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ENTERED

JUL 2003

July 9, 2003

Mr. Steve Zappe
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Re: May 12, 2003 Permit Modification Requests for the Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Number NM4890139088-TSDF.

Dear Mr. Zappe:

The U.S Department of Energy, Carlsbad Field Office and Washington TRU Solutions, LLC (the Permittees) submitted the proposed Permit Modification Requests (PMR) to the New Mexico Environment Department (NMED) on May 12, 2003. The PMR consists of five (5) Class 2 requests and one (1) Class 3 request.

The requests included:

1. Packaging-Specific Drum Age Criteria (DAC) for New Approved Waste Disposal Containers;
2. Removal of Underground Booster Fans;
3. Los Alamos National Laboratory (LANL) Sealed-Sources Waste Stream Headspace Gas Sampling and Analysis Requirements;
4. Removal of Formaldehyde as a Required Analyte at LANL;
5. Addition of Hazardous Waste Numbers; and
6. Construction and Use of Disposal Units (a Class 3 PMR).

The enclosed comments on the five Class 2 PMRs reflect the independent review by the Environmental Evaluation Group staff. The commentators considered the PMRs submitted by the Permittees and responses by representatives of the Permittees at several public meetings where EEG staff and members of the public asked questions about the PMRs. These comments are provided earlier than the posted deadline to allow the Permittees time to respond to them.

Comments on the Class 3 PMR, Construction and Use of Disposal Units, will be sent to you to meet the July 14, 2003 deadline. EEG intends to participate fully in the Class 3 PMR process.

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If you have any questions about the enclosed EEG comments, please do not hesitate to contact me. Thank you.

Sincerely,

Matthew K. Silva
Director

MKS:SBW:GA:js
Enclosure: Comments by the Environmental Evaluation Group on Five Class 2 Permit Modification Requests

cc: Inés Triay, DOE/CBFO
Steven Warren, WTS

Comments by the Environmental Evaluation Group on Five Class 2 Permit Modification Requests

Item 1
Addition of Drum Age Criteria for New Containers

The current HWFP Drum Age Criteria (DAC) values do not include values for direct-loaded 85- and 100-gallon drums, or ten-drum overpacks. This PMR would add DAC values for these containers. The methodology for developing these values is said (p. 2) to be the same one as was used for developing the DAC values that are currently in the HWFP for 55-gallon drums and standard waste boxes (this is a requirement in the HWFP). EEG comments are as follows:

Comment 1. Direct-loaded 85-gallon drums are not currently acceptable for transportation in TRUPACT-IIs, according to Revision 19b of the *TRUPACT-II Authorized Methods for Payload Control* (TRAMPAC; April, 2002; see Section 2.1.1 for currently allowed payload configurations). Perhaps equally important, the TRUPACT-II *Certificate of Compliance* (Certificate 9218, Revision 15; April 9, 2003) states (p. 2):

> Materials must be packaged in one of the following payload containers: a 55-gallon drum, a 100-gallon drum, a standard waste box (SWB), a standard pipe overpack, an S100 pipe overpack, an S200 pipe overpack, or ten-drum overpack (TDOP).

Note that 85-gallon drums are not one of the available payload containers. The NMED might want to inquire as to progress toward gaining the Nuclear Regulatory Commission's (NRC) acceptance of the 85-gallon containers for direct-loading purposes, and inclusion of 85-gallon drums into the TRUPACT-II *Certificate of Compliance*.

EEG notes that the HWFP already accepts the use of 85-gallon drums, either as overpacks or for direct loading; however, there may be questions with obtaining NRC approval to ship direct-loaded 85-gallon drums that would also apply to HWFP considerations.

Comment 2. The Advanced Mixed Waste Treatment Facility (AMWTF), a WIPP waste generator, plans to compact waste in 55-gallon drums and place these "pucks" in 100-gallon drums to ship to WIPP. The PMR proposed text change contains the following statement (p. B-2):

> If a 100-gallon drum (i.e. Packaging Configuration Group 7) contains a compacted 55-gallon drum containing a rigid liner, the 55-gallon drum must meet the appropriate 55-gallon drum DAC listed in Table B1-6, B1-7 or B1-10 to ensure that [Volatile Organic Compound] VOC solubility associated with the presence of the 55-gallon rigid drum liner does not impact the DAC for the 100-gallon drum.

