Hazardous Waste Permit for Los Alamos National Laboratory
Technical Area 63 Transuranic Waste Facility
Draft Permit
Responses to Comments
December 20, 2013

I. Department's Use of 40 Code of Federal Regulations (CFR) § 270.32(b)(2)

> Comment: *Where NMED-HWB has utilized the regulation and deems it to be appropriate, the following text should be added: "(see 40 CFR 270.32(b)(2))."*

The Department agrees that where the authority supporting a permit condition is 40 CFR § 270.32(b)(2) it should be cited. The Department has cited this authority in several instances in Permit Section 3.14, and has added a reference to the regulation where applicable.

II. Ignitable and Reactive Waste

> Comment: *The proposed addition to the permit text at Permit Section 2.8 is confusing. The boundary depicted in Figure 55 that defines the 15-m buffer limit is not the TA specific boundary but the fence line at the TWF. Therefore, the placement of the Figure reference in the sentence is not correct. This was the basis for LANL's proposal in the "Response to Disapproval, TA-63 Transuranic Waste Facility Permit Modification Request, Revision 2.0, Los Alamos National Laboratory" of October 1, 2012, that the figure not be added here to avoid confusion. The requirement for a 15 meter boundary from the fence line at the TA-63 TWF, rather than the technical area boundary creates an inconsistency within the Permit when compared to other container storage units covered by the Permit. If the reference is required here, LANL proposes that a sentence be added instead that stipulates the boundary correctly. The proposed sentence is: "The 15 meter boundary from the permitted unit fence line for the TWF at TA-63 is shown in Figure 55."*

The Department agrees with this comment and has revised Permit Section 2.8 to clarify that the 15 meter boundary at the TWF is from the fence line, not the technical area specific boundary, as shown in Figure 55.

The Department has revised the first paragraph of Permit Section 2.8 as follows:

> "The Permittees shall manage ignitable, reactive, and incompatible hazardous wastes in containers and tanks in compliance with the requirements of 40 CFR §§ 264.17, 264.176, 264.177, 264.198, and 264.199, which are incorporated herein by reference, and Permit Parts 3 and 4. The Permittees shall ensure that containers holding ignitable or reactive wastes are located at least 15 meters from the facility boundary defined as the technical area (TA) specific boundary identified in Figures 11, 22, 24, and 38~~, and 55~~ in Permit

> Attachment N (*Figures*). At TA-63, the Permittees shall ensure that containers holding ignitable or reactive waste are located at least 15 meters from the TWF fence line, as shown in Figure 55 in Permit Attachment N (*Figures*). (*see* 40 CFR §§ 264.176 and 270.32(b)(2)).”

III. Storage Prohibitions at the Transuranic Waste Facility (TWF)

A. Closed Containers

> Comment: *The included storage prohibition in Permit Section 3.14.1(3) is not appropriate and is inconsistent with waste management procedures at other permitted container storage units. The TWF is intended to store additional waste types such as mixed low level waste and hazardous-only waste. Such waste types will not be vented.*

The Department disagrees with this comment with respect to the prohibition on managing open containers at the TWF. The Department agrees that not all containers managed at the TWF will be equipped with filter vents.

In Attachment G of the permit modification request (PMR), the Permittees proposed the following text be included in Permit Attachment A, Section A.6.1: "Waste containers will only be accepted at the TWF if they are closed and equipped with [Waste Isolation Pilot Plant (WIPP)] approved filter vents. Waste containers will not be opened during characterization nor while in storage although their filter vents may be replaced if necessary."

The Department agrees with the proposed prohibition on opening containers at the TWF, and the additional requirement that transuranic (TRU) and mixed TRU containers must be equipped with filter vents, is appropriate. The Department also believes it is more appropriate to include this requirement in Permit Part 3 instead of Attachment A.

Nevertheless, the Department recognizes that the Permittees may store some containers that do not require filter vents (e.g., mixed low-level waste, or hazardous only waste). The Department therefore has added a qualifier to the requirement, providing that the Permittees may only accept TRU and mixed TRU waste containers at the TWF if they are closed and equipped with WIPP approved filter vents. Therefore, the Department has revised Permit Section 3.14.1(3), under the authority of 40 CFR § 270.32(b)(2), as follows:

> "The Permittees shall only accept TRU and mixed TRU waste containers at the TWF if they are closed and equipped with ~~Waste Isolation Pilot Plant (WIPP) approved~~ filter vents approved for containers destined for the Waste Isolation Pilot Plant. The Permittees shall not open waste containers during storage or characterization at the TWF, although

the Permittees may replace filter vents on TRU and mixed TRU waste containers if necessary (*see* 40 CFR § 270.32(b)(2)).”

B. Site Treatment Plan (STP)-Covered Waste

Comment: *The included storage prohibition on STP-covered waste in Permit Section 3.14.1(4).c is not appropriate. The TWF is intended to store additional waste types such as MLLW and hazardous-only waste. In addition, the prohibition on STP-covered waste is in conflict with the provisions of 40 CFR §268.50(c) and the Federal Facilities Compliance Act.*

The language in the Fact Sheet states that “…NMED’s rationale for prohibiting STP covered waste is that the Permittees’ Fiscal Year 2011 STP Update commits to removing all STP covered waste at LANL by 2014. The purpose of the TWF is storage and characterization of newly generated TRU waste for shipment to and disposal at WIPP. Therefore, NMED proposes the prohibition of storage of hazardous and mixed waste that has been stored at LANL for more than one year, i.e., STP-covered waste.…”

Review of the indicated STP update document (LANL, 2011a) does not appear to substantiate the statement regarding STP commitments. Several types of waste streams are mentioned that have 2013 and 2014 compliance dates for treatment and/or removal but this schedule does not apply for any other waste type including TRU waste that would be potentially managed by this facility.

LANL compliance with RCRA’s one-year prohibition of storage for Land Disposal Restrictions (LDR) mixed wastes under RCRA §3004(j) and 40 CFR §268.50(c) is already addressed by the Federal Facility Compliance Act (FFCA), under the NMED-HWB-issued Federal Facility Compliance Order (FFCO, October 4, 1995), and the STP implementing the FFCO. The STP is an enforceable document authorized through the provisions of the FFCO. The STP documents the agreements between the State of New Mexico and the Permittees regarding the schedule and disposition of waste subject to the FFCO. The FFCO requires LANL to identify covered waste in the STP, and covered wastes are identified as “all mixed waste at LANL, regardless of time generated,” including newly discovered, identified, generated, or received from off-site …” (FFCO, §§5A, 6). Therefore, the proposed text is inconsistent with the STP and should be deleted.

LANL may store newly-generated LDR restricted mixed wastes longer than one year as long as it is in compliance with the FFCO and STP, therefore a requirement that all newly-generated TRU waste be shipped to WIPP within one year of the date it is generated would conflict with FFCO provisions.

The Department recognizes that the LANL Fiscal Year 2011 STP Update does not commit to remove all Site Treatment Plan (STP) covered waste at LANL by 2014. The Department also recognizes the issues created by the STP waste prohibition in regard to the definition of *covered waste* in the Federal Facility Compliance Order (FFCO), as LANL notes. Nevertheless, an integral component of the TWF's purpose, as stated by LANL throughout its PMR, and specifically at Section 1.2, is to "replace the TRU waste storage and characterization capabilities currently located at Area G" and to "provide[ ] the necessary capacity for management of *newly generated* TRU waste to allow the closure of Area G in a timely and integrated manner." (Emphasis added). This integral purpose as indicated throughout LANL's PMR, its Comments on the Draft Permit and throughout the record justifies NMED's decision to include prescriptive storage prohibitions limiting the TWF to handling newly generated waste.

The Permittees' stated purpose for the TWF justifies the storage prohibitions imposed by NMED in the final permit. In addition to Section 1.2 of the PMR, cited above, the Permittees state the purpose of the TWF consistently throughout the record as follows:

- Section 1.2 of the PMR states: "The TWF will replace the TRU waste storage and characterization capabilities currently located at Area G. The TWF provides the necessary capacity for management of newly generated TRU waste to allow the closure of Area G in a timely and integrated manner."
- Section 1.3 states: "The TWF is intended to replace the TRU waste storage currently taking place at TA-54 Area G."
- Section 2.2 states: "The primary purpose of the TWF is two-fold: first, safe indoor storage of TRU waste newly generated by LANL operations. Second, waste containers stored at the TWF will be subject to characterization including review of generator documentation, gas sampling, and non-intrusive radioassay."
- Section 2.2.7 of the PMR states: "The primary function of the TWF is to safely receive, inspect, handle, characterize, certify, store, and ship newly generated TRU waste containers to other LANL facilities for additional waste management activities or for off-site disposition."
- Section 2.2.7.3 of the PMR states: "Newly-generated TRU waste containers are primarily characterized by [acceptable knowledge (AK)] and may go through a certified visual examination (VE) process at the waste generator location (e.g., TA-55) before being transported to the TWF."
- Slide 9 of the presentation given at the August 10, 2011 Pre-submittal meeting (Attachment H of the PMR) states: "Waste management capability is required to continue to process newly generated (future) TRU waste from LANL to the Waste Isolation Pilot Plant near Carlsbad, NM."

- The Permittees' July 12, 2012 response to Comment 5 of the Department's May 24, 2012 Disapproval Letter, states: "The function of the TWF is to store newly generated waste (1) at LANL for further disposition at LANL or off-site hazardous waste management facilities and (2) to characterize that waste for compliance with WIPP waste acceptance procedures (See Section 2.2 and 2.2.7)."

Distilled, the primary purpose of the TWF is to store and characterize newly generated TRU waste from LANL operations, replace the TRU waste storage and characterization currently taking place at TA-54 Area G, and to process newly generated TRU waste from LANL for disposition at the WIPP and for shipment to other LANL or off-site facilities for additional waste management activities. Therefore, the imposed storage prohibitions in the final permit are justified and provide assurance that the TWF facility, when operable, will achieve and not deviate from its stated purpose.

