The results of the Permittees' waste confirmation activities, including radiography and visual examination records (data sheets, packaging logs, and/or video and audio recordings) will be maintained in the WIPP facility operating record. Noncompliant waste identified during waste confirmation will be managed as described in Section B7-2.

B7-1b Radiography Methods Requirement

For containers which contain classified shapes and undergo radiography, the radiography will occur at a facility with appropriate security provisions and the video and audio recording will be considered classified. The radiography data forms will not be considered contain classified information.

B7-1c Visual Examination Methods Requirements

Visual examination (VE) may also be used as a waste confirmation method by the Permittees. VE shall be conducted by the Permittees in accordance with written SOPs to describe the contents of a waste container. ~~The description shall clearly~~ Visual examination shall be conducted to identify and describe all discernible waste items, residual materials, packaging materials, or and waste material parameters. VE may be used by the Permittees to examine a statistically representative subpopulation of the waste certified for shipment to WIPP to confirm that the waste contains no ignitable, corrosive, or reactive waste. This is achieved by confirming that the waste contains no residual liquids in excess of TSDF-WAC limits or compressed gases, and that the physical form of the waste matches the waste stream description documented on the WSPF. ~~A VE data form is used to document this information.~~ During packaging, the waste container contents are directly examined by trained personnel. This form of waste confirmation may be performed by the Permittees at a generator/storage site. The VE may be documented ~~recorded~~ on video and audio media, or ~~alternatively~~, by using a second operator to provide additional verification by reviewing the contents of the waste container to ensure correct reporting. When VE is performed using a second operator, each operator performing the VE shall observe for themselves the waste being placed in the container or the contents within the examined container when waste is not removed. The results of all VE shall be documented on VE data forms.

In order to keep radiation doses as low as reasonably achievable at generator/storage sites, the Permittees may use their own trained VE operators to perform VE for waste confirmation by reviewing video media prepared by the generator/storage site during their VE of the waste. If the Permittees perform waste confirmation by review of video media, the video record of the VE must be sufficiently complete for the Permittees to confirm the Waste Matrix Code and waste stream description, and verify the waste contains no residual liquids in excess of TSDF-WAC limits or compressed gases. Generator/storage site VE video/audio media subject to review by the Permittees shall meet the following minimum requirements:

E-2b Runoff

TRU mixed waste received for emplacement at the WIPP facility must be certified under this Permit's Treatment, Storage, and Disposal Facility Waste Acceptance Criteria (TSDF-WAC) as nonliquid waste; ~~in some cases, the Permit allows up to~~ no more than one percent residual liquids. The TSDF-WAC are procedural controls that must be met at the generator or storage site and the data must be verified by the WIPP facility staff prior to acceptance for the Disposal Phase and shipment to the WIPP facility. Permit Module II and Permit Attachment B contain information regarding TSDF-WAC requirements for shipping and discusses receipt and verification of the TRU mixed waste at the WIPP facility. Derived waste must also meet all TSDF-WAC requirements prior to disposal. Calculations in Permit Attachment M1 demonstrate that one percent residual liquid in TRU mixed waste containers is easily contained by the WHB Unit floor.

F-1c Containers

Liquid waste, including "derived waste," containing liquids, in excess of the TSDF-WAC limits will not be emplaced in the WIPP. (See Permit Attachment B, Section B-1c). TRU mixed waste for emplacement in the WIPP shall contain as little residual liquid as is reasonably achievable. All internal containers (e.g., bottles, cans, etc.) will be well-drained, but may contain residual liquids. As a guideline, residual liquids in well-drained containers will be restricted to approximately one percent of the volume of the internal container. In no case shall the total liquid equal or exceed one volume percent of the waste container (i.e., drum, standard waste box [SWB], ten-drum overpack, or canister):

F-4i Container Spills and Leakage

The waste received at the WIPP facility will meet stringent TSDF-WAC (e.g., no free liquids and less no more than one percent residual liquids), which will minimize the possibility of waste container degradation and liquid spills. Should a spill or release occur from a container, following an initial assessment of the event, the WIPP facility will immediately take the following actions, in compliance with 20.4.1.500 NMAC (incorporating 40 CFR §264.52(a) and §264.171):

H2 Radiography (Level 1)

Formal Training

- Project Requirements
- State and Federal Regulations
- Basic Principles of Radiography
- Radiography of Waste Forms (including the ability to identify liquids and compressed gases which will be verified by a radiography subject matter expert)
- Waste Stream-Specific Instruction (e.g., specific waste generating processes, typical packaging configurations, waste material parameters)

On-the-Job Training

- System Operation (equipment and procedures used by Level 1 radiographers)
- Identification of Packaging Configurations
- Identification of Waste Material Parameters/Waste Matrix Codes
- Identification of ~~excess residual liquids as defined in~~ excess of the limits in the TSDF-WAC, and compressed gases
- Verification of waste stream description

H2 Radiography (Level 2)

On-the-Job Training

- System Operation
- Identification of Packaging Configurations
- Identification of Waste Material Parameters/Waste Matrix Codes
- Identification of ~~excess residual liquids as defined in~~ excess of the limits in the TSDF-WAC and compressed gases
- Verification of waste stream description

Requalification of operators shall be based upon evidence of continued satisfactory performance (primarily video/audio reviews) and shall be done at least every two years. Unsatisfactory performance will result in disqualification. Unsatisfactory performance is defined as the misidentification of ~~excess residual liquids~~ in excess of the limits (as defined in the TSDF-WAC) or compressed gases in a training drum or a score of less than eighty percent (80%) on the comprehensive exam. Retraining and demonstration of satisfactory performance are required before a disqualified operator is again allowed to operate the radiography system for the Permittees.

H2 Visual Examination (Level 1)

On-the-Job Training

- System Operation (equipment and procedures used by Level 1 visual examination personnel)
- Identification of Packaging Configurations
- Identification of Waste Material Parameters/Waste Matrix Codes
- Identification of ~~excess residual liquids~~ as defined in excess of the limits in the TSDF-WAC and compressed gases
- Verification of waste stream description

H2 Visual Examination (Level 2)

On-the-Job Training

- Identification of Packaging Configurations
- Identification of Waste Material Parameters/Waste Matrix Code
- Identification of Prohibited Items liquids ~~as defined in the~~ in excess of the limits in the TSDF-WAC and compressed gases
- Verification of waste stream description

13-3b Nature of the TRU Mixed Waste

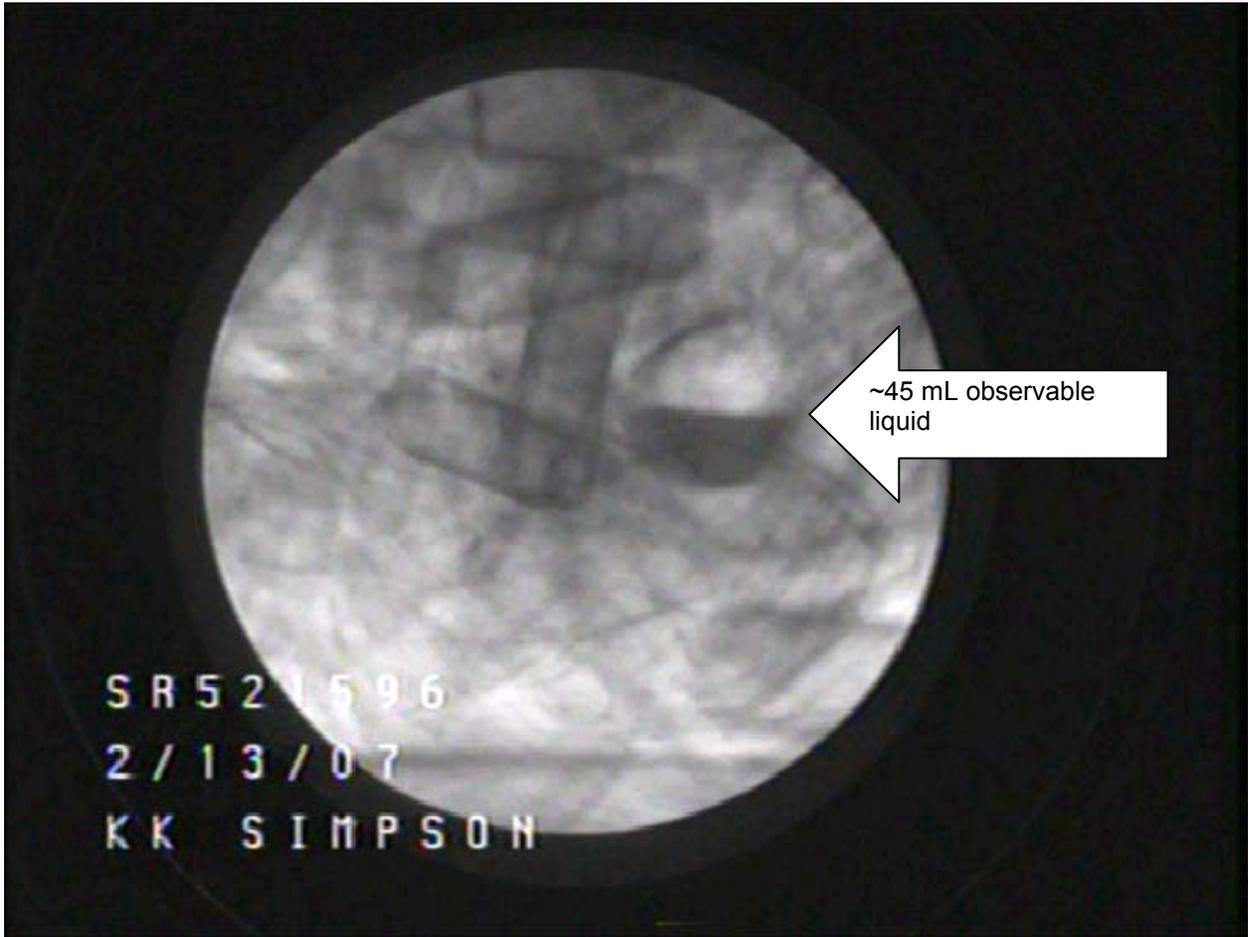
TRU mixed waste is defined as transuranic waste which is also a hazardous waste. The processes responsible for the radioactivity in the waste are, for the most part, the same processes responsible for making it a hazardous waste. Therefore, the TRU mixed waste forms are described in terms of both classes of waste (radioactive and hazardous). The Permit Treatment, Storage, and Disposal Facility Waste Acceptance Criteria (**TSDF-WAC**) in Module II places limits on the waste that can be shipped to the WIPP facility based on the characteristics of the waste form. According to the TSDF-WAC, certain waste forms with specific characteristics are not allowed at the WIPP facility. ~~Liquid waste~~ Waste with liquid in excess of the TSDF-WAC limits is one waste form that is not allowed. Other limitations include, but are not limited to, a prohibition on pyrophoric materials, corrosive materials, ignitable waste, and compressed gases. Furthermore, TRU waste must contain 100 nanocuries or more of transuranic elements per gram of waste, which means that the radioactive component of the waste will always be present within the waste in significant concentrations. The TSDF-WAC limitations and restrictions are provided to ensure that any waste form received at the WIPP facility is stable and can be managed safely.

