



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

Hazardous Waste Bureau

**2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us**



RYAN FLYNN
Cabinet Secretary Designate

BUTCH TONGATE
Deputy Secretary

TOM BLAINE, P.E.
Division Director

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

September 20, 2013

Jose Franco, Manager
Carlsbad Field Office
Department of Energy
P.O. Box 3090
Carlsbad, New Mexico 88221-3090

M. Farok Sharif, Project Manager
Nuclear Waste Partnership LLC
P.O. Box 2078
Carlsbad, New Mexico 88221-5608

**RE: TECHNICAL INCOMPLETENESS DETERMINATION
CLASS 3 PERMIT MODIFICATION REQUEST FOR 3 ITEMS: ITEM 1, MODIFICATIONS
TO THE WIPP PANEL CLOSURE; ITEM 2, REPOSITORY RECONFIGURATION OF
PANELS 9 AND 10; ITEM 3, REVISE VOLATILE ORGANIC COMPOUND (VOC)
TARGET ANALYTE LIST AND OTHER CHANGES TO THE VOC MONITORING
PROGRAM
WASTE ISOLATION PILOT PLANT, EPA I.D. NUMBER NM4890139088**

Dear Messrs. Franco and Sharif:

The New Mexico Environment Department (NMED) received a request for Class 3 Permit Modification on March 18, 2013. It included three items: Item 1, Modifications to the WIPP Panel Closure; Item 2, Repository Reconfiguration of Panels 9 and 10; and Item 3, Revise Volatile Organic Compounds (VOC) Target Analyte List and Other Changes to the VOC Monitoring Program.

This Class 3 permit modification request is currently being processed by NMED in accordance with the requirements specified in 20.4.1.900 NMAC (incorporating 40 CFR §270.42(c)). This permit modification request was subject to a public comment period from March 21, 2013 until May 20, 2013. At the close of the public comment period, NMED received comments from 19 individuals and groups. The permit modification request was determined to be administratively

complete on July 29, 2013. After performing a technical review of the permit modification request, NMED has determined it to be technically incomplete. The attached comments list the specific additional information requested by NMED. A response by the Permittees is necessary for NMED to consider preparation of a draft permit. The comments contain requests for specific information from most of the sections and supplements provided in the permit modification request.

Please submit a full response to the comments identified in the attachments and applicable revised portions of the permit modification request to NMED within sixty (60) days of receipt of this letter. A response to some of the comments listed may require more than 60 days to develop and for this reason, NMED will consider a request to extend the deadline for portions of the required information if a written request and expected submittal date for each portion is provided prior to the deadline.

If you have any questions regarding this matter, please contact Trais Kliphuis of my staff at (505) 476-6051.

Sincerely,



John E. Kielling
Chief
Hazardous Waste Bureau

cc: Tom Blaine, NMED EHD
Susan Lucas-Kamat, NMED DOEBOB
Trais Kliphuis, NMED HWB
Tom Peake, EPA ORIA
Laurie King, EPA Region 6

File: Red WIPP 2013

NMED Comments

Item 1- Modifications to the WIPP Panel Closure

1-1: PMR Overview, Section 1, “Revision to the PCS Design”

This section needs to explicitly explain which Attachment G1 Appendices are being deleted and which new appendices contain relevant information from old appendices. For example, Appendix B appears to include consolidated relevant information from the previous Appendices B through F; the new Appendix A replaces the old Appendix A. NMED believes that appendices not included in the permit should not be listed in the Attachment G1 Table of Contents. An alternative would be to list non-included appendices as references to Attachment G1.

1-2: PMR Item 1 Attachment G1

Please review Attachment G1 for applicable requirements and revise to remove extraneous and non-enforceable language other than what is necessary for clarification. The remaining requirements should be clearly identified with appropriate methods of compliance demonstration identified. Specifically, monitoring, recordkeeping and reporting should be associated with each requirement. The complete detailed design report will be included in the record as a reference.

