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GARY E. JOHNSON
GOVERNOR

PETER MAGGIORE
SECRETARY

PAUL R. RITZMA
DEPUTY SECRETARY

March 28, 2001

RE: RESPONSE TO COMMENTS LETTER
WIPP HAZARDOUS WASTE FACILITY PERMIT
EPA I.D. NUMBER NM4890139088

Dear Concerned Citizen:

The New Mexico Environment Department (NMED) recently sent a letter to you regarding the "Response to Specific Comments, Class 2 Modification Request, WIPP Hazardous Waste Facility Permit, EPA I.D. Number NM4890139088" dated March 23, 2001. The March 23, 2001 letter was inadvertently dated incorrectly and should have been dated March 26, 2001. Attached to this cover letter is the corrected letter with the appropriate date. Please refer to the March 26, 2001 letter in any future correspondence regarding this issue.

Should you have any questions regarding this matter please call me or Steve Zappe at (505) 827-1557.

Sincerely,

John E. Kieling
Manager
Permits Management Program

Attachment

cc: James Bearzi, HWB
Steve Zappe, HWB
Ines Triay, DOE/CBFO
Hank Herrera, Westinghouse

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March 26, 2001

RE: RESPONSE TO SPECIFIC COMMENTS, CLASS 2 MODIFICATION REQUEST
WIPP HAZARDOUS WASTE FACILITY PERMIT
EPA I.D. NUMBER NM4890139088

Dear Concerned Citizen:

The New Mexico Environment Department (**NMED**) has denied the Class 2 permit modification request to the WIPP Hazardous Waste Facility Permit as submitted to the Hazardous Waste Bureau (**HWB**) in the following document:

- Request for Class 2 Permit Modifications, Dated 12/7/00, Received 12/7/00

This modification was processed by NMED in accordance with the requirements specified in the New Mexico Hazardous Waste Regulations, 20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)).

In their request, the Permittees proposed to modify the permit requirements for Drum Age Criteria (**DAC**). The DAC determines how long a container of waste must wait after packaging and venting before the generator site can obtain a gas sample from the headspace (void space) in the waste container. This is done in order to measure concentrations of hazardous volatile organic compounds (**VOCs**) in the container headspace. The proposed modification added numerous DAC values for specific waste packaging configurations (i.e., how many inner bags and liners were used in packaging the waste) for three different headspace gas sampling scenarios. The modification request replaced simple criteria (one time period for debris waste, another one for homogeneous waste) with a complex scheme of scenarios and lookup tables as a function of waste type, container type, packaging configuration, liner lid hole size, and vent filter characteristics.

NMED's regulations provide several reasons for denying a Class 2 permit modification request, such as the modification request is incomplete; it does not comply with applicable requirements; or it fails to protect human health and the environment. Numerous public commentors identified

significant technical inadequacies in the modification request. One such inadequacy was the complete failure of the Permittees to address how sites would obtain the required information necessary to determine appropriate DACs, including but not limited to modifications to visual examination, radiography, and acceptable knowledge permit requirements.

NMED was unable to approve the modification "with changes" as allowed under the regulations because none of the commentors proposed sufficiently detailed changes to rectify the technical inadequacies they identified. Such changes would have had to be fairly substantial to overcome the significant shortcomings of the proposed modification, and would also have to be subject to additional public comment. Furthermore, NMED was unable to reclassify this modification request to follow the procedures for Class 3 modifications because the request was not approvable as submitted.

This Class 2 modification was subject to a sixty (60) day public comment period, which ran from December 11, 2000 through February 9, 2001. NMED received written comments from ten individuals and organizations, including you, during this time. NMED's specific responses to each of these comments are incorporated in the attachment to this letter.

Further information on this administrative action may be found on the NMED WIPP Information Page on the World Wide Web at <http://www.nmenv.state.nm.us/wipp/>.

Thank you for your participation by submitting written comments on this permit modification request. If you have any questions regarding this matter, please contact Steve Zappe at (505) 827-1560, x1013.

Sincerely,

John E. Kieling, Manager
Permits Management Program
Hazardous Waste Bureau

JEK/soz

Attachment

cc: James Bearzi, HWB
Steve Zappe, HWB
Inés Triay, DOE/CBFO
Hank Herrera, Westinghouse