Further, there is a need to remove all STP-covered waste currently stored at TA-54, Area G, for proper treatment and/or disposal as quickly as possible in order to meet the clean-up deadlines in the Order on Consent. The Order on Consent requires Area G to be cleaned up by December 2015. The TWF will not be operational until late 2016, at the earliest, and therefore all waste at Area G should be sent for off-site treatment and/or disposal prior to the time that the TWF becomes operational. The final permit language waste prohibition ensures that only newly generated waste will be allowed at the TWF.

In accordance with section 20.4.1.901.A(4) NMAC, the Department met with the Permittees in June 2013 to attempt to resolve the Permittees' concerns and as a response to their request for hearing, about the TWF prohibition of storage of waste covered by the STP. The Department has decided to replace the prohibition on storage of STP-covered waste with a prohibition on storage of mixed waste generated prior to December 31, 2015, as indicated and supported above. The Department believes this expansive prohibition on storage of such waste is appropriate and consistent with the stated purpose of the TWF, and that it is protective of human health and the environment. The Department has revised the storage prohibition at Permit Section 3.14.1(4).c, under the authority of 40 CFR § 270.32(b)(2), as incorporated by 20.4.1.900 NMAC as follows:

> "~~Waste that is or has ever been part of the Site Treatment Plan (STP) inventory~~ Mixed waste generated prior to December 31 2015."

C. Containers not Acceptable for Shipment to WIPP

> Comment: *The included storage prohibition in Permit Sections 3.14.1(4).d and A.6 will limit safer storage options associated with the [Oversize Waste Boxes (OWBs)]. Permit Section 3.3 lists the conditions for acceptable containers for all container storage units covered by the Permit.*

The Fact Sheet states that the NMED-HWB's rationale for proposing to prohibit storage of OWBs is that they are not approved for shipment and disposal at WIPP and the purpose of the TWF is to store and characterize newly generated TRU waste for shipment to and disposal at WIPP. This description of the unit's purpose is not consistent with the stated mission of the TWF as contained in Section 1.2 of the PMR. The mission description in that section includes the statement that the TWF will replace the TRU waste storage and characterization capabilities currently located at TA-54 Area G, which include storage of wastes that potentially have other disposition pathways. To illustrate this, Section 2.2 of the PMR describing the TA-63 TWF states that the TWF will provide storage in containers for TRU waste, including the hazardous component of mixed TRU (MTRU) waste and, potentially, mixed low-level waste streams (MLLW). Some TRU waste containers may be determined through the final waste characterization carried out in the waste characterization trailers not to meet the WIPP requirements for TRU waste. Depending on the presence of hazardous constituents, these waste containers will be reclassified as either low-level radioactive waste or mixed low-level waste and stored at the TWF until they can be dispositioned appropriately. Such activity may include temporary storage prior to shipment to other LANL facilities as a component of the broader TRU waste management program at LANL (e.g. repackaging at the TA-50 Waste Characterization, Reduction, and Repackaging Facility (WCRRF)). The TWF may also manage hazardous-only waste streams generated on site. Therefore, the overall storage capabilities at the TWF are intended to include waste types in addition to MTRU waste as a potential result of waste characterization activities at the sire, to assist with options for the orderly management of other MTRU waste containers that cannot be immediately certified for WIPP due to needs such as packaging, and for waste generated through routine operations at the site.

Additionally, the prohibition may potentially limit safer storage of waste in OWBs at LANL. Currently, storage of OWBs at the TA-55 permitted units is approved in the Permit, including storage on the TA-55 Outside Storage Pad subject to the conditions for such storage in the Permit. The ability to manage or campaign (e.g., accumulate sufficient containers for the purpose of efficient repackaging) these types of containers in the protected storage conditions of the TWF, prior to shipment and management at other LANL waste management facilities, is a potentially safer storage option and should not be prohibited.

> *Currently, storage of OWBs at the TA-55 permitted units is approved in the Permit, including storage on the TA-55 Outside Storage Pad subject to the conditions for such storage in the Permit. The ability to manage or campaign (e.g., accumulate sufficient containers for the purpose of efficient repackaging) these types of containers in the protected storage conditions of the TWF, prior to shipment and management at other LANL waste management facilities, is a potentially safer storage option and should not be prohibited.*

NMED agrees that the purpose of the TWF includes more than storing and characterizing newly generated TRU waste for shipment to and disposal at WIPP. The distilled purpose of the TWF, as stated above in Part III.B., is to store and characterize newly generated TRU waste generated from LANL operations, replace the TRU waste storage and characterization currently taking place at TA-54 Area G, and to process newly generated TRU waste from LANL for disposition at the WIPP and for shipment to other LANL or off-site facilities for additional waste management activities. Section 2.2 of the PMR does state that the "TWF will consist of one waste management unit that will provide storage in containers for TRU waste, including the hazardous component of MTRU waste and, potentially, mixed low-level waste streams." Also, LANL did state in its Response to Notice of Disapproval, TA-63 Transuranic Waste Facility Permit Modification Request, Rev. 1, LANL, July 2012, at Comment 5, that, "In some cases, the TWF might receive a container for storage that is an OWB and not WIPP-compliant; although no repackaging will occur at TWF, these containers must be stored at the facility while awaiting further disposition (e.g., sending back to the generator or for management at other LANL hazardous waste management facilities)."

Nevertheless, NMED has determined that a waste prohibition limiting LANL's ability to store OWBs at the TWF is appropriate. The revised prohibition at Permit Section 3.14.1(4).c, discussed in Section III.B., above, will ensure that only OWBs generated after December 31, 2015, will be stored at the TWF, and thus will allow the Permittees to store TRU waste at the TWF newly generated from LANL operations and packaged in OWBs after that date, but disallow the TWF from becoming a storage site for legacy waste contained in OWBs.

In accordance with section 20.4.1.901.A(4) NMAC, the Department met with the Permittees to attempt to resolve the Permittees' concerns about the prohibition of storage of oversize waste boxes at the TWF that warranted their request for hearing. Based on the Permittees' comments, and the justification for the final permit waste prohibitions, above, the Department has eliminated Permit Section 3.14.1(4).d, prohibiting storage of containers that are not acceptable for shipment to WIPP (e.g., OWBs) at the TWF, and replaced it with the expansive prohibition on mixed waste generated prior to December 31, 2015. Again, the Department believes the

prohibition on storage of such waste is appropriate and consistent with the stated purpose of the TWF, and that it is protective of human health and the environment.

The Department has also revised the following language in Permit Attachment A, Section A.6, for consistency:

> "The types of waste containers holding hazardous or mixed waste that are stored at the TWF include: 55- and 85-gallon drums; 55-gallon pipe overpack containers (POCs); Standard Waste Boxes (SWBs); Oversize Waste Boxes (OWBs); and Standard Large Box 2s (SLB2s). ~~Oversized Waste Boxes (OWBs) are not stored at the TWF.~~"

IV. Retention Basin

A. Secondary Containment

> Comment: *The language used in PMR Section 2.2.1 regarding the use of the retention basin as containment in accordance with 40 CFR § 264.175(b) is in error and is not consistent with the discussion regarding secondary containment pallets in PMR Section 2.5.4 and in Permit Section 3.14.1(1). Secondary containment at the TWF is primarily afforded by the pallets. The Permittees suggest the following sentence be deleted: "The retention basin at the TWF is a secondary containment system as described in Permit Section 3.7, Containment Systems."*

In response to the Permittees' comment, the Department has removed the statement that the retention basin is a secondary containment system because secondary containment pallets will be used at the TWF. Permit Section 3.14.2 has been revised as follows:

> "~~The retention basin at the TWF is a secondary containment system as described in Permit Section 3.7, Containment Systems.~~ The Permittees shall inspect the retention basin as required by Permit Section 2.6, General Inspection Requirements, and in accordance with Permit Attachment E, *Inspection Plan*, for evidence of contamination and deterioration during each inspection. The Permittees shall record inspection results and any remediation in the Operating Record. Any decontamination of the retention basin will be subject to the provisions of Permit Attachment D, *Contingency Plan*."

The Department has revised the description in Section A.6 as follows:

> "The retention basin ~~serves as a secondary containment system, as described in Permit Section 3.7, Containment Systems, and~~ is designed to capture storm water run-off and fire suppression water released in the event of a fire at the TWF, as described in Permit Section A.6.5."

The Department has revised the description in Section A.6.5 as follows:

> "The retention basin ~~functions as a secondary containment system and also~~ is designed to collect surface storm water or melt water run-off from the concrete pavement via the slope (nominally 2%) of the concrete pad, and in the event of a fire at the unit, fire suppression water that could flow out of the storage buildings or from other unit structures to the concrete pad."

The Department has revised the description in Section A.6.9 as follows:

> "The secondary containment provided by ~~the retention basin and by~~ secondary containment pallets has sufficient capacity to contain at least 10 % of the volume of containers or the volume of the largest container stored in the system, whichever is greater, pursuant to the requirements of 40 CFR § 264.175(b)(3) and Permit Section 3.7, *Containment Systems*."

B. Management of Water Collected in the Retention Basin

> Comment: *The Permittees proposed addition of the following sentence to paragraph 1 of Permit Section 3.14.2 to clarify the primary purpose of the retention basin:*
>
> - *"The retention basin will manage storm water to MSGP standards, unless there is a need for prevention of releases in the case of a contamination event."*

The Department deleted the first sentence of Permit Section 3.14.2, which stated that the retention basin is a containment system, thus clarifying that the primary purpose of the retention basin is not containment. The Permittees may manage storm water collected in the basin in accordance with the *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (Multi-Sector Permit), but only *after* they determine the storm water is not hazardous waste and is not contaminated with hazardous waste constituents. If hazardous waste or hazardous waste constituents are present, the storm water must be managed in accordance with the Hazardous Waste Permit.