When the 100-gallon drum is the container being sampled for headspace gas the sorption of the liner would also potentially affect the gas dispersal from other compacted 55-gallon drums packaged in the 100-gallon drum, and there would be a potential need for a correction factor to the 100-gallon drum DAC, not just that of the 55-gallon drum in its pre-compacted state. This might be the case, for example, if the VOCs in the 55-gallon drum with the liner do not saturate the liner, but that drum is on top of the other compacted drums in the 100-gallon container that have VOC-emitting materials in them, in which case the liner could potentially absorb these VOCs until saturation is reached. The NMED may want to establish whether or not such a possibility would affect achieving steady-state equilibrium prior to approving of this PMR.

A second consideration is that compaction of 55-gallon drums may change the diffusion characteristics within the container. Pathways to the exterior of a crushed 55-gallon drum from the VOC-emitting materials may be much more restricted than the pathways in a loosely-packed drum, and the number of pathways will be limited by the surrounding steel from the crushed 55-gallon drum. The NMED may want some demonstration that the DAC for 100-gallon drums containing compacted 55-gallon drums has also been analyzed for this possibility.

A third issue is that the DAC table referenced in the statement quoted above, Table B1-10, Scenario 3 Drum Age Criteria (In Days) Matrix for S3000 and S4000 Waste by Packaging Configuration Group, does not include debris wastes. The major intent of this PMR is to establish DAC values for debris waste to be compacted, not S3000 and S4000 waste, because S3000 and S4000 wastes are not likely to compact appreciably. The AMWTF apparently has no plans to compact them. Table B1-9, Scenario 3 Drum Age Criteria (In Days) Matrix for S5000 Waste by Packaging Configuration Group (p. B-10 in the PMR) is an analogous table for debris wastes. EEG recommends that Table B1-9 should be included in the statement quoted above– and with the Permittees concurrence, the reference to Table B1-10 may be able to be dropped.

Attachment C of the PMR, Determination of Drum Age Criteria Values for Ten-Drum Overpacks, 85-Gallon Drums, and 100-Gallon Drums, which is the documentation of the computer modeling effort used to establish the new DAC, states (p. 2)

> Compacted 55-gallon drums containing rigid drum liners placed inside the 100-gallon drum must meet the appropriate 55-gallon drum DAC value established by the Permit **prior to compaction**. [emphasis added].

It was recognized by the Permittees that rigid drum liners in compacted 55-gallon drums would affect the transport of VOCs inside the 100-gallon drum, and it was prudent to allow time for the VOC/liner interactions to come into near equilibrium. However, DAC modeling is based on hypothetical drum systems that are closed except for filter vents. Crushing a drum that has been closed for some DAC period destroys the equilibrium (or near equilibrium) and essentially violates the closed system and basis for the DAC model. Any VOC absorbed by the rigid drum liner in a 55-gallon drum could de-absorb when it is crushed. Therefore, allowing a 55-gallon drum to remain closed for a DAC period prior to crushing is unnecessary since the closed-system equilibrium necessary for headspace gas testing may be nonexistent. On the other hand, placing crushed drums inside a 100-gallon drum, closing it to establish a known geometry and a known filter vent rate, then sampling its headspace after an appropriate DAC would not violate the

premise of the original DAC model. That is, instead of waiting for a DAC then crushing the 55-gallon drum, the drum should be crushed, placed in the 100-gallon drum, then wait for the DAC because the system is closed. NMED should ask the Permittees to recalculate the DAC based strictly on closed system (except for filter vents) dynamics.

Comment 3. For the proposed Packaging Group 5 in Table B1-8, the line-out of the term "SWB" implies that there may be liner bags for TDOPs, as well as SWBs. However, Attachment C states that an assumption used to create the TDOP DAC is that, "The TDOP packaging configurations consist of (1) up to one SWB liner bag and (2) up to six bag layers total, up to one of which may be an SWB liner bag." There is no mention of a separate TDOP liner bag. Attachment C to this Item 1 also describes what appears to be the liner bag of a TDOP as an "SWB bag" (see p. 1).

If SWB liner bags can be used as TDOP liner bags, then the elimination of the "SWB" term in Group 5 of Table B1-8 need not be performed–and the ability to use SWB liner bags as TDOP liner bags should be made explicit. EEG recommends that the line-through of "SWB" for Packaging Configuration Group 5 in the second and third column of the Table be rejected. Moreover, the term "SWB liner bag" no longer seems to accurately describe the use of these bags; perhaps the term should be replaced by a more appropriate term, such as "large container liner bag".