Comment Number	Commentor/ Affiliation	Topic Area	Commentor Number	Comment Summary	Response	Include in Permit? y/n	Reviewer (initials)
1	Lawrence Souza/ Citizen	Drum Age Criteria Permit Modification Request	A	The Commentor believes that to avoid unnecessary radiation exposures and achieve ALARA, perhaps the permit mod should include options for: 1) sampling the headspace of the drum containing the pipe overpack containers (POC), and 2) a much shorter DAC that corresponds to the much simpler POC configuration used by LANL and other TRU waste generators.	To address the Commentor's concerns, the proposed permit modifications would require additional technical information and justification not included in the Class 2 Permit Modification Request. Further, the Permittees state " If additional packaging configurations are identified, an appropriate Permit Modification will be submitted to incorporate DAC using the methodology in BWXT (2000)." NMED assumes that this could include modifications addressing the Commentor's concerns.	no	SOZ
2	Jay Shelton/ Citizen	Drum Age Criteria Permit Modification Request	B	The Commentor states that the changes sound sensible.	The comment is extremely general in its support of the proposed modification. See Response to Comment 3.	no	SOZ
3	Penelope McMullen/Sisters of Loretto	Drum Age Criteria Permit Modification Request	C	The Sisters of Loretto oppose the permit modification request because the DOE will not be able to adequately determine the number of bags and thickness of bags, and the permit [modification] does not adequately specify how they [DOE] will do this [characterization]. Several inner bags could be closed with a single horsetail, so identification of the number of inner bags by counting the number of horsetails could induce error. Also, the records of content cannot be used to determine the waiting period, as it is known that the records are frequently wrong.	NMED agrees that the proposed permit modification does not include permit changes that address how sites shall obtain the necessary information required to determine DACs, including but not limited to modifications to visual examination, radiography, and acceptable knowledge permit requirements. Thorough and comprehensive modification of all applicable permit areas must be included in the permit modification request to ensure consistent and correct application of the modification.	no	SOZ

4	Maria Santelli, CARD	Drum Age Criteria Permit Modification Request	D	CARD strongly opposes the DAC Class 2 permit modification and urges NMED to deny it.	See Response to Comment 8.2.	no	SOZ
5.1A	Don Hancock, Southwest Research and Information Center	Drum Age Criteria Permit Modification Request	E	The Commentor states that the permit modification request is incomplete and should be denied because it does not make necessary changes to all relevant areas of the permit, including those areas dealing with determination of drum liner presence, type of liner, number of bags, etc.	NMED concurs with the Commentors concerns regarding completeness of the permit modification request. See Response to Comments 3 and 8.2.	no	SOZ
5.1B	Don Hancock, Southwest Research and Information Center	Drum Age Criteria Permit Modification Request	E	The Commentor believes that the modification does not meet the operational standards regulations. For example, if inaccurate / underestimated amounts of VOCs are reported, the waste analysis requirements [that mandate adequate and accurate information about the hazardous waste at any facility] will not be met.	NMED agrees that accurate headspace gas information must be obtained, and this information must be collected at the appropriate time to ensure the drum meets the 90% steady state concentration criteria. NMED does not oppose the implementation of drum configuration-specific DAC, but also believes that additional information should have been included in the permit modification request to ensure that DAC determination is correctly and consistently implemented, and to ensure that the methodology used to calculate the DAC is well supported.	no	SOZ
5.1C	Don Hancock, Southwest Research and Information Center	Drum Age Criteria Permit Modification Request	E	The Commentor believes that the modification does not protect public health and the environment. Because of the likelihood of inaccurate sampling, larger amounts of VOCs could be brought to WIPP than estimated. That increased amount of VOCs could endanger public health and the environment.	NMED agrees that if the DAC is underestimated, the actual VOC concentration realized in the subsurface and measured at air monitoring locations would be greater than anticipated. However, the permit modification request does not alter permit requirements with respect to on-site monitoring or the potential consequences that exceedence of permit-required subsurface concentrations would trigger.	no	SOZ

5.2	Don Hancock, Southwest Research and Information Center	Drum Age Criteria Permit Modification Request	E	The Commentor states that the proposed revision of Drum Age Criteria would put more reliance on DOE Acceptable Knowledge (AK), which the commentor believes to be frequently inaccurate. Relying on AK to determine Drum Age Criteria information is inconsistent with basic principles and requirements of the permit.	NMED agrees that reliance on AK to determine detailed and specific information required for DAC determination will not suffice for the majority of containers present at generator/storage sites. AK requirements of the current permit do not mandate collection of the detailed and specific information necessary to determine DACs, and the permit modification request does not include modification of the permit's AK requirements to require this. Additionally, NMED has observed that for the majority of generator/storage sites audited to date, AK records alone typically do not contain all of the required drum-specific information needed to determine DACs.	no	SOZ
5.3	Don Hancock, Southwest Research and Information Center	Drum Age Criteria Permit Modification Request	E	The Commentor believes that DOE has not explained why (if current calculations are correct) information presented in the past concerning DAC was so wrong. Contrarily, DOE has not demonstrated that the new DAC include all types of debris waste. Criteria are clearly addressed to design a problem at INEEL, but use of the alternative proposed criteria have not shown to give accurate HSG results at INEEL, nevertheless the other sites. Thus, the Commentor asserts there has been no showing that all the sites have been surveyed or that all types of debris waste drums are covered by the three scenarios included in the modification request.	The debris waste DAC calculation upon which the Permit DAC was based assumed, among other elements, that 55 gallon containers were used, debris containers had 5 layers of inner confinement, the rigid drum liner had a .375 inch diameter hole, and the drum filter has a hydrogen diffusivity of 4.2 E-06 moles/second/mole fraction. The DAC for Scenario 1 is significantly different than the current DAC in the permit. This difference is attributable to the lack of a drum filter and/or rigid liner vent in the Scenario 1 drum. However, Scenario 3 more closely mimics Permit DAC conditions, and includes drum packaging configurations and tables that, while not inclusive of all Permit DAC assumptions, are very similar in drum liner configuration, liner hole diameter, etc. Upon comparison of the DAC in the permit with those included in the modification for similar conditions, the DACs are very comparable.	no	SOZ

