



**Department of Energy**  
Carlsbad Field Office  
P. O. Box 3090  
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**SEP 29 2011**

Mr. John Kieling, Acting Chief  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 E. Rodeo Park Drive, Building 1  
Santa Fe, NM 87505-6303

**Subject:** Request for a Temporary Authorization for the Referenced Class 2 Permit Modification to the Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Permit Number: NM4890139088-TSDF to Facilitate Changes to Protect Human Health and the Environment.

**Reference:** Letter from Edward Ziemianski, CBFO and M.F. Sharif, WTS to John Kieling, NMED dated September 29, 2011, transmitting a Class 2 Permit Modification Request

Dear Mr. Kieling:

Pursuant to 20.4.1.900 of the New Mexico Administrative Code (**NMAC**), incorporating Section 270.42(e), Title 40 of the Code of Federal Regulations (**CFR**), the Department of Energy and Washington TRU Solutions, LLC, collectively referred to as the Permittees, hereby provide you with the following temporary authorization (**TA**) request.

The Permittees are requesting a TA per 40 CFR 270.42(e)(2)(i) for Item 1 of the referenced Class 2 Permit Modification Request (**PMR**) submitted to your office on September 29, 2011.

The activity to be conducted under the requested TA is to allow personnel to enter an active remote-handled transuranic (**RH TRU**) mixed waste disposal room to adjust ventilation regulators when the ventilation rate in the RH TRU mixed waste disposal room is less than 35,000 standard cubic feet per minute (**scfm**) as described in Item 1 of the referenced PMR.

This TA is needed to facilitate protection of underground personnel at the WIPP as provided by 40 CFR 270.42 (e)(3)(ii)(E) by minimizing potential exposure to emissions from the disposed waste as described in Item 1 of the referenced PMR. The basis for Item 1 of the PMR is to improve the protection of operating personnel by reducing the time the workers must be present in the exhaust air of panels to adjust ventilation regulators. Permit Attachment A4, Section A4-4 states that "[t]he exhaust drift in the waste disposal area will normally not be used for personnel access." Item 1 of the proposed PMR minimizes the chance for exposure to emissions from the waste. Item 1 of the PMR proposes to use the active RH TRU waste disposal room to gain access to the ventilation louvers without requiring workers to travel the longer distances down the exhaust drift. Currently, workers enter the ventilation exhaust areas to adjust ventilation. Item 1 of the PMR proposes to mitigate this circumstance by applying the ventilation requirement for access to rooms that are adjacent to a filled CH (contact-handled) TRU mixed waste disposal room or Room 7 of any panel when CH TRU mixed waste is being disposed thereby allowing access to other active rooms (specifically, active RH TRU mixed

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waste rooms) when ventilation is less than 35,000 scfm. This proposed change is consistent with the administrative history of the Permit. The requested activity under the TA is to allow the

Permittees to enter an active RH TRU mixed waste room when ventilation in that room is less than 35,000 scfm to access the ventilation system control bulkhead to make needed operational adjustments. These adjustments are needed to assure there is 35,000 scfm in the active CH TRU mixed waste room before personnel enter. The relief provided by the TA protects workers by reducing exposure to emissions from the disposed waste.

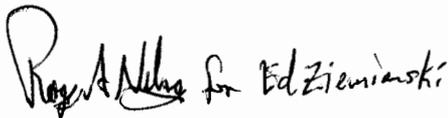
Other than allowing the Permittees to perform the requested activity, this TA would not affect other conditions or requirements of the Permit nor are the Permittees seeking to implement other aspects of the PMR. The Permittees are in compliance with the requirements of 20.4.1.500 NMAC, incorporating 40 CFR Part 264. Therefore, this TA would not impact continued compliance with the requirements of 20.4.1.500 NMAC and provides sufficient information to ensure compliance with 40 CFR 264 standards per 40 CFR 270.42(e)(2)(ii)(C).

In accordance with 20.4.1.900 NMAC, incorporating 40 CFR 270.42(e)(1), the Permittees are requesting that this TA be effective until the New Mexico Environment Department (NMED) completes the administrative process for the Class 2 PMR, or 180 days, whichever is shortest.

For the reasons delineated above, the Permittees believe the requirements of 20.4.1.900 NMAC, incorporating 40 CFR 270.42(e), have been met and are requesting the issuance of the TA to facilitate changes to protect human health and the environment.

We certify under penalty of law that this document and all enclosures were prepared under our direction or supervision according to a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions please contact George T. Basabilvazo at (575) 234-7488.



Sincerely,

Edward Ziemianski, Interim Manager  
U.S. Department of Energy



M. F. Sharif, General Manager  
Washington TRU Solutions LLC

Enclosure

cc: w/enclosure

J. Davis, NMED \*ED

T. Hall, NMED ED

CBFO M&RC

\*ED denotes electronic distribution

**Item 1**

**Class 2 Permit Modification Request**

**Update Ventilation Language**

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

**WIPP Permit Number - NM4890139088-TSDF**

**September 2011**

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### **Acronyms/Abbreviations/Units**

CFR	Code of Federal Regulations
CH	contact-handled
HWDU	Hazardous Waste Disposal Unit
MSHA	Mine Safety and Health Administration
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
Permit	Hazardous Waste Facility Permit
PMR	Permit Modification Request
RH	remote-handled
scfm	standard cubic feet per minute
SOP	standard operating procedure
TRU	transuranic
VOC	volatile organic compound
WIPP	Waste Isolation Pilot Plant

## Overview of the Permit Modification Request

This document contains one Class 2 Permit Modification Request (**PMR**) for the Waste Isolation Pilot Plant (**WIPP**) Hazardous Waste Facility Permit (**Permit**) Number NM4890139088-TSDF.

This PMR is being submitted by the U.S. Department of Energy Carlsbad Field Office and Washington TRU Solutions LLC, collectively referred to as the Permittees, in accordance with the WIPP Permit, Part 1, Condition 1.3.1 (20.4.1.900 New Mexico Administrative Code (**NMAC**) incorporating Title 40 Code of Federal Regulations (**CFR**) 270.42(b)). The modification provides for the following changes:

- Add definition of a filled room.
- Revise language to indicate when 35,000 standard cubic feet per minute (**scfm**) is required for worker entry into active rooms and when reporting is required.
- Change a related reporting requirement.

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 is provided in this PMR. The proposed modification to the text of the WIPP Permit has been identified using red text and a double underline and a ~~strikeout~~ font for deleted information. All direct quotations are indicated by italicized text. The following information specifically addresses how compliance has been achieved with the WIPP Permit requirement, Permit Part 1, Condition 1.3.1. 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.**

The Permittees are proposing the following changes in this PMR:

1. Add definition for a "filled room" in Condition 1.5.19.
2. Add clarifying language in Conditions 4.5.3.2, Attachment A2, Section A2-2a(3), Attachment O, Section O-1, Section O-2, Section O-3, Section O-3c(1), Section O-3c(2), and Section O-5a to indicate that 35,000 scfm is required for worker entry into any active CH TRU mixed waste room that is adjacent to a filled room or in room 7 of any panel.
3. Modify when reporting to the New Mexico Environment Department (NMED) is necessary if the ventilation requirements are not met. Delete text in O-3b(2) since it is redundant with the reporting requirements in O-5a and condition 4.6.4.3.

The Table of Changes (Appendix A) and proposed text changes in redline strikeout (Appendix B) of this PMR describe each change that is being proposed. Appendix A provides a detailed list of changes by Permit section.

**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 Permittees are submitting this PMR as specified in Item A.4.b of Appendix I in 20.4.1.900 NMAC (incorporating 40 CFR 270.42) which states: "*Changes in the frequency of or procedures for monitoring, reporting, sampling or maintenance activities by the permittee: other changes.*" Therefore this modification request is a Class 2 under Item A.4.b.