1-3: PMR Item 1 Section 1 of Overview, Revision to the PCS Design

The modification request provides the following rationale for proposing 100 feet of run-of-mine salt. “A minimum length of 100 feet for the run-of-mine salt was selected based on engineering judgment that a backfill length that is 7 to 10 times the panel entry height would provide adequate flow resistance. The panel entry height is nominally 13 feet; therefore, 7 to 10 times this height corresponds to approximately 90 to 130 feet. A nominal distance of 100 feet was chosen to meet this guideline.” Please provide further justification for the selection of the 100 feet.

1-4: PMR Item 1 Appendix B, Attachment G, Section G-1e Closure Activities, 6th Bullet

It is NMED’s understanding that maintenance of the bulkhead will be conducted whenever periodic visual inspections warrant and/or when an investigation of increasing monitored VOC concentrations suggests that the bulkhead is not providing the proper airflow resistance. Please include a discussion of this with examples of potential triggers for bulkhead maintenance as well as a discussion of the association between maintenance required for compliance with performance standards and how the maintenance is minimized with this WIPP Panel Closure (WPC) design as required by 40 CFR 264.111. Also, please provide a copy of the Panel Closure Bulkhead Maintenance Procedure.

1-5: PMR Item 1 Appendix B, Attachment G1, Section 6, 3rd Bullet

The PMR states “Out-bye bulkheads must be maintained to provide 2, 200 Practical Units (PU) resistance for 23 years after installation”. If VOC levels are rising, an investigation could reveal that bulkhead maintenance is becoming necessary. Please relate bulkhead maintenance monitoring, recordkeeping, and reporting to the bulkhead airflow resistance standard in a statement within Attachment G1. This statement should tie rising VOC levels to an out-bye

bulkhead inspection. Since this is a proposed permit performance standard, please provide a discussion on how compliance will be demonstrated. It is NMED's understanding that the bulkhead airflow resistance performance standard of 2,200 PU will be demonstrated through monitoring at VOC-A but the Permit Modification Request (PMR) does not appear to explicitly state this. Please provide a technical justification for the assumption that a standard bulkhead of the type proposed for the panel closure would provide an air flow resistance of 2,200 PU. Also, please provide appropriate permit language including associated monitoring, recordkeeping and reporting. Please revise the PMR to consistently state that the bulkheads will be maintained to achieve the required standard.

1-6: PMR Overview

A description of the remedial actions that would be taken if VOC emissions exceed the regulatory limits was not found in Item 1 of the PMR. Please present descriptions of proposed Action Levels and of the remedial actions that would be taken at each level to identify and mitigate the source(s) of elevated VOC releases for panel closures constructed using the proposed run of mine (ROM) salt WPC design. The response to this item could be combined with the response to item 3-6.

1-7: PMR Item 1 Appendix B, Attachment G1, Section 3.3.3, Page 58

The PMR states: "The air conductivities were then calculated based upon the intrinsic permeability relationship that accounts for both the relative density and the average particle size of the ROM salt backfill..." "This relationship ...is based upon the investigations made by Shor, et al. (1981) ... for a particle size of 0.13 inches (0.34 cm)." The data of Shor et al. (1981), shown in Figure G1-13 (Appendix B, Attachment G1, Page B-60), demonstrate that permeability increases with increasing particle size. However, Section 04100 of the specifications for the ROM salt to be used for the WPC (PMR Appendix B, Attachment G1, Appendix C, Section 04100, Part 2.1, Page B-121) states that the salt requires no grading and therefore its average particle size will be unknown. If the WIPP ROM salt has a higher average particle size and thus a higher intrinsic permeability than was assumed in the air flow calculations, those calculations could underestimate VOC releases. Please justify that the particle size used in the calculation is representative of the ungraded WIPP ROM salt to be used for the WPC. If a measured particle size distribution for "as-mined salt" is available, please include.