One benefit of waste form restrictions, such as no liquids in excess of the TSDF-WAC, is that they limit the kinds of releases that could occur to those that would be readily detectable through visual inspection (i.e., large objects that fall out of ruptured containers) or through the use of radiation monitoring either locally or within the adjacent area to detect materials that have escaped from containers.

M1-1a Containers with Residual Liquids

The Permit Treatment, Storage, and Disposal Facility (**TSDF**) Waste Acceptance Criteria (**WAC**) and the Waste Analysis Plan (Permit Attachment B) prohibit the shipment of liquid waste to the WIPP: ~~This prohibition is enforced as a maximum residual liquids requirement. In no case shall the total liquid equal or exceed~~ with liquid in excess of one volume percent of the waste container (e.g., drum, standard waste box [**SWB**], or canister). Since the maximum amount of liquid is one percent, calculations made to determine the secondary containment as required by 20.4.1.500 NMAC (incorporating §264.175) are based on ten percent of one percent of the volume of the containers, or one percent of the largest container, whichever is greater.

Attachment C
Figures, Drawings, and/or Supplemental Information – Item 1



Item 2

Overview of the Permit Modification Request

This PMR is being submitted by the DOE, and WTS, collectively referred to as the Permittees, in accordance with the Permit, Condition I.B.1 (20.4.1.900 NMAC incorporating Title 40 CFR §270.42(b)). This modification proposes the following:

Clarify language regarding visual examination.

These changes do not reduce the ability of the Permittees to provide continued protection to human health and the environment.

The requested modification to the WIPP Permit and related supporting documents are provided in this PMR along with a description of the exact change being sought and the rationale for the changes. The following information specifically addresses how compliance has been achieved with Permit Condition I.B.1 for submission of this Class 2 PMR.

1. **20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(1)(i)), requires the applicant to describe the exact change to be made to the permit conditions and supporting documents referenced by the permit.**

This modification proposes to make the changes to the Permit described below:

- A. Clarify language regarding VE of waste in order to create more detailed and consistent requirements. This includes the following changes:
 - Delete “that involves X-ray scanning of waste containers” in Permit Attachment B, Section B-3c.
 - Delete “Visual examination (VE) constitutes opening a container and physically examining its contents” from Section B-3c.
 - Delete the terms “visual examination technique” and “VE in lieu of radiography” from Permit Attachment B, Sections B-3c and B-3d and Permit Attachment B1, Section B1-4.
 - Clarify in Permit Attachment B1, Section B1-4 that when VE is performed using a second operator that it is the responsibility of each operator to observe for themselves the waste being examined.
 - Change “visual examination expert” to “VE Operator” in Permit Attachment B1, Section B1-4.

- Change “packaging logs” to “packaging records” in Permit Attachment B1, Section B1-4. Packaging records is a broader term that includes packaging logs when they are available.
- Change the term “visual examination records” to “waste container packaging records” in Permit Attachment B1, Section B1-4.
- Add “who witnessed the packaging of the waste” to the first bullet under VE requirements performed using two generator site personnel in Permit Attachment B1, Section B1-4.
- Change “visual inspection” to “visual examination” and “Visual inspectors” to “Visual examination operators” in Permit Attachment B1, Section B1-4.
- Add training requirements for VE operators related to examining waste items and determining when VE cannot be used to meet the required Data Quality Objectives (**DQO**) in Permit Attachment B1, Section B1-4.
- Minor editorial changes to ensure consistent use of terms and acronyms in Permit Attachment B, Section B-3c, B-4a(1), and Permit Attachment B1, Section B1-4.
- Revised Permit Attachment B7, Section B7-1c to make this section consistent with the changes made in Section B1-4 described above.

B. This modification adds language to Permit Attachment B3, Section B3-12b(2) requiring justification for selection of radiography or VE as the appropriate method for waste characterization to be included in the Characterization Information Summary (**CIS**). This change supports both the clarification of the VE method and the clarification of the liquid prohibition in Item 1 of this PMR.

The Permittees have revised the Permit to clarify the aforementioned language in Attachments B, B1, B3, B6 and B7.

The Table of Changes and the redline strikeout in this modification describes each change that is being proposed. The redline strikeout also contains some changes related to Item 1 of this PMR package. Corresponding changes to the B6 Checklists are included as an attachment at the end of the Class 2 package.

2. 20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(1)(ii)), requires the applicant to identify that the modification is a Class 2 modification.

The proposed modification is classified as Class 2 Permit modification for the reason indicated below:

“Changes to waste sampling or analysis methods: ...other changes...” in accordance with 20.4.1.900 NMAC incorporating 40 CFR §270.42 Appendix I, Item B.1.d.

3. 20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(1)(iii)), requires the applicant to explain why the modification is needed.

This modification, to clarify language regarding VE, is being submitted in order to create more detailed and consistent requirements. This change has been prepared in response to questions raised by the NMED during audits of generator site waste characterization activities as documented in a letter dated September 2, 2008, "*NMED Approval of the Los Alamos National Laboratory/Central Characterization Project Final Audit Report, Audit A-08-16*".

Reasons for the specific changes described are provide below:

- Delete "that involves X-Ray scanning of waste containers" and "Visual examination (**VE**) constitutes opening a container and physically examining its contents" from Section B-3c. This language is descriptive language that is repeated in greater detail in Permit Attachment B1. In order to avoid inconsistency between Permit Attachment B, Section B-3c and Permit Attachment B1, the detail is deleted here and a cross reference to Permit Attachment B1 is added for radiography and VE.
- A change was made regarding the terms "visual examination technique" and "VE in lieu of radiography" in Permit Attachment B, Sections B-3c and B-3d and Permit Attachment B1, Section B1-4. Previously, there was a difference in the implementation of the VE methods, requiring specific terminology. However, with past modifications of the Permit, the distinction has been eliminated so that today the VE methods are the same for newly generated and retrievably stored waste.
- Clarifying language in Permit Attachment B1, Section B1-4 to require that when VE is performed using a second operator that it is the responsibility of each operator to observe for themselves the waste being examined is needed to provide more detailed requirements. Currently the Permit requires the second operator to simply verify "by reviewing the contents of the waste container to ensure correct reporting." To ensure that this verification is more than a paper review by the second operator additional detail is needed to require direct observation of the waste by both operators.
- Changing "visual examination expert" to "VE Operator" in Permit Attachment B1, Section B1-4 is needed to ensure that VE is recorded in sufficient detail so that any VE operator and not just the VE expert can identify the associated waste parameters. This will ensure consistent reporting of VE information.
- Correcting "visual examination records" to "waste container packaging records" and the related discussion concerning packaging records in Permit Attachment B1, Section B1-4 (paragraph 5) is required because the purpose of this paragraph is to allow the use of existing waste container packaging records. Requirements for recording the performance of VE are provided in the two preceding paragraphs in Permit Attachment B1, Section B1-4, but

detailed requirements regarding the use of packaging records were not previously included.

- Adding “who witnessed the packaging of the waste” to the first bullet under VE requirements performed using two generator site personnel in Permit Attachment B1, Section B1-4 is needed as a minimum requirement for determining the usability of packaging records. This is consistent with existing language in Permit Attachment B7, Section B7-1c.
- Changing “visual inspection” to “visual examination” and “Visual inspectors” to “Visual examination operators” in Permit Attachment B1, Section B1-4 is required because “visual inspection” and “visual inspectors” are not defined in the permit.
- Additional training requirements for VE operators related to identifying all waste items in waste containers and identifying when VE cannot be used to meet the VE Data Quality Objectives in Permit Attachment B1, Section B1-4 are needed so that operators can recognize situations when visual examination of the waste in accordance with the Permit is not adequate.
- Editorial changes are required to ensure consistent use of terms and acronyms in Permit Attachment B, Sections B-3c, B-4a(1) and Permit Attachment B1, Section B1-4.
- This modification adds language requiring justification for selection of radiography or VE as the appropriate method for waste characterization to be included in the CIS. This change is needed so that the Permittees can determine if the appropriate characterization method is selected for each waste stream and approve that method for the specific waste stream. The generator storage site will have to submit appropriate justification for the method that they select with the CIS attached to the Waste Stream Profile Form (**WSPF**) submitted to the Permittees for approval. A WSPF cannot be approved by the Permittees without this justification. This change is related to the change in Item 1 of the PMR regarding the definition of “observable liquid.” The addition of this requirement in Permit Attachment B3, Section B3-12b(2) requires the Permittees to review and approve the method the generator site will use to observe liquid in the waste container.
- Revised Permit Attachment B7, Section B7-1c to make this section consistent with the changes made in Section B1-4 described above. These changes are required to ensure consistency with the VE methods described in B1-4 and B7-1c.

4. 20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(1)(iv), requires the applicant to provide the applicable information required by 40 CFR §§270.13 through 270.22, 270.62, 270.63, and 270.66.

The regulatory crosswalk describes those portions of the Permit that are affected by this PMR. Where applicable, regulatory citations in this modification reference

20.4.1 NMAC revised March 1, 2009, incorporating 40 CFR (40 CFR Parts 264 and 270). Title 40 CFR §§270.16 through 270.22, 270.62, 270.63 and 270.66 are not applicable at WIPP. Consequently, they are not listed in the regulatory crosswalk table. Title 40 CFR §270.23 is applicable to the WIPP HWDUs. This modification does not impact the conditions associated with the HWDUs.

- 5. 20.4.1.900 NMAC (incorporating 40 CFR §270.11(d)(1) and 40 CFR §270.30(k)), requires any person signing under paragraphs a and b must certify the document in accordance with 20.4.1.900 NMAC.**

The transmittal letter for this PMR contains the signed certification statement in accordance with Module I.F of the Permit.