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

The basis for this PMR is to improve the protection of operating personnel by reducing the time the workers must be present in the exhaust air of panels to adjust ventilation regulators. Permit Attachment A4, Section A4-4 states that "*[t]he exhaust drift in the waste disposal area will normally not be used for personnel access.*" This restriction minimizes the chance for exposure to emissions from the waste. This PMR proposes to use the active remote-handled (RH) transuranic (TRU) mixed waste disposal room to gain access to the ventilation louvers without requiring workers to travel the longer distances down the exhaust drift even if the ventilation flow rate in the RH TRU mixed waste disposal room is less than 35,000 scfm. Currently workers have to enter and travel within the ventilation exhaust areas to adjust ventilation. This PMR proposes to ameliorate this circumstance by minimizing the amount of time a worker must spend down-wind from the waste. This is accomplished by changing the restriction regarding access to rooms that contain TRU mixed waste. Specifically, this modification makes it acceptable for a worker to enter an RH TRU mixed waste room with less than 35,000 scfm as long as that room is not adjacent to a filled contact-handled (CH) TRU mixed waste room and RH TRU waste handling is not under way in the room. Using the RH TRU mixed waste room to access the ventilation control louvers shortens the travel path for workers and minimizes the amount of time that must be spent in the exhaust drift. This modification also clarifies that workers are not allowed into a CH TRU mixed waste room that is adjacent to a filled CH TRU mixed waste room or in Room 7 of any panel when CH TRU mixed waste is being disposed without a minimum airflow of 35,000 scfm. This proposed change is consistent with the exposure modeling and the administrative history of the Permit as discussed below. This change does not waive any ventilation requirements imposed by the Mine Safety and Health Administration (MSHA).

There are times when it is necessary to enter an active disposal room in order to establish normal ventilation. In such cases and in order to protect workers, reentry is accomplished in accordance with a standard operating procedure (SOP). According to the SOP the ventilation mode is shifted to "Filtration Mode" for thirty minutes prior to reentry to the underground. Also prior to reentry into the underground, filters at radiological station A are checked for radiological contamination. Then workers are allowed underground to establish that adequate air quality exists as defined by MSHA (30 CFR 57.5015) and the SOP including volatile organic compounds (VOCs) as appropriate. Once air quality has been determined to be acceptable the reentry team proceeds to the active panel area to inspect for abnormal conditions (i.e., fire, roof fall, or dropped/breached containers). Once the condition has been determined to be adequate, normal ventilation and entry to the underground may be established. This process is a

systematic approach to prevent the inadvertent release of radioactive contamination and assures protection of human health and the environment.

Normally, the active panel inspection can be performed from the entry to the active room (i.e., from the intake drift at the room entrance). In order to assure such reentry activity can be performed after the Permit is modified, language is placed in Attachment O, Section O-3c(2) that specifically exempts entry for establishing normal ventilation (i.e., 35,000 scfm) from the requirement that ventilation be verified to be at 35,000 scfm prior to entering. The language requires that such entry be noted in the log book so that clear documentation of such events is kept in the Operating Record for the facility.

In addition, modification of the reporting requirements is proposed. Currently, there is a 7-day notification requirement whenever the ventilation requirements are not met. This is triggered after a monthly review of the ventilation records. The Permittees are proposing in place of the 7-day notification, which is usually reserved to situations which pose risk to human health or the environment, that instances where the ventilation requirements are not achieved be reported annually in the Mine Ventilation Rate Monitoring Annual Report. To this extent, the Permittees are proposing changes to the text in Permit Part 4, Condition 4.6.4.3 and Permit Attachment O, Sections O-3b(2) and O-5a. Currently required calculations, measurements and evaluations will remain the same. The changes will only be to the reporting mechanism, and frequency.

#### **Source of the 35,000 scfm Ventilation Requirement in the Permit:**

When the Permittees prepared their Permit Application in 1996, the NMED requested that several exposure scenarios be examined to evaluate the potential releases of VOCs and the effects on underground workers (WIPP RCRA Part B Permit Application, DOE/WIPP 91-005, Revision 6 Appendix D9, Attachment 1). These scenarios involved a roof fall in an open room (i.e., one being actively filled with CH TRU mixed waste) and a closed room (i.e., a CH TRU mixed waste room that was filled with drums of waste and had ventilation barriers in place). Two other scenarios evaluated "normal operations" to determine risk to workers actively placing waste in CH TRU mixed waste rooms when no roof fall occurs. In all four cases, the potentially exposed individual was an underground waste handler working in the active CH TRU mixed waste room. The four scenarios are shown in Figures 1 to 4 which are taken from the NMED's written testimony submitted during the original Permit hearings in 1999 (NMED Direct Testimony Regarding Regulatory Process and Imposed Conditions" (HRM 98-04(P))). In all four cases, the NMED determined that the combination of the environmental performance standards (established through room-based limits) and the minimum ventilation of 35,000 scfm were sufficient to protect these workers. Hence, the Permit was issued with the condition that 35,000 scfm be maintained whenever workers are present in an active room (Permit Attachment O, multiple locations).

#### **Applicability to RH TRU Mixed Waste Rooms:**

At the time the Permit was issued in 1999, RH TRU waste was prohibited and RH TRU waste emplacements were not included in the NMED's ventilation analysis. Rooms that are being filled with RH TRU waste represent one additional scenario as shown in Figure 5. As can be seen in Figure 5, the worker is unaffected by normal operations or a roof fall in the adjacent CH TRU mixed waste room and by any roof fall scenario in the adjacent filled room by virtue of the fact that the ventilation flow through the active CH TRU mixed waste room bypasses the active RH TRU mixed waste room. In other words, because RH TRU mixed waste rooms are upstream from CH TRU mixed waste rooms, the RH TRU mixed waste worker in an RH TRU

mixed waste room is never in the CH TRU mixed waste room ventilation stream, and therefore would not be subject to the consequences of the roof-fall scenario.

Volatile Organic Compound emissions from RH TRU waste itself are negligible due to the low volume of RH TRU waste being emplaced. The Permit Part 4.1.12 restricts the volume of RH waste that can be placed in each panel. Based on the current Panel 7 volume limit in Part 4.1.1.2 this restriction equates to less than 104 canisters per disposal room. Furthermore, RH is emplaced in boreholes with shield plugs and is not subject to active ventilation similar to drums of waste on the floor of an active room. Therefore, this emplacement configuration restricts VOC emissions from RH TRU mixed waste into the active disposal room.

#### **Appropriateness of the Proposed Changes:**

The changes proposed in the PMR are based on the NMED record that indicates the concern for maintaining adequate ventilation is to protect workers from exposure to harmful concentrations of VOCs in the active CH TRU mixed waste room adjacent to a filled CH TRU mixed waste room or in Room 7 of any panel during normal operations and in the event of a roof fall. These harmful concentrations cannot occur in the RH TRU mixed waste rooms during normal operations or as the result of the roof fall. Therefore, the change specifically limits the condition to maintain 35,000 scfm to any active room that is adjacent to a filled disposal room when workers are present. A "filled room" is also defined so there is no confusion regarding this terminology. The change normally would apply to the room in a panel that is receiving CH TRU mixed waste and not to an RH TRU mixed waste disposal room. However, there may be circumstances when a room is filled with CH TRU mixed waste and there is remaining RH TRU mixed waste to be emplaced in the next room. Another situation exists with Room 7 in each panel when CH TRU mixed waste is being disposed. Since this is the first room filled there is no adjacent filled room. In such cases, the requirement for 35,000 scfm would apply to the RH TRU mixed waste room (i.e., the room adjacent to a filled disposal room) and to Room 7 of any panel when CH TRU mixed waste is being disposed.