1-8: PMR Item 1 Overview, Section 3, Page 9 "Deletion of Hydrogen and Methane Monitoring"

The PMR references data in Annual Transuranic Waste Inventory Report (ATWIR) (2012), including Table 4-1 and Appendices A, B and C and concludes that gas generation rates in future filled panels will not differ significantly from rates measured in Panels 3 and 4 because descriptions of these waste streams indicate they are generated by the same processes as waste already shipped to the WIPP facility. The PMR addresses some key factors likely to affect hydrogen and methane gas generation rates but does not adequately review issues such as the inventories of iron-based metals, organic matrices, and cellulose, plastics and rubbers in the stored and projected waste streams. Please compare the inventories of these materials in Panel 3, Panel 4 and to the extent possible in the stored and projected waste streams to demonstrate that

gas generation from future waste is adequately represented by the waste emplaced in Panels 3 and 4.

1-9: PMR Appendix D, Section V.E, Pages D-23 through D-29

URS (2013) provides regression plots of median, mean and maximum hydrogen concentrations versus the months since room closure for Panels 3 and 4. However, using the median, mean and maximum values in the regression analyses may not indicate whether the hydrogen concentration at a specific location could increase to levels greater than Action Level 1 or the Lower Explosive Limit during the time the repository will remain open. Please provide regression analyses for individual monitoring locations, particularly the locations with the highest hydrogen concentrations in Panel 4.

1-10: PMR Appendix D, Figures 12 and 13, Pages D-17 and D-18

Hydrogen concentrations in Panel 4, Room 7 (7e and 7i) and possibly in other rooms appear to decrease from mid-2011 through August 2012. However, increased hydrogen concentrations are observed in samples obtained from August 2012 through December 2012. Please provide hydrogen monitoring data for first two quarters of calendar year (CY) 2013 and evaluate any increasing concentration trends at individual monitoring locations, including whether these trends could result in hydrogen concentrations that exceed Action Level 1 or the Lower Explosive Limit (LEL) before repository closure.

1-11: PMR Appendix B, Attachment G-1, Section 3.3.1 Page B-32

The PMR states: "The WPC VOC flow analyses are considered bounding because: (1) the pressure drop of 170 milli-inches (4 mm) of water gage is considered a maximum value...". The seven years of pressure drop data presented in the PMR (Page 327 of pdf; Appendix C, Tables B-1 and B-2) showed that in two of those years (2005 and 2009) the annual average pressure drops across closed waste panels (299 and 177 milli-inches, respectively) were greater than the proposed maximum value of 170 milli-inches. These higher average pressure drops would result in higher average air flow through the closed panels and therefore higher VOC releases than were calculated using a pressure drop of 170 milli-inches. Please justify the assertions that the proposed value of 170 milli-inches is a maximum and that the VOC flow analyses are therefore bounding.

1-12: PMR Page C-63

The PMR states: "This appendix presents the derivation of the air-flow model used to determine the performance of the WIPP Panel Closure (WPC). These derivations were used in the analyses in Section 3 to determine air flow from a single panel." This Appendix entitled Appendix A-Derivation of Relationships for the Air-Flow Models provides a discussion of the derivation of the Airflow Models used to calculate the airflow parameters of the WPC. Although Equations A-1 through A-28 provided in the appendix are presented in a straightforward manner, the input parameter values used in these equations are not consistently specified or justified. Please provide the appropriate input parameter values to allow further evaluation of the Permittees' calculations and analyses. In addition to the initial conditions used in the equations, please provide changes to conditions such as air flow gradient, air viscosity, air conductivity, and

intrinsic permeability as a function of changing panel conditions (salt creep, inner bulkhead deterioration, VOC rates) that were considered.

1-13: Page C-65

The PMR states: "Air conductance is defined as the product of the air conductivity and cross sectional area divided by the flow path length. The effective flow conductance for a parallel system consisting of flow components can be obtained in terms of the conductances of its flow components...". Equations A3 and A4 are used to calculate the air flow permeability. The equations use a number of air flow components that are summed to calculate the air flow conductance at a given set of panel conditions. Please provide additional information regarding the nature of these components including the total number of components, distance interval of each component, and how these components may change as a function of time and distance given the impact of salt creep on these calculations as used in the modeling.