5.3 (continued)	Don Hancock, Southwest Research and Information Center	Drum Age Criteria Permit Modification Request	E	(continued from above)	However, NMED agrees that every waste configuration possible was not included in the permit modification request, but more important, the permit modification request did not address how configurations different from those in the request would be handled. That is, it is quite possible that deviations from the specific criteria (e.g., hole diameter, etc.) will be observed, but the permit modification request did not offer generator/storage site direction as to how these differences should be addressed, short of implying that these wastes are not eligible for shipment to WIPP. NMED agrees that support documentation does not include survey information obtained from generator/storage sites to support the DAC determinations.	no	SOZ
5.4	Don Hancock, Southwest Research and Information Center	Drum Age Criteria Permit Modification Request	E	The Commentor questions how sites will know whether drums fit into the different sampling scenarios described in the permit modification, and states that it is not demonstrated that the three scenarios adequately bound all waste. Additionally, the generator/storage site "survey" discussed in the modification is not referenced or documented. The Commentor believes that without the survey, it cannot be determined whether the survey was comprehensive with respect to all sites or adequately thorough. Also, the Commentor points out that Attachment B of the modification requires has not been provided to the Commentor.	NMED agrees that without permit modifications stating that DAC-required data must be obtained through visual examination, radiography, etc., it is unclear how sites shall acquire the specific information necessary to make the DAC determination. NMED also agrees that while the configurations assumed are representative of site waste, outliers certainly may occur that are not accounted for in the assumed configurations.	no	SOZ

6.1A	Joni Arends/ CCNS	Drum Age Criteria Permit Modification Request	F	The Commentor believes that the permit modification request is incomplete and should be denied because it does not make necessary changes to all relevant areas of the permit. For example, the existing permit does not include procedures to determine whether a drum has a liner or not, type of liners present, etc. In order to change the waiting period, the permit should also be modified to include identification requirements for these and other elements, which it does not include.	Refer to Response to Comments 3 and 8.2.	no	SOZ
6.1B	Joni Arends/ CCNS	Drum Age Criteria Permit Modification Request	F	The Commentor believes that the modification does not meet the operational standards regulations. For example, if inaccurate / underestimated amounts of VOCs are reported, the waste analysis requirements [that mandate adequate and accurate information about the hazardous waste at any facility] will not be met.	Refer to Response to Comment 5.1B.	no	SOZ
6.1C	Joni Arends/ CCNS	Drum Age Criteria Permit Modification Request	F	The Commentor believes that the modification does not protect public health and the environment. Because of the likelihood of inaccurate sampling, larger amounts of VOCs could be brought to WIPP than estimated. That increased amount of VOCs could endanger public health and the environment.	Refer to Response to Comment 5.1C.	no	SOZ
6.2	Joni Arends/ CCNS	Drum Age Criteria Permit Modification Request	F	The Commentor believes that modification of the Drum Age Criteria would put more reliance on DOE Acceptable Knowledge for determining whether each drum has met the waiting period based on the number of liners, etc. The Commentor believes that these records are frequently wrong, and should not be relied upon.	Refer to Response to Comment 5.2.	no	SOZ