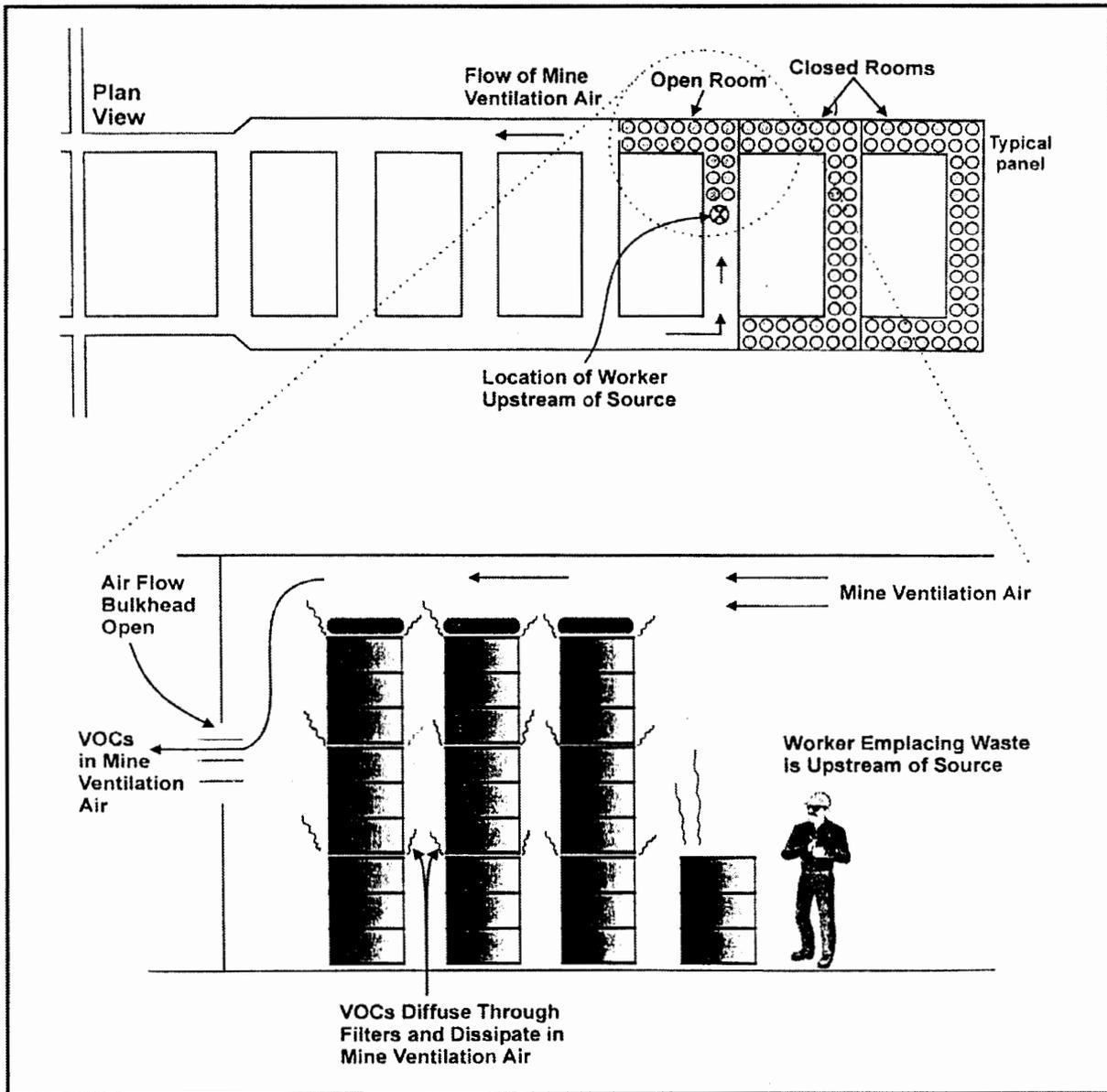
Figure 6 shows the current and proposed worker pathways to adjust the ventilation regulators. Clearly, the pathway allowed by this proposed modification is significantly shorter and thereby reduces the time that a worker must be downstream of the emplaced waste.

- 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 270.21, 270.62 and 270.63.**

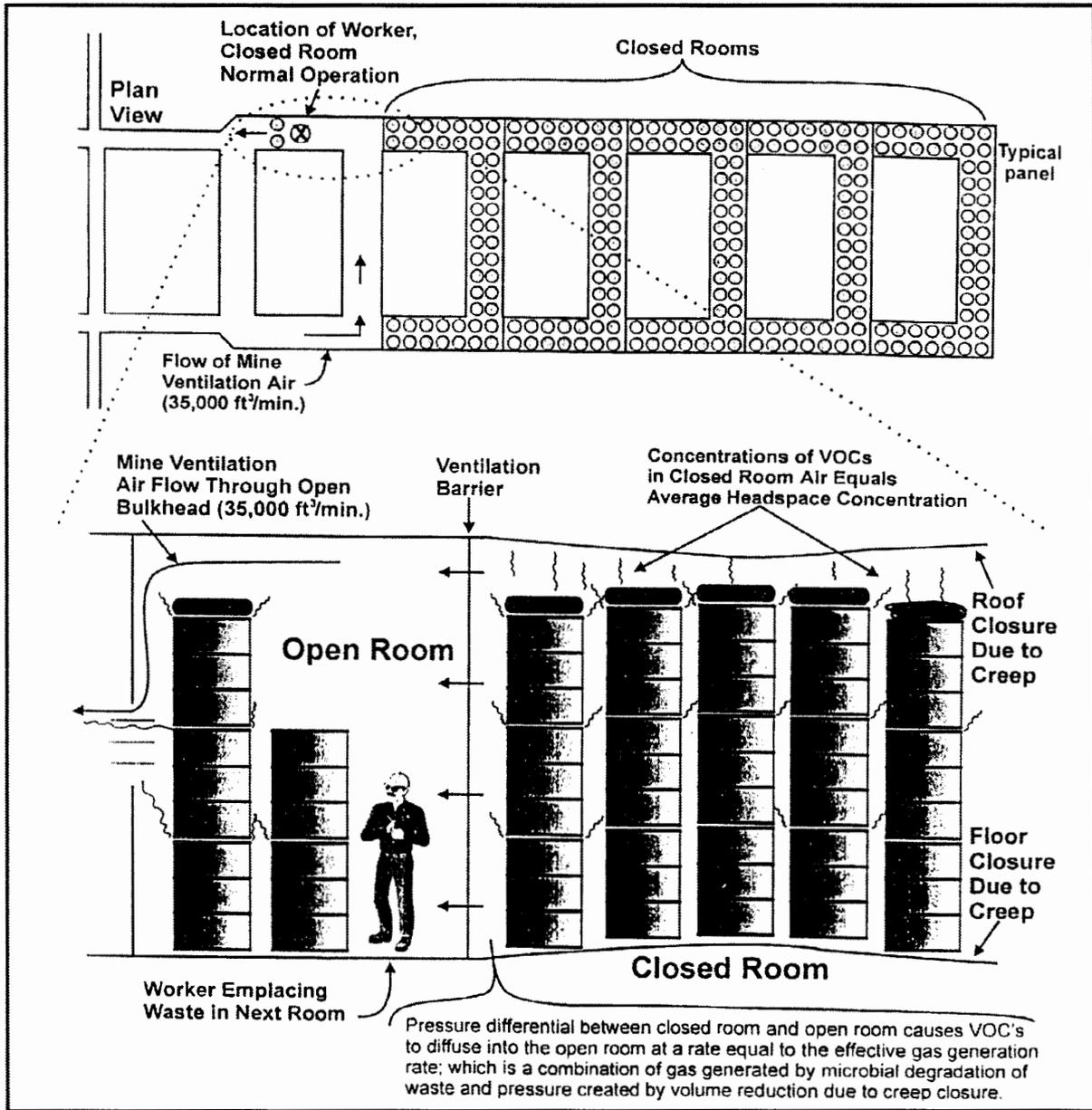
Regulatory citations in this modification reference 20.4.1.900 NMAC (incorporating 40 CFR §§270.13-15) revised March, 2009. Title 40 CFR §§270.16 through 270.22, 270.62, 270.63 and 270.66 are not applicable at WIPP. Consequently, they are not included. Title 40 CFR §270.23 is applicable to the WIPP Hazardous 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 that any person signing under paragraph a and b must certify the document in accordance with 20.4.1.900 NMAC.**