Proposed Permit Section 3.14.2 is unchanged from the Draft Permit, and states:

> "The Permittees shall inspect the retention basin as required by Permit Section 2.6, *General Inspection Requirements*, and in accordance with Permit Attachment E, *Inspection Plan*, for evidence of contamination and deterioration during each inspection."

The first paragraph of proposed Permit Section 3.14.2(1) is unchanged from the Draft Permit, and states:

> "Run-off collected in the retention basin shall be evaluated before discharge. If the run-off is known to be or potentially contaminated with hazardous waste constituents from a spill, leak, or other release, it shall be sampled."
>
> Comment: *The Permittees suggest revision of the sentence referencing the Contingency Plan in Permit Section 3.14.2 to clarify the point at which it is implemented, as follows:*
>
> - *"Any decontamination of the retention basin will be subject to the provisions of Permit Attachment D, Contingency Plan upon implementation during a contamination event (i.e., fires, spills, explosions or non-sudden releases)."*

If the Permittees' evaluation or inspection determines that only routine storm water entered the basin (i.e., the storm water is not contaminated), the Permittees must simply manage the storm water in accordance with the Multi-Sector Permit. If, however, the storm water contains hazardous waste or hazardous constituents, the Permittees must, in addition, manage the storm water in accordance with certain conditions of the Hazardous Waste Permit.

Thus, based on the Permittees' comment, and because the retention basin will not be considered a containment system, the Department has revised the second paragraph of Permit Section 3.14.2(1) to require that the Contingency Plan be implemented when contamination is discovered in the retention basin, as follows:

> "If the run-off present in the retention basin is determined to be hazardous waste, the Permittees shall implement Attachment D, *Contingency Plan*, and manage ~~remove~~ the waste ~~water~~ spill as required by Permit Section ~~3.7.1(2)~~D.4."
>
> Comment: *The Permittees suggest adding clarification to the MSGP management provision by stipulating hazardous waste constituents and that monitoring conditions subject to the MSGP are not identical to RCRA hazardous waste characterization requirements, as follows:*
>
> - *"If the Permittees determine that the storm water is not contaminated with hazardous waste constituents, the Permittees shall monitor and manage the storm water in accordance with The Multi-Sector General Permit For Stormwater Discharges Associated with Industrial Activity (MSGP) for the facility."*
>
> *The citation to Permit Section 11.4 in the last sentence of Part 3.14.2 should be revised to be Permit Section 11.4.3 to clarify the reference to the standards for water cleanup discussed in the sentence.*

Although the terms "hazardous constituents" and "hazardous waste constituents" are often used interchangeably, the Department agrees with the commenters that it is preferable to require the Permittees to determine whether storm water collected in the basin is contaminated with hazardous *waste* constituents. This term is clearer and consistent with the definition in 40 CFR § 260.10. The Department has revised the third and fourth paragraphs of Permit Section 3.14.2(1) to make this clarification. It has also included the more specific reference to Permit Section 11.4.3:

> "If the Permittees determine that the storm water is not hazardous waste, but that it is contaminated with hazardous waste constituents, the Permittees shall ensure the storm water meets the applicable clean-up requirements in Permit Section 11.4.3, Surface Water Clean-up Levels, prior to discharge.
>
> If the Permittees determine that the storm water is not contaminated with hazardous waste constituents, the Permittees shall manage the storm water in accordance with *The Multi-Sector General Permit For Stormwater Discharges Associated with Industrial Activity* (MSGP) for the facility."
>
> Comment: *Suggest replacement of Permit Section 3.14.2 with:*
>
> - *"The Permittees shall inspect the retention basin at the TA-63 TWF at least weekly for fluids. All liquid within the retention basin should be removed and managed as storm water in accordance with the Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) if it is determined that no hazardous waste constituents could reasonably be present with the liquid (i.e. there have been no spills at the unit or all spills have been managed in accordance with Permit Section 2.10.4 or 2.11.1). If the fluid within the retention basin is the result of a fire suppression system release, the Permittees shall include a record of the evacuation in the Facility's Operating Record including a complete chemical analysis of the fluid."*

The Department has revised proposed Permit Section 3.14.2(2) to require the Permittees to manage fire suppression water collected in the retention basin as required by the Contingency Plan if the fire suppression water collected in the retention basin is determined to be a hazardous waste. This change was necessary because the retention basin is not a containment system:

> "Within 24 hours of a fire event, the Permittees shall collect a sample of fire suppression water collected in the retention basin and analyze it for any hazardous waste constituents managed at the facility. If the fire suppression water present in the retention basin is determined to be hazardous waste, the Permittees shall manage ~~remove~~ the waste water

as required by Attachment D, *Contingency Plan* ~~Permit Section 3.7.1(2)~~. The Permittees shall use the analytical results, together with information from the Operating Record, to characterize the water in accordance with Permit Attachment C, Waste Analysis Plan. The Permittees shall record the type and quantity of waste water present in the retention basin, the date of the incident, and the date of removal of the waste water in the Operating Record.

If the Permittees determine that the fire suppression water is not a hazardous waste, the Permittees shall ensure the water meets the applicable clean-up requirements in Permit Section 11.4.3, Surface Water Clean-up Levels, prior to discharge."

It should be noted that if there is a fire event at the TWF, the Permittees will have already implemented the Contingency Plan. The revised language clarifies that the Permittees must manage fire suppression water determined to be hazardous waste in accordance with Section D.4 of the Contingency Plan.

V. Subsurface Vapor Monitoring

A. New Monitoring Network Requirements

Comment: *The NMED-HWB proposes significant and extensive new requirements relating to soil vapor monitoring for Material Disposal Area (MDA) C at draft Permit Section 3.14.3 and Attachment A.6.10. In July 2012, the Permittees voluntarily proposed to conduct soil vapor-monitoring to provide additional characterization information and to enhance the ability to detect vapor plume constituents at MDA C by installing two new vapor-monitoring wells and using data from an existing well. Permittees' proposed this well-monitoring program in Comment 30 of the Response to Notice of Disapproval including Figure 4-2 in Attachment E specifically as part of LANL's Corrective Action Program because the MDA C vapor plume is the source of potential soil vapor constituents at TWF (see Response to the Disapproval, TA-63 Transuranic Waste Facility Permit Modification Request, Revision 1.0, Los Alamos National Laboratory, dated July 12, 2012 (LANL, 2012b). The MDA C vapor monitoring program was also described in Section 4.2.2, Corrective Action, of Revision 1.0 of the PMR (LANL, 2012a). In the draft Permit, the NMED-HWB moved these requirements from the corrective action portion of the PMR, created new Permit Section 3.14.3, and added the following new requirements: (1) the installation of a total of five (5) (i.e., three additional) new vapor-monitoring wells, (2) additional sampling requirements, (3) required methodology to determine soil gas screening levels, (4) additional actions if constituents in the vapor-monitoring wells are detected that exceed screening levels; and (5) significant consequences (including cessation of TWF operations) if the additional actions cannot be completed.*

For the reasons set forth below, the Permittees respectfully do not agree that these additional requirements at Section 3.14.3 are technically supported or appropriate under

> *NMED's regulations. First, the NMED-HWB's record (including the Fact Sheet) contains no technical basis to justify the imposition of these new permit requirements which will entail numerous additional and costly soil vapor-monitoring well requirements. Indeed, the Agency did not provide the Permittees' any prior notice of these new conditions before issuance of the draft Permit in contravention of its own rules. Second, the Permittees are fully committed and agree with the need to continue monitoring the MDA C vapor plume, including specifically, the evaluation of whether plume migration would result in potential exposure to workers requiring remediation. The Permittees believe, however, that the appropriate mechanism to accomplish any corrective actions is through the 2005 Compliance Order on Consent ("Consent Order") corrective action processes. The most recent sampling and data interpretation conducted under Consent Order investigations concluded that the MDA C vapor plume does not pose a threat to the health of LANL workers nor will it pose a threat to workers during construction of the proposed facilities. Under these facts, there is no technical support to include the additional and costly proposed requirements for soil vapor-monitoring at MDA C associated with the TWF.*

The Department disagrees with several portions of the Permittees' comment.

First, the Department does not agree with the Permittees' claim that, "the Permittees voluntarily proposed to conduct soil vapor-monitoring . . . ." Later in the comments, the Permittees state, "On May 24, 2012, the NMED-HWB issued a Disapproval letter (NMED, 2012b) for the TWF review that included comments regarding the MDA C plume. These included a requirement to 'propose the installation of a monitoring network capable of detecting contaminant migration toward the TWF from the MDA C vapor plume in order to prevent completion of exposure pathways to the TWF structures or other potential receptor locations . . . ." The statement that the Permittees voluntarily proposed to conduct soil vapor-monitoring is not accurate.

Second, the Department does not agree with the Permittees' claim that "NMED-HWB's record (including the Fact Sheet) contains no technical basis to justify the imposition of these new permit requirements . . . ." In the Department's February 1, 2012 Notice of Deficiency, the Permittees were required to address the issue of the MDA C vapor plume below the proposed TWF site. The Permittees utilized inaccurate modeling results and conclusions to negate the possible impacts of the MDA C vapor plume to the TWF. The Department documented these inaccuracies in the May 24, 2012 Disapproval letter and discussed them with the Permittees in their May 31, 2012 meeting. The Permittees, after being made fully aware of the inaccuracies of their modeling and conclusions, continued to use this misinformation as justification to ignore the vapor plume below the TWF site. The Department's justification is, and has always been, that the Permittees are constructing the TWF above the leading edge of an advancing vapor plume of volatile organic compounds. The Permittees had various other siting options, but chose to build the TWF at the proposed location.

Third, the Department does not agree that "the Agency did not provide the Permittees' any prior notice of these new conditions before issuance of the draft Permit in contravention of its own rules." The Permittees were notified that soil vapor monitoring would be required at the site in various meetings throughout 2012 and in the May 24, 2012 Disapproval letter.