Comment 4. The proposed addition of footnote "d" to Table B1-9, Scenario 3 Drum Age Criteria (In Days) Matrix for S5000 Waste by Packaging Configuration Group, discusses "Headspace sample taken between inner and outer drum lids". This obviously refers to "true" two- lidded drums; however, footnote "b" of Table B1-8 in the current permit refers to a "double drum lid" where the drum lid and a drum liner lid often found in 55-gallon drums are meant.

Since this Item will add "true" double drum lids to the HWFP, a clear differentiation between the two meanings should be provided. EEG believes that the current language in footnote "b" to Table B1-8 should be altered to more clearly denote that a drum lid and the drum liner lid are specified, and not a "real" double lidded drum.

There may be other instances in the current HWFP where the 55-gallon drum and liner lids are denoted as "double lids" that should also be amended.

Comment 5. Attachment C also states that the assumption for 100-gallon drums is (p. 2):

> The modeled 100-gallon drum packaging configuration includes one filtered non-polymeric (e.g., steel) inner drum lid, no layers of confinement, and no rigid drum liner.

The current TRAMPAC (Revision 19b) does not appear to allow a steel inner drum lid. Section 2.1.5 states (p. 2.1-15):

> The 100-gallon drum, with or without an optional inner lid, is authorized for transport within the TRUPACT-II...An optional, rigid, **polypropylene**

> inner lid may be used inside the drum when posting materials from a glovebox through a bagless transfer port. [emphasis added]

Thus, the modeling performed with a metal inner drum lid would not appear to be modeling that reflects the allowable conditions in 100-gallon drums–or if it is, then the shipment of drums would not appear to meet the specifications in the TRAMPAC. If the intent is to use a steel inner drum lid in the computer modeling in order to provide a conservative value for diffusion across the barrier that the inner lid provides, then the PMR should say so. However, the TRAMPAC-authorized polypropylene lid may also create a sink for VOCs (through similar solubility to that of polyethylene liners) that would retard the achievement of steady-state equilibrium.

For 85-gallon drums, Attachment C states (p. 2):

> The packaging configuration and possible sampling locations with respect to the inner and outer drum lids for the 85-gallon drum are assumed to be the same as the 100-gallon drum.

The EEG has no independent information indicating that 85-gallon drums will have a two-lid conformation. NMED may want to check the specifications to be included in the TRAMPAC modification that would be required to allow direct-loading of 85-gallon drums to see whether a second drum lid will be specified, and if so, what materials are allowed for the inner lid, so that the efficacy of the modeling for 85-gallon drums can be adequately checked.

Comment 6. Item 1, Attachment C, Appendix A states (p. A-5):

> For the 100-gallon drum in which the headspace sample is taken inside the filtered non-polymeric (e.g., steel) inner drum lid prior to placement of the outer drum lid, VDRUM models this packaging configuration with a hypothetical innermost layer that is very thin. By making the innermost layers very thin as shown in the input files, their resistance to the release of hydrogen is removed from the analysis.

Note again the use of a "non-polymeric (e.g., steel) inner drum lid" in the modeling, which is contrary to the polymeric inner drum lid specified by the TRAMPAC, as addressed in a previous EEG comment.

This statement appears to describe modeling that hypothesizes little resistance to the flow of gases inside the container. The NMED may want to obtain information from the Permittees that will make it clear that materials packed in the 100-gallon drums will have "very thin" (i.e., nonexistent) packaging that will not impede the flow of hydrogen or other gases to be sampled, or the NMED may want to impose such a condition in the text of the HWFP.

Comment 7. Item 1, Attachment C, Appendix A states in part (p. A-5):

> Assumptions for 100-gallon drum and 85-gallon drum headspace void volumes are based on 20% of the container volume outside of the waste packaging. Assumptions for the void volumes between the drum lids (if

two lids are used) are determined based on 100-gallon drum dimensions and by scaling the 100-gallon drum dimensions for the 85-gallon drum.

These assumptions need to be supported or the permittees should demonstrate that they are unnecessary. Void volume in 55-gallon drums is extremely variable, from about 10% to greater than 90%. There are also no constraints on where in a 100-gallon drum an inner lid can be placed, except that it must be above the top of the waste and waste packaging, thus an average void volume is uncertain.

Comment 8. Item 1, Attachment C, Appendix A also states (p. A-5):

> When the headspace sample is taken between inner and outer drum lids, D_{v*}, the release rate of the outermost layer of confinement, is set to the diffusivity of the outer lid filter. Because VDRUM only allows entry of one filtered layer of confinement, the filter on the inner lid can be accounted for by adjusting the parameter values for the rigid liner. The dimensions of the drum liner are adjusted so the effective release rate equals the inner lid filter vent (Given $A_d = (D^*)(x_d)/(D_{c0})$, where D^* = diffusivity of the inner lid filter vent, $x_d = 1.0$, and D_{c0} = hydrogen diffusivity at standard temperature and pressure). The resulting drum liner dimensions are shown in the corresponding input files.