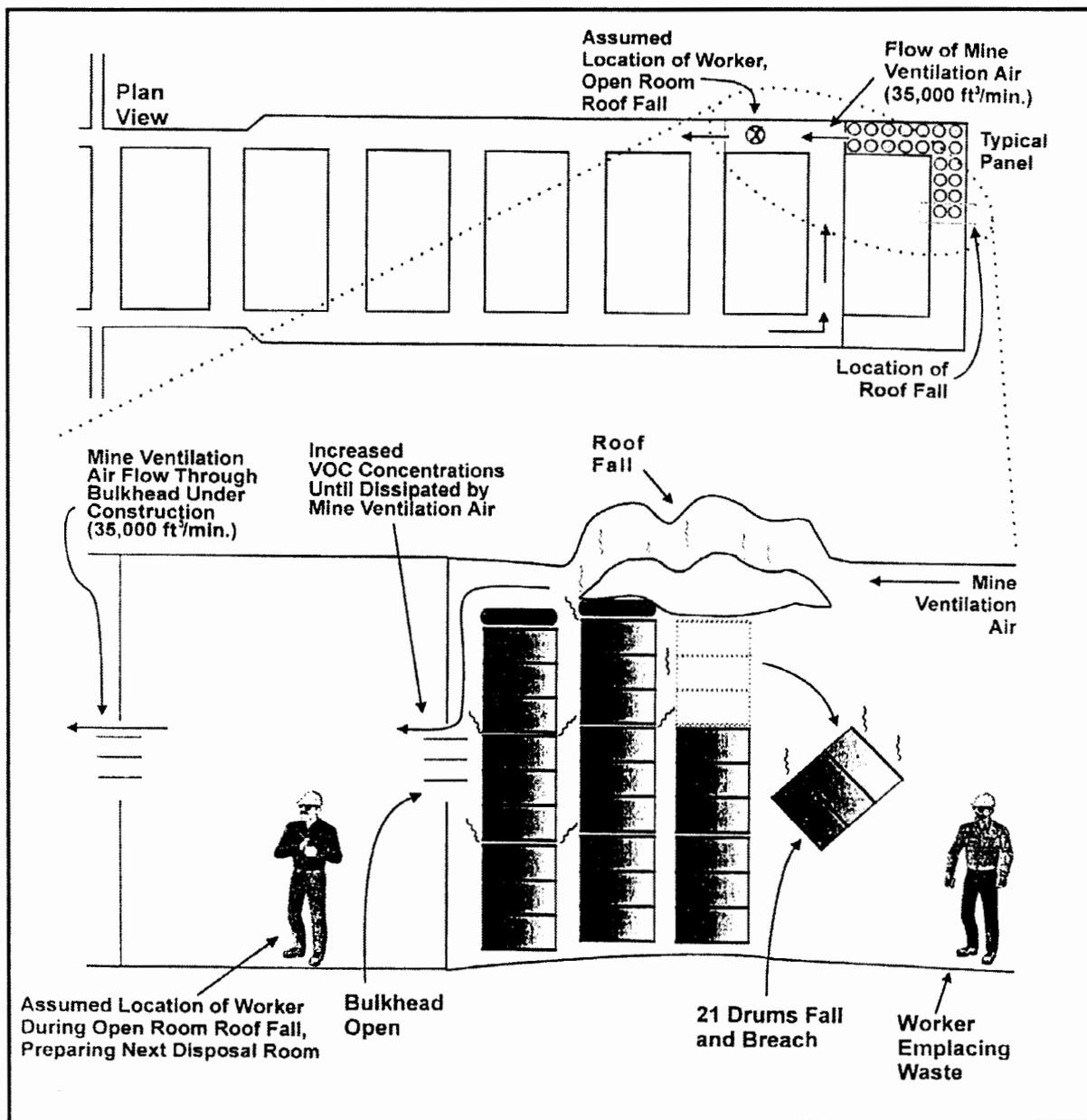
The transmittal letter for this PMR contains the signed certification statement in accordance with Part 1, Condition 1.9 of the Permit.



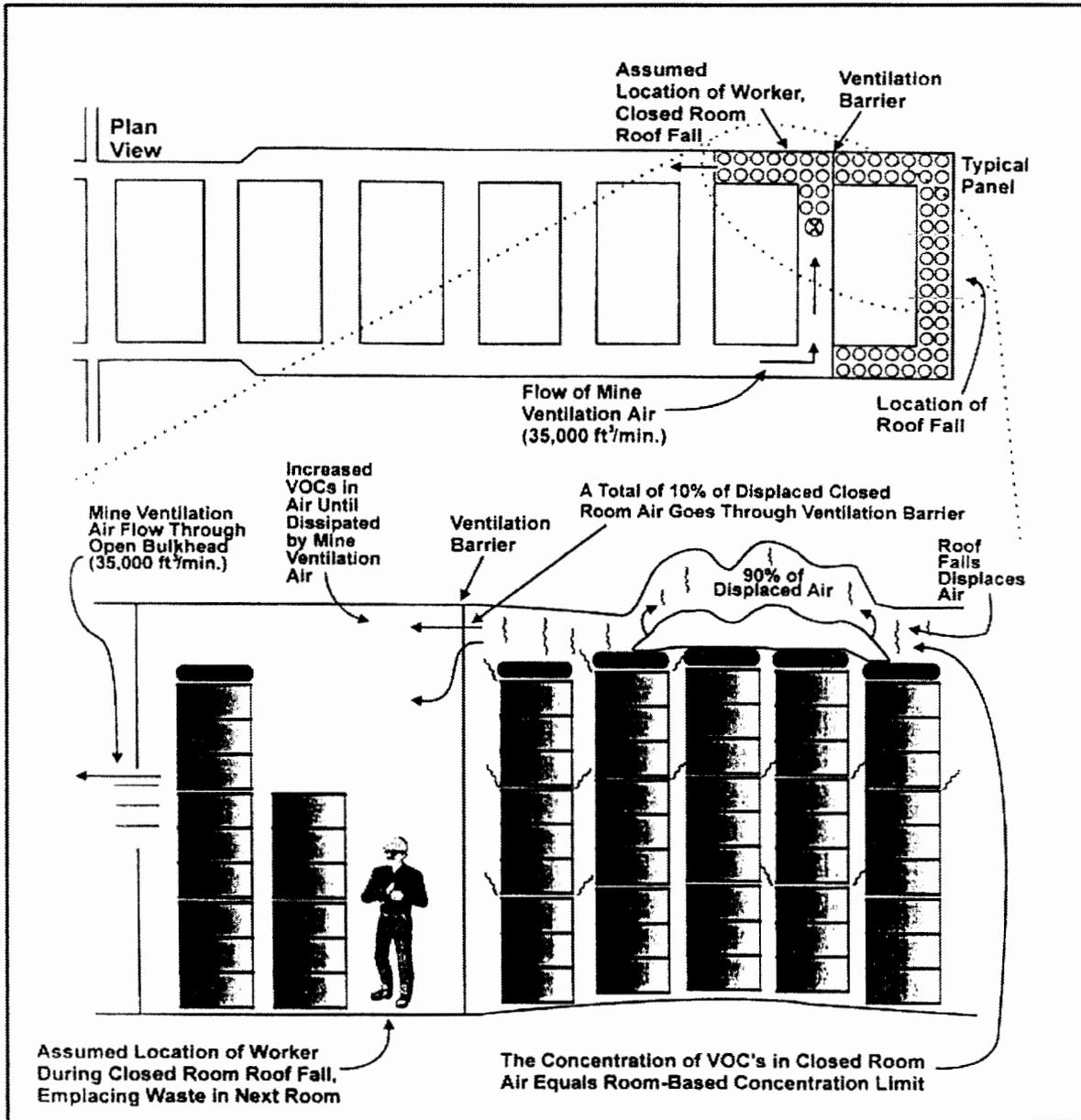
**Figure 1**  
**VOC Emissions from an Open Room, Open Panel under Normal Operation**