In addition, the Department does not agree with the Permittees' most recent data interpretation or conclusions referred to above, as these were based on data averages over the past several years versus the maximum data values that have been reported in recent sampling results. Sampling results indicate that the VOC plume is migrating in the direction of the TWF and that high levels of various constituents are present in vapor samples collected at shallow (25 feet (ft) and 99 ft below ground surface (bgs)) depths. Analytical results from sampling events at MDA C have discredited the Permittees' data interpretation and modeling.

The Department has clarified the requirements in Section 3.14.3 of the permit by adding to the paragraph of that section the following requirement:

> "[t]he Permittees shall monitor subsurface vapors to evaluate for releases from Material Disposal Area (MDA) C. If soil vapors are determined to present a potential risk to on-site personnel, then the Permittees shall initiate corrective action as necessary to protect human health."

B. Overall Issues with Draft Permit Section 3.14.3

> Comment: *1. The Investigation of the MDA C Vapor Plume Is Regulated Under the Consent Order. In order to impose these new Resource Conservation and Recovery Act (RCRA) permit conditions, the NMED-HWB must technically justify how these requirements are necessary to achieve compliance with specific requirements under 40 CFR Part 264, and further, the new RCRA permit requirements cannot duplicate or conflict with the Consent Order. The Consent Order specifically states that it is the "sole" mechanism and only enforceable document for establishing and enforcing corrective action requirements for Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) at LANL (Consent Order, Section III.W.2). The Consent Order also states that the "RCRA permit will not include any corrective action requirements, nor any other requirement that is duplicative of the Consent Order (Section III.W.4)." Section 11.1 of the revised Permit is consistent with the Consent Order and states that NMED and the Permittees have agreed to the Consent Order which requires the Permittees to conduct corrective action at all SWMUs and AOCs at LANL to fulfill the requirements of 40 CFR §264.101. The Consent Order is an enforceable document pursuant to 40 CFR §264.90(f), §264.110(c), and as defined in 40 CFR §270.1(c)(7).*

Under the Consent Order, MDA C is designated as SWMU 50-009 and is required to be investigated and, as necessary, remediated pursuant to the New Mexico Hazardous Waste Act and RCRA. Pursuant to the Consent Order investigations, LANL determined that the MDA C vapor plume represents a "release from the SWMU" and is subject to the corrective action processes under the Consent Order. The Consent Order includes specific corrective action requirements for the MDA C vapor plume including site investigation of the release of hazardous constituents in soil vapor from MDA C and risk evaluations to determine whether or not there is a substantiated risk to human health and the environment. The potential remediation of the plume may also remove or minimize that assessed risk from the release. For example, a remediation option such as soil vapor extraction may significantly reduce or eliminate the source of the soil gas vapor at the site. Based on this process, the Permittees completed Consent Order investigation activities for MDA C and in September 2012 submitted for NMED approval, a Corrective Measures Evaluation report (LANL, 2012c) to NMED that presents a recommended remediation alternative for the site.

For these reasons, the draft Permit Section 3.14.3 requirement for soil vapor monitoring at MDA C is duplicative and in conflict with the established Consent Order process. MDA C is the source of the vapor plume – this existing plume could not represent a "release" from waste management activities at TWF. As such, any requirement for soil vapor-monitoring wells in the Permit must necessarily be regulated under the Consent Order as the Permittees included at TWF PMR (LANL, 2012b) Section 4.2.14 (which specifically acknowledged that this monitoring and any potential remediation of the MDA C soil vapor monitoring plume would be addressed in the Consent Order). This monitoring, in turn, will determine whether the plume necessitates remediation to address any potential to worker safety at TWF.

The discussion below summarizes the history of investigation for the MDA C and the determination of potential risk to workers as it has related to the TWF PMR.

2. Consent Order Investigations and History of MDA C

On July 15, 2011, the Phase III Investigation Report for Material Disposal Area C, Solid Waste Management Unit 50-009 at Technical Area 50 (Phase III IR) (EP2011-0223) (LANL, 2011b) was submitted by LANL to the NMED and subsequently approved by the NMED on December 8, 2011. The report discussed the sampling performed to define a vapor plume made up of volatile organic compounds (VOCs) beneath MDA C. In particular, the concentration data for the most prevalent VOC, trichloroethylene (TCE), was modeled to illustrate the shape and extent of the vapor plume. The model indicated that the boundary of the soil vapor plume extended to a position under the proposed TWF site.

The Phase III IR incorporated the results of the human-health risk screening evaluation presented in the October 2009 Phase II investigation report for MDA C (LANL, 2009). This evaluation concluded that contaminant releases from MDA C did not pose an unacceptable risk to human health under current conditions. The risk screening evaluation identified work exposure to vapor-phase contaminants from MDA C as a potentially complete exposure pathway but characterized the resulting risk as very low. The potential for exposure of LANL workers in the vicinity of MDA C to unacceptable concentrations of contaminants from the vapor plume was subsequently evaluated in more detail in response to comments from the public. The mean subsurface vapor concentrations of all the constituents in the plume were compared to the time-weighted threshold limit values (TLVs) defined by the American Conference of Governmental Industrial Hygienists (ACGIH). The time-weighted average TLV represents the level to which it is believed a worker can be exposed daily during an entire career, based on an 8 hour day and 40 hours worked each week, without adverse health effects. The TLVs are guidelines that the ACGIH considers to be either as or more protective than the regulatory limits set by the Occupational Health and Safety Administration (OSHA). Pursuant to 10 CFR §851.23(a)(9), the ACGIH TLVs (2005 edition) are applicable standards for protection of workers at LANL.

A total of 28 VOCs were detected in samples from the most recent sampling event reported in the Phase III IR. The maximum concentration of each constituent was compared to its respective TLV and only TCE exceeded its TLV. The maximum of the two-year average vapor-phase concentrations of all detected constituents were also compared to their respective TLVs and only TCE exceeds its TLV. The TLV for airborne TCE is 10 parts per million (ppm), a standard that is more stringent than OSHA's permissible exposure limit of 100 ppm. Based on two years of averaged quarterly vapor monitoring, TCE concentrations at MDA C exceed the TLV at depths of 200 to 300 feet below ground surface, with a maximum of 118% of the TLV. However, TCE concentrations have been determined to be significantly lower than the TLV at the ground surface and at 20 feet below the surface. This distribution of concentrations is consistent with the conceptual model presented in the Phase III IR. As described by this conceptual model, vapors are transported by diffusion radially outward from the center of the plume, resulting in concentration gradients with concentrations decreasing with distance from the center of the plume.

LANL presented the results of this evaluation in a supplementary report describing the nature and extent of the MDA C vapor plume situated near the proposed TWF waste management site. This supplementary report was included as Attachment D of the Response to Notice of Deficiency Administrative Completeness and Fee Assessment, TA-63 Transuranic Waste Facility

Permit Modification Request of April 16, 2012 (LANL, 2012a). The report was titled "The Vapor Plume at Material Disposal Area C in Relation to Pajarito Corridor Facilities." The report used a series of maps and cross sections illustrating the modeled concentrations of TCE to address public concerns raised about the proximity of the vapor plume at MDA C in a public information meeting for the TWF on August 10, 2012. The report concluded that sampling and data interpretation indicate that the vapor plume does not pose a threat to the health of LANL workers nor will it pose a threat to workers during construction of the proposed facilities. The public cannot be directly exposed to the vapor plume beneath MDA C because the plume is located in an area of the Laboratory that is closed to the public.

On May 24, 2012, the NMED-HWB issued a Disapproval letter (NMED, 2012b) for the TWF review that included comments regarding the MDA C plume. These included a requirement to "propose the installation of a monitoring network capable of detecting contaminant migration toward the TWF from the MDA C vapor plume in order to prevent completion of exposure pathways to the TWF structures or other potential receptor locations..." The Disapproval also included several comments related to the Attachment D report. These included a critique of the application of average data concentration values for evaluating the TLV concentrations rather than maximum values, the absence of more recent sampling data, and discussion of surface concentrations of VOCs that did not correspond with subsurface data. Significantly, the Disapproval did not provide comments regarding whether the use of TLV concentrations was inappropriate. Nor did the Disapproval suggest the proposal of additional elements such as subsequent actions if the monitoring network indicated TLVs were exceeded. The Disapproval notice also examined the vapor plume discussion from the point of view of the application of the model for the entire area rather than extrapolating the specific effects at the TWF location on the border of the plume.

As discussed above, in July 2012, the Permittees proposed a soil vapor monitoring network with two new wells and an existing MDA C monitoring well to detect MDA C vapor plume constituents (see Comment 30, Response to the Disapproval, (LANL 2012b)). The new wells were proposed to be situated in the area north of Puye Road in order to place them between the central source in the MDA C vapor plume and the nearest boundaries of the TWF. Consistent with the conceptual model presented in the Phase III IR, the locations were to provide monitoring data in-line with the source of the vapor plume and potential receptor sites at the TWF to meet the requirement for a monitoring network capable of detecting contaminant migration toward the TWF from the MDA C vapor plume. The use of the existing well was proposed to provide data closer to the soil vapor source and supplement investigation of the expected concentration gradient. The Permittees proposed 25 and 60 foot sampling depths and six month sampling intervals to be consistent with MDA C corrective action schedules. They also

requested a meeting with the NMED-HWB to further discuss details of the soil vapor monitoring network. This request was repeated in a subsequent letter submittal of December 6, 2012 (LANL, 2012e). The NMED-HWB did not respond to the requests for additional discussion.

Subsequent to submittal of the Phase III IR, LANL conducted two additional vapor monitoring events at MDA C. Results from the first of these events, conducted in March and April 2012, were included in the Corrective Measures Evaluation report for MDA C, submitted to the NMED on September 28, 2012 (LANL, 2012c). Results from the most recent event, conducted in October and November 2012, are presented in Attachment 1 of this submittal. These results show a general decrease in concentrations from the previous event. No VOC concentrations from the most recent event exceeded TLVs.