This appears to allow an inner lid (modeled as steel) to be accounted for in the model as a liner (normally modeled as a polymer). This seems to be going beyond the earlier statement of Appendix A that (p. A-1):

> This appendix includes the input and output files for the TDOP, 85-gallon drum, and 100-gallon drum that document the calculation of DAC values using the methodology described in BWXT (2000) [1].

The methodology in BWXT (2000) did not appear to include such an *ad hoc* substitution of one parameter type with another. The NMED may want to consider whether or not this process is enough of a change that a further approval of DAC methodology is necessary.

Comment 9. New footnote 'e' for Tables B1-9 and B1-10 states:

> While a DAC value of 2 days may be determined, containers must comply with the equilibrium requirements specified in Section B1-1a (i.e., 72 hours [3 days] at 18° C or higher). Generator sites may comply with these requirements simultaneously.

Appendix C (DAC computer model input/output documentation), however, indicates that the current PMR modeling-runs used 25° C as an input parameter. The Permittees should demonstrate that the 7° C difference has no effect on the calculated DACs. Also, the three day holding period at 18° C or higher was established for 55-gallon drums and SWB (~four 55-gallon

drums). The Permittees should also demonstrate that this time is adequate for TDOP (~ten 55-gallon drums) contents to reach temperature equilibrium sufficient for headspace gas testing.

Item 2
Removal of Booster Fans (and Air Flow Reversal) from the HWFP)

The booster fans in the Waste Isolation Pilot Plant (WIPP) underground were required during construction of the WIPP, but are no longer deemed necessary. The proposal to remove these fans was originally submitted to the New Mexico Environment Department (NMED) as a Class 1* modification (June 10, 2002), but was withdrawn (July 11, 2002) due to public comments on the proposal. The Environmental Evaluation Group (EEG) provided a comment to the NMED on that Class 1* modification, but the information provided in item 2 adequately addresses that issue.

The changes to the Hazardous Waste Facility Permit (HWFP) proposed in this permit modification request (PMR) would also remove references to air flow reversal in the WIPP underground. As noted in the PMR (p. A-13), the WIPP Mine Ventilation Plan currently allows for air flow reversal in the WIPP underground under certain hazard conditions. The PMR also indicated that an expert mine ventilation contractor (hired to assess the WIPP underground ventilation system) considered airflow reversal a problem under these hazardous conditions and listed several factors that could make air reversal during an underground fire problematic (p. A-21). Attachment C, a letter from Mine Ventilation Services, Inc., also hired to evaluate the WIPP ventilating system, makes the point much stronger (pp. 1 and 4):

> ...one component of the system that has been in place since the early 1980s that does not contribute to enhancing safety at the facility is the use of booster fans to reverse the airflow in the underground...
>
> Since the mid 1990s reversal capabilities of the booster fans in W-30 between S-1000 and S-1300 were kept in the operational procedures as a means, in theory, of reversing airflow in the facility. Reversal modes were established for upcasting air in the Salt Handling Shaft, upcasting air in the Air Intake Shaft and to reverse the airflow direction in the north side of the facility. However, as shown by actual field testing, there are significant problems with the booster fans being used for this purpose. Because of these problems, and because WIPP has other, safer and more effective ventilation control methods to control the spread of fire, smoke, and toxic gases in the underground in the event of an emergency, MVS recommends that the booster fans be removed.

Thus, approval of this PMR would initiate the process for removing what appears to be a potential health and safety hazard from the WIPP. The proposed changes to the HWFP text eliminate sections discussing use of the booster fans during off-normal events. Approval of this PMR will enhance, and not detract from, safety and health considerations at the WIPP.

Item 3
LANL Sealed Source Waste Streams Headspace Gas Sampling and Analysis Requirements

The Los Alamos National Laboratory (LANL) has been charged to recover, transport, and store radioactive sealed sources that are no longer used. Under the existing HWFP, these sources are required to undergo the same characterization activities as other contact handled transuranic mixed waste.

The Permittees wish to establish a packaging headspace gas value (from materials that will be used to package the sources) and report those values for headspace gas constituents, thus eliminating the waste confirmation process of headspace sampling and analysis for each container. Section a.3 Attachment B, Section B-3a(1)(iii) presents specific language and conditions relating to the Sampling Requirements for Waste Containers of LANL Sealed Sources Waste Streams including the provision that the sealed sources must be US DOT Special Form Material, or equivalent, in accordance with 49 CFR 173.403.