6.3	Joni Arends/ CCNS	Drum Age Criteria Permit Modification Request	F	The Commentor believes that DOE has not explained why (if current calculations are correct) information presented in the past concerning DAC was so wrong. Contrarily, DOE has not demonstrated that the new DAC include all types of debris waste. Criteria are clearly addressed to design a problem at INEEL, but use of the alternative proposed criteria have not shown to give accurate HSG results at INEEL, nevertheless the other sites. Thus, the Commentor asserts there has been no showing that all the sites have been surveyed or that all types of debris waste drums are covered by the three scenarios included in the modification request.	Refer to Response to Comment 5.3.	no	SOZ
7.1	Matthew Silva/ EEG	Drum Age Criteria Permit Modification Request	G	The Commentor believes that the conceptual approach is reasonable and has no objection to appropriate credit for different packaging configurations.	NMED also has no philosophical disagreement to appropriate credit for different packaging configurations.	no	SOZ
7.2	Matthew Silva/ EEG	Drum Age Criteria Permit Modification Request	G	The Commentor did not check the DAC calculations, deferring to NMED for this activity.	NMED has spot checked DAC calculations, and believes that while the mathematical implementation may be correct, additional questions pertaining to the proposed approach, assumptions, etc., should be addressed to better support DOE's calculations.	no	SOZ

7.3	Matthew Silva/ EEG	Drum Age Criteria Permit Modification Request	G	The Commentor stated that while there are a variety of diffusivity values in filter values allowed for WIPP containers and the diffusivities fall within the ranges evaluated by DOE, but the proposed DAC values must be used carefully to be conservative for individual containers with different filters [i.e. the WAC allows 23 different filters that fall within the modification range, and the DAC value that is closer, but lower than a given value of the 23 should be assigned]. Also, implementation of the modification submission would seem to indicate that more specific requirements concerning the acceptable hydrogen diffusivity values for each type of waste container should be specified in the HWFP, as should a requirement to record the type of filter on each container.	NMED agrees that conservative application of filter diffusivity values would impart appropriate conservativism to DAC calculations, and that the permit modification request should also have addressed specific requirements concerning hydrogen diffusivity values, as well as filter record keeping requirements. However, the DOE did not consider these or numerous other "what ifs" when developing the permit modifications request and which should have been included to ensure consistent application of permit requirements at the generator/storage sites.	no	SOZ

7.4	Matthew Silva/ EEG	Drum Age Criteria Permit Modification Request	G	The Commentor stated that the diameter of the rigid liner opening on a waste container is a critical value, and there needs to be assurance that the size of these opening is accurately known in order for the specific DAC value used to be conservative. The Commentor suggested that NMED determine the amount of uncertainty with respect to liner lid hole size and tolerance data, and add the appropriate language to the HWFP; the Commentor also suggested that NMED may wish to require that these be verified either by statistical sampling or 100% review, so as to ensure that the consequent DAC and resulting headspace gas measurements would also be sufficiently accurate.	NMED agrees that the diameter of the rigid liner opening on a waste container is a critical value, and must be accurately known to ensure application of the appropriately conservative DAC value. NMED also agrees that uncertainty with respect to the liner lid hole size, tolerance data, and appropriate verification should have been included in the permit modification request to more adequately address DAC determination. However, NMED is constrained by the requirements of Class 2 permit modifications to not include such major and important elements as simple changes to the Class 2 permit modification. Inclusion of all required elements could constitute significant alternations to the permit modification request and bring to question the completeness of the permit modification request itself.	no	SOZ
7.5	Matthew Silva/ EEG	Drum Age Criteria Permit Modification Request	G	The Commentor stated that the number of inner bags and liners in a waste container is a critical value, and there needs to be assurance that these values are accurately known in order for the DAC value chosen for a waste container is to be conservative. The Commentor went on to suggest that since the number of liner bags and inner bags is very important when determining the DAC, NMED should evaluate whether these parameters are being determined adequately under the current HWFP and, if not, appropriate modifications should be made to the permit. Additionally, the Commentor provided numerous comments in specific permit modification requests in terms of language, etc.	Refer to Response to Comment 3.	no	SOZ

8.1	Bryce/Lovejoy, Attorney General of New Mexico	Drum Age Criteria Permit Modification Request	H	NMED should deny the proposed modification because the modification is incomplete as it does not address required modifications to the WAP, QAOs and Data Validation techniques, Acceptable Knowledge required data to include the data required to establish the appropriate DAC for each drum or container.	Refer to Response to Comment 8.2.	no	SOZ
8.2	Bryce/Lovejoy, Attorney General of New Mexico	Drum Age Criteria Permit Modification Request	H	Alternatively, the Commentor states that NMED should direct that the proposed modification be considered under the rules for Class 3 modifications because the proposed changes are clearly outside the propose scope of Class 2 modifications. The proposed modifications, for the most part, reduce the level of conservativism of the original permit, add to the complexity of headspace determinations, and introduce several changes in waste management. Moreover, adoption of the proposed DAC would call for changes to numerous other sections of the permit, and the question of DOE's capability to comply with revised permit terms should be explored.	NMED has determined that the permit modification request is technically incomplete because it did not address all portions of the permit that must be modified to adequately implement the request, and because questions remain regarding the technical elements of DAC implementation. Although NMED is allowed by regulation to modify the request, the required changes would be very extensive and would bring to question the completeness of the original submission. As such, NMED is compelled to deny the request at this time. Furthermore, NMED cannot reclassify the modification request to a Class 3 if it is not approvable as submitted. However, NMED recommended that the Permittees consider submitting a revised modification request as a Class 3 modification due to the complex technical nature of the request.	no	SOZ