3. The Permit Conditions Duplicate and Conflict with OSHA Worker Safety Standards.

The required actions contained in draft Permit Section 3.14.3 are duplicative and redundant with industrial hygiene programs that will be applied for worker protection at the TWF. LANL implements OSHA worker protection requirements as contained in 29 CFR Part 1910, including 1910.94 Ventilation, 1910.120 Hazardous Waste Operations, and 1910 Subpart Z Toxic and Hazardous Substances, as applicable. These include a safety and health program for employee protection that includes site analysis, potential engineering controls, and maximum exposure limits. As stated previously, 10 CFR Part 851, Worker Safety and Health Program, for DOE sites requires and establishes the use of the ACGIH TLVs for determining worker protection standards and occupational exposure levels at 10 CFR §851.23. Additionally, 29 CFR §1910.120(a)(2)(iii)(A) states that the provisions for operations conducted under RCRA (paragraph (p)) apply to "..any treatment, storage or disposal (TSD) operation regulated by 40 CFR parts 264 and 265 or by state law authorized under RCRA, and required to have a permit or interim status from EPA (sic., U.S. Environmental Protection Agency) pursuant to 40 CFR §270.1 or from a state agency pursuant to RCRA…"

4. NMED-HWB Does Not Provide Sufficient Technical Support In its Record to Justify Imposition of Three New Monitoring Wells or to Support Additional Requirements in Draft Permit Section 3.14.3.

The NMED rules require that if HWB intends to impose permit conditions in a draft permit upon an applicant, it must be based on the record and be accompanied by a fact sheet to the draft permit that explains the significant factual, legal and methodological issue in the draft permit, and including a summary of the basis for the draft permit conditions including references to

applicable statutory or regulatory provision (20.4.901.D NMAC, incorporating 40 CFR §124.8). The purpose of this requirement, as explained by the EPA, is to "provide a mechanism that helps the permittee and other interested parties understand how and why limits, conditions, and requirements" are derived and to ensure meaningful public comment. In its fact sheet, the NMED-HWB justifies the imposition of the new Permit Section 3.14.3 based on the following:

> *NMED has proposed requirements … to install a subsurface vapor monitoring network consisting of a minimum of five vapor monitoring wells between MDA-C and the buildings located within the TWF facility to evaluate for vapor-phase contaminants that may migrate from MDA-C. The purpose of the vapor monitoring network is to prevent worker exposure to potentially harmful levels of volatile organic compounds and tritium at TWF. NMED has also proposed language in Permit Section 3.14.3 requiring baseline sampling, a schedule of ongoing sampling, a method for calculating action levels, and actions the Permittees must take if constituents are detected above any of the action levels.*

These three sentences fall far short of providing the Permittees sufficient detail to understand the technical basis of the new requirements. Merely stating that the NMED-HWB requires "five" soil vapor-monitoring wells to be installed without any justification or explanation as to why the "two" that were proposed were insufficient makes it impossible to provide meaningful comment. In addition, NMED-HWB does not indicate or explain how these activities would not conflict with ongoing activities under the Consent Order related to the MDA C vapor plume. Likewise, no technical explanation is provided for imposing enforceable permit conditions requiring imposition of SGSLs or criteria developed from guidance documents, as discussed below, that address technically different circumstances.

In the final permit, the Department is not requiring any further investigation or specific corrective action measures to be taken for MDA C. The Department is only requiring soil vapor monitoring related to vapor intrusion into TWF buildings for protection of human health and the environment under 40 CFR 270.32(b)(2), incorporated by 20.4.1.900 NMAC. The Department agrees that corrective action for the VOC plume from MDA C can be addressed under the Consent Order. However, the monitoring and possible future corrective action required in the final permit address specific releases of contaminants within or in close proximity to the TWF, an operating, permitted unit that may be triggered from SVM well readings. Therefore, the Department has determined that it is appropriate to identify and address these releases, at least initially, under the permit.

The Department agrees that the October 2009 Phase II investigation report concluded that contaminant releases from MDA C did not pose an unacceptable risk to human health under conditions existing at the time. Since this report was written, conditions at the site have changed. High level vapor phase contamination has been detected in one of the shallow monitoring ports (25 ft bgs), which is at approximately the same elevation as the TWF ground surface and whose location is directly connected to the TWF location via highly transmissive utility corridors.

The Department does not agree with using mean concentrations for comparison to standards. Maximum detected concentrations should be used for comparison to standards as the maximums represent the potential concentrations to which humans could be exposed.

The Department also does not agree with the use of American Conference of Governmental Hygienists' time-weighted threshold limit values (TLVs) for comparison purposes. TLVs have been established under the Occupational Safety and Health Act for workplace safety and health. The goals of OSHA are distinct from the goals of the hazardous waste laws. The purpose of the Hazardous Waste Act – and the Permit – is to protect human health and the environment through, among other things, corrective action based on assessment of risk. In contrast, OSHA establishes standards for occupational safety and health. TLVs are non-regulatory guidelines that are developed using a combination of scientific (toxicological) data and professional judgment, but are not developed using explicit risk-based methodologies. TLVs cannot be equated to a specific risk level, such as a cancer risk of 1E-05 (1×10^{-5}) or non-cancer hazard index of 1.0. Thus, they cannot be used to demonstrate that risks to human health are within target risk levels, or that risks are serious enough to trigger corrective action under either the permit or the Consent Order. Use of TLVs to demonstrate adequacy of protection of human health under the intent of a hazardous waste permit is not valid; rather, acceptable risk-based methodology must be applied. The Department recognizes that internal LANL policy may include monitoring for OSHA compliance (note that permissible exposure limits (PELs) are evaluated under OSHA), as stated in Permittees' comments Section II.B.3, but OSHA compliance or monitoring for OSHA compliance does not substitute for compliance with hazardous waste corrective action requirements for protection of human health and the environment.

The Department disagrees with the findings the Permittees cited in the report "The Vapor Plume at Material Disposal Area C in Relation to Pajarito Corridor Facilities" (2012 MDA C Vapor Plume Report). In the 2012 MDA C Vapor Plume Report, the Permittees stated, "[b]ased on two years of quarterly vapor monitoring, TCE [trichloroethylene] concentrations at MDA C exceed the TLV at depths of 200 to 300 ft below ground surface, with a maximum of 118% of the TLV."

Analysis of soil vapor monitoring samples from monitoring well 50-24813 collected on April 25, 2011 indicates that TCE concentrations at both 25 ft bgs and 99 ft bgs are 173% of the TLV. Monitoring Well 50-24813 lies adjacent to the Pajarito Road utility corridor which extends along both the northern and southwestern boundaries of the TWF. Utility corridors have proven to provide fast moving transport pathways for VOC contamination. The detected TCE concentrations in samples obtained from this monitoring well at 25 ft bgs increased over sevenfold in approximately four months, illustrating the rapid movement and of the VOC plume. Concentrations at monitoring well 50-24813 have decreased in recent samples, but remain at 96% of the TLV at 99 ft bgs. The variability in concentration over time indicates that VOCs are moving through the subsurface.

The Department does not accept the Permittees' model results as a significant factor in its decision to require vapor monitoring. These results have been proven inaccurate through unbiased analytical laboratory analyses of environmental samples. Inconsistencies and inaccuracies in the 2012 MDA C Vapor Plume Report were documented in a Notice of Disapproval sent to the Permittees on May 24, 2012 and discussed in the May 31, 2012 meeting with the Permittees. They include:

- The modeled plume does not correlate to the available data and therefore is not appropriate for use with regard to health and safety.

- In the 2012 MDA C Vapor Plume Report, the Permittees refer to "measured surface concentrations of TCE" and "surface measurements." The Department's administrative record does not contain any record of measurements of TCE collected at the ground surface at MDA C.

- The modeled plume for TCE vapor-phase contamination at MDA C does not include more recent high concentration TCE results from sampling the MDA C vapor monitoring wells. Figure 4 of the 2012 MDA C Vapor Plume Report presents a modeled plume that does not correlate with actual field measurements.

- Sampling events at MDA C report concentrations of TCE between 25 and 99-ft bgs to be 173% of the TLV. As the Permittees stated in the 2012 MDA C Vapor Plume Report, "[t]he steepest concentration gradients are upward toward the surface, which leads to preferential VOC transport toward the mesa top and yields releases to the atmosphere." Based on this observation, it is unlikely that the modeled concentration of TCE would decrease from 93,000 µg/m^3 at 25 ft bgs to 16,110 µg/m^3 at 5 ft bgs, a distance of only 20 ft.

- In the 2012 MDA C Vapor Plume Report, the Permittees state "[t]he modeled plume at this depth (24 feet) indicates that the highest concentration of TCE would be around 50% of the TLV in the southeastern corner of MDA C." Data from sampling events at MDA C lists TCE levels in the southeastern corner of MDA C at a depth of 25 feet as 173% of TLV.

- The estimates of anticipated TCE vapor concentrations do not correspond to the available data; therefore, the model as presented does not provide support for the Permittees' conclusions.

The Permittees' 2012 MDA C Vapor Plume Report and any conclusions derived from modeling do not accurately reflect site conditions and cannot be considered in the Department's decision-making process.

The two new monitoring wells proposed by the Permittees, as well as the existing well, were situated several hundred feet away from the TWF. These locations would not provide adequate protection of human health in the vicinity of the TWF on their own. EPA draft guidance on monitoring for vapor intrusion specifies that monitoring wells should be located as close to the buildings in question as is possible. The requirement for monitoring wells located in close proximity to the TWF buildings was discussed with the Permittees in a meeting on May 31, 2012, following issuance of NMED's May 24, 2012 Disapproval Letter, TA-63 Transuranic Waste Facility PMR Revision 1.0.

The Department does not agree that "the permit conditions duplicate and conflict with OSHA worker safety standards." The purpose of the RCRA part B permit is to ensure protection of human health and the environment through assessment of risk and need for corrective action, whereas OSHA establishes standards for occupational safety and health. The permit language has been revised to establish that the purpose of the subsurface vapor monitoring is to protect human health. In addition, OSHA does not provide any inspection or oversight of operations at DOE facilities.