**Figure 2**  
**VOC Emissions from a Closed Room, Open Panel under Normal Operation**

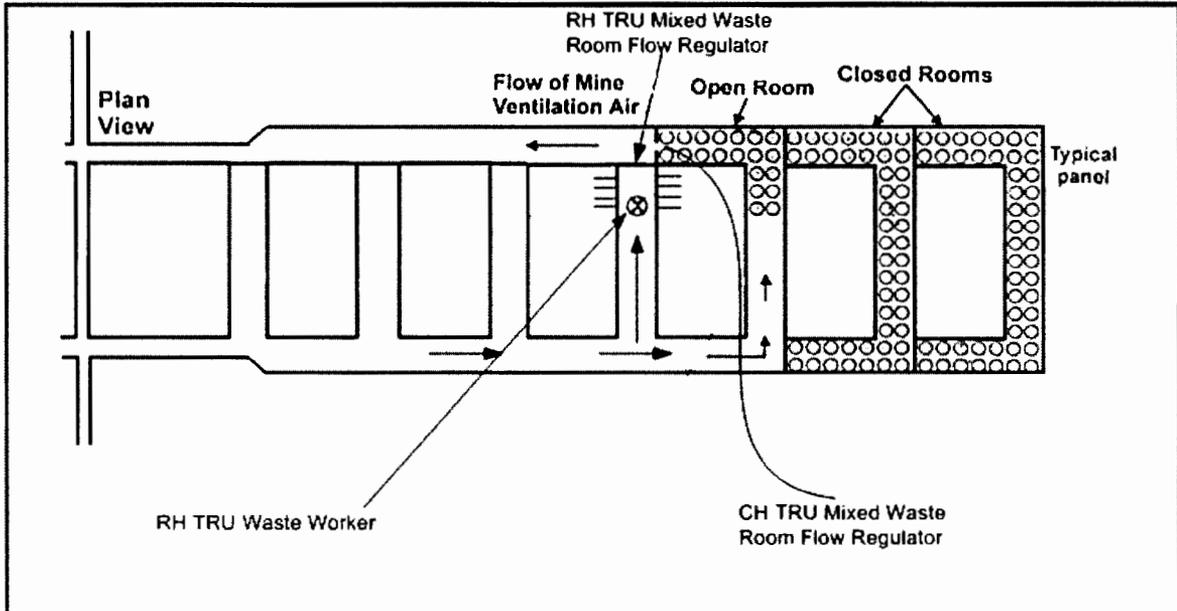


**Figure 3**  
**Roof Fall in an Open Room**

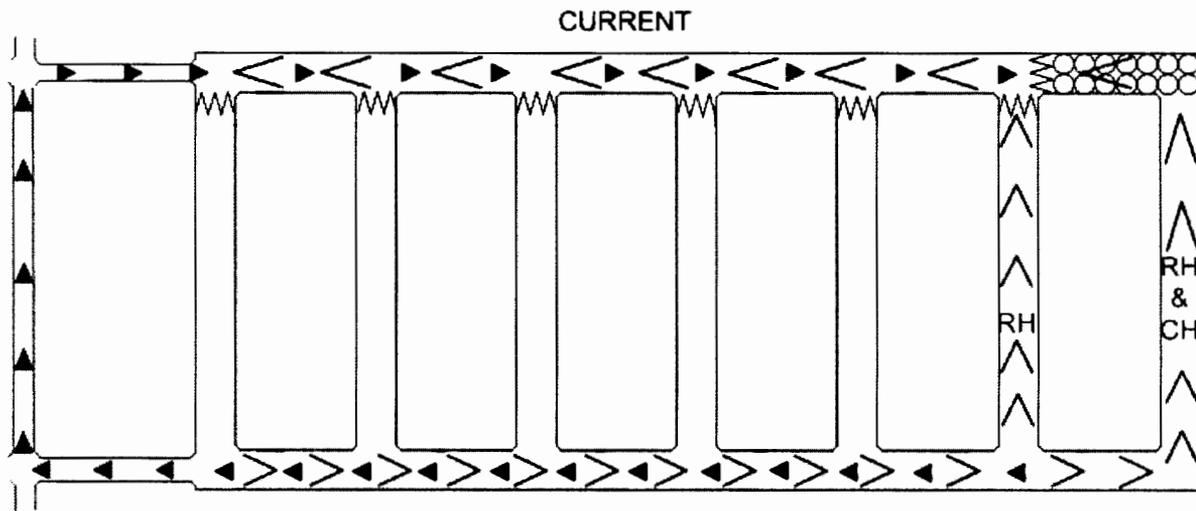


(X) = Assumed location of worker

**Figure 4**  
**Roof Fall in Closed Room**

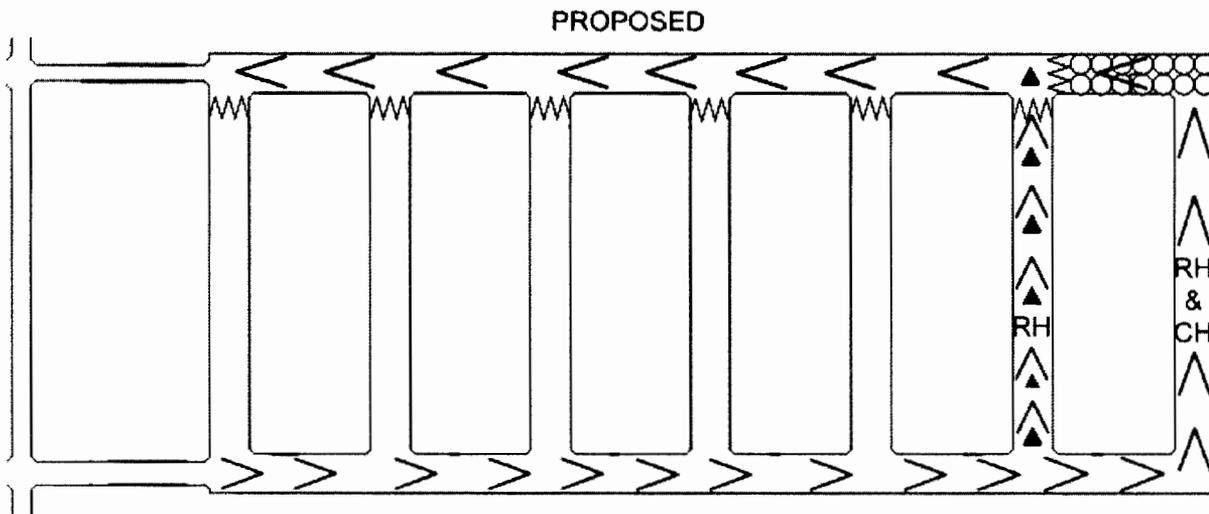


**Figure 5**  
**Location of Worker Emplacing RH-TRU Mixed Waste**



**LEGEND**

- Intake air
- Exhaust air
- Ventilation Controls
- Worker Travel Path



**Figure 6  
Current and Proposed Routes**

### Regulatory Crosswalk

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 WIPP Permit Application	Yes	No
§270.13		Contents of Part A permit application	Attachment B Part A		✓
§270.14(b)(1)		General facility description	Attachment A		✓
§270.14(b)(2)	§264.13(a)	Chemical and physical analyses	Part 2.3.1 Attachment C		✓
§270.14(b)(3)	§264.13(b)	Development and implementation of waste analysis plan	Part 2.3.1.1 Attachment C		✓
	§264.13(c)	Off-site waste analysis requirements	Part 2.2.1 Attachment C		✓
§270.14(b)(5)	§264.15(a-d)	General inspection requirements	Part 2.7 Attachment E-1a		✓
	§264.174	Container inspections	Attachment E-1b(1)		✓
§270.23(a)(2)	§264.602	Miscellaneous units inspections	Attachment E-1b Attachment E-1b(1)		✓
§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	Part 2.12 Attachment D		✓
	§264.51	Contingency plan design and implementation	Part 2.12.1 Attachment D		✓
	§264.52 (a) & (c-f)	Contingency plan content	Attachment D		✓
	§264.53	Contingency plan copies	Part 2.12.2 Attachment D		✓
	§264.54	Contingency plan amendment	Part 2.12.3 Attachment D		✓
	§264.55	Emergency coordinator	Part 2.12.4 Attachment D-4a(1)		✓
	§264.56	Emergency procedures	Attachment D-4		✓
§270.14(b)(8)		Description of procedures, structures or equipment for:	Attachment A Part 2.11		✓
§270.14(b)(8)(i)		Prevention of hazards in unloading operations (e.g., ramps and special forklifts)	Part 2.11		✓
§270.14(b)(8)(ii)		Runoff or flood prevention (e.g., berms, trenches, and dikes)	Attachment A1-1c(1) Part 2.11		✓
§270.14(b)(8)(iii)		Prevention of contamination of water supplies	Part 2.11		✓
§270.14(b)(8)(iv)		Mitigation of effects of equipment failure and power outages	Part 2.11		✓
§270.14(b)(8)(v)		Prevention of undue exposure of personnel (e.g., personal protective equipment)	Part 2.11		✓

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 WIPP Permit Application	Yes	No
§270.14(b)(8)(vi) §270.23(a)(2)	§264.601	Prevention of releases to the atmosphere	Part 2.11 Part 4.4 Attachment D-4e Attachment G-1a		✓
	264 Subpart C	Preparedness and Prevention	Part 2.10		✓
	§264.31	Design and operation of facility	Part 2.1		✓
	§264.32	Required equipment	Part 2.10.1 Attachment D		✓
	§264.33	Testing and maintenance of equipment	Part 2.10.2 Attachment E-1a		✓
	§264.34	Access to communication/alarm system	Attachment E-1a Part 2.10.3		✓
	§264.35	Required aisle space	Part 2.10.4		✓
	§264.37	Arrangements with local authorities	Attachment D-4a(3)		✓
§270.14(b)(9)	§264.17(a-c)	Prevention of accidental ignition or reaction of ignitable, reactive, or incompatible wastes	Part 2.9		✓
§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 A4		✓
§270.14(b)(11)(i) and (ii)	§264.18(a)	Seismic standard applicability and requirements	Attachment G2-2.2 Renewal App. Sep. 2009, 270.14 Contents of Part B: General Requirements		✓