9.1	Deborah Reade/ CARD	Drum Age Criteria Permit Modification Request	I	The Commentor believes that the proposed modification is not protective of human health and the environment because DOE cannot show the ability to determine the number of layers of confinement in the containers. The commentor questioned the viability of AK data to determine critical DAC parameters, citing several concerns voiced by EEG regarding Acceptable Knowledge at Lawrence Livermore and Nevada Test Site. Further, the Commentor believes that RTR is not a reliable method for determining inner layers of confinement.	See Response to Comments 3 and 5.2.	no	SOZ
9.2	Deborah Reade/ CARD	Drum Age Criteria Permit Modification Request	I	The Commentor believes that the proposed modification is incomplete because it does not include additions to the existing permit to create procedures to determine whether a container is lined, the type of liner, the number of plastic bags, etc. in a container, as well as Quality Control and confirmation procedures. DOE must show a consistent history of excellent characterization and the QA/QC procedures at all sites before NMED should consider allowing them to lessen the requirements for Drum Age Criteria.	See Response to Comment 3.	no	SOZ
9.3	Deborah Reade/ CARD	Drum Age Criteria Permit Modification Request	J	The Commentor believes that to be truly protective of human health and the environment, the DAC should be increased, not decreased. The Commentor believes that the modification was posed to solve a particular problem at INEEL, and questioned whether the DAC should be revised upward for debris waste for containers with greater than 5 layers of confinement.	NMED agrees that conservative application of filter diffusivity values and other elements would impart appropriate conservativism to DAC calculations (i.e. could revise DACs upward, depending upon the situation). However, the DOE did not consider this or numerous other "what ifs" when developing the permit modifications request, thus rendering the request technically incomplete.	no	SOZ

10.1	Margret Carde/ Nuclear Watch of New Mexico	Drum Age Criteria Permit Modification Request	K	The Commentor strongly opposes the modification and requests that NMED deny DOE's application because DOE fails to articulate a cause for the modification under 40 CFR 270.42(b). Specifically, the Commentor believes: 1) that no alteration has occurred to justify this permit modification and DOE has not new/contradictory information on DAC today that was not available at the original hearings; 2) DOE has not shown that cause exists to grant the modification based on the need to meet compliance schedules; and 3) DOE has failed to demonstrate good cause for this permit modification.	Permittees are not required to justify Class 2 permit modifications based on the criteria cited by the commentor. NMED also points out that the Temporary Authorization approval granted for DAC use was withdrawn by NMED. Also see Response to Comment 8.2.	no	SOZ
10.2	Margret Carde/ Nuclear Watch of New Mexico	Drum Age Criteria Permit Modification Request	K	The Commentor believes that the DOE's application requires the more extensive procedures of a Class 3 permit modification. Specifically, the Commentor believes: 1) the permit modification application is incomplete; 2) DOE's modification application fails to give sufficient information to explain or justify the complex nature of this proposed modification; 3) the modification request fails to show that it is protective of human health and the environment; and 4) Federal regulations state that Class 2 modification applications should be considered under Class 3 procedures when there is significant public concern about the change.	See response to Comments 8.2 and 8.3.	no	SOZ

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GARY E. JOHNSON
GOVERNOR

PETER MAGGIORE
SECRETARY

PAUL R. RITZMA
DEPUTY SECRETARY

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 26, 2001

Dr. Inés Triay, Manager
Carlsbad Field Office
Department of Energy
P. O. Box 3090
Carlsbad, New Mexico 88221-3090

Mr. Hank Herrera, General Manager
Westinghouse TRU Solutions, LLC
P.O. Box 2078
Carlsbad, New Mexico 88221-5608

RE: FINAL DETERMINATION, CLASS 2 MODIFICATION REQUESTS
WIPP HAZARDOUS WASTE FACILITY PERMIT
EPA I.D. NUMBER NM4890139088

Dear Dr. Triay and Mr. Herrera:

The New Mexico Environment Department (**NMED**) hereby denies the Class 2 permit modification request to the WIPP Hazardous Waste Facility Permit as submitted to the Hazardous Waste Bureau in the following document:

- Request for Class 2 Permit Modifications, Dated 12/7/00, Received 12 7 00

This modification, proposing changes to the Drum Age Criteria (**DAC**) in the Permit, was processed by NMED in accordance with the requirements specified in 20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)). The basis for the denial of this modification is addressed below, while NMED's general comments on the proposed permit modification are in Attachment 1.