The Department does not agree that the Fact Sheet does not contain adequate justification for imposing the vapor monitoring and specifically five vapor monitoring wells (VMW) at the TWF. The five VMWs are located within the existing vapor plume delineation as defined by investigations associated with MDA C conducted by the Permittees. As previously stated, the fact that the Permittees are building the TWF on the surface above an active soil vapor contamination plume is clearly adequate justification for monitoring for indications of soil vapor intrusion into the TWF buildings under 40 CFR 270.32(b)(2), incorporated by 20.4.1.900 NMAC. And though the VMWs are not related to the primary purpose and function of the TWF,

they are necessary to protect human health and the environment under 40 CFR 270.32(b)(2), incorporated by 20.4.1.900 NMAC.

VMW-1, VMW-2, and VMW-3 are located near the boundary of the proposed TWF and in close proximity to the TWF buildings. The concern for these wells in close proximity to the buildings is the soil vapor concentrations near the foundations of the buildings that could be migrating into the building's breathing air. Therefore, the Department has reduced the required sampling ports in the three close proximity wells to one shallow port between 5 and 10 ft bgs in order to more thoroughly and effectively monitor for immediate threats to human health at the TWF. The depths for these locations will provide more information on immediate threats to human health warranting action than if the first port was located at 25 feet. VMW-4 and VMW-5 are located between the source area at MDA C and the TWF and will provide early warning indications when contamination vapors are at levels that may potentially pose a threat to human health. The Department has reduced the number of sampling ports from three to two for these wells and has relocated them to 25 and 60 ft bgs in order to provide a necessary vertical profile of soil vapor contamination. The Department determined that the 10 ft bgs sampling port in VMW-4 and VMW-5 would be too shallow to provide relevant information concerning the migration of contamination vapors towards the TWF based on the elevation of the VMWs location in relation to the surface of the TWF. The locations of the VMWs and the depths of the sampling ports can be found at Attachment A.6.10 and Figure 56, as cited in permit condition+ 3.14.3. Inclusion of these monitoring wells is necessary to evaluate potential exposures to humans and to assess whether corrective actions under the Consent Order may be required. The data from the VMWs allow assessment of human health risk to be conducted to evaluate whether corrective action is necessary. The use of the soil gas screening levels specified in permit condition 3.14.3, were included in the permit rather than TLVs because TLVs are not risk-based numbers nor do TLVs have regulatory status.

C. Specific Issues with Draft Permit Section 3.14.3

> Comment: *The following discussion addresses specific concerns with draft Permit Section 3.14.1, in the order presented in the section.*
>
> *1. Tritium Monitoring*
>
> *The second sentence of draft Permit Section 3.14.3 states that "[t]he Permittees shall monitor subsurface vapors to prevent worker exposure to potentially harmful levels of volatile organic compounds and tritium." This permit condition represents a change in the stated purpose of the monitoring network compared to the stated purpose originally presented in the NMED-HWB Disapproval discussion. As stated above, the Permittees do not oppose the goal for the purpose of the TWF project but the original proposal for the monitoring well network was*

seen as providing additional information regarding characterization of the site and assessment of the vapor plume rather than to specifically prevent worker exposure. Additionally, the inclusion of tritium as a constituent of concern as a RCRA permit condition is problematic. The presence of tritium in the plume is a result of releases from the MDA C SWMU rather than from waste management activities at the TWF. Tritium is not a RCRA regulated hazardous waste component. It is DOE policy to provide radionuclide data from investigations of SWMUs or AOCs as part of corrective action activities on a voluntary basis. Including this as a permit condition for a permitted hazardous waste management unit under the RCRA permit is not appropriate. This condition supports the need for coordination between the SWMU investigation activities at MDA C and TWF activities rather than as a separate permit condition.

Draft Permit Section 3.14.3 also refers to tritium as a "radionuclide tracer." While tritium may be a conservative tracer for certain contaminants being transported advectively in solution, it is not an effective tracer for transport by vapor diffusion. Vapor phase tritium (as tritiated water vapor) diffuses through vadose zone pore spaces more slowly than VOCs because it equilibrates with water in the pore space as it diffuses. Therefore, tritium would not arrive at the proposed vapor-monitoring wells sooner than VOCs, would not be an effective tracer, and there would be no benefit from monitoring for tritium for this purpose.

2. Threshold Concentration Values

Draft Permit Section 3.14.3 requires the Permittees to submit a "vapor monitoring work plan" to NMED-HWB for approval within 90 days after the effective date of the permit modification approval. An initial sampling schedule is set for two sampling activities within 15 and 60 days to establish baseline conditions in the vicinity of the TWF. The section establishes enforceable soil gas screening levels for all vapor phase constituents detected in the subsurface at MDA C. Action levels for these constituents are set for the lowest permissible Soil Gas Screening Levels (SGSLs). SGSL values are required to be calculated using EPA's risk-based indoor air screening levels for industrial workers (IARLs) and attenuation factors that are calculated as described in EPA's "User's Guide for Evaluating Subsurface Vapor Intrusion Into Buildings" (USEPA, 2004) and the State of California Department of Toxic Substances Control Vapor Intrusion Guidance (DTSC, 2011). The IARLs represent the maximum acceptable concentration to which industrial workers may be exposed and the attenuation factors represent the amount of attenuation/dilution that occurs from the point of measurement (i.e., the monitoring well) to the point of exposure (i.e., inside the building).

The Permittees do not believe that the incorporation of criteria from both the EPA and California guidance documents is appropriate to establish enforceable permit

conditions under these circumstances. First, neither of these guidance documents suggests or supports the use of the methodology proposed as an enforceable RCRA permit condition. Second, both guidance documents contain specific and various disclaimers for their potential use in evaluating soil vapor intrusion effects. For example, the EPA guide suggests that the presented model be used for locations at RCRA corrective action sites, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)/Superfund sites, and voluntary cleanup sites (Section 5). It also states that the guidance does not impose any requirements or obligations on the owners/operators of sites that may be contaminated and that the sources of authority and requirements for addressing subsurface vapor intrusion are the applicable and relevant statutes and regulations (page ii). The target concentrations for TCE, the main constituent of concern for MDA C, are subject to change and should be considered provisional values (page ix). The State of California guidance document states that the use of the guidance is "optional" as other technically sound approaches may be available and goes on to say that the guidance is not a regulation and does not impose any requirements or obligations on the regulated community (page 1).

Third, NMED-HWB has not previously expressed concerns with the use of the ACGIH TLV standards for determining whether unacceptable exposure to workers in the vicinity of the MDA C corrective action site is occurring. The Disapproval Notice of May 24, 2012 did not question the use of the TLV values for plume exposure evaluation but only the concentration values used as data for the subsequent modeling. Finally, as stated in the overall major concerns, NMED-HWB provides no technical basis or justification for imposing SGSLs based on IARLs rather than established occupational exposure standards. Neither the Fact Sheet nor any prior written document contains any technical or regulatory basis for including this as an enforceable permit condition.

3. Additional Actions

Draft Permit Section 3.14.3, last paragraph, contains additional actions the Permittees must take if constituents are detected above the action levels (i.e., lowest permissible SGSLs). These include notification of NMED-HWB within 24 hours of detection, continuous indoor air monitoring within all buildings of the TWF, adequate ventilation, worker respiratory protection, and worker exposure interim measures. If these additional actions cannot be complied with, operations at the TWF must cease until soil vapor levels decrease below the action levels.

One major problem with the additional actions appears to reside in the condition that triggers the actions. Although the SGSL calculations include attenuation factors that define the ratio of the concentration in the work place to the concentration at the point of measurement, these attenuation factors are based on

> *a number of assumptions that may not be appropriate for a facility such as TWF or relevant to the specific site. The only action that should reasonably be triggered by detection of a VOC in a vapor-monitoring well in excess of a SGSL should be to institute indoor air monitoring to determine the actual concentration to which workers are being exposed. Any further actions should be directed based on actual indoor air concentrations, in accordance with industrial hygiene practices.*
>
> *Additionally, the inclusion of permit requirements for actions to be taken in the event SGSLs are exceeded appears to establish corrective action requirements in the permit for releases of hazardous constituents from a SWMU. That is, a major option for reducing the concentration levels of detected VOCs would be remediation of the source. As discussed previously, this would be inconsistent with Section III.W.2 of the Consent Order. Any potential corrective actions resulting from monitoring the MDA C plume must be directed through the Consent Order rather than the permit.*

The Department does not agree with the Permittees' arguments regarding the monitoring of subsurface vapors for tritium. However, the Department realizes that it may not be possible to determine the source of tritium should it be detected in subsurface vapor samples, thereby minimizing its usefulness as a tracer. The Department has therefore removed the requirement to analyze subsurface vapor samples for tritium.

The Department does not agree with the Permittees' arguments regarding the use of EPA and California guidance documents. The Department has revised the method for referencing these documents by including the citation within the Permit text. The Department does not agree that TLVs are appropriate for reasons stated in Section B above.

Specific requirements for corrective action should a soil gas screening level be exceeded are not included in the permit based on the concerns raised by the Permittees in the above comments. Section 3.14.3 of the final Permit states:

> "If sample results, reported in accordance with Permit Section 11.10.3, indicate that volatile organic constituents are present at concentrations above soil gas screening levels in any of the vapor detection network wells, the Permittees must:
>
> (1) Notify NMED in writing within 24 hours of detection;
>
> (2) Resample the wells as soon as is practicable within ten business days to confirm results. Confirmatory samples must be processed on a rush basis at the analytical laboratory;

(3) If the confirmatory analytical sample results verify the accuracy of the initial sample results, the Permittees must notify NMED in writing within 24 hours of confirmation in order to discuss whether subsurface mitigation measures are required to protect human health.

The Respondents shall notify the Department in writing within fifteen days after review of the analytical data if the data indicate any of the following:

(1) Detection of a contaminant in a vapor monitoring well if that contaminant has not previously been detected in the well.