1-14: PMR (General)

The PMR did not discuss the potential impact of the Klinkenberg Effect on air permeability of the ROM salt after closure of the gap. If applicable, the Klinkenberg Effect will have a tendency to increase air permeability due to decreased viscosity on pore surfaces. Please provide this information.

1-15: PMR Appendix D, Tables 1 and 2, Pages D-10 and D-11

Mean hydrogen concentrations are generally higher in Panel 4 than in Panel 3. Please compare the waste inventories in Panels 3 and 4 (including iron-based metals, organic matrices, and cellulose, plastics and rubbers) to determined potential causes of these different gas concentrations.

Item 2 - Repository Reconfiguration of Panels 9 and 10

2-1: PMR Table 4.1.1, Pages B-2 and B-3

Provide redline strike out text revising "Final Waste Volume" column to "Final Waste Volume Disposed" and to revising note 3 of the table to clearly state the volumes in this column only shows the volume of each panel and that the total final volume cannot exceed repository limits.

2-2: PMR Section A-4 Facility Type, Pages B-6

Provide redline strike out text revising sentence from "as Panels 1 through 8, 9A and 10A" to only say "as Panels 1 through 10A". (See PMR page B-7, Section A2-1)

2-3: Section A2-2a(3), Underground Ventilation System Description, Page B-8

The description in this section provides no demonstration of the ability of the current ventilation system to adequately ventilate the underground facility given the increased repository volumes and longer ventilation drifts in the proposed reconfiguration. Please provide demonstration of whether the current ventilation system is adequate to maintain current ventilation requirements or what changes if any will be necessary to meet those requirements.

2-4: Section A2-2a(3), Underground Ventilation System Description, Page B-8

In item 1 of the PMR, the air intake flow rate through a closed panel was calculated assuming a pressure drop across the intake and exhaust drifts of 170 milli-inches of water gage (Appendix C, Page C-81). NMED understands that current pressure drops are less than 100 milli-inches of water gage. Please demonstrate that the average pressure drop across closed waste panels under the reconfigured layout would not exceed the value used in the air flow calculations in Item 1. Include additional, more recent and any lower pressure drop data in the demonstration if available.

2-5: Overview 1. Describe the exact change to be made

Are waste emplacement plans (including documented intent) different for panels 9, 10 versus proposed panels 9A and 10A? If so, clearly describe and compare the former and proposed plans for panels 9, 10 against 9A and 10A. Please include capacity comparisons.

2-6: Overview 3. Explain why the modification is needed

The modification request states, "Engineering evaluations of Panels 9 and 10 ... have led to the conclusion that relocation of Panels 9 and 10 to an alternative location ... is preferred over widening the entries..." Have there been any other engineering evaluations besides the Geotechnical Analysis Report for July 2009-June 2010 that is referenced in the PMR? If so, provide a copy of such evaluations and point to specific data that supports the Permittees conclusion. If there are no such evaluations please provide a discussion that addresses "increased convergence rates and higher fracturing" as it relates to the enlarging of the south access drifts for waste disposal.

2-7: Geotechnical Overview

Provide a reference to the permit and/or the administrative record that supports the geological adequacy of the proposed locations for Panels 9A and 10A.

2-8: Figure D-5, Underground Emergency Equipment Locations and Underground Evacuation Routes, Pages C-8 and C-23

Revise figure to include planned and existing panels to the legend, and add Panels 9A and 10A as planned panels.

2-9: Figure G-6, Approximate Location of Boreholes in Relation to the WIPP Underground, Pages C-11 and C-26

Revise figure to include location markers for WIPP-19 and H-16.

2-10: Figure G2-1, View of the WIPP Underground Facility, Pages C-12 and C-27

Revise figure label to read "PANELS 8-10A NOT YET EXCAVATED"

2-11: Figure H1-1, Spatial View of WIPP Surface and Underground Facilities, Pages C-13 and C-28

The figure in the PMR is not the correct figure that is referenced in the Permit. The correct figure must be initially referenced in the PMR. Any proposed changes to the figure can then be requested.