20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)(7)) provides several reasons for denying a Class 2 permit modification request, such as the modification request is incomplete; it does not comply with applicable requirements; or it fails to protect human health and the environment. Although NMED issued an administrative completeness determination for this modification request on February 22, 2001, this determination did not consider the technical adequacy of the

request. Numerous public commentors identified significant technical inadequacies in the modification request. One such inadequacy was the complete failure of the Permittees to address how sites would obtain the required information necessary to determine appropriate DACs, including but not limited to modifications to visual examination, radiography, and acceptable knowledge permit requirements.

NMED was unable to approve the modification "with changes" as allowed under 20.4.1.900 (incorporating 40 CFR §270.42(b)(6)(i)(A)) because none of the commentors proposed sufficiently detailed changes to rectify the technical inadequacies they identified. Such changes would have had to be fairly substantial to overcome the significant shortcomings of the proposed modification, and would also have to be subject to additional public comment. Furthermore, NMED was unable to reclassify this modification request to follow the procedures for Class 3 modifications specified in 20.4.1.900 (incorporating 40 CFR §270.42(b)(6)(i)(C)) because the request was not approvable as submitted.

Due to its complex technical nature and in consideration of NMED's and the public's comments, the Permittees may wish to resubmit this permit modification request as a Class 3 modification under 20.4.1.900 (incorporating 40 §270.42(c)) and 20.4.1.901.B(5) NMAC. The Class 3 modification process does allow an initially deficient request to undergo the notice of deficiency (**NOD**) and NOD response cycle prior to issuance of a draft permit, at which time it is subject to additional public comment. If the Permittees continue to submit technically complex changes as Class 2 modifications, they run the risk of having technically deficient requests denied on the same basis as this DAC modification request.

This Class 2 modification was subject to a sixty (60) day public comment period, which ran from December 11, 2000 through February 9, 2001. NMED received written comments from ten individuals and organizations during this time. The list of commentors and NMED's responses to these comments are incorporated in the following attachments:

- Attachment 2 is a list of commentors, their affiliation, the date their comment was received, and the number of pages of comments.
- Attachment 3 is a spreadsheet providing NMED's direct response to each comment submitted. This document will be mailed to each individual commentor.
- Attachment 4 is a general summary of the permit modification request, the typical comments received, and NMED's general response to those comments. This document will be mailed to all other individuals and organizations on NMED's WIPP facility mailing list.

NMED expects that the Permittees will address all comments provided in Attachment 1, as well as evaluating the comments in Attachment 2, prior to submitting a revised permit modification request. If you have any questions regarding this matter, please contact Steve Zappe of my staff at (505) 827-1560, x1013.

Sincerely,

Gregory J. Lewis
Director
Water and Waste Management Division

GJL/soz

Attachments

cc: Paul Ritzma, NMED
James Bearzi, NMED HWB
John Kieling, NMED HWB
Steve Zappe, NMED HWB
Susan McMichael, NMED OGC
David Neleigh, EPA Region 6
Connie Walker, TechLaw
File: Red WIPP '01

Attachment 1

NMED General Comments on Permit Modification Request

NMED Comments on the BWTX Report

1. The models proposed in the 1995 Lockheed Report **(1995 Report)** and the October 2000 BWTX Report entitled "Determination of Drum Age Criteria Prediction Factors Based on Packaging Configurations" **(BWTX 2000)** appear to assume that the method of sample collection will occur through an air tight needle entry and that no VOCs are lost to the atmosphere either through sampling or other handling (e.g., opening a vent in the rigid liner). However, it is unclear how this assumption would be achieved, particularly with respect to the potential loss of volatiles during Scenario 2 liner venting or Scenario 1 sampling through the rigid liner.

2. The 1995 Report and BWTX 2000 reports were compared to assess differences in the assumptions or in the formulae used to generate the theoretical drum ages for the different scenarios and packaging configurations. The 1995 Report calculated DACs were compared to the Scenario 3 DACs in BWTX 2000, and there does appear to be a general sense of agreement between the approaches presented in each report with respect to comment elements addressed in each report. However, the presentation and terminology differed significantly between the two reports and it was not always clear if the approach between the 1995 and 2000 reports was the same. In general, the Permittees should provide additional clarification to demonstrate that the approach, assumptions, and inputs used in the 1995 Report were also used in BWTX 2000. Any changes in approach, assumptions, or inputs should be clearly identified. In addition to this general request for clarification, the following specific clarifications are among those that should be provided if the modification is revised and resubmitted (note that this is not a comprehensive listing of clarifications, which are presented only as examples):

    - The 1995 Report included a term for calculating the VOC accumulation in the rigid liner (Equation A-4). This term does not appear to be addressed in BWTX 2000. The Permittees should provide clarification as to the use of this term and the impact of this term on the overall DAC calculations.