§270.14(b)(11)(iii-v)	§264.18(b)	100-year floodplain standard	Attachment A1-1c(1) Renewal App. Sep. 2009, 270.14 Contents of Part B: General Requirements		✓
§270.14(b)(12)	§264.16(a-e)	Personnel training program	Part 2.8 Attachment F		✓
§270.14(b)(13)	264 Subpart G	Closure and post-closure plans	Part 6 & 7 Attachment G & H		✓
§270.14(b)(13)	§264.111	Closure performance standard	Attachment G-1a		✓
§270.14(b)(13)	§264.112(a), (b)	Written content of closure plan	Attachment G-1		✓
§270.14(b)(13)	§264.112(c)	Amendment of closure plan	Part 6.3 Attachment G-1d(4)		✓
§270.14(b)(13)	§264.112(d)	Notification of partial and final closure	Attachment G-2a		✓
§270.14(b)(13)	§264.112(e)	Removal of wastes and decontamination/dismantling of equipment	Attachment G-1e(2)		✓
§270.14(b)(13)	§264.113	Time allowed for closure	Part 6.5 Attachment G-1d		✓

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 WIPP Permit Application	Yes	No
§270.14(b)(13)	§264.114	Disposal/decontamination	Part 6.6 Attachment G-1e(2)		✓
§270.14(b)(13)	§264.115	Certification of closure	Part 6.7 Attachment G-2a		✓
§270.14(b)(13)	§264.116	Survey plat	Part 6.8 Attachment G-2b		✓
§270.14(b)(13)	§264.117	Post-closure care and use of property	Part 7.3 Attachment H-1a		✓
§270.14(b)(13)	§264.118	Post-closure plan; amendment of plan	Part 7.5 Attachment H-1a (1)		✓
§270.14(b)(13)	§264.178	Closure/containers	Part 6.9 Attachment A1-1h Attachment G-1		✓
§270.14(b)(13)	§264.601	Environmental performance standards-miscellaneous units	Attachment A-4 Attachment D-1 Attachment G-1a		✓
§270.14(b)(13)	§264.603	Post-closure care	Part 7.3 Attachment G-1a(3)		✓
§270.14(b)(14)	§264.119	Post-closure notices	Part 7.4 Attachment H-2		✓
§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		✓
§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 B2 Part A Renewal App. Sep. 2009, 270.14 Contents of Part B: General Requirements		✓
§270.14(b)(19)(ii)	§264.18(b)	100-year floodplain	Attachment B2 Part A Renewal App. Sep. 2009, 270.14 Contents of Part B: General Requirements		✓
§270.14(b)(19)(iii)		Surface waters	Attachment B2 Part A Renewal App. Sep. 2009, 270.14 Contents of Part B: General Requirements		✓

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 WIPP Permit Application	Yes	No
§270.14(b)(19)(iv)		Surrounding land use	Attachment B2 Part A Renewal App. Sep. 2009, 270.14 Contents of Part B: General Requirements		✓
§270.14(b)(19)(v)		Wind rose	Attachment B2 Part A Renewal App. Sep. 2009, 270.14 Contents of Part B: General Requirements		✓
§270.14(b)(19)(viii)	§264.14(b)	Access controls	Attachment B2 Part A Renewal App. Sep. 2009, 270.14 Contents of Part B: General Requirements		✓
§270.14(b)(19)(ix)		Injection and withdrawal wells	Attachment B2 Part A Renewal App. Sep. 2009, 270.14 Contents of Part B: General Requirements		✓
§270.14(b)(19)(xi)		Drainage on flood control barriers	Attachment B2 Part A Renewal App. Sep. 2009, 270.14 Contents of Part B: General Requirements		✓
§270.14(b)(19)(xii)		Location of operational units	Attachment B2 Part A Renewal App. Sep. 2009, 270.14 Contents of Part B: General Requirements		✓
§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	Attachment B Renewal App. Sep. 2009, 270.14 Contents of Part B: General Requirements		✓
§270.15	§264 Subpart I	Containers	Part 3 Part 4.3 Attachment A1		✓
	§264.171	Condition of containers	Part 3.3 Attachment A1		✓
	§264.172	Compatibility of waste with containers	Part 3.4 Attachment A1		✓