Regulatory Crosswalk – Item 2

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
§270.13		Contents of Part A permit application	Attachment O, Part A		✓
§270.14(b)(1)		General facility description	Attachment A		✓
§270.14(b)(2)	§264.13(a)	Chemical and physical analyses	Attachment B	✓	
§270.14(b)(3)	§264.13(b)	Development and implementation of waste analysis plan	Attachment B	✓	
	§264.13(c)	Off-site waste analysis requirements	Attachment B	✓	
§270.14(b)(4)	§264.14(a-c)	Security procedures and equipment	Attachment C		✓
§270.14(b)(5)	§264.15(a-d)	General inspection requirements	Attachment D		✓
	§264.174	Container inspections	Attachment D		✓
§270.23(a)(2)	§264.602	Miscellaneous units inspections	Attachment D		✓
§270.14(b)(6)		Request for waiver from preparedness and prevention requirements of Part 264 Subpart C	NA		
§270.14(b)(7)	264 Subpart D	Contingency plan requirements	Attachment F		✓
	§264.51	Contingency plan design and implementation	Attachment F		✓
	§264.52 (a) & (c-f)	Contingency plan content	Attachment F		✓
	§264.53	Contingency plan copies	Attachment F		✓
	§264.54	Contingency plan amendment	Attachment F		✓
	§264.55	Emergency coordinator	Attachment F		✓
	§264.56	Emergency procedures	Attachment F		✓
§270.14(b)(8)		Description of procedures, structures or equipment for:	Attachment E		✓
§270.14(b)(8)(i)		Prevention of hazards in unloading operations (e.g., ramps and special forklifts)	Attachment E		✓
§270.14(b)(8)(ii)		Runoff or flood prevention (e.g., berms, trenches, and dikes)	Attachment E		✓
§270.14(b)(8)(iii)		Prevention of contamination of water supplies	Attachment E		✓
§270.14(b)(8)(iv)		Mitigation of effects of equipment failure and power outages	Attachment E		✓
§270.14(b)(8)(v)		Prevention of undue exposure of personnel (e.g., personal protective equipment)	Attachment E		✓
§270.14(b)(8)(vi) §270.23(a)(2)	§264.601	Prevention of releases to the atmosphere	Module II Module IV Attachment M2 Attachment N		✓
	264 Subpart C	Preparedness and Prevention	Attachment E		✓
	§264.31	Design and operation of facility	Attachment E		✓
	§264.32	Required equipment	Attachment E Attachment F		✓
	§264.33	Testing and maintenance of equipment	Attachment D		✓

Regulatory Crosswalk – Item 2

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
	§264.34	Access to communication/alarm system	Attachment E		✓
	§264.35	Required aisle space	Attachment E		✓
	§264.37	Arrangements with local authorities	Attachment F		✓
§270.14(b)(9)	§264.17(a-c)	Prevention of accidental ignition or reaction of ignitable, reactive, or incompatible wastes	Attachment E		✓
§270.14(b)(10)		Traffic pattern, volume, and controls, for example: Identification of turn lanes Identification of traffic/stacking lanes, if appropriate Description of access road surface Description of access road load-bearing capacity Identification of traffic controls	Attachment G		✓
§270.14(b)(11)(i) and (ii)	§264.18(a)	Seismic standard applicability and requirements	Part B, Rev. 6 Chapter B		✓
§270.14(b)(11)(iii-v)	§264.18(b)	100-year flood plain standard	Part B, Rev. 6 Chapter B		✓
	§264.18(c)	Other location standards	Part B, Rev. 6 Chapter B		✓
§270.14(b)(12)	§264.16(a-e)	Personnel training program	Permit Module II Attachment H		✓
§270.14(b)(13)	264 Subpart G	Closure and post-closure plans	Attachment I & J		✓
§270.14(b)(13)	§264.111	Closure performance standard	Attachment I		✓
§270.14(b)(13)	§264.112(a), (b)	Written content of closure plan	Attachment I		✓
§270.14(b)(13)	§264.112(c)	Amendment of closure plan	Attachment I		✓
§270.14(b)(13)	§264.112(d)	Notification of partial and final closure	Attachment I		✓
§270.14(b)(13)	§264.112(e)	Removal of wastes and decontamination/dismantling of equipment	Attachment I		✓
§270.14(b)(13)	§264.113	Time allowed for closure	Attachment I		✓
§270.14(b)(13)	§264.114	Disposal/decontamination	Attachment I		✓
§270.14(b)(13)	§264.115	Certification of closure	Attachment I		✓
§270.14(b)(13)	§264.116	Survey plat	Attachment I		✓
§270.14(b)(13)	§264.117	Post-closure care and use of property	Attachment J		✓
§270.14(b)(13)	§264.118	Post-closure plan; amendment of plan	Attachment J		✓
§270.14(b)(13)	§264.178	Closure/containers	Attachment I		✓
§270.14(b)(13)	§264.601	Environmental performance standards-Miscellaneous units	Attachment I		✓
§270.14(b)(13)	§264.603	Post-closure care	Attachment I		✓
§270.14(b)(14)	§264.119	Post-closure notices	Attachment J		✓
§270.14(b)(15)	§264.142	Closure cost estimate	NA		✓
	§264.143	Financial assurance	NA		✓
§270.14(b)(16)	§264.144	Post-closure cost estimate	NA		✓

Regulatory Crosswalk – Item 2

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
	§264.145	Post-closure care financial assurance	NA		✓
§270.14(b)(17)	§264.147	Liability insurance	NA		✓
§270.14(b)(18)	§264.149-150	Proof of financial coverage	NA		✓
§270.14(b)(19)(I), (vi), (vii), and (x)		Topographic map requirements Map scale and date Map orientation Legal boundaries Buildings Treatment, storage, and disposal operations Run-on/run-off control systems Fire control facilities	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(ii)	§264.18(b)	100-year floodplain	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(iii)		Surface waters	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(iv)		Surrounding Land use	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(v)		Wind rose	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(viii)	§264.14(b)	Access controls	Attachment O Part A Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(ix)		Injection and withdrawal wells	Attachment O Part A Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(xi)		Drainage on flood control barriers	Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(xii)		Location of operational units	Part B, Rev. 6 Chapter B		✓
§270.14(b)(20)		Other federal laws Wild and Scenic Rivers Act National Historic Preservation Act Endangered Species Act Coastal Zone Management Act Fish and Wildlife Coordination Act Executive Orders	Part B, Rev. 6 Chapter K		✓
§270.15	§264 Subpart I	Containers	Attachment M1		✓
	§264.171	Condition of containers	Attachment M1		✓
	§264.172	Compatibility of waste with containers	Attachment M1		✓
	§264.173	Management of containers	Attachment M1		✓
	§264.174	Inspections	Attachment D Attachment M1		✓

Regulatory Crosswalk – Item 2

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
§270.15(a)	§264.175	Containment systems	Attachment M1		✓
§270.15(c)	§264.176	Special requirements for ignitable or reactive waste	Attachment E Permit Module II		✓
§270.15(d)	§264.177	Special requirements for incompatible wastes	Attachment E Permit Module II		✓
	§264.178	Closure	Attachment I		✓
§270.15(e)	§264.179	Air emission standards	Attachment E Attachment N		✓
§270.23	264 Subpart X	Miscellaneous units	Attachment M2		✓
§270.23(a)	§264.601	Detailed unit description	Attachment M2		✓
§270.23(b)	§264.601	Hydrologic, geologic, and meteorologic assessments	Permit Module IV Attachment M2		✓
§270.23(c)	§264.601	Potential exposure pathways	Permit Module IV Attachment M2 Attachment N		✓
§270.23(d)		Demonstration of treatment effectiveness	Permit Module IV Attachment M2 Attachment N		✓
	§264.602	Monitoring, analysis, inspection, response, reporting, and corrective action	Permit Module IV Attachment M2 Attachment N		✓
	§264.603	Post-closure care	Attachment J Attachment J1		✓
	264 Subpart E	Manifest system, record keeping, and reporting	Permit Module I Permit Module II Permit Module IV Attachment B		✓

Attachment A
Table of Changes – Item 2

Table of Changes – Item 2	
Affected Permit Section	List of Changes
Attachment B, Section B-3c	<p>In paragraph 1:</p> <ul style="list-style-type: none"> • Editorial Change: Delete “is a” • Add “and visual examination (VE) are” • Editorial change to change “technique” to read “techniques” • Delete “ that involves X-ray scanning of waste containers” • Add “used” • Add “as specified in Permit Attachment B1.” • Delete “Visual Examination (VE) constitutes opening a container and physically examining its contents.” • Change visual examination to “VE” <p>In paragraph 2:</p> <ul style="list-style-type: none"> • Delete the first sentence “Generator/storage sites may conduct visual examination of waste containers in lieu of radiography.” • Delete “choose to” • Delete “in lieu of radiography,”
Attachment B, Section B-3d.	<ul style="list-style-type: none"> • Revise parenthetical by deleting “the technique” to read “using VE” • Revise parenthetical by deleting “in lieu of radiography” to read “or VE”
Attachment B, Section B-3d(1)	<ul style="list-style-type: none"> • Add “using VE” to clarify that VE will either be used during packaging or radiography. • Delete “as required with VE in lieu of radiography” and replace with “and a single operator.” and change “uses” to “may use.”
Attachment B1, Section B1-4	<ul style="list-style-type: none"> • Delete “in lieu of radiography, the” • Add “The” • Add Acronym “(VE)” • Add “on a waste container” • Add “identify and” • Delete “all the contents of a waste container, clear identifying all discernible” • Editorial Change: Delete “or” and replace with “and” • Add “in the waste container” • Delete “All visual” and replace with “Visual” • Editorial Change: Delete “alternatively” • Add “When VE is performed using a second operator, each operator performing the VE shall observe for themselves the waste being placed in the waste container or the contents within the

Table of Changes – Item 2

Affected Permit Section	List of Changes
	<p>examined waste container when waste is not removed.”</p> <ul style="list-style-type: none"> • Delete “Visual Examination” and replace with “VE” • Delete “Visual Examination expert” and replace with “VE operator” • Add language to clarify bullet “ who witnessed the packaging of the waste” • Delete “logs” and replace with “records” • Delete “be considered” and replace with “contain” • Delete “Visual Examination” and replace with “Waste container packaging” • Delete “for characterization of TRU mixed waste. The visual examination” and replace with “to meet the VE data quality objectives (DQOs)(Permit Attachment B Section B-4a(1). These” • Add “ for either VE recorded on video/audio media or VE performed by two generator site personnel” • Add “VE” to read “VE operators” • Add “VE” before “data forms” • Delete “visual examination and replace with “waste container packaging or VE” • Delete “visual inspection” and replace with “VE” • Delete “inspectors” and replace with “examination operators” to read “Visual examination operators” • Delete “expected” • Delete “on” and replace with “to examine the” • Add “Training will include the following regardless of Summary Category Group: <ul style="list-style-type: none"> • Identifying and describing the contents of a waste container by examining all items in waste containers of previously packaged waste • Identifying when VE cannot be used to meet the DQOs.”
Attachment B3, Section B3-12b(2)	<ul style="list-style-type: none"> • Add new bullet “A justification for the selection of radiography and/or VE as an appropriate method for characterizing the waste.”
Attachment B7, Section B7-1c	<ul style="list-style-type: none"> • Delete “The description shall clearly” and replace with “Visual Examination shall be conducted to” • Delete “all discernible” and replace with “and describe” • Delete “or” and replace with “and” • Delete “A VE data form is used to document this information.” • Change “recorded” to “documented” • Editorial Change: Delete “alternatively” • Add “When VE is performed using a second operator, each operator performing the VE shall observe for themselves the waste being placed in the waste container or the contents within the

Table of Changes – Item 2	
Affected Permit Section	List of Changes
	<p>examined waste container when waste is not removed. The results of all VE shall be documented on VE data forms”</p> <ul style="list-style-type: none"> • Add “and shall contain an inventory of waste items in sufficient detail” • Delete “VE expert” and replace with “VE operator” • Delete “determine what the waste items are and their” and replace with “identify the” • Change “parameter” to “parameters” • Delete “logs” and replace with “records” • Change “VE” to “Visual Examination” • Delete “be considered” and replace with “contain”
Attachment B6, Table B6-1	<ul style="list-style-type: none"> • Revised B6-1 Waste Analysis (WAP) Checklist to be consistent with WAP changes described above. The proposed changes to the B6 Checklists for Item 2 are attached at the end of this Class 2 package.