    - The 1995 Report contains a series of equations (Equations A-7a through A-11b) that define the rate of change of the VOC concentration in each layer of confinement, but BWTX 2000 did not specifically discuss these equations. The Permittees should provide additional clarification to demonstrate how the rate of change in each layer of confinement is calculated and how the equations used in BWTX 2000 are equivalent.

    - The equation for VOC diffusivity in air included in BWTX 2000 (Equation 7) is different than the equation used in the 1995 Report (Equation 3-2), as BWTX 2000 includes a temperature and pressure factor that is not in the 1995 equation. The

Permittees should clarify the origin and purpose of this factor and how this factor was accounted for in the 1995 equation.

- Some model inputs are different between the 1995 Report and BWTX 2000. For example, the 1995 Report references the use of the NFT-20 filter that has a hydrogen diffusivity characteristic of 4.2E-06. The 2000 report calculates DACs based on three separate filter diffusivities, none of which are the NFT-20 filters.

3. The BWTX 2000 software modeling report indicated that hydrogen generation was no longer included in the model. The Permittees should clarify if the hydrogen gas generation was considered in the 1995 Report and what impact not considering the gas generation has on the model.

4. The VOC multiplier factors found in Section 5 of BWTX 2000 indicates that VOC multipliers could be used to extrapolate VOC headspace gas concentrations at the DAC by measuring the concentration at a different date and applying a multiplication factor. However, the Permit Modification did not indicate if this approach would be employed and how it would be implemented. If it is implemented, the Permittees should clarify the impact of these lower concentrations on TIC identification and reporting as well as target reporting for concentrations at or near the MDL in the samples taken at an earlier date. Furthermore, test data needs to be generated to support these calculations, as specified in Comment #5 below.

5. It is unclear if any test data was generated to support the theoretical calculations provided in the BWTX 2000 report. The collection of test data to support DAC conclusions, particularly for those elements not considered in the 1995 Report (i.e., SWBs, pipe overpack, containers larger than 55 gallons, etc.), would appear to be crucial to both demonstrate practical applicability of calculated DAC values and to validate the extension of the methodology to other container types and sizes. Experiments would also lend serious credibility to the entire process. NMED notes that the methodology presented in the original permit application was supported by test data. If new test data were generated, the Permittees should discuss the results and the parameters of the test.

6. Several clarifications should be provided with respect to BWTX 2000 to ensure complete understanding and implementation of the process. These clarifications should include but are not limited to the following:

   - Sensitivity and uncertainty analysis should be discussed with respect to important parameters such as the presence/absence of liners, filter vent characteristics, opening size in the liner lid, etc. This is important to identify which parameters influence DAC calculations the most.

- Be sure that BWTX is very clearly written, particularly in the areas of Scenario descriptions. For example, it is not entirely clear from the Scenario 2 discussion on page 3 of the BWTX report that the drum is initially unvented until DAC1 is reached, after which the drum is vented and DAC2 must be reached before sampling.

- All assumptions and simplifications presented in BWTX should be justified (e.g., assumptions pertaining to waste drum configurations, selection of Scenario 3 packaging configurations for drums, Section 6.1 Modeling Assumptions, Appendices A and B, etc.).

- The information reviewed which supported the determination of various packaging configurations for SWBs and pipe overpacks should have been included

- Clarify how the Pipe Component DAC was calculated with respect to the relationship of this value and information presented in Section 6 of BWTX 2000.

7. During the development of the draft permit in 1998, NMED examined the 1995 report and supporting mathematical calculations/assumptions, and accepted the methodology embodied in that report. It might be appropriate for NMED and the Permittees to discuss all code changes implemented since the 1995 report, particularly those used to implement changes in SWB and pipe overpack determinations. While the mathematics appear generally appropriate, NMED has a number of questions concerning assumptions, applicability, etc., which remain unanswered because NMED did not have access to the authors nor have an opportunity to interact with the Permittees after the modification was submitted. This is primarily due to the nature of the Class 2 permit modification process, which does not provide for supplementing the administrative record with information obtained from a request for supplemental information (**RSI**) or a notice of deficiency (**NOD**).