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 WIPP Permit Application	Yes	No
	§264.173	Management of containers	Part 3.5 Attachment A1		✓
	§264.174	Inspections	Part 3.7 Attachment E-1 Attachment A1-1e		✓
§270.15(a)	§264.175	Containment systems	Part 3.6 Attachment A1		✓
§270.15(c)	§264.176	Special requirements for ignitable or reactive waste	Attachment A1-1g Permit Part 2.1		✓
§270.15(d)	§264.177	Special requirements for incompatible wastes	Attachment A1-1g Permit Part 2.3.3.4		✓
	§264.178	Closure	Part 6 Attachment G		✓
§270.15(e)	§264.179	Air emission standards	Part 4.4.2 Attachment N		✓
§270.23	264 Subpart X	Miscellaneous units	Part 1.3.1 Attachment A2-1 Attachment G1.3.1		✓
§270.23(a)	§264.601	Detailed unit description	Part 4 Part 5 Attachment A2 Attachment L		✓
§270.23(b)	§264.601	Hydrologic, geologic, and meteorologic assessments	Part 4 Part 5 Attachment A2 Attachment L		✓
§270.23(c)	§264.601	Potential exposure pathways	Part 4 Attachment A2 Attachment N	✓	
§270.23(d)		Demonstration of treatment effectiveness	Part 4 Attachment A2 Attachment N		✓
	§264.602	Monitoring, analysis, inspection, response, reporting, and corrective action	Part 4 Part 5 Attachment A2 Attachment E-1 Attachment N Attachment L		✓
	§264.603	Post-closure care	Attachment H Attachment H1		✓
	264 Subpart E	Manifest system, record keeping, and reporting	Permit Part 1 Permit Part 2.13 & 2.14 Permit Part 4 Attachment C		✓
§270.30(j)(2)	§264.73(b)	Ground-water records	Part 1		✓
	264 Subpart F	Releases from solid waste management units	Part 5 & 7 Attachment G2 & L		✓

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 WIPP Permit Application	Yes	No
	§264.90	Applicability	Part 5 Attachment L		✓
	§264.91	Required programs	Attachment L		✓
	§264.92	Ground-water protection standard	Attachment L		✓
	§264.93	Hazardous constituents	Attachment L		✓
	§264.94	Concentration limits	Part 5 Attachment L		✓
	§264.95	Point of compliance	Part 5 Attachment L		✓
	§264.96	Compliance period	Attachment L		✓
	§264.97	General ground-water monitoring requirements	Part 5 Attachment L		✓
	§264.98	Detection monitoring program	Part 5 Attachment L		✓
	§264.99	Compliance monitoring program	Part 5 Attachment L		✓
	§264.100	Corrective action program	Part 5 Attachment L		✓
	§264.101	Corrective action for solid waste management units	Part 8 Attachment L		✓
	264 Appendix IX	Ground-water Monitoring List	Part 5 Attachment L		✓

**Appendix A**  
**Table of Changes**



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### Table of Changes

Affected Permit Section	Explanation of Change	Page Number
<ul style="list-style-type: none"> <li>• Part 1, Condition 1.5.19.</li> </ul>	<ul style="list-style-type: none"> <li>• Added definition for Filled Room</li> </ul>	B-2
<ul style="list-style-type: none"> <li>• Part 4, Condition 4.5.3.2.</li> </ul>	<ul style="list-style-type: none"> <li>• Deleted "active"</li> <li>• Deleted "the"</li> <li>• Added "an active"</li> <li>• Added "adjacent to a filled room or in Room 7 of any panel when CH TRU mixed waste is being disposed"</li> </ul>	B-2 B-2 B-2 B-2
<ul style="list-style-type: none"> <li>• Part 4, Condition 4.6.4.3.</li> </ul>	<ul style="list-style-type: none"> <li>• Deleted "Notification"</li> <li>• Added "Evaluation"</li> <li>• Deleted "Whenever the evaluation of the mine ventilation monitoring program data identifies that the ventilation rates specified in Permit Section 4.5.3.2 have not been achieved, the"</li> <li>• Added "The"</li> <li>• Deleted "notify" replaced with "report to"</li> <li>• Deleted "writing within seven calendar days"</li> <li>• Added "the annual report specified in Permit Section 4.6.4.2 whenever the evaluation of the mine ventilation monitoring program data identifies that the ventilation rates specified in Permit Section 4.5.3.2 have not been achieved"</li> </ul>	B-2 B-2 B-2  B-2 B-2 B-2
<ul style="list-style-type: none"> <li>• Attachment A2, Section A2-2a(3)</li> </ul>	<ul style="list-style-type: none"> <li>• Added "active"</li> <li>• Added "that is adjacent to a filled room"</li> <li>• Deleted "where waste disposal is taking place"</li> <li>• Added "or in Room 7 of any panel when CH TRU mixed waste is being disposed"</li> <li>• Deleted "The"</li> <li>• Added "Filled"</li> <li>• Deleted "that are filled with waste"</li> <li>• Deleted "the"</li> <li>• Added "adjacent active"</li> <li>• Deleted " that are actively being filled"</li> <li>• Add "or in Room 7 of any panel when CH TRU mixed waste is being disposed."</li> </ul>	B-3 B-3
<ul style="list-style-type: none"> <li>• Attachment O, Section O-1</li> </ul>	<ul style="list-style-type: none"> <li>• Added "that is adjacent to a filled room or in Room 7 of any panel when CH TRU mixed waste is being disposed."</li> </ul>	B-3
<ul style="list-style-type: none"> <li>• Attachment O, Section O-2</li> </ul>	<ul style="list-style-type: none"> <li>• Added "that are adjacent to a filled room or in Room 7 of any panel when CH TRU mixed waste is being disposed."</li> </ul>	B-4
<ul style="list-style-type: none"> <li>• Attachment O, Section O-3</li> </ul>	<ul style="list-style-type: none"> <li>• Added "that are adjacent to a filled room or in Room 7 of any panel when CH TRU mixed waste is being disposed."</li> </ul>	B-4
<ul style="list-style-type: none"> <li>• Attachment O, Section O-3b(2)</li> </ul>	<ul style="list-style-type: none"> <li>• Deleted "The Permittees will notify NMED within seven calendar days if either the minimum running annual average mine ventilation exhaust rate of 260,000 scfm or a minimum active room ventilation rate of 35,000 scfm when workers are present in the room are not achieved."</li> </ul>	B-4
<ul style="list-style-type: none"> <li>• Attachment O, Section O-3c(1)</li> </ul>	<ul style="list-style-type: none"> <li>• Added "the Minimum Airflow for an"</li> <li>• Added "that is Adjacent to a Filled Room"</li> <li>• Deleted "Minimum Airflow"</li> <li>• Added "in an active room that is adjacent to a"</li> </ul>	B-4 B-4 B-4 B-4

Affected Permit Section	Explanation of Change	Page Number
	filled room or in Room 7 of any panel when CH TRU mixed waste is being disposed." <ul style="list-style-type: none"> <li>• Added "that"</li> <li>• Deleted "(s)"</li> </ul>	B-4 B-4
<ul style="list-style-type: none"> <li>• Attachment O, Section O-3c(2)</li> </ul>	<ul style="list-style-type: none"> <li>• Added "Entry to restricted access active disposal rooms for the purpose of establishing normal ventilation is allowed. Such entry shall also be documented on the log sheet including a reference to the SOP used for reentry."</li> </ul>	B-4
<ul style="list-style-type: none"> <li>• Attachment O, Section O-5a</li> </ul>	<ul style="list-style-type: none"> <li>• Deleted "active room"</li> <li>• Added "for an active room that is adjacent to a filled room or in Room 7 of any panel when CH TRU mixed waste is being disposed."</li> <li>• Deleted "O-3b(2)"</li> <li>• Added "Permit Section 4.5.3.2"</li> <li>• Deleted "Whenever the evaluation of the mine ventilation monitoring program data identifies that the ventilation rates specified in O-3b(2) have not been achieved, the"</li> <li>• Added "The"</li> <li>• Deleted "notify"</li> <li>• Added "report to"</li> <li>• Deleted "writing within seven calendar days"</li> <li>• Added "the annual report specified in Permit Section 4.6.4.2. whenever the evaluation of the mine ventilation monitoring program data identifies that the ventilation rates specified in Permit Section have not been achieved"</li> </ul>	B-5  B-5 B-5 B-5 B-5  B-5 B-5

**Appendix B**  
**Proposed Revised Permit Text**

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## Proposed Revised Permit Text:

### 1.5.19. Filled Room

“Filled Room” means a room in an Underground Hazardous Waste Disposal Unit as described in Permit Part 4 that will no longer receive mixed waste for emplacement.