Attachment B
Proposed Revised Permit Text – Item 2

Item - 2. VE

B-3c Radiography and Visual Examination

Radiography is a and visual examination (VE) are nondestructive qualitative and quantitative techniques ~~that involves X-ray scanning of waste containers~~ used to identify and verify waste container contents as specified in Permit Attachment B1. ~~Visual examination (VE) constitutes opening a container and physically examining its contents.~~ Generator/storage sites shall perform radiography or VE of 100 percent of CH TRU mixed waste containers in waste streams except for those waste streams for which the Permittees approve a Scenario 1 or Scenario 2 Determination Request. No RH TRU mixed waste will be shipped to WIPP for storage or disposal without documentation of radiography or VE of 100 percent of the containers as specified in Permit Attachment B1. Radiography and/or ~~visual examination~~ VE will be used, when necessary, to examine a waste container to verify its physical form. These techniques can detect observable liquid wastes in excess of TSDF-WAC limits and containerized gases, which are prohibited for WIPP disposal. The prohibition of liquids in excess of TSDF-WAC limits and containerized gases prevents the shipment of corrosive, ignitable, or reactive wastes. Radiography and/or VE are also able to confirm that the physical form of the waste matches its waste stream description (i.e. Homogeneous Solids, Soil/Gravel, or Debris Waste [including uncategorized metals]). If the physical form does not match the waste stream description, the waste will be designated as another waste stream and assigned the preliminary hazardous waste numbers associated with that new waste stream assignment. That is, if radiography and/or VE indicates that the waste does not match the waste stream description arrived at by acceptable knowledge characterization, a non-conformance report (NCR) will be completed and the inconsistency will be resolved as specified in Permit Attachment B4 and the NCR will be dispositioned in accordance with Permit Attachment B3, Section B3-13. The proper waste stream assignment will be determined (including preparation of a new WSPF), the correct hazardous waste ~~codes~~ numbers will be assigned, and the resolution will be documented. Refer to Permit Attachment B4 for a discussion of acceptable knowledge and its verification process.

~~Generator/storage sites may conduct visual examination of waste containers in lieu of radiography.~~ For generator/storage sites that ~~choose to use visual examination in lieu of radiography,~~ the detection of any liquid waste in non-transparent inner internal containers, detected from shaking the internal container, will be handled by assuming that the internal container is filled with liquid and adding this volume to the total liquid in the ~~payload~~ container being characterized using VE (e.g., 55-gallon drum or SWB). The ~~payload~~ container being characterized using VE would be rejected and/or repackaged to exclude the internal container if it is over the TSDF-WAC limits. When radiography is used, or visual examination of transparent containers is performed, if any liquid in inner internal containers is detected, the volume of liquid shall be added to the total for the ~~payload~~ container being characterized using radiography or VE. Radiography, or the equivalent, will be used as necessary on the existing/stored waste containers to verify the physical characteristics of the TRU mixed waste correspond with its waste stream identification/waste stream Waste Matrix Code and to identify prohibited items. Radiographic examination protocols and QA/QC methods are provided in Permit Attachment B1. Radiography and VE shall be subject to the Permittees' Audit and Surveillance Program (Permit Attachment B6).

B-3d Characterization Techniques and Frequency for Newly Generated and Retrievably Stored Waste

In the CIS for each waste stream, the generator/storage site will be required to document their methods, and the findings from those methods, for determining the physical form of the waste

and the presence or absence of prohibited items for both retrievably stored and newly generated waste. Radiography and/or VE may be used to verify the physical form of retrievably stored TRU mixed waste. For newly generated waste, physical form and prohibited items may either be documented during packaging (using the VE technique) or verified after packaging using radiography (or VE in lieu of radiography).

B-3d(1) Newly Generated Waste

The RCRA-regulated constituents in newly generated wastes will typically be documented at the time of generation based on acceptable knowledge for the waste stream. Newly generated TRU mixed waste characterization typically begins with verification that processes generating the waste have operated within established written procedures. Waste containers are delineated into waste streams using acceptable knowledge. The Permittees will require that the generator/storage sites document the methods used to delineate waste streams in the acceptable knowledge record and Acceptable Knowledge Summary Report. Determination that the physical form of the waste (Summary Category Group) corresponds to the physical form of the assigned waste stream may be accomplished either using VE during packaging or by performing radiography as specified in Permit Attachment B1, Section B1-3 for retrievably stored waste. Instead of using a video/audio tape and a single operator, ~~as required with VE in lieu of radiography~~, the VE method for newly generated waste (or repackaged retrievably stored waste) may use a second operator, who is equally trained to the requirements stipulated in Permit Attachment B1, to provide additional verification by reviewing the contents of the waste container to ensure correct reporting. If the second operator cannot provide concurrence, corrective actions² will be taken as specified in Permit Attachment B3. The subsequent waste characterization activities depend on the assigned Summary Category Group, since waste within the Homogeneous Solids and Soils/Gravel Summary Category Groups may be characterized using different techniques than the waste in the Debris Waste Summary Category Group. The packaging configuration, type and number of filters, and rigid liner vent hole presence and diameter necessary to determine the appropriate drum age criteria (DAC) in accordance with Permit Attachment B1, Section B1-1, may be documented as part of the characterization information collected during the packaging of newly generated waste or repackaging of retrievably stored waste for those containers of debris waste that will undergo headspace gas sampling and analysis.

B1-4 Visual Examination

~~In lieu of radiography, the~~ The waste container contents may be verified directly by visual examination (VE) of the waste container contents. Visual examination may be performed on waste containers to verify the Waste Matrix Code and to verify that the container is properly included in the appropriate waste stream. Visual examination shall be conducted on a waste container to identify and describe all contents of a waste container, ~~clearly identifying all discernible waste items, residual materials, packaging materials, or~~ and waste material parameters in the waste container. ~~All~~ Visual examination activities shall be documented on video/audio media, or alternatively, by using a second operator to provide additional verification by reviewing the contents of the waste container to ensure correct reporting. When VE is performed using a second operator, each operator performing the VE shall observe for themselves the waste being placed in the waste container or the contents within the examined waste container when waste is not removed. The results of all ~~visual examination~~ VE shall be documented on ~~visual examination~~ VE data forms.

- The video/audio media shall record the waste packaging event for the container such that all waste items placed into the container are recorded in sufficient detail and shall contain an inventory of waste items in sufficient detail that

another trained ~~visual examination expert~~ VE operator can identify the associated waste material parameters.

- The video/audio media shall capture the waste container identification number.
- The personnel loading the waste container shall be identified on the video/audio media or on packaging records traceable to the loading of the waste container.
- The date of loading of the waste container will be recorded on the video/audio media or on packaging records traceable to the loading of the waste container.

Visual examination performed using two generator site personnel shall meet the following minimum requirements:

- At least two generator site personnel who witnessed the packaging of the waste shall approve the data forms or packaging ~~logs~~ records attesting to the contents of the waste container.
- The data forms or packaging ~~logs~~ records shall contain an inventory of waste items in sufficient detail that another trained ~~visual examination expert~~ VE operator can identify the associated waste material parameters.
- The waste container identification number shall be recorded on the data forms or packaging ~~logs~~ records.

Visual examination video/audio media of containers which contain classified shapes shall be considered classified information. Visual examination data forms or packaging ~~logs~~ records will not be considered contain classified information.

Visual examination Waste container packaging records may be used for characterization of TRU mixed waste. The visual examination to meet the VE data quality objectives (DQOs) (Permit Attachment B, Section B-4a(1)). These records must meet the minimum requirements listed above for either VE recorded on video/audio media or VE performed by two generator site personnel and shall be reviewed by operators trained and qualified to the requirements listed below. The VE operators will prepare VE data forms based on the ~~visual examination-waste container packaging or VE~~ records. Visual examination batch data reports will be prepared, reviewed, and approved as described in Permit Attachment B, Section B-4, and Permit Attachment B3.

Standardized training for ~~visual inspection~~ VE shall be developed. Visual inspectors examination operators shall be instructed in the specific waste generating processes, typical packaging configurations, and ~~expected~~ waste material parameters expected to be found in each Waste Matrix Code at the site. The training shall be site specific to include the various waste configurations generated/stored at the site. For example, the particular physical forms and packaging configurations at each site will vary so operators shall be trained on to examine the types of waste that are generated, stored, and/or characterized at that particular site. Training will include the following regardless of Summary Category Group:

- Identifying and describing the contents of a waste container by examining all items in waste containers of previously packaged waste
- Identifying when VE cannot be used to meet the DQOs.

Visual examination personnel shall be requalified once every two years.

Each visual examination VE facility shall designate a visual examination VE expert. The visual examination VE expert shall be familiar with the waste generating processes that have taken place at that site and also be familiar with all of the types of waste being characterized at that site. The visual examination VE expert shall be responsible for the overall direction and implementation of the visual examination VE at that facility. The Permittees shall require site QAPjPs to specify the selection, qualification, and training requirements of the visual examination VE expert.

B3-12b(2) Characterization Information Summary

- A justification for the selection of radiography and/or VE as an appropriate method for characterizing the waste.

B7-1c Visual Examination Methods Requirements

Visual examination (**VE**) may also be used as a waste confirmation method by the Permittees. VE shall be conducted by the Permittees in accordance with written SOPs to describe the contents of a waste container. The description shall clearly **Visual examination shall be conducted to** identify **and describe** all discernible waste items, residual materials, packaging materials, or **and** waste material parameters. VE may be used by the Permittees to examine a statistically representative subpopulation of the waste certified for shipment to WIPP to confirm that the waste contains no ignitable, corrosive, or reactive waste. This is achieved by confirming that the waste contains no residual liquids in excess of TSDf-WAC limits or compressed gases, and that the physical form of the waste matches the waste stream description documented on the WSPF. ~~A VE data form is used to document this information.~~ During packaging, the waste container contents are directly examined by trained personnel. This form of waste confirmation may be performed by the Permittees at a generator/storage site. The VE may be documented recorded on video and audio media, or ~~alternatively~~, by using a second operator to provide additional verification by reviewing the contents of the waste container to ensure correct reporting. When VE is performed using a second operator, each operator performing the VE shall observe for themselves the waste being placed in the waste container or the contents within the examined waste container when waste is not removed. The results of all VE shall be documented on VE data forms.