NMED Comments on the Permit Modification Request

8. BWTX 2000 was used as justification for the proposed DAC modification. The authors of BWTX 2000 propose a very prescribed and ordered process to determine drum ages based on waste packaging configuration and other drum considerations. In this process, three distinct drum Scenarios are provided: Scenario 1 applies to unvented drums sampled immediately after venting; Scenario 2 applies to drums that were unvented for the Scenario 1 DAC time period, but were then vented; and Scenario 3 applies to drums vented at the time of packaging. In Drum Scenario 2, the sample may only be collected after the Scenario 1 Drum Age Criteria DAC (DAC_1) is met and the container is subsequently vented, followed by achievement of the Scenario 2 DAC (DAC_2). However, the Proposed Permit Modification provides only a single reference in Table B1-5 indicating that Scenario 2 drums are to meet *both* the Scenario 1 DAC and Scenario 2 DAC sequentially. That is, the Permit Modification

does not clearly indicate that the Scenario 2 DAC must be considered in conjunction with the Scenario 1 DAC and that the Scenario 2 DAC begins once the Scenario 1 DAC is met and the drum is vented. This could be very confusing to generator/storage sites attempting to implement the Permit Modification.

9. The proposed Permit Modification is unclear with respect to how samples will be collected under unvented rigid drum liners. The permit currently contains prescriptive criteria for collecting samples through a carbon filter or the drum lid of containers with vented rigid liners, but the Permit Modification is not equally prescriptive with respect to details for sampling through the rigid unvented liner. The Permittees should provide additional detail for collecting a sample through the rigid unvented liner.

10. Section B-1c of the WAP specifies that all drums must have filters, which was a concern during WIPP permit hearings with respect to gas build-up and potential development of corrosive, ignitable, and reactive conditions. However, according to the proposed modification, it appears that unfiltered drums would be very acceptable and are currently present at sites. The Permittees should consider how this information impacts the Permit, particularly with respect to permit requirements and the mitigation of interior drum conditions with respect to D001, D002 and D003 waste. The Permittees should also clarify how they intend to have sites manage drums without filters.

11. Table 4 (Table B1-8) presents the Scenario 3 Packaging Configurations and shows that for any Summary Waste Category Group, certain packaging is allowed under specific Packaging Configurations. However, BWTX 2000 indicates that different packaging considerations were assumed for S5000 and S3000/S4000 when calculating the DAC. For example, Packaging Scenario 3 assumed a bounding packaging condition of two liner bags for S3000/S4000 waste, and a bounding packaging condition of 4 inner bags/2 Liner bags for debris (S5000). As such, the BTWX 2000 report did not consider 4 inner bags/ and two liner bags for S3000/S4000 waste (the DAC for this condition would presumably be greater/more conservative than when two liners alone are considered), yet Table 4 allows this configuration for S3000/S4000 waste. Unless the Permittees can justify combining assessed configurations and making them applicable to all wastes, Table 4 should have differentiated between S5000 and S3000/S4000 waste allowable packaging configurations, as shown in the BWTX 2000 Report.

12. The Permit Modification lists specific liner lid hole sizes, filter diffusivities, etc., that drums must have to use the included DAC tables. However, it is apparent that not all drums may fit the specified criteria. The Permittees state that additional DAC shall be calculated for new packaging configurations (and shall be submitted as permit modifications), but the Permittees should also have indicated how DAC must be calculated or selected when drum parameters don't exactly "match" those specified on Permit Modification Tables (e.g., interpolate between DAC values, choose the more conservative DAC, etc.).

13. The Permit Modification was presumably submitted to allow sites the ability to select configuration and waste-specific DAC rather than using the single DAC(s) included in the Permit. Additionally, the modification allows sampling of unvented drums, which was not considered in the Permit. However, the Permittees do not appear to have considered the practical application of the modification with respect to implementation at generator sites. For example, packaging configuration determination specific enough to determine DAC would require modifications to VE, RTR, AK, and many other procedures. Additionally, drum filter and other criteria may not "match" those specified in the permit. As such, the modification could require sites to perform wholesale modification of their characterization programs and could even disallow some drums for shipment (if, for example, their packaging does not match those specified on the tables), or it could encourage significant repackaging of wastes (which is an ALARA concern). The Permittees should have considered the option of retaining some simplistic "default" DAC or set of DAC values that sites could rely on to simplify their characterization processes.

14. The proposed Permit Modifications do not consider or include additional permit modifications that must also be made to support new DAC calculations. For example, RTR reporting requirements must be modified to specify all of the necessary information to determine specific packaging configurations, as must Visual Verification and Visual Examination requirements. AK requirements must be modified to require collection of DAC-related data (i.e. liner, bags, etc., on a *drum-specific* basis), and this would become mandatory, not supplemental, information. Reporting, data validation/verification, and other permit sections would also require modification. Without complete and comprehensive modification of all necessary permit sections, generator/storage sites would not have consistent direction with respect to implementation of the DAC and related processes, and the audit process could become unnecessarily complicated.