2-12: Figure H1-4, Perimeter Fenceline and Roadway, Pages C-14 and C-29

The figure in the PMR is not the correct figure that is referenced in the Permit. The correct figure must be initially referenced in the PMR. Any proposed changes to the figure can then be requested.

2-13: Figure N-1, Panel Flow Area, Pages C-15 and C-30

The figure in the PMR is not the correct figure that is referenced in the Permit. The correct figure must be initially referenced in the PMR. Any proposed changes to the figure can then be requested. Revise figure to include a legend, Panel 7 as an existing panel, and Panel 8 as a planned panel.

Item 3 - Revise Volatile Organic Compounds (VOC) Target Analyte List and Other Changes to the VOC Monitoring Program

3-1: PMR Section 3, Topic 1, Table 1 Recalculated Waste Matrix Code Group Weighting Factors based on the 2004 Compliance Recertification Contact Handled (CH) Transuranic (TRU) Waste Inventory (m3)

The new weighting factors appear to be based on CH TRU waste only and do not include remote handled (RH) TRU waste. There was no discussion in the PMR addressing possible differences in Waste Matrix Code Group (WMCG) for RH TRU that could potentially impact the weighting factors. Please provide data characterizing the differences in emissions between the two types of waste, in support of the assertion that modeling data from CH TRU waste adequately characterizes RH TRU waste.

3-2: PMR Section 3, Topic 1, Table 3

When identifying reference concentrations (RfCs) and inhalation unit risks (IURs) for use in chemical score derivation in cases where there is no EPA guidance, the Permittees default to the recommended hierarchy of sources of toxicity values (USEPA, 2003). Table 3 has blanks listed where no guidance was available, but it is unclear if there is no guidance available from any organization for these endpoints or if there were only no EPA data. As a result, the "blanks" propagate to "0" values in calculations, which could potentially underestimate the risk associated with these compounds. Please clarify the impact that missing risk values have on the resulting risk associated with the VOC inventory. Alternatively, the Permittees could examine the International Toxicity Estimates for Risk (*ITER*) as on Toxnet (<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?iter>) for missing data to assess the impact that these missing values have on the resulting calculations.

3-3: PMR Section 3, Topic 1, Table 2

Table 2 presents the Updated VOC Weighted Average Source Term and provides weighted VOC concentrations based upon the 1999-2010 Headspace Gas (HSG) VOC data for the current inventory. The calculations are based on 2004 WMCG assignments, and it is unclear whether the 2004-2010 WMCG are comparable to the 2004 assignments and how any differences would impact calculations presented on Table 2. Also, Table 2 shows the weighted average carbon

tetrachloride concentration to be 921 parts per million by volume (ppmv), which is very different from previous VOC projections. Please identify the waste stream(s), waste material groups, and waste quantities that contributed to the increased carbon tetrachloride values.

3-4: PMR Proposed Permit Attachment N, Section N-3b

The PMR states: "The VOCs that have been identified for repository and disposal room VOC monitoring are listed in Table N-1. The analysis will focus on routine detection and quantification of these target analytes in collected samples. As part of the analytical evaluations, the presence of other compounds (i.e., non-target VOCs) will also be monitored. Some non-targets may be included on the laboratory's target analyte list as additional requested analytes (ARAs) to gain a better understanding of potential concentrations and associated risk. The analytical laboratory will be directed to calibrate for ARAs when requested and classify and report other non-target VOCs as tentatively identified compounds (TICs) if tentative identification can be made. The evaluation of TICs in original samples will include those concentrations that are ≥ 10 percent of the relative internal standard. The evaluation of ARAs only includes concentrations that are \geq the method reporting limit (MRL). The required MRLs for ARAs will be U.S. Environmental Protection Agency (EPA)-specified levels of quantitation proposed for EPA contract laboratories that analyze canister samples by gas chromatography/mass spectrometry (GC/MS) (EPA, 1991).