To identify and quantify the VOCs, headspace gas samples were collected from ten empty 55-gallon drums containing only the materials used to package the sealed sources. An important supporting document to this Item is the report, "Headspace Gas Sampling and Analysis Evaluation for LANL Sealed Sources," LAUR-03-0917, authored by L. Leonard which is contained as Attachment D to Item 3 of this PMR.

The EEG agrees that headspace gas sampling of these wastes would not appear to be necessary. However, there are a number of comments that the NMED should be made aware of prior to approving this PMR.

Comment 1. The testing for average VOCs should be repeated if there is: (1) a change in the packing material which may cause an increase in the VOCs or, (2) the supplier of the packing material changes since there is no assurance that the "new" packing material would be identical to what was tested.

Comment 2. NMED should obtain some assurances that VOC generation from a loaded drum (containing packing materials and sealed sources) would be no greater than VOC generation from packing materials alone.

Comment 3. The sealed sources must meet statutory and regulatory requirements relating to transuranic radioactive waste left from the atomic energy defense activity. It is important that the sealed sources destined to the WIPP unambiguously meet these requirements. Moreover, Section 10101 (3) of the nuclear Waste Policy Act of 1982 states the following:

> The term 'atomic energy defense activity' means any activity of the [DOE] Secretary performed in whole or in part in carrying out any of the following functions:
>
> (A) naval reactor development;
>
> (B) weapons activities, including defense inertial confinement fusion;

(C) verification and control technology;
(D) defense nuclear material production;
(E) defense nuclear waste and materials by-products management;
(F) defense nuclear materials security and safeguards and security investigations; and
(G) defense research and development.

The Interim Guidance on Ensuring That Waste Qualifies for Disposal at the Waste Isolation Pilot Plant (February 13, 1997) quotes this section of the Act, and cites DOE General Counsel interpretation that, "A TRU waste is eligible for disposal at WIPP if it has been generated in whole or in part by one or more of the [these] activities" (p. 4).

Comment 4. EEG understands that each source will be leak tested (wipe test, identifying removable contamination) prior to packaging. This is a good practice. It would be useful if the Permittees quantify the limits (dpm/wipe) which will be used to determine if the source is leaking.

Comment 5. It would be helpful to obtain a list of the different sources; i.e., ^{239}PuBe, ^{241}AmBe, ^{241}AmLi, ^{241}AmF, ^{241}AmB, ^{239}PuF and the approximate number of sources of each type and composition. In addition, EEG supports the NMED request for clarifications addressing the types and quantities of any sources containing water reactive, light elements such as lithium (May 8, 2003 letter from NMED to the Permittees regarding waste stream profile form LA-OS-00-01). The Permittees should address any non-radioactive constituents of the sources that have the potential to exhibit characteristics of reactivity, toxicity, corrosivity, etc.

Comment 6. NMED should be aware of the potential amount of sealed sources that may be sent to the WIPP. An April, 2003 General Accounting Office Report, *Nuclear Nonproliferation: DOE Action Needed to Ensure Continued Recovery of Unwanted Sealed Radioactive Sources* (GAO-03-483) indicated that in lieu of establishing a separate repository for unwanted sealed sources the DOE may wish to decide to utilize the WIPP as the repository for greater-than-Class-C (GTCC) wastes, including the sealed sources collected by the LANL Off-Site Source Recovery Project. In this regard, the GAO report stated (p. 23):

> ...DOE is also exploring whether all of the sealed sources containing plutonium-239 that the Off-Site Source Recovery Project plans to recover meet the legal and regulatory requirements for disposal at the Waste Isolation Pilot Plant. Currently, by law, only radioactive waste resulting from the development of nuclear weapons, referred to as defense waste, can be disposed of at the Waste Isolation Pilot Plant. Any greater-than-Class-C sealed sources containing plutonium-239 that were used in this manner can be disposed of at this facility; however, most of the plutonium-239 sources that the Off-Site Recovery Project plans to recover were not directly used for defense purposes. DOE is exploring whether a case can be made that, although these sources were used for research and other purposes, the plutonium-239 that they contain was originally

> manufactured for use in weapons development and thus can be disposed of at the Waste Isolation Pilot Plant.

The alternative to using the WIPP as the source repository is to develop another site for GTCC disposal. The national success rate for developing radioactive waste disposal sites in a timely fashion–and currently the DOE expects to establish such a facility in 2007–indicates that the DOE will likely request the WIPP mission be expanded to include GTCC disposal.