In order to keep radiation doses as low as reasonably achievable at generator/storage sites, the Permittees may use their own trained VE operators to perform VE for waste confirmation by reviewing video media prepared by the generator/storage site during their VE of the waste. If the Permittees perform waste confirmation by review of video media, the video record of the VE must be sufficiently complete for the Permittees to confirm the Waste Matrix Code and waste stream description, and verify the waste contains no residual liquids in excess of TSDf-WAC limits or compressed gases. Generator/storage site VE video/audio media subject to review by the Permittees shall meet the following minimum requirements:

- The video/audio media shall record the waste packaging event for the container such that all waste items placed into the container are recorded in sufficient detail and shall contain an inventory of waste items in sufficient detail that a trained Permittee VE operator expert can determine what the waste items are and their identify the associated waste material parameters.
- The video/audio media shall capture the waste container identification number.
- The personnel loading the waste container shall be identified on the video/audio

media or on packaging records traceable to the loading of the waste container.

- The date of loading of the waste container will be recorded on the video/audio media or on packaging records traceable to the loading of the waste container.

The Permittees may also use their own trained VE operators to perform VE for waste confirmation by reviewing VE data forms or packaging logs prepared by the generator during their packaging of the waste. To be acceptable, the generator/storage site VE data must be signed by two generator/storage site personnel who witnessed the packaging of the waste and must provide sufficient information for the Permittees to determine that the waste container contents match the waste stream description on the WSPF and the waste contains no liquids in excess of TSDf-WAC limits or compressed gases. The Permittees will document their review of generator/storage site VE data on Permittee VE data forms. Generator/storage site VE forms or packaging logs records subject to review by the Permittees shall meet the following minimum requirements:

- At least two generator site personnel shall approve the data forms or packaging logs records attesting to the contents of the waste container.
- The data forms or packaging logs records shall contain an inventory of waste items in sufficient detail that a trained Permittee VE operator ~~expert~~ can identify the associated waste material parameters.
- The waste container identification number shall be recorded on the data forms or packaging records logs.

Visual Examination video media of containers which contain classified shapes shall be considered classified information. Visual Examination data forms will not be considered contain classified information.

(This page intentionally left blank)

Item 3

Overview of the Permit Modification Request

This PMR is being submitted by the DOE, and WTS, collectively referred to as the Permittees, in accordance with the Permit, Condition I.B.1 (20.4.1.900 NMAC incorporating Title 40 CFR §270.42(b)). This modification proposes the following:

Clarify language regarding nonconformances.

These changes do not reduce the ability of the Permittees to provide continued protection to human health and the environment.

The requested modification to the WIPP Permit and related supporting documents are provided in this PMR along with a description of the exact change being sought and the rationale for the changes. The following information specifically addresses how compliance has been achieved with Permit Condition I.B.1 for submission of this Class 2 PMR.

1. **20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(1)(i)), requires the applicant to describe the exact change to be made to the permit conditions and supporting documents referenced by the permit.**

This PMR proposes to clarify language to ensure that nonconformances noted during waste characterization have been dispositioned before shipment. The changes include:

- Some existing language in Permit Attachment B3, Section B3-13, Nonconformances was replaced with the following:
“Any waste container for which a nonconformance report (**NCR**) has been written will not be shipped to the WIPP facility unless the condition that led to the NCR for that container has been dispositioned in accordance with the Permittees’ Quality Assurance Program Document (**QAPD**).”
- The following language was added to Permit Attachment B3, Section B3-13.
“For each container selected for confirmation in accordance with Permit Attachment B7, the Permittees will examine respective NCR documentation to verify NCRs have been dispositioned for the selected container.”

Similar language is placed in Permit Attachment B7, Section B7-1a.

In addition to changes described above the following changes are proposed:

- Editorial changes including changing “nonconformance report” to “NCR” and to correct a spelling.
- Change notification requirement for non-administrative nonconformances identified at the Site Project Manager (**SPM**) level in Permit Attachment B3, Section B3-13 from 5 calendar days to 7 calendar days.

The Permittees have revised the Permit to clarify the aforementioned language in Permit Attachments B3, B6, and B7.

The Table of Changes and the redline strikeout in this modification describes each change that is being proposed. Corresponding changes to the B6 Checklists are included as an attachment at the end of the Class 2 package.

2. 20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(1)(ii)), requires the applicant to identify that the modification is a Class 2 modification.

The proposed modification is classified as Class 2 Permit modification for the reason indicated below:

“Changes to waste sampling or analysis methods: ...other changes...” in accordance with 20.4.1.900 NMAC incorporating 40 CFR §270.42 Appendix I, Item B.1.d.

3. 20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(1)(iii)), requires the applicant to explain why the modification is needed.

This PMR is needed to clarify the manner in which the NCR program is implemented and to make the requirements for resolving or dispositioning nonconformance reports applicable to a waste container prior to shipping that container to the WIPP facility.

The changes listed below are needed to provide additional assurance that waste containers are not shipped with NCRs that have not been dispositioned.

- Some existing language in Permit Attachment B3, Section B3-13, Nonconformances was replaced with the following:

“Any waste container for which a nonconformance report (**NCR**) has been written will not be shipped to the WIPP facility unless the condition that led to the NCRs for that container has been dispositioned in accordance with the Permittees’ Quality Assurance Program Document (**QAPD**).”

This change is proposed so that the Permit contains explicit language requiring that NCRs pertaining to a container be dispositioned for that container before it is shipped to the WIPP facility.

- The following language was added to Permit Attachment B3, Section B3-13 to require an additional check by the Permittees that NCRs have been dispositioned.

“For each container selected for confirmation in accordance with Permit Attachment B7, the Permittees will examine the respective NCR documentation to verify NCRs have been dispositioned for the selected container.”

Similar language is placed in Permit Attachment B7, Section B7-1a.

The editorials including changing “nonconformance report” to “NCR” and to correct a spelling error are needed to ensure consistent use of acronyms and make a required correction.

Changing the notification requirement for non-administrative nonconformances identified at the SPM level in Permit Attachment B3, Section B3-13 from 5 calendar days to 7 calendar days is needed to allow time for screening and reporting in order to accommodate long weekends and holidays. This internal notification requirement is to notify the Permittees in writing of non-administrative nonconformances identified at the SPM level. In order to meet this requirement the nonconformance must first be screened to determine if it is a non-administrative nonconformance subject to reporting. The identification, screening and reporting typically takes up to one day. When this type of nonconformance is discovered the day before a long holiday the generator storage site may not be able to meet the current 5 day requirement. For example, this Christmas holiday for the WIPP Project included the 5 days between Wednesday through Sunday for most personnel. When factoring the identification, screening and notification time the generator/storage site may not be able to meet the notification time frame. Because this is an internal notification requirement and because all nonconformances must be dispositioned before the container is shipped to the WIPP facility, this change does not have any adverse impact to human health or the environment. Furthermore, this change does not impact the requirement to submit a NCR to the Permittees within 30 calendar days and the monthly report of NCRs to the NMED.

4. 20.4.1.900 NMAC (incorporating 40 CFR §270.42(c)(1)(iv)), requires the applicant to provide the applicable information required by 40 CFR §§270.13 through 270.22, 270.62, 270.63, and 270.66.

The regulatory crosswalk describes those portions of the Permit that are affected by this PMR. Where applicable, regulatory citations in this modification reference 20.4.1 NMAC revised March 1, 2009, incorporating 40 CFR (40 CFR Parts 264 and 270). Title 40 CFR §§270.16 through 270.22, 270.62, 270.63 and 270.66 are not applicable at WIPP. Consequently, they are not listed in the regulatory crosswalk table. Title 40 CFR §270.23 is applicable to the WIPP HWDUs. This modification does not impact the conditions associated with the HWDUs.

5. **20.4.1.900 NMAC (incorporating 40 CFR §270.11(d)(1) and 40 CFR §270.30(k)), requires any person signing under paragraphs a and b must certify the document in accordance with 20.4.1.900 NMAC.**

The transmittal letter for this PMR contains the signed certification statement in accordance with Module I.F of the Permit.

Regulatory Crosswalk – Item 3

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
§270.13		Contents of Part A permit application	Attachment O, Part A		✓
§270.14(b)(1)		General facility description	Attachment A		✓
§270.14(b)(2)	§264.13(a)	Chemical and physical analyses	Attachment B	✓	
§270.14(b)(3)	§264.13(b)	Development and implementation of waste analysis plan	Attachment B	✓	
	§264.13(c)	Off-site waste analysis requirements	Attachment B	✓	
§270.14(b)(4)	§264.14(a-c)	Security procedures and equipment	Attachment C		✓
§270.14(b)(5)	§264.15(a-d)	General inspection requirements	Attachment D		✓
	§264.174	Container inspections	Attachment D		✓
§270.23(a)(2)	§264.602	Miscellaneous units inspections	Attachment D		✓
§270.14(b)(6)		Request for waiver from preparedness and prevention requirements of Part 264 Subpart C	NA		
§270.14(b)(7)	264 Subpart D	Contingency plan requirements	Attachment F		✓
	§264.51	Contingency plan design and implementation	Attachment F		✓
	§264.52 (a) & (c-f)	Contingency plan content	Attachment F		✓
	§264.53	Contingency plan copies	Attachment F		✓
	§264.54	Contingency plan amendment	Attachment F		✓
	§264.55	Emergency coordinator	Attachment F		✓
	§264.56	Emergency procedures	Attachment F		✓
§270.14(b)(8)		Description of procedures, structures or equipment for:	Attachment E		✓
§270.14(b)(8)(i)		Prevention of hazards in unloading operations (e.g., ramps and special forklifts)	Attachment E		✓
§270.14(b)(8)(ii)		Runoff or flood prevention (e.g., berms, trenches, and dikes)	Attachment E		✓
§270.14(b)(8)(iii)		Prevention of contamination of water supplies	Attachment E		✓
§270.14(b)(8)(iv)		Mitigation of effects of equipment failure and power outages	Attachment E		✓
§270.14(b)(8)(v)		Prevention of undue exposure of personnel (e.g., personal protective equipment)	Attachment E		✓
§270.14(b)(8)(vi) §270.23(a)(2)	§264.601	Prevention of releases to the atmosphere	Module II Module IV Attachment M2 Attachment N		✓
	264 Subpart C	Preparedness and Prevention	Attachment E		✓
	§264.31	Design and operation of facility	Attachment E		✓
	§264.32	Required equipment	Attachment E Attachment F		✓
	§264.33	Testing and maintenance of equipment	Attachment D		✓