Non-targets classified as ARAs or TICs that meet the following criteria: (1) are VOCs listed in Appendix VIII of 40 Code of Federal Regulations (CFR) Part 261 (incorporated by reference in 20.4.1.200 New Mexico Administrative Code (NMAC), and (2) are detected in 10% percent or more of any original VOC monitoring samples collected over a 12-month timeframe, will be added, as applicable, to the analytical laboratory target analyte lists for both the repository and disposal room VOC monitoring programs, unless the Permittees can justify the exclusion from the target analyte list(s). Nontarget VOCs reported as "unknown" by the analytical laboratory are not evaluated due to indeterminate identifications.

Additional requested analytes and TICs detected in the repository and disposal room VOC monitoring programs will be placed in the WIPP Operating Record and reported to NMED in the annual reports as specified in Permit Part 4, Section 4.6.2.2. As applicable, the Permittees will also report the justification for exclusion from the target analyte list(s) (e.g., the compound does not contribute to more than one percent of the risk). If new targets are required the Permittees will submit a Class 1 Permit Modification Notification annually in accordance with 20.4.1.900 NMAC (incorporating 40 CFR 270.42(a)) to update Table 4.6.2.3 to include the new analyte and associated recommended EPA risk values for the inhalation unit risk (IUR) and reference concentration (RfC). Added compounds will be included in the risk assessment described in Section N-3e(1)."

The language of section N-3b in the proposed Attachment N contains language that is ambiguous. Please provide clarification for the following items:

- a) The Permittees have introduced language that refers to additional requested analytes (ARAs). Based on the language in this passage it is unclear what the difference is between a

tentatively identified compound (TIC) and an ARA. Provide additional clarification that distinguishes TICs from ARAs. Clarify who (i.e. Permittees, NMED) requests ARAs and criteria for said requests.

- b) The PMR indicates that ARAs will be reported to contract laboratory Method Reporting Limits (MRL). The PMR did not include these MRLs and did not include the EPA 1991 reference in the reference section of the modified permit. There is reference to a Contract Required Quantitation Limit (CRQL) elsewhere in the permit. However, it is unclear if these two terms are synonymous. Please provide the EPA 1991 (or newer) reference, provide the actual MRLs, verify if the MRL and CRQL are synonymous, and justify that the MRLs are sufficiently low to ensure that human health and environment are not compromised. Additionally, based on the provided information, it was not clear if the referenced document is applicable to Resource Conservation and Recovery Act (RCRA) activities.
- c) Clarify what is meant by the term “original VOC Monitoring samples”.
- d) Clarify why the term “running 12 month time frame” was replaced with “12 month timeframe”. A running time frame indicates an ongoing monitoring process where the VOCs are monitored on an on-going basis, while the language proposed by the Permittees indicates a static program where monitoring will not occur on an on-going basis.
- e) Specify the due dates for the proposed annual Class 1 Permit Modification Notification that would update Table 4.6.2.3 with new target analytes.
- f) Clarify that if there is no annual change to the target analyte list as described above, the Permittees will submit notification to NMED. Specify the time frame for this notification.

3-5: Permit Section 4.6.3.2 Notification Requirements

Line 4, “in any closed room in an active panel or” appears to need deletion to be consistent with other changes made by this PMR.

3-6: Permit Section 4.6.3.3: Remedial Action

Please revise the last sentence: “The Permittees may implement an alternative remedial action plan in lieu of closing the active room.” to include mandatory closing of the active room in the event that all proposed and implemented alternative remedial action plan(s) fail. The proposed permit language may be acceptable for a short time period, but cannot be left “open-ended”. There must be some trigger that stops implementation of multiple, ineffective remedial action plans that otherwise could continue indefinitely.

3-7: Permit Attachment N, Section N-3a(1)

First paragraph, next to last sentence: Briefly describe what a “designated sample day” is, and why the Permittees need flexibility as to the day of the week that the weekly sample is taken. Also clarify if the sample would ever be collected during a non-work day (such as weekends and holidays).

3-8: Permit Attachment N, Section N-3a(2)(4)

Last sentence, please remove “As required below” and replace with “In accordance with Section N-3d(2),” or provide a discussion as to why the proposed language is appropriate.