(2) Detection of a contaminant in a vapor monitoring well at a concentration that exceeds one-half the soil gas screening level, if that contaminant has not previously exceeded one-half such screening level in the well.

(3) Detection of a contaminant in a vapor monitoring well at a concentration that exceeds one-half the soil gas screening level and that has increased for the third consecutive sampling of that well."

D. Phased Approach to Monitoring and Subsequent Actions

Comment: *For the above reasons, the Permittees request that the NMED-HWB incorporate its proposed language for soil-vapor monitoring as described in Comment 30 of the July 12, 2012 Response to Notice of Disapproval (LANL 2012b) with the following changes: the Permittees will implement the soil vapor monitoring network as a phased approach and in coordination with the corrective action activities associated with SWMU 50-009. In the first phase, two soil vapor monitoring wells will be installed at the locations shown for Wells VMW-4 and VMW-5 on the west side of Puye Road as shown in Figure 56, Permit Attachment N, Figures, of the Draft Permit. Initial sampling for the newly installed wells shall occur within 30 days after installation, and will be used to establish subsurface baseline conditions in the vicinity of the TWF. Soil vapor concentrations of the constituents in the plume will be compared to the TLVs defined by the ACGIH, and samples results will be used to indicate the potential for worker exposure.*

Sampling activities would be coordinated with the sampling conducted under the provisions of the corrective action program at MDA C. This would prevent duplication of effort and ensure that any data collected is assessed in coordination with the existing corrective action program and in reference to the site concentration model. The sampling schedule would therefore be on the

current corrective action program six month sampling approach rather than the accelerated schedule suggested in the proposed Permit Section 3.14.3.

A second phase will be triggered if TLV concentrations are exceeded in either of the two new wells proposed by the Permittees. In this event, this may indicate a higher potential for worker exposure to soil vapor VOCs down gradient at the TWF. As previously described, VOCs are diffusively transported from locations of high concentration (i.e., beneath MDA C) to locations of low concentration. Therefore, from a technical standpoint it is clear that concentrations in excess of TLV action levels would be detected at the two new wells proposed by the Permittees before they would be detected under the location of the TWF. If VOCs are detected at the two new wells proposed by the Permittees but do not exceed TLV values, worker exposure at TLV or higher levels would not reasonably be expected at the TWF locations further from the vapor source. For this reason, there is no basis to require the construction of additional costly wells as suggested by NMED-HWB.

In the second phase, if the TLV concentrations are exceeded as described above, the TWF would be required to comply with and implement worker protection standards under OSHA (29 CFR 1910) and DOE Rules (10 CFR 851). These requirements would necessarily duplicate many of the proposed permit conditions suggested by NMED-HWB in the new permit section: the requirement to conduct continuous indoor air monitoring at the TWF; provide adequate ventilation; and specific OSHA-driven requirements for workers to utilize appropriate respirator protection along with interim measures. For these reasons, the Permittees have suggested a revision to the Permit condition to provide NMED-HWB a written notice within 5 days; however, the remaining draft provisions have been deleted. The technical and regulatory basis for deleting the NMED-HWB provisions is that in the event of a TLV exceedance, the appropriate legal and regulatory mechanism to require specific measures to protect worker safety at TWF is pursuant to OSHA and DOE authorities and standards, and not this RCRA Permit.

The Department does not agree with the Permittees' proposed phased approach to monitoring. The VMWs near the TWF buildings are an important component in the determination of potential issues related to vapor intrusion into the TWF buildings. Monitoring data from MDA C VMWs has indicated the need for vapor monitoring in close proximity to the TWF buildings. The Department requires that all five subsurface vapor monitoring wells are installed prior to the commencement of operations at the TWF. The Department has removed many of the

requirements regarding actions should a screening level be exceeded and instead has required discussions between the Permittees and the Department to evaluate appropriate action to address the exceedances. The actions required in the draft permit may not be applicable in all situations involving an exceedance of a screening level in a VMW; therefore, the appropriate action is to evaluate an exceedance on a case by case basis and then decide the logical path forward.

VI. Description of the TWF

A. Editorial and Conforming Changes

Based on comments received from the Permittees, the Department has made the following changes in Attachment A. Most of these changes are relatively minor editorial revisions and corrections and changes to conform to changes to the permit discussed elsewhere in this Response to Comments.

Section A.6:

- "The following section describes the ~~transuranic (TRU) waste storage facility~~ Transuranic Waste Facility (TWF)."
- "~~The closest buildings are shops immediately north of Puye Road, Office Building 63-111, records storage buildings immediately east of the TWF location, and buildings and structures on Pecos Drive further north of the TWF.~~"
- "The types of waste containers holding hazardous or mixed waste that are stored at the TWF include: 55- and 85-gallon drums; 55-gallon pipe overpack containers (POCs); Standard Waste Boxes (SWBs); Oversize Waste Boxes (OWBs); and Standard Large Box 2s (SLB2s). ~~Oversized Waste Boxes (OWBs) are not stored at the TWF.~~"
- "The unit also includes a small storage building for calibration sources used for waste characterization activities~~, a covered forklift charging station, and an equipment storage shed~~. Outside the boundary of the unit ~~fence~~, other site structures include an operations support building, a fire water storage tank, ~~and~~ an associated utility building, a covered forklift charging station, and an equipment storage shed."
- "The retention basin ~~serves as a secondary containment system, as described in Permit Section 3.7, Containment Systems, and~~ is designed to capture storm water run-off and fire suppression water released in the event of a fire at the TWF, as described in Permit Section A.6.5."

Section A.6.1

- "Storm water and potentially contaminated fire suppression water ~~run-off~~ flow from the northern portion of the pad ~~flows~~ to the valley gutter that drains to the retention basin~~, providing containment for the site in accordance with 40 CFR §264.175(b)~~."

Section A.6.4

- "SuperHENC unit. The NDA equipment in the trailer is similar to the HENC but includes a high efficiency neutron counter and a gamma counter that are both designed to handle SWBs ~~and SLB2s~~."
- "The SuperHENC operates on the same principle as the HENC, within a similar tractor trailer. The process however, is applicable to the assay of TRU radionuclides in waste packages such as SWBs ~~and SLB2s~~."

Section A.6.5

- "The retention basin ~~functions as a secondary containment system and also~~ is designed to collect surface storm water or melt water run-off from the concrete pavement via the slope (nominally 2%) of the concrete pad, and in the event of a fire at the unit, fire suppression water that could flow out of the storage buildings or from other unit structures to the concrete pad."

Section A.6.6

- "An equipment storage shed used to store items such as metal pallets, containers used to over-pack waste containers, and snow removal equipment is located on the west side of the ~~unit~~ TWF."

Section A.6.7

- "The TWF is patrolled by ~~LANS~~ facility security personnel to prevent unauthorized entry ~~does not occur~~."

Section A.6.8

- "The facility monitor/control system is located in the access control station at the TWF; the system is also connected to the ~~LANL CAS~~ Los Alamos County Consolidated Dispatch Center."
- "Once manually activated, an alarm will sound in the TWF access control station and at the LAFD through ~~LANL's CAS~~ Los Alamos County Consolidated Dispatch Center."
- "All fire-alarm pull boxes and automatic fire-suppression systems located at the TWF are connected to the LAFD through ~~LANL's CAS~~ Los Alamos County Consolidated Dispatch Center."

Section A.6.9

- "The secondary containment provided by ~~the retention basin and by~~ secondary containment pallets has sufficient capacity to contain at least 10% of the volume of containers or the volume of the largest container stored in the system, whichever is greater, pursuant to the requirements of 40 CFR § 264.175(b)(3) and Permit Section 3.7, Containment Systems."

Section A.6.10

NMED revised the description of Subsurface Vapor Monitoring in Section A.6.10 to be consistent with Permit Section 3.14.3 as described in Section V (**Subsurface Vapor Monitoring**) above.

B. Fire suppression system design change

> Comment: *The design for a wet-pipe fire suppression system has been changed to a dry-pipe system for safety and freeze prevention considerations.*

This change would require revisions to figures submitted in the PMR; however, revised figures were not provided with the Permittees' comments, and therefore the Department recommends the Permittees submit the revised figures as a separate permit modification at a later date. No changes were incorporated into the final Permit based on this comment.

C. Use of "shall" and "must" in Attachment A

> Comment: *It is the Permittees' understanding that the Department, stakeholders, and the Permittees agreed during the permit negotiation process for the renewed LANL permit that the intent of Attachment A, Technical Area (TA) Unit Descriptions was to include descriptive text about the permitted units and not permit conditions or requirements. The requirements that have been proposed throughout Section A.6 should be moved to a more applicable section of the permit, particularly those using the terms "must" or "shall" in the discussion regarding soil vapor monitoring wells.*

The Department disagrees with this comment. All Attachments in the Permit are part of the Permit and may include mandatory requirements. Moreover, the attachments are often specifically referenced as requirements in the body of the permit. For example, Permit Section 3.1(1) provides that the Pemittees shall store and otherwise manage containers in accordance with Attachment A. In turn, Permit Section A.5.4 states: "The B45 permitted unit is used to store containers of hazardous and mixed waste that do not contain liquids." This provision is mandatory; it prohibits the Permittees from storing liquids in containers at that permitted unit. Another example is Permit Section 3.1(2), which prohibits the Permittees from storing containers

of hazardous waste in excess of the maximum capacities for each container storage unit identified in Attachment J, Table J-1. Thus, the storage capacities for each permitted unit listed in Attachment J, Table J-1 are mandatory and enforceable.

No changes were incorporated into the final Permit based on this comment.

VII. Attachment B

> Comment: *Revisions to Attachment B, Part A Application, of the Permit to incorporate the TWF information have been provided to supplement the draft Permit.*

The Permittees submitted a revised Part A Application on November 14, 2013. Because the Part A Form submitted with the Permittees' comments on the TWF PMR was based on an earlier version of the Part A Form, the Permittees must submit a revised Part A Form that incorporates the TWF within 30 days of approval of this PMR.