### 4.5.3.2. Ventilation

The Permittees shall maintain a minimum running annual average mine ventilation exhaust rate of 260,000 standard ft<sup>3</sup>/min and a minimum ~~active~~ room ventilation rate of 35,000 standard ft<sup>3</sup>/min when workers are present in the an active room adjacent to a filled room or in Room 7 of any panel when CH TRU mixed waste is being disposed, as specified in Permit Attachment A2, Section A2-2a(3), “Subsurface Structures (Underground Ventilation System Description)” and as required by 20.4.1.500 NMAC (incorporating 40 CFR 264.601(c)).

### 4.6.4.3. ~~Notification~~ Evaluation Requirements

The Permittees shall calculate the running annual average mine ventilation exhaust rate on a monthly basis. In addition, the Permittees shall evaluate compliance with the minimum active room ventilation rate specified in Permit Section 4.5.3.2 on a monthly basis. ~~Whenever the evaluation of the mine ventilation monitoring program data identifies that the ventilation rates specified in Permit Section 4.5.3.2 have not been achieved, the~~ The Permittees shall ~~notify report to~~ the Secretary in ~~writing within seven calendar days~~ the annual report specified in Permit Section 4.6.4.2 whenever the evaluation of the mine ventilation monitoring program data identifies that the ventilation rates specified in Permit Section 4.5.3.2 have not been achieved.

### A2-2a(3) Subsurface Structures

#### Underground Ventilation System Description

At any given time during waste emplacement activities, there may be significant activities in multiple rooms in a panel. For example, one room may be receiving CH TRU mixed waste containers, another room may be receiving RH TRU mixed waste canisters, and the drilling of RH TRU mixed waste emplacement boreholes may be occurring in another room. The remaining rooms in a panel will either be completely filled with waste; be idle, awaiting waste handling operations; or being prepared for waste receipt. A minimum ventilation rate of 35,000 ft<sup>3</sup> (990 m<sup>3</sup>) per minute will be maintained in each active room that is adjacent to a filled room where waste disposal is taking place when workers are present in the room or in

Room 7 of any panel when CH TRU mixed waste is being disposed. This quantity of air is required to support the numbers and types of diesel equipment that are expected to be in operation in the area, to support the underground personnel working in that area, and to exceed a minimum air velocity of 60 ft (18 m) per minute. The remainder of the air is needed in order to account for air leakage through inactive rooms.

Air will be routed into a panel from the intake side. Air is routed through the individual rooms within a panel using underground bulkheads and air regulators. Bulkheads are constructed by erecting framing of rectangular steel tubing and screwing galvanized sheet metal to the framing. Bulkhead members use telescoping extensions that are attached to framing and the salt which adjust to creep. Rubber or sheet metal attached to the bulkhead on one side and the salt on the other completes the seal of the ventilation. Where controlled airflow is required, a louver-style damper on a slide-gate (sliding panel) regulator is installed on the bulkhead. Personnel access is available through most bulkheads, and vehicular access is possible through selected bulkheads. Vehicle roll-up doors in the panel areas are not equipped with warning bells or strobe lights since these doors are to be used for limited periodic maintenance activities in the return air path. Flow is also controlled using brattice cloth barricades. These consist of chain link fence that is bolted to the salt and covered with brattice cloth; and are used in instances where the only flow control requirement is to block the air. A brattice cloth air barricade is shown in Figure A2-11. Ventilation will be maintained only in all active rooms within a panel until waste emplacement activities are completed and the panel-closure system is installed. The air will be routed simultaneously through all the active rooms within the panel. ~~The Filled rooms that are filled with waste~~ will be isolated from the ventilation system, while the adjacent active rooms that are actively being filled or in Room 7 of any panel when CH TRU mixed waste is being disposed will receive a minimum of 35,000 SCFM of air when workers are present to assure worker safety. After all rooms within a panel are filled, the panel will be closed using a closure system described Permit Attachment G and Permit Attachment G1.

#### O-1 Definitions

Restricted Access: If the required ventilation rate in an active disposal room that is adjacent to a filled room or Room 7 of any panel when CH TRU mixed waste is being disposed cannot be achieved or cannot be supported due to operational needs, access is restricted by the use of barriers, signs and postings, or individuals stationed at the entrance to the active disposal room when ventilation rates are below 35,000 scfm.

#### O-2 Objective

The objective of this plan is to describe how the ventilation requirements in the Permit will be met. This plan achieves this objective and documents the process by which the Permittees demonstrate compliance with the ventilation requirements by:

- Maintaining an annual running average of 260,000 scfm through the underground repository

- Maintaining a minimum of 35,000 scfm of air through the active disposal rooms that are adjacent to a filled room or in Room 7 of any panel when CH TRU mixed waste is being disposed when workers are present in the rooms

### O-3 Design and Procedures

This section describes the four basic processes that make up the mine ventilation rate monitoring plan:

- Test and Balance, a periodic re-verification of the satisfactory performance of the entire underground ventilation system and associated components
- Monitoring and calculation of the Running Annual Average of the Total Mine Airflow to verify achievement of the 260,000 scfm minimum requirement
- Monitoring of active disposal room(s) that are adjacent to a filled room or in Room 7 of any panel when CH TRU mixed waste is being disposed to ensure a minimum flow of 35,000 scfm whenever workers are present in the room

#### O-3b(2) Calculation of the Running Annual Average of Total Mine Airflow

The use of an average value of 730 hours per month in the monthly average calculation is reasonable, given that all the numbers involved are very large and that the final use of the monthly average flow is in an annual calculation. ~~The Permittees will notify NMED within seven calendar days if either the minimum running annual average mine ventilation exhaust rate of 260,000 scfm or a minimum active room ventilation rate of 35,000 scfm when workers are present in the room are not achieved.~~

#### O-3c(1) Verification of the Minimum Airflow for an Active Disposal Room that is Adjacent to a Filled Room ~~Minimum Airflow~~

Whenever workers are present in an active room that is adjacent to a filled room or in Room 7 of any panel when CH TRU mixed waste is being disposed, the Permittees shall verify the minimum airflow through that active disposal room(s) of 35,000 scfm at the start of each shift, any time there is an operational mode change, or if there is a change in the ventilation system configuration.

#### O-3c(2) Measurement and Calculation of the Active Waste Disposal Room Airflow

The operator shall compare the recorded acfm value with the minimum acfm value provided at the top of the log sheet. The airflow shall be re-checked and recorded whenever there is an operational mode change or a change in ventilation system configuration. Once the ventilation rate has been recorded and verified to be at least the required minimum, personnel access to the room is unrestricted in accordance with normal underground operating procedures. If the required ventilation rate cannot be achieved, or cannot be supported due to operational needs, access to the room shall be restricted. Those periods when active disposal room access is restricted shall be documented on the log sheet for that active disposal room. Entry to restricted access active disposal rooms for the purpose of establishing normal ventilation is allowed. Such entry shall be documented on the log sheet including a reference to the SOP used for reentry.

O-5a Reporting

The Permittees shall submit an annual report to NMED presenting the results of the data and analysis of the Mine Ventilation Rate Monitoring Plan. In the years that the Test and Balance is performed, the Permittees will provide a summary of the results in the annual report.

The Permittees shall calculate the running annual average mine ventilation rate on a monthly basis and evaluate compliance with the minimum ~~active room~~ ventilation rate for an active room that is adjacent to a filled room or Room 7 of any panel when CH TRU mixed waste is being disposed specified in ~~O-3b(2)~~ Permit Section 4.5.3.2 on a monthly basis. ~~Whenever the evaluation of the mine ventilation monitoring program data identifies that the ventilation rates specified in O-3b(2) have not been achieved, the~~ The Permittees will notify report to the Secretary in ~~writing within seven calendar days~~ the annual report specified in Permit Section 4.6.4.2 whenever the evaluation of the mine ventilation monitoring program data identifies that the ventilation rates specified in Permit Section 4.5.3.2, have not been achieved.