Regulatory Crosswalk – Item 3

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
	§264.34	Access to communication/alarm system	Attachment E		✓
	§264.35	Required aisle space	Attachment E		✓
	§264.37	Arrangements with local authorities	Attachment F		✓
§270.14(b)(9)	§264.17(a-c)	Prevention of accidental ignition or reaction of ignitable, reactive, or incompatible wastes	Attachment E		✓
§270.14(b)(10)		Traffic pattern, volume, and controls, for example: Identification of turn lanes Identification of traffic/stacking lanes, if appropriate Description of access road surface Description of access road load-bearing capacity Identification of traffic controls	Attachment G		✓
§270.14(b)(11)(i) and (ii)	§264.18(a)	Seismic standard applicability and requirements	Part B, Rev. 6 Chapter B		✓
§270.14(b)(11)(iii-v)	§264.18(b)	100-year flood plain standard	Part B, Rev. 6 Chapter B		✓
	§264.18(c)	Other location standards	Part B, Rev. 6 Chapter B		✓
§270.14(b)(12)	§264.16(a-e)	Personnel training program	Permit Module II Attachment H		✓
§270.14(b)(13)	264 Subpart G	Closure and post-closure plans	Attachment I & J		✓
§270.14(b)(13)	§264.111	Closure performance standard	Attachment I		✓
§270.14(b)(13)	§264.112(a), (b)	Written content of closure plan	Attachment I		✓
§270.14(b)(13)	§264.112(c)	Amendment of closure plan	Attachment I		✓
§270.14(b)(13)	§264.112(d)	Notification of partial and final closure	Attachment I		✓
§270.14(b)(13)	§264.112(e)	Removal of wastes and decontamination/dismantling of equipment	Attachment I		✓
§270.14(b)(13)	§264.113	Time allowed for closure	Attachment I		✓
§270.14(b)(13)	§264.114	Disposal/decontamination	Attachment I		✓
§270.14(b)(13)	§264.115	Certification of closure	Attachment I		✓
§270.14(b)(13)	§264.116	Survey plat	Attachment I		✓
§270.14(b)(13)	§264.117	Post-closure care and use of property	Attachment J		✓
§270.14(b)(13)	§264.118	Post-closure plan; amendment of plan	Attachment J		✓
§270.14(b)(13)	§264.178	Closure/containers	Attachment I		✓
§270.14(b)(13)	§264.601	Environmental performance standards-Miscellaneous units	Attachment I		✓
§270.14(b)(13)	§264.603	Post-closure care	Attachment I		✓
§270.14(b)(14)	§264.119	Post-closure notices	Attachment J		✓
§270.14(b)(15)	§264.142	Closure cost estimate	NA		✓
	§264.143	Financial assurance	NA		✓
§270.14(b)(16)	§264.144	Post-closure cost estimate	NA		✓

Regulatory Crosswalk – Item 3

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
	§264.145	Post-closure care financial assurance	NA		✓
§270.14(b)(17)	§264.147	Liability insurance	NA		✓
§270.14(b)(18)	§264.149-150	Proof of financial coverage	NA		✓
§270.14(b)(19)(I), (vi), (vii), and (x)		Topographic map requirements Map scale and date Map orientation Legal boundaries Buildings Treatment, storage, and disposal operations Run-on/run-off control systems Fire control facilities	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(ii)	§264.18(b)	100-year floodplain	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(iii)		Surface waters	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(iv)		Surrounding Land use	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(v)		Wind rose	Attachment O Part A Part B, Rev. 6 Chapter B, E		✓
§270.14(b)(19)(viii)	§264.14(b)	Access controls	Attachment O Part A Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(ix)		Injection and withdrawal wells	Attachment O Part A Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(xi)		Drainage on flood control barriers	Part B, Rev. 6 Chapter B, E, F		✓
§270.14(b)(19)(xii)		Location of operational units	Part B, Rev. 6 Chapter B		✓
§270.14(b)(20)		Other federal laws Wild and Scenic Rivers Act National Historic Preservation Act Endangered Species Act Coastal Zone Management Act Fish and Wildlife Coordination Act Executive Orders	Part B, Rev. 6 Chapter K		✓
§270.15	§264 Subpart I	Containers	Attachment M1		✓
	§264.171	Condition of containers	Attachment M1		✓
	§264.172	Compatibility of waste with containers	Attachment M1		✓
	§264.173	Management of containers	Attachment M1		✓
	§264.174	Inspections	Attachment D Attachment M1		✓

Regulatory Crosswalk – Item 3

Regulatory Citation(s) 20.4.1.900 NMAC (incorporating 40 CFR Part 270)	Regulatory Citation(s) 20.4.1.500 NMAC (incorporating 40 CFR Part 264)	Description of Requirement	Added or Clarified Information		
			Section of the HWFP or Permit Application	Yes	No
§270.15(a)	§264.175	Containment systems	Attachment M1		✓
§270.15(c)	§264.176	Special requirements for ignitable or reactive waste	Attachment E Permit Module II		✓
§270.15(d)	§264.177	Special requirements for incompatible wastes	Attachment E Permit Module II		✓
	§264.178	Closure	Attachment I		✓
§270.15(e)	§264.179	Air emission standards	Attachment E Attachment N		✓
§270.23	264 Subpart X	Miscellaneous units	Attachment M2		✓
§270.23(a)	§264.601	Detailed unit description	Attachment M2		✓
§270.23(b)	§264.601	Hydrologic, geologic, and meteorologic assessments	Permit Module IV Attachment M2		✓
§270.23(c)	§264.601	Potential exposure pathways	Permit Module IV Attachment M2 Attachment N		✓
§270.23(d)		Demonstration of treatment effectiveness	Permit Module IV Attachment M2 Attachment N		✓
	§264.602	Monitoring, analysis, inspection, response, reporting, and corrective action	Permit Module IV Attachment M2 Attachment N		✓
	§264.603	Post-closure care	Attachment J Attachment J1		✓
	264 Subpart E	Manifest system, record keeping, and reporting	Permit Module I Permit Module II Permit Module IV Attachment B		✓

Attachment A
Table of Changes – Item 3

Table of Changes – Item 3

Table of Changes – Item 3	
Affected Permit Section	List of Changes
Attachment B, Section B-3c	<ul style="list-style-type: none"> • Add “(NCR)” • Add “and the NCR will be dispositioned in accordance with Permit Attachment B3, Section B3-13”
Attachment B3, Section B3-13	<ul style="list-style-type: none"> • Delete “The Permittees shall require participating sites reconcile and correct nonconforming items as appropriate in accordance with the Permittees’ Quality Assurance Program Description (QAPD).” • Add “Any waste container for which a nonconformance report (NCR) has been written will not be shipped to the WIPP facility unless the condition that led to the NCR for that container has been dispositioned in accordance with the Permittees’ Quality Assurance Program Document (QAPD).” • Add “For each container selected for confirmation in accordance with Permit Attachment B7, the Permittees will examine the respective NCR documentation to verify NCRs have been dispositioned for the selected container.” • Delete “nonconformance report” and replace “NCR” • Delete “useability” and replace with “usability of” • Delete “data quality objective” to read “DQO” • Delete “five (5)” and replace with “seven” calendar days • Editorial Change: Change “thirty (30)” to “30”
Attachment B7, Section B7-1a	<ul style="list-style-type: none"> • Add “For each container selected for confirmation in accordance with the process above, the Permittees will examine the respective Nonconformance Report (NCR) documentation to verify NCRs have been dispositioned for the selected container as required by Permit Attachment B3, Section B3-13.”
Attachment B6, Table B6-1	<ul style="list-style-type: none"> • Revised B6-1 Waste Analysis (WAP) Checklist to be consistent with WAP changes described above. The proposed changes to the B6 Checklists for Item 3 are attached at the end of this Class 2 package.

Attachment B
Proposed Revised Permit Text – Item 3

Item - 3. NCR

B-3c Radiography and Visual Examination

Radiography ~~is a~~ and visual examination (VE) are nondestructive qualitative and quantitative techniques ~~that involves X-ray scanning of waste containers~~ used to identify and verify waste container contents as specified in Permit Attachment B1. ~~Visual examination (VE) constitutes opening a container and physically examining its contents.~~ Generator/storage sites shall perform radiography or VE of 100 percent of CH TRU mixed waste containers in waste streams except for those waste streams for which the Permittees approve a Scenario 1 or Scenario 2 Determination Request. No RH TRU mixed waste will be shipped to WIPP for storage or disposal without documentation of radiography or VE of 100 percent of the containers as specified in Permit Attachment B1. Radiography and/or visual examination VE will be used, when necessary, to examine a waste container to verify its physical form. These techniques can detect observable liquid wastes in excess of TSDf-WAC limits and containerized gases, which are prohibited for WIPP disposal. The prohibition of liquids in excess of TSDf-WAC limits and containerized gases prevents the shipment of corrosive, ignitable, or reactive wastes. Radiography and/or VE are also able to confirm that the physical form of the waste matches its waste stream description (i.e. Homogeneous Solids, Soil/Gravel, or Debris Waste [including uncategorized metals]). If the physical form does not match the waste stream description, the waste will be designated as another waste stream and assigned the preliminary hazardous waste numbers associated with that new waste stream assignment. That is, if radiography and/or VE indicates that the waste does not match the waste stream description arrived at by acceptable knowledge characterization, a non-conformance report (NCR) will be completed and the inconsistency will be resolved as specified in Permit Attachment B4 and the NCR will be dispositioned in accordance with Permit Attachment B3, Section B3-13. The proper waste stream assignment will be determined (including preparation of a new WSPF), the correct hazardous waste codes numbers will be assigned, and the resolution will be documented. Refer to Permit Attachment B4 for a discussion of acceptable knowledge and its verification process.

B3-13 Nonconformances

Nonconformances are uncontrolled and unapproved deviations from an approved plan or procedure. Nonconforming items and activities are those that do not meet the WAP requirements, procurement document criteria, or approved work procedures. Nonconforming items shall be identified by marking, tagging, or segregating, and the affected generator/storage site(s) notified. ~~The Permittees shall require participating sites reconcile and correct nonconforming items as appropriate in accordance with the Permittees' Quality Assurance Program Description (QAPD).~~ Any waste container for which a nonconformance report (NCR) has been written will not be shipped to the WIPP facility unless the condition that led to the NCR for that container has been dispositioned in accordance with the Permittees' Quality Assurance Program Document (QAPD). Disposition of nonconforming items shall be identified and documented. The QAPjPs shall identify the person(s) responsible for evaluating and dispositioning nonconforming items and shall include referenced procedures for handling them. For each container selected for confirmation in accordance with Permit Attachment B7, the Permittees will examine the respective NCR documentation to verify NCRs have been dispositioned for the selected container.