3-9: Permit Attachment N, Section N-3b

The second paragraph states: “Non-targets classified as ARAs or TICs that meet the following criteria: (1) are VOCs listed in Appendix VIII of 40 Code of Federal Regulations (CFR) Part 261 (incorporated by reference in 20.4.1.200 New Mexico Administrative Code (NMAC), and (2) are detected in 10 percent or more of any original VOC monitoring samples collected over a 12-month timeframe, will be added, as applicable, to the analytical laboratory target analyte lists for both the repository and disposal room VOC monitoring programs, unless the Permittees can justify the exclusion from the target analyte list(s). Nontarget VOCs reported as “unknown” by the analytical laboratory are not evaluated due to indeterminate identifications.”
(underline added for emphasis)

The context of “as applicable” is unclear and should be either deleted or further explained.

3-10: Permit Attachment N, Section N-3c

Second paragraph, second sentence: Include an additional statement similar to that included in the PMR Item 3 Overview, p. 29, stating that the shorter duration disposal room samples will not be collected as a time-weighted average. Explain that TO-15 “is used to collect grab samples (duration of 10 to 30 seconds) or time-integrated samples (duration of 12-24 hours) taken through a flow restrictive inlet (e.g., mass flow controller, critical orifice).” (from Compendium Method TO-15, Section 8.2.1.1). According to the method, samples collected that are not time-weighted averages are grab samples; WIPP may be using an approach where the sample duration is longer than that stated in the Method for grab samples but less than that for a time weighted average sample (1 hour duration minimum). If this is the case, the sampling approach, including duration, should be explained. If a site-specific procedure detailing the steps followed for short-duration sampling is available, please include.

3-11: Permit Attachment N, Section N-5a

Equation N-7: neither the inner nor the outer parentheses appear as “vertical lines”; therefore the note following the equation stating that the A-B quantity is an absolute value is confusing and needs to be clarified.

3-12: Permit Attachment N, section N-5a(3)

Clarification of the term “area” is necessary; NMED assumes this term refers to the area under the peak in an elution time vs. detector output plot from a gas chromatograph, and is generally linearly proportional to analyte concentration but this should be stated in the PMR.

3-13: Permit Attachment N, Section N-5d

NMED would like an example field sampling data sheet with minimum data entry requirements highlighted as included in a site-specific procedure. Section N-5d should also specify that the field data sheets are to become records that are kept on site and available for NMED review upon request. The data validation procedures referred to in this section should identify, at least in general terms, who is responsible for checking all field data sheets for completeness and correctness. If this is included in the procedure, please state as such and provide the procedure.

3-14: Permit Attachment N, Section N-5e

First Paragraph, Last Sentence: "System audits will be performed at or shortly after to the initiation of the VOC monitoring programs and on an annual basis thereafter." The word "to" appears extraneous and should be deleted.

3-15: Permit Attachment N, Section N-5g

Last paragraph: Rather than deleting the following sentence: "Original and duplicate or backup records of project activities will be maintained at the WIPP site.", the Permittees should keep majority of original text but clarify what is included in "project activities". All records (those without electronic format) should be kept on site in accordance with the permit.

3-16: Figure N-1

This figure should be retained but modified to show the location of VOC-A only and its physical relationship to ventilation intake/exhaust flow direction, proximity to open/closed panels, and proximity to intake/exhaust shafts.

3-17: Figure N-2

This figure should be retained, but modified accordingly to show the layout of the proposed new VOC monitoring system design.

3-18: Figure N-3

This figure is being retained, but the symbol legend needs to be modified to provide horizontal alignment between symbol and symbol description. The figure title should be expanded to read "Typical Disposal Room VOC Monitoring Locations and Path of Ventilation Air Flow".

3-19: Figure N-4

The title of this figure should be modified to read "Disposal Room VOC Sample Head Arrangement", in order to avoid confusing with any other type of sampling head (such as hydrogen/methane).

3-20: PMR Appendix C, Attachment A: Air Dispersion Modeling Report

Please provide the AERMOD input files.