It is not clear that the NMED would have any regulatory control over whether an expansion of the WIPP waste envelope to GTCC will occur. Thus, approval of this PMR may mean that all of the more than 14,000 GTCC sealed sources that, according to the GAO report, are expected to be collected by the LANL OSRP by 2010 would fall under the elimination of headspace gas characterization proposed in the modification. This number would be significantly greater than the "approximately 1,000" sealed sources cited in this PMR (p. 4).

Since there may be more unwanted sealed sources [the GAO report cites a 1994 estimate was that, at that time, between 250,000 and 500,000 had been produced, with as many as 24,000 more produced each year], the LANL OSRP may need to be extended. Current DOE plans are that after 2010 unwanted sealed sources would simply be shipped to the designated repository by the current owner; however, such a program would not fit well with the current, or any known planned, WIPP waste acceptance program. Thus, the OSRP task may be extended in some form, and additional sealed sources may also fall under the modification.

Comment 7. As a part of the explanation as to why the modification is needed, the draft PMR stated that (p. 4):

> The WIPP HWFP was modified via Class 2 Modifications on August 8, 2000, to allow reduced headspace gas sampling for waste streams that do not contain VOC's [sic]. The HWFP currently allows for the application of statistical headspace gas sampling and analysis requirements when characterizing waste streams that have no VOC-related hazardous waste numbers assigned or which have undergone thermal processing...This PMR proposes a headspace gas characterization process for a specific debris waste stream (sealed sources) that is very similar to those allowances previously approved. This PMR establishes specific criteria for the assignment of headspace gas VOC concentration values in lieu of headspace gas sampling and analysis for the characterization of containers belonging to LANL sealed sources waste streams.

The "allowance for statistical headspace sampling and analysis when characterizing waste streams that have no VOC-related hazardous waste number assigned" still requires representative sampling across each of these waste streams (homogeneous and thermally treated). The argument presented is one that supports using a similar statistically-based representative sampling process to those used for high-heat processed wastes, but statistical sampling of the waste is not what is proposed in this PMR.

Comment 8. The second, and final, argument presented to show why this PMR was necessary stated that (p. 4):

> Subsequent to the events of September 11, 2001, and based on homeland security concerns the DOE and the U.S. Congress have identified significant risk associated with the large number of excess and unsecured sealed sources remaining in the environment and have directed the DOE to accelerate recovery and disposition of the known backlog of sealed sources...

The PMR does not address how headspace gas sampling and analysis for the relatively small proportion of "the large number of excess and unsecured sealed sources remaining in the environment" that meet the standards for WIPP disposal have significantly impeded the task assigned to the DOE. Thus, this second argument does not tie the removal of a sample-and-analysis requirement to the events of September 11, 2001.

Neither this argument nor the one discussed in the previous comment provide any substantive statement as to why the HWFP modification is needed. Arguments based on the practical grounds that seem to have been the impetus for this PMR–that headspace gas sampling and analysis of sealed sources adds complication as well as time and cost considerations to the waste characterization processes for these wastes, and that the well-authenticated records for the sealed sources demonstrate beyond a reasonable doubt that the sources will not emit significant levels of VOCs–would have been more to the point, and thus more effective. NMED may want to consider whether or not the non-substantive arguments presented in this PMR are sufficient to establish the necessity for implementing this, or future, proposed modifications.

Comment 9. This PMR eliminates headspace gas sampling of sealed source waste containers, and offers a process for assigning VOC values for these containers based on analysis of packaging material samples. It is the waste, however, not the packaging, that a Hazardous Waste Facility Permit (and the regulations behind it) is meant to address. Thus, data packages should emphasize that the waste qualifies for the exemption, rather than substituting average packaging VOC values that the PMR text accentuates. The following sub-comments suggest areas in the permittee-proposed changes where an emphasis on the assignment of waste containers and waste streams should be added. However, there may be other portions of the HWFP not addressed by the Permittees that should be altered.

Comment 9.a. Text changes include the addition of the following statement to Section B-3a(1) of the HWFP (text change a.2, p. B-2, of the Item):

> Los Alamos National Laboratory (LANL) sealed sources waste containers that meet specified conditions must be assigned VOC concentration values in accordance with Section B-3a(1)(iii).

The "specified conditions" that are to be met are also listed in Section B-3a(1)(iii). The statement might be better rendered to note the following:

> LANL waste containers that meet the conditions specified in Section B-3a(1)(iii) for sealed source containers are to be assigned VOC concentration values as directed in Section B-3a(1)(iii).