Management at all levels shall foster a "no-fault" attitude to encourage the identification of nonconforming items and processes. Nonconformances may be detected and identified by anyone performing WAP activities, including:

~~A nonconformance report~~ NCR shall be prepared for each nonconformance identified. Each

~~nonconformance report~~ NCR shall be initiated by the individual(s) identifying the nonconformance. The ~~nonconformance report~~ NCR shall then be processed by knowledgeable and appropriate personnel. For this purpose, a ~~nonconformance report~~ NCR including, or referencing as appropriate, results of laboratory analysis, QC tests, audit reports, internal memoranda, or letters shall be prepared. The ~~nonconformance report~~ NCR must provide the following information:

- An indication of the potential ramifications and overall ~~useability~~ usability of the data, if applicable

The Permittees shall require the Site Project Manager to oversee the ~~nonconformance report~~ NCR process and be responsible for developing a plan to identify and track all nonconformances and report this information to the Permittees. The Site Project Manager is also responsible for notifying project personnel of the nonconformance and verifying completion of the corrective action for nonconformances.

Nonconformance to DQOs

For any non-administrative nonconformance related to applicable requirements specified in this WAP which are first identified at the Site Project Manager signature release level (i.e., a failure to meet a ~~data quality objective~~-DQO), the Permittees shall receive written notification within ~~five (5)~~ seven calendar days of identification and shall also receive a ~~nonconformance report~~ NCR within ~~thirty (30)~~ calendar days of identification of the incident. The Permittees shall require the generator/storage site to implement a corrective action which remedies the nonconformance prior to management, storage, or disposal of the waste at WIPP. The Permittees shall send NMED a monthly summary of nonconformances identified during the previous month, indicating the number of nonconformances received and the generator/storage sites responsible.

B7-1a Permittees' Confirmation of a Representative Subpopulation of the Waste

For each container selected for confirmation in accordance with the process above, the Permittees will examine the respective nonconformance report (NCR) documentation to verify NCRs have been dispositioned for the selected container as required by Permit Attachment B3, Section B3-13.

B6 Checklists Proposed Changes for Item 1, Item 2, Item 3

Table B6-1 Waste Analysis Plan (WAP) Checklist

**Waste Analysis Plan (WAP)
General Checklist for use at
DOE's Generator/Storage Sites**

	WAP Requirement (Insert Site) Audit (Insert Audit #) Table B6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
WASTE STREAM IDENTIFICATION						
6	<p>Are procedures in place to ensure that the generator/storage site assigns EPA hazardous waste numbers associated with the waste? If so, do these assigned EPA hazardous waste numbers correspond to the permitted EPA hazardous waste numbers in Table B-9? Are there any assigned EPA hazardous waste numbers that are not permitted EPA hazardous waste numbers on the Table B-9? If so, did the generator/storage site reject the waste for shipment to and disposal at WIPP? Did the generator assign a state hazardous waste codes or numbers? If so, is it assigned to waste that is permitted at WIPP?</p> <p>(Section B-1b)</p>					
UNACCEPTABLE WASTE						
12	<p>Are procedures in place to ensure that the generator/storage site ensures, through administrative and operational procedures and characterization techniques, that waste containers do not include the following unacceptable waste:</p> <ul style="list-style-type: none"> • liquid waste <u>is not acceptable at WIPP. Liquid in the quantities delineated below is acceptable</u> (waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers shall contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any payload container may not exceed 1 percent volume of that container. Payload containers with U134 waste shall have no detectable liquid) • <u>Observable liquid shall be no more than 1 percent by volume of the outermost container at the time of radiography or visual examination (VE).</u> • <u>Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited.</u> • <u>However, internal containers with more than 60 milliliters or 3 percent by volume observable liquid are not prohibited if:</u> <ul style="list-style-type: none"> • <u>Acceptable knowledge states the liquid does not exhibit the characteristic of ignitability, corrosivity, and/or reactivity (EPA Hazardous Waste Numbers D001, D002, D003)</u> • <u>Justification for implementation is included in the Characterization Information Summary as required by Permit Attachment B3, Section B3-12b(2)</u> • <u>Containers with Hazardous Waste Number U134 assigned shall have no observable liquid</u> • <u>Overpacking the outermost container that was examined during radiography or visual examination or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.</u> • non-radionuclide pyrophoric materials • hazardous wastes not occurring as co-contaminants with TRU wastes (non- 					

	WAP Requirement (Insert Site) Audit (Insert Audit #) Table B6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	mixed hazardous wastes) <ul style="list-style-type: none"> wastes incompatible with backfill, seal and panel closures materials, container and packaging materials, shipping container materials, or other wastes wastes containing explosives or compressed gases (continued below) 					
GENERAL SAMPLING AND ANALYTICAL REQUIREMENTS						
<u>26</u>	Are procedures in place to ensure that radiography and/or visual examination are used as necessary to: <ul style="list-style-type: none"> Examine a waste container to determine the physical form Identify <u>observable</u> liquids <u>in excess of TSDF WAC limits</u> and containerized gases Verify the physical form matches the waste stream description (Section B-3c)					

	WAP Requirement (Insert Site) Audit (Insert Audit #) Table B6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
27	<p>Are procedures in place to ensure that the following characterization activities shall occur for newly generated wastes:</p> <ul style="list-style-type: none"> • Acceptable Knowledge for all wastes, with sampling and analysis as necessary to augment AK including; <ul style="list-style-type: none"> - Either visual examination during packaging or radiography (or VE in lieu of radiography) after packaging for all waste containers, ensuring this occurs prior to any treatment designed to supercompact waste - Headspace gas analysis for randomly selected containers, except for qualifying waste containers belonging to LANL sealed sources waste streams - Total VOC, SVOC, and Metals analyses for a selected number of homogeneous solids and soil/gravel waste containers as specified in Attachment B2 - Evaluation of any TICs found in headspace gas and totals analyses <p>(Section B-3d(1))</p>					
DATA GENERATION, VERIFICATION, VALIDATION, DOCUMENTATION, AND QUALITY ASSURANCE						
30	<p>Are procedures in place to ensure that the following Data Quality Objectives are met:</p> <ul style="list-style-type: none"> • Use Acceptable Knowledge to delineate TRU mixed waste streams, assess whether TRU mixed wastes comply with the applicable requirements of the TSDF-WAC, assess whether TRU mixed wastes exhibit a hazardous characteristic, assess whether TRU mixed wastes are listed and to estimate waste material parameter weights • Use Headspace gas sampling and analysis, as necessary, to identify and quantify VOCs in waste containers to resolve the assignment of EPA Hazardous Waste Numbers • Perform totals analyses of homogeneous solids and soils/gravel wastes to establish if the waste is hazardous based on the toxicity characteristics levels in 20.4.1.200 NMAC through a comparison of the upper confidence limits (UCL₉₀) of the mean concentrations to resolve the assignment of hazardous waste numbers • Use radiography or visual examination to determine physical waste form, the absence of prohibited items, and additional waste characterization techniques that may be used based on Summary Category Groups <p>(Section B-4a(1))</p>					
44	<p>Are procedures in place to ensure that non-administrative, WAP-related nonconformances first identified at the site project manager level are reported to the Permittees within five <u>seven</u> (57) calendar days of identification, that nonconformance reports are prepared within thirty (30) calendar days, and that corrective action is implemented prior to waste shipment?</p> <p>(Section B3-13)</p>					
45	<p>Are procedures in place to ensure that <u>any waste container for which a nonconformance report (NCR) has been written will not be shipped to the WIPP facility unless the condition that led to the NCR for that container</u> are is appropriately</p>					

	WAP Requirement (Insert Site) Audit (Insert Audit #) Table B6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	identified, reconciled, corrected, and documented? Are nonconformance reports prepared for nonconformances identified? Are nonconformances identified and tracked, and does the Site Project Manager oversee the nonconformance report process? (Section B3-13)					
RECORDS AND RECORD MANAGEMENT						
56	<p>Are procedures in place to ensure that hard copy or electronic Waste Stream Profile Form will include the following:</p> <ul style="list-style-type: none"> • Generator/storage site name • Generator/storage site EPA ID • Date of audit report approval by NMED (if obtained) • Original generator of waste stream • Whether waste is Contact-Handled or Remote-Handled • Waste Stream WIPP Identification Number • Summary Category Group • Waste Matrix Code Group • Waste Material Parameter Weight Estimates per unit of waste • Waste stream name • A description of the waste stream • Applicable EPA hazardous waste codes-numbers • Applicable TRUCON codes • A listing of acceptable knowledge documentation used to identify the waste stream • The waste characterization procedures used and the reference and date of the procedure • Certification signature of Site Project Manager, name, title, and date signed <p>(Section B3-12b(1))</p>					
56a	<p>Are procedures in place to ensure that hard copy or electronic Characterization Information Summary will include the following:</p> <ul style="list-style-type: none"> • Data reconciliation with DQOs • Headspace gas summary data listing the identification numbers of samples used in the statistical reduction, the maximum, mean, standard deviation, UCL₉₀, RTL, and associated EPA hazardous waste numbers that must be applied to the waste stream. • Total metal, VOC, and SVOC analytical results for homogeneous solids and soil/gravel (if applicable). 					

	WAP Requirement (Insert Site) Audit (Insert Audit #) Table B6-1 Waste Analysis Plan (WAP) Checklist ¹	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	<ul style="list-style-type: none"> TIC listing and evaluation. Radiography and visual examination summary to document that all prohibited items are absent in the waste (if applicable). A complete listing of all container identification numbers used to generate the Waste Stream Profile Form, cross-referenced to each Batch Data Report. Complete AK summary, including stream name and number, point of generation, waste stream volume (current and projected), generation dates, TRUCON codes, Summary Category Group, Waste Matrix Code(s) and Waste Matrix Code Group, other TWBIR information, waste stream description, areas of operation, generating processes, RCRA determinations, radionuclide information, all references used to generate the AK summary, and any other information required by Permit Attachment B4, Section B4-2b. Method for determining Waste Material Parameter Weights per unit of waste. List of any AK Sufficiency Determinations requested for the waste stream. Certification through acceptable knowledge or testing and/or analysis that any waste assigned the hazardous waste number of U134 (hydrofluoric acid) no longer exhibits the characteristic of corrosivity. This is verified by ensuring that no liquid is present in U134 waste. <u>A justification for the selection of radiography and/or VE as an appropriate method of characterizing the waste.</u> <u>When applicable, a justification for acceptability of internal containers with liquid greater than 60 milliliters or 3 percent by volume observable liquid, whichever is greater as required by Permit Attachment B, Section B-1c.</u> <p>(Section B3-12b(2))</p>					