This same comment also applies to the identical wording found in text change a.4, page B-5; change a.5, page B-5; change a.6, page B-6; change b.1, page B-12; and change c.1, on page B-13. Slightly modified, the comment also applies to footnotes "a" in Table B3-12 (text change c.5, p. B-18) and Table B3-13 (text change c.6, p. B-19).

Comment 9.b. The proposed text to be added as Section B-3a(1)(iii) ends with the statement (text change a.3, p. B-4):

> The assignment of VOC concentration values for qualifying waste containers belonging to LANL sealed sources waste streams must be directed as documented and approved in the LANL QAPjP.

This requirement may not be a particularly useful addition to the HWFP, unless NMED is also to be a direct participant in the review and approval of the LANL QAPjP and its changes. A more appropriate statement would be along the lines of:

> The LANL QAPjP shall specify a process to be used for the assignment of VOC concentration values for LANL sealed source waste streams that is in accordance with the methods described in this section.

An assumption in this proposed statement is that there is a clear establishment of what qualifies as a "LANL sealed source waste stream" already in the HWFP (see previous comment).

Comment 9.c. The Item 3 text change to Table B-6; Summary of Parameters, Characterization Methods, and Rationale For CH Transuranic Mixed Waste (Newly Generated Waste), states in two places for debris wastes that the "Method" is to be (pp. B-8 and B-10):

> 100% gas sampling and analysis, <u>statistical sampling or assignment of VOC concentrations</u>[a] (see Table B-3)

Double underlining is used to indicate proposed changes in text, and the term "statistical sampling" does not occur equivalently in the Table in the January 30, 2003 version of the HWFP. The "statistical sampling" term apparently refers to the statistical sampling process allowed for non-sealed source waste streams as specified in HWFP Section B-3a(1). If so, this portion of the proposed text change is unrelated to the purpose of either Item 3 or any other portion of this PMR, and there is no explanation as to why this change is needed as is required by 40 CFR 270.42(b)(1)(iii). While the addition appears to be useful it does not appear that it should have been a part of this PMR.

EEG noted this addition late in the review process and has not conducted a detailed comparison of the changes in this Item (or of other parts of this PMR) to the text in the current HWFP. There may be other instances of such unwarranted changes and NMED may want to establish the

consistency of the proposed changes in this PMR to the PMR's expressed purposes, and to the current HWFP, prior to approving the request.

Another issue regarding Table B-6 is that it appears that it is duplicated internally, with slight differences. That is, in Item 3 pages B-9 and B-10 are nearly exact duplicates of pages B-7 and B-8. However, this is an accurate reflection of the January 30, 2003 version of the HWFP, where pages B-46 and page B-47 are also nearly exact duplicates of pages B-44 and B-45. The near-duplication is unnecessary, and EEG recommends that during the next revision of the HWFP the NMED note the differences between the two near-copies, determine which is more appropriate, and eliminate the duplicated portions from Table B-6 to prevent possible confusion.

Comment 9.d. The Item 3 proposed text change for Section B3-10b(1) B3-10b(1) Site Project QA Officer, adds the following text in relation to the verification and validation of data package activities required of the SPQAO (p. B-14):

> For LANL sealed sources waste streams, the quality control provisions for VOC source term development were properly implemented in accordance with Permit Attachment B, Section B-3a(1)(iii).

The proposed Section B-3a(1)(iii) does not designate any "quality control provisions for VOC source term development". The NMED may want to ensure that the HWFP includes a clear requirement concerning SPQAO review, which should include verification that the containers designated as part of "LANL sealed sources waste streams" meet the requirement for inclusion in these waste streams, and verification that the headspace gas values have been properly developed, as specified in Section B-3a(1)(iii).

Comment 9.e. The Item 3 text change for Section B3-10b(2), Site Project Manager, adds the following text in relation to the final validation of data package activities supplied by the SPM (p. B-14):

> For LANL sealed sources waste streams, the VOC source term was properly developed and used in accordance with Permit Attachment B, Section B-3a(1)(iii).

The SPM validation should also cover the assignment of containers to the sealed source waste streams that are exempt from waste headspace gas sampling and analysis.

An alternate, and perhaps better, location for adding the requirement for the SPM may be in Section B3-11a, Reconciliation at the Project Level, where a series of bullets require "...each Site Project Manager to determine if sufficient data have been collected to determine the following WAP-required waste parameters...".

Item 4
Removal of Formaldehyde as a Required Analytical Parameter for LANL

A requirement to analyze LANL solids samples for formaldehyde was included in the HWFP apparently based on the possibility of formaldehyde in a debris (rather than solids) TRU waste stream at LANL. The permittees seek to remove the requirement because there has been no evidence found in the LANL records that indicate a likelihood of formaldehyde in the containers being sampled (solids containers), and the analysis is resource-intensive. Based on the information provided there does not appear to be a necessity for performing formaldehyde analysis of LANL solids.

However, the process used for removing the requirement in this PMR might be questionable. A textbook provided at a DOE-sponsored training session in Carlsbad the week of June 2-6, 2003 titled *McCoy's RCRA Unraveled* (Section 2.6.7, Delisting Petition, p. 68) states:

> EPA requires the use of the [Toxicity Characteristic Leaching Procedure] TCLP for all testing used to support delisting petitions submitted under §§261.20 and 260.22. For all delisting demonstrations, the agency requires that the TCLP be used to predict the leaching potential of any inorganic and organic constituents listed in Appendix VIII to Part 261.

The permittees appear to be requesting a "delisting" based on re-submitted acceptable knowledge, rather than testing data from the TCLP. NMED may not view this Item as a "delisting" process, however, if it does, then the NMED may want to consider whether or not the EPA's requirement should also be applied under the HWFP.

Item 5
Add New hazardous Waste Numbers
(D033, P030, P098, P099, P106, U003, U103 and U108)

EEG understands that the waste streams containing the compounds identified in this PMR have been treated at the Rocky Flats Environmental Technology Site (RFETS) using ultra-violet (UV) light or alkaline chlorination methods. Item 5 would add several Hazardous Waste Numbers (HWNs) to the HWFP so that additional RFETS wastes can be received at the WIPP. The PMR points out that all but one of these are listed wastes (soluble cyanide salts, potassium cyanide, potassium silver cyanide, sodium cyanide, acetonitrile, dimethyl sulfate, and 1,4-dioxane; EPA HWNs P030, P098, P099, P106, U003, U103, and U108) for which RFETS has treated the waste to eliminate or at least reduced these compounds to trace amounts. There has apparently been no treatment for the single non-listed addition, hexaclorobutadiene (D033).

Comment 1. The fourth paragraph on page 3 of the PMR states:

> The treatment of organic compounds and cyanides employing UV oxidation and/or alkaline chlorination resulted in organic compounds or cyanides being treated sufficiently to meet the LDR (land use restrictions) standards...

It is not clear that both the organic compounds and the cyanides were treated sufficiently to meet LDR standards. NMED may want to have this statement clarified.

Comment 2. Item 5 adds the listed HWNs to the HWFP (Table II.C.4; Item change a.1, pp. B-3 and B-4) for all sites, not just RFETS. That RFETS has treated the listed wastes proposed in this PMR that it will be sending does not ensure that the same compounds will not be shipped to the WIPP from other sites, perhaps in appreciable amounts (see Comment 3 following). The NMED may want to consider whether additional limitations on the receipt of waste with the proposed listed HWNs might be appropriate.

Comment 3. Item 5 indicates that all of the proposed listed wastes will be in the same waste stream or waste streams. The proposed changes to Attachment O (an amended Part A permit application) in Item 5 indicates that 344 metric tons of listed wastes containing each of the proposed HWNs is expected to be shipped annually (Item change b.1, p. 6 of the Part A form). There may be a failure to properly add the information to Attachment O because the instructions (p. 5 of the Part A form) state that when hazardous wastes are described by more than one EPA hazardous waste number; the initial HWN entry is to contain the estimated annual quantity, the unit of measure, and the processing steps (columns B, C, and D); but the succeeding HWN entries are to simply state "included with above". NMED may want to ensure that the data has been properly entered into Attachment O prior to accepting this PMR.

Comment 4. The proposed change to Attachment O in Item 5 also shows that 344 metric tons of hexachlorobutadiene-containing wastes are also to be expected at the WIPP annually. The U.S. Department of Health and Human Services publication *Toxicological Profile for Hexachlorobutadiene* (May, 1994; pp. 102 and 103) shows relatively low limits for the chemical in air (ACGIH TWA of 0.02 ppm, and OSHA TWAs of 0.02 ppm or 0.24 mg m^3). Given the toxicity and quantities, NMED may want to consider whether or not adding hexachlorobutadiene to the disposal room limits, and to the waste confirmation requirements for volatile and/or semivolatile compounds, needs additional study prior to accepting this HWN.