Table B6-3 Acceptable Knowledge (AK) Checklist

Acceptable Knowledge (AK) Checklist¹

	WAP Requirement ² (Insert Site) Audit (Insert Audit #) Table B6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location Adequate?	Y/N (Why)	Item Reviewed	Adequate? Y/N	
REQUIRED AND SUPPLEMENTAL INFORMATION						
141	<p>Does the generator site document that the following shall be collected for each waste stream:</p> <ul style="list-style-type: none"> A. Area(s) and/or building(s) from which the waste stream was or is generated B. Waste stream volume and time period of generation (e.g., 100 standard waste boxes of retrievable stored waste generated from June 1977 through December 1977) C. Waste generating process described for each building (e.g., batch waste stream generated during decommissioning operations of glove boxes), including processes associated with U134 waste generation, if applicable. D. Process flow diagrams (e.g., a diagram illustrating glove boxes from a specific building to a size reduction facility to a container storage area). In the case of research/development, analytical laboratory waste, or the similar processes where process flow diagrams cannot be created, a description of the waste generating processes, rather than a formal process flow diagram, may be included if this modification is justified and the justification is placed in the auditable record E. Material inputs or other information that identifies the chemical content of the waste stream and the physical waste form (e.g., glove box materials and chemical handled during glove box operations, events or processes that may have modified the chemical or physical properties of the waste stream after generation, data obtained through visual examination of newly generated waste that later undergoes radiography; information demonstrating neutralization of U134 [hydrofluoric acid] and waste compatibility. <p><u>E. Information regarding whether liquid in internal containers could exhibit the characteristics of ignitability, corrosivity, and/or reactivity (EPA Hazardous Waste Numbers D001, D002, D003).</u></p> <p>(Section B4-2b)</p>					

	WAP Requirement ² (Insert Site) Audit (Insert Audit #) Table B6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location Adequate?	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
144	<p>Have the following procedures been prepared?:</p> <ul style="list-style-type: none"> A. Procedures for identifying and assigning the physical waste form of the waste B. Procedures for delineating waste streams and assigning Waste Matrix Codes C. Procedures for resolving inconsistencies in acceptable knowledge documentation D. Procedures for headspace gas sampling and analysis, visual examination and/or radiography, and homogeneous waste sampling and analysis, if applicable E. For newly generated waste, procedures describing process controls used to ensure prohibited items (specified in the WAP, Permit Attachment B) are documented and managed F. Procedures to ensure radiography and visual examination include a list of prohibited items that the operator shall verify are not present in each container of waste (e.g. liquids exceeding TSDF WAC limits, corrosives, ignitables, reactives, and incompatible wastes) G. Procedures to document how changes to Waste Matrix Codes, waste stream assignment, and associated Environmental Protection Agency hazardous waste numbers based on material composition are documented for any waste H. Procedures for assigning EPA hazardous waste numbers to TRU mixed waste I. Procedures for estimating waste material parameter weights <p>(Section B4-2b)</p>					
PROCEDURES						
149a	<ul style="list-style-type: none"> E. Sites must prepare and implement a written procedure to identify hazardous wastes and assign the appropriate hazardous waste numbers to each waste stream. The following are minimum baseline requirements/standards that site-specific procedures must include to ensure comparable and consistent characterization of hazardous waste: <ul style="list-style-type: none"> 1. Compile all of the required information in an auditable record. 2. Review the compiled information and delineate TRU mixed waste streams. Delineation of waste streams must comply with the WAP definition: a waste stream is defined as waste material generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents. 3. Review the compiled information to determine if the waste stream is compliant with the TSDF-WAC 4. Review the required information to determine if the waste is listed under 20.4.1.200 NMAC (incorporating 40 CFR § 261), Subpart D. 					

	WAP Requirement ² (Insert Site) Audit (Insert Audit #) Table B6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location Adequate?	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	<p>Assign all listed hazardous waste numbers, unless the site chooses to justify an alternative assignment and document the justification in the auditable record.</p> <p>5. Review the required information to determine if the <u>potential for the waste to exhibit a hazardous characteristic of ignitability, corrosivity, and/or reactivity</u> or <u>if the waste</u> may contain hazardous constituents included in the toxicity characteristics specified in 20.4.1.200 NMAC (incorporating 40 CFR § 261, Subpart C. If a toxicity characteristic contaminant is identified and is not included as a listed waste, assign the toxicity characteristic number, unless data are available which demonstrates that the concentration of the constituent in the waste is less than the toxicity characteristic regulatory level. When data are not available, the toxicity characteristic hazardous waste number for the identified hazardous constituent must be applied to the mixed waste stream.</p> <p>6. Review the compiled information to provide an estimate of the material parameter weights for each container to be stored or disposed of at WIPP. For newly generated waste, procedures shall be developed and implemented to characterize hazardous waste using acceptable knowledge prior to packaging.</p>					
AUGMENTATION OF ACCEPTABLE KNOWLEDGE						
155	<p>Does the generator site have procedures for reevaluating acceptable knowledge if the results of the waste characterization indicate that the waste to be shipped does not match the approved waste stream or if the data from radiography or visual examination for waste streams without an AK Sufficiency Determination exhibit this discrepancy? Does this procedure describe how the waste is reassigned, acceptable knowledge reevaluation, and appropriate hazardous waste codes <u>numbers</u> are assigned?</p> <p>(Section B4-3e)</p>					
CRITERIA FOR ASSEMBLING AN ACCEPTABLE KNOWLEDGE RECORD DELINEATING THE WASTE STREAM						
163	<p>Does the generator site document, justify, and consistently delineate waste streams and assign hazardous waste codes <u>numbers</u> based on site specific permit requirements or state-enforced agreements?</p> <p>(Section B4-3e)</p>					

	WAP Requirement ² (Insert Site) Audit (Insert Audit #) Table B6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location Adequate?	Y/N (Why)	Item Reviewed	Adequate? Y/N	
DATA QUALITY REQUIREMENTS						
168	<p>Are acceptable knowledge processes consistently applied among all generator sites, and does each generator site comply with the following data quality requirements for acceptable knowledge documentation:</p> <p>A. Precision - Precision is the agreement among a set of replicate measurements without assumption of the knowledge of a true value. The qualitative determinations, such as compiling and assessing acceptable knowledge documentation, do not lend themselves to statistical evaluations of precision. However, the acceptable knowledge information will be addressed by the independent review of acceptable knowledge information during internal and external audits.</p> <p>B. Accuracy - Accuracy is the degree of agreement between an observed sample result and the true value. The percentage of waste containers which require reassignment to a new waste matrix code and/or designation of different hazardous waste numbers based on sampling and analysis data and discrepancies identified by the Permittees during waste confirmation will be reported as a measure of acceptable knowledge accuracy.</p> <p>C. Completeness - Completeness is an assessment of the number of waste streams or number of samples collected to the number of samples determined to be useable through the data validation process. The acceptable knowledge record must contain 100 percent of the information (Permit Attachment B4-3) The useability of the acceptable knowledge information will be assessed for completeness during audits.</p> <p>D. Comparability - Data are considered comparable when one set of data can be compared to another set of data. Comparability is ensured through sites meeting the training requirements and complying with the minimum standards outlined for procedures that are used to implement the acceptable knowledge process. All sites must assign hazardous waste codes <u>numbers</u> in accordance with Permit Attachment B4-4 and provide this information regarding its waste to other sites who store or generate a similar waste stream.</p> <p>E. Representativeness - Representativeness expresses the degree to which sample data accurately and precisely represent characteristics of a population. Representativeness is a qualitative parameter that will be satisfied by ensuring that the process of obtaining, evaluating, and documenting acceptable knowledge information is performed in accordance with the minimum standards established in Permit Attachment B4. Sites also must assess and document the limitations of the acceptable knowledge information used to assign hazardous waste codes <u>numbers</u> (e.g., purpose and scope of information, date of publication, type and extent to which waste parameters are addressed).</p> <p>(Section B3-9)</p>					

1. NMED expects a traceability analysis to be performed, the results of which should be presented on this checklist under the "Examples of Implementation" column. Further, the traceability analysis process and results should be discussed in the Final Audit Report.

2. The WAP requirements should be presented in documents, such as procedures. Each of the questions posed under WAP requirements are meant to determine whether procedures are in place or whether documents are evident which demonstrate that the specific WAP requirement is or can be met.

Table B6-5 Radiography Checklist

Radiography Checklist

	WAP Requirement ¹ (Insert Site) Audit (Insert Audit #) Table B6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
DATA COMPILATION						
243	Are there procedures to ensure that a radiography data form is used to document the waste matrix code, ensure the waste container contains no ignitable, corrosive or reactive waste by documenting the absence of liquids in excess of TSDf-WAC limits or compressed gases, and verify that the physical form of the waste is consistent with the waste stream description documented on the WSPF? (Section B1-3)					
246	If a discrepancy is noted, do procedures ensure that the proper waste stream assignment is determined, the correct hazardous waste codes <u>numbers</u> assigned, and the resolution documented? (Section B-3c)					

- i. The WAP requirements should be presented in documents, such as procedures. Each of the questions posed under WAP requirements is meant to ask whether procedures are in place or whether documents are evident which demonstrate that the specific WAP requirement is or can be met.

Table B6-6 Visual Examination (VE) Checklist

Visual Examination (VE) Checklist

	WAP Requirement ¹ (Insert Site) Audit (Insert Audit #) Table B6-6 Visual Examination (VE) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
TRAINING						
296	Is there documentation which shows that a standardized training program for visual examination personnel <u>operators</u> has been developed? Is it specific to the site and include the various waste configurations generated/stored at the site? (Section B1-4)					
297	Is there documentation which shows that the visual inspectors <u>examination operators</u> receive training on the specific waste generating processes, typical packaging configurations, and waste material parameters expected to be found in each waste <u>Matrix Code</u> at the site? (Section B1-4)					
298a	<u>Does the training include the following regardless of Summary Category Group?</u> <ul style="list-style-type: none"> • <u>Identifying and describing the contents of a waste container by examining all items in waste containers of previously packaged waste.</u> • <u>Identifying when VE cannot be used to meet the DQOs.</u> (Section B1-4)					
VISUAL EXAMINATION PROCEDURES						
304	Do procedures indicate that all visual examination activities are recorded <u>documented</u> on audio/videotape <u>video/audio media</u> or <u>VE performed</u> alternatively, by using a second operator to provide additional verification by reviewing the contents of the waste container to ensure correct reporting? (Section B1-4)					
304a	<u>Are procedures in place to ensure that when VE is performed using a second operator, each operator performing the VE shall observe for themselves the waste being placed in the waste container or the contents within the examined waste container when waste is not removed?</u> (Section B1-4)					
313	Do site procedures ensure that when liquids are <u>is</u> found, the non-transparent <u>internal</u> container holding the liquid will be assumed to be filled with liquid and this volume will be added to the total liquid in the payload-container <u>being characterized using VE</u> ? The payload-container <u>being characterized using VE</u> would then be rejected and/or repackaged to exclude the <u>internal</u> container if it is over the TSDF-WAC limits. (Section B-3c)					

- i. The WAP requirements should be presented in documents, such as procedures. Each of the questions posed under WAP requirements is meant to ask whether procedures are in place or whether documents are evident which demonstrate that the specific WAP requirement is or can be met.