VIII. Attachment G.27

Tables

> Comment: *NMED-HWB has eliminated several tables previously contained in the PMR. These include Hazardous Waste Constituents of Concern at the Transuranic Waste Facility; Sample Containers, Preservation Techniques, and Holding Times; Summary of Analytical Methods; and Quality Control Sample Types, Applicable Analyses, Frequency, and Acceptance Criteria. This removal is not consistent with the format of all other approved closure plans in the Permit. It has been the Permittees understanding, based upon the negotiations prior to approval of the renewed Permit, that the Closure Plans be "stand-alone" and consistent.*

The Department did not propose to eliminate the table titled *Hazardous Waste Constituents of Concern at the Transuranic Waste Facility*. The Department has determined that several other tables included in the PMR are unnecessary until the operating record documents the type of waste managed at the TWF. The Department agrees that this appears to be inconsistent with the other closure plans in the Permit; however, the regulation at 40 CFR § 264.112(c) allows the Permittees "to amend the closure plan at any time prior to the notification of partial or final closure of the facility." Prior to closure, and once the operating record has determined the types of waste managed at the TWF, the Permittees will be required submit a permit modification to add the deleted tables to the closure plan.

No changes were made to the final Permit based on this comment.

Section 2.0

> Comment: *The storm water retention basin has been moved to: "STRUCTURES THAT HAVE MANAGED HAZARDOUS WASTE TO BE REMOVED AT CLOSURE:" from its original category: "OTHER TWF STRUCTURES TO BE REMOVED AT CLOSURE:" This change assumes that contamination of the retention basin will occur prior to implementation of the Closure Plan and/or that any contamination event will not be decontaminated to the provisions of the Permit Contingency Plan. This assumption is premature given the nature of the waste, the design of the facility, waste management procedures to be developed, and the future actual operating history of the unit to be shown in the Operating Record. The retention basin should not be considered for inclusion in the hazardous waste management structure category unless a contamination event that cannot be remediated has occurred.*

Based on comments received from the Permittees and discussions between the Department and the Permittees in accordance with section 20.4.1.901.A(4) NMAC, the Department has determined that the retention basin is not a containment system. The Department therefore has moved "Retention Basin" to the category "Other TWF Structures to Be Removed at Closure" in Attachment G.27, section 2.0 as follows:

> "STRUCTURES THAT HAVE MANAGED HAZARDOUS WASTE TO BE REMOVED AT CLOSURE:
>
> - Storage Buildings: 63-0149, 63-0150, 63-0151, 63-0152, and 63-0153
> - Storage and Characterization Building: 63-0154
> - Characterization Trailers: 63-0155, 63-0156, and 63-0156
> - Concrete Storage Pad
> - ~~Retention Basin~~
>
> "Six buildings are designated for storage of TRU and Mixed TRU wastes in support of LANL programs and missions. One of the storage structures is used for both storage of larger-sized waste containers and for head space gas sampling and analysis. Certification of containers in accordance with Waste Isolation Pilot Plant (WIPP) Waste Acceptance Criteria (WAC) occurs at three characterization and testing trailers. A concrete pad

underlies the storage and characterization buildings and trailers. The boundaries of the pad will be used to designate the RCRA-permitted portion of the TWF.

"OTHER TWF STRUCTURES TO BE REMOVED AT CLOSURE:

- Retention Basin

- Calibration Source and Matrix Module (CSMM) Building: 63-0158

The CSMM Building and the Retention Basin are the only structures that will be closed within the boundary of the TWF permitted hazardous waste management unit that are not used to manage hazardous waste."

Section 3.0

Comment: *The discussion has been modified to read: "The TWF shall not store a volume greater than 105,875 gallons of waste at any time for the lifetime of the facility." This is not the estimate of maximum waste managed over the course of the operating life of the facility as required by 40 CFR § 264.112(b) as previously given in the Closure Plan.*

Rescind the change and restore Table 1, Technical Area 63, TWF Storage Unit Capacities and Waste Categories.

The Department disagrees with this comment. The regulation at 40 CFR § 264.112(b)(3) states that the Closure Plan must include "An estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the facility…" The Permittees have provided an estimate of the total volume of waste that will be managed at the site during the operating life of the TWF. There is no requirement in 40 CFR § 264.112(b), or elsewhere in the regulations or the Hazardous Waste Act, to estimate the "maximum waste managed over the course of the operating life of the facility."

No changes were made to the Permit based on this comment.

Section 4.1

Comment: *The closure performance standards have been revised to incorporate the discussion in Permit Section 9.2.1 only. The Permittees propose that the first sentence be revised to reference the complete provisions of Permit Section 9.2 in order to retain the allowable options under that section of the Permit.*

Revise the first sentence to read: "In accordance with the provisions of ~~As required by~~ Permit Section 9.2, the permitted unit will be closed to meet the following performance standards:"

The Department disagrees with this comment. It is appropriate, especially given that the TWF is a newly constructed container storage facility, to require the Permittees to achieve the closure performance standards under Permit Section 9.2.1, *Clean Closure*. If, at the time of closure, the Department determines based on technical information and data that the Permittees cannot achieve clean closure, then Permit Part 10, *Post-Closure Care*, will be implemented.

No changes were made to the Permit based on this comment.

Section 5.0

Comment: NMED-HWB deleted the provision that the operating record review could commence earlier than the completion date condition in Permit Section 9.4.6.1. The Permittees request that the language be reinstated to the text in order to retain and clarify the ability to start the records review at an earlier date.

Revise the sentence: The procedures shall occur ~~proceed~~ in the sequence described in this section (5) although the operating record review described in Section 5.2.1 may be started earlier.

In response to this comment, the Department has revised the second sentence of Permit Attachment G.27, section 5.0 as follows:

"The procedures shall ~~proceed~~ occur in the sequence described in this section (5), although the operating record review described in Section 5.2.1 may be started earlier."

Section 5.1

Comment: *The following sentence has been deleted: "All hazardous waste containers will be moved to a permitted on-site storage unit or a permitted off-site treatment, storage, or disposal facility." This leaves WIPP as the only disposal option for all waste streams. As described in Comment 3, the potential exists that MLLW or hazardous waste containers may be present at TWF.*

Suggest reinstating the previously deleted sentence with the following revision: "All hazardous-only or MLLW waste containers will be moved to a permitted on-site storage unit or a permitted off-site treatment, storage, or disposal facility."

In response to this comment, the Department has added the following sentence at the end of Attachment G.27, section 5.1:

> "All hazardous-only or MLLW waste containers will be moved to a permitted on-site storage unit or a permitted off-site treatment, storage, or disposal facility."

Section 5.2.2

> Comment: The reference to Permit Section 11.10.2.5 in the last sentence of the section should be replaced in the closure plan. This section and the site surveying that it requires, is applicable to investigation activities that will not be necessary for a container storage unit where the operational lifetime of the unit is accounted for within the Operating Record. Identification of additional sampling locations during the structural assessment should be conducted in accordance with Permit Section 9.4.6.2 as required and sufficient for permitted unit closure under the Permit and stated at the beginning of the section.
>
> Suggest deleting the sentence: "~~The location of any additional sampling locations shall be determined in accordance with Permit Section 11.10.2.5.~~"

The Department disagrees with this comment. Permit Section 11.10.2.5 includes the methodology for surveying the sample locations if the structural assessment determines additional samples must be conducted. The Department has determined this is an appropriate method for surveying any additional sample locations identified by the structural assessment. No changes were made to the Permit in response to this comment.

Section 6.2.1

> Comment: *NMED-HWB deleted "if applicable" in the sentence describing sampling liquid in the drain of the retention basin. The condition cannot be met if no liquid is present at the time of closure.*
>
> *Suggest reinstating the term "if applicable."*

The Department disagrees with this comment. The requirement applies only to "*any* liquids present in the retention basin" (emphasis added). If there are no liquids present, it would not apply. Adding the words "if applicable" is nonsensical and confusing. No changes were made to the Permit in response to this comment.

Section 6.4.1

Comment: *The reference to Permit Section 11.10.3.6 is unclear as there is no section listed by that number in Part 11 of the Permit.*

Suggest removal of the Permit Section as follows: "The analytical laboratory shall perform the detailed qualitative and quantitative chemical analysis specified in Section 6.4.2 ~~and Permit Section 11.10.3.6~~."

The Department intended the reference to be 11.10.3 and has revised the second sentence in Attachment G.27, section 6.4.1 as follows:

"The analytical laboratory shall perform the detailed qualitative and quantitative chemical analyses ~~specified~~ in accordance with Section 6.4.2 and Permit Section 11.10.3 ~~11.10.3.6~~."

Section 6.4.2.1

Comment: *Replace the reference to Permit Section 11.10.2.9(4).*

Revise the first sentence of the section as follows: "The field QC samples that will be collected include trip blanks, field blanks, field duplicates, and equipment rinsate blanks as required by Permit Sections 9.4.7.1(8), 11.10.2.4.vii, and 11.10.2.9.~~iv~~(4)."

The Department intended the reference to be 11.10.2.9(4) and has revised the first sentence in Attachment G.27, section 6.4.2.1 as follows:

"The field QC samples that will be collected include trip blanks, field blanks, field duplicates, and equipment rinsate blanks as required by Permit Sections 9.4.7.1(8), 11.10.2.4.vii, and 11.10.2.9(4)~~11.10.2.9.iv~~."

Section 7.0

Comment: *Replace the reference to Table 6 if the table is not included in the closure plan.*

The Department intended the reference to be to Table G.27-2 and has revised the second sentence of the first paragraph of Attachment G.27, section 7.0 as follows:

"Closure activities may generate different types of waste materials, which are listed with potential disposal options in Table G.27-2~~6~~ of this closure plan."

Section 8.0

Comment: *The added permit condition regarding investigations set forth in Permit Section 11.12.3 is unclear. The referenced Permit Section regards the report format for Investigation Work Plans conducted under corrective action activities. Permit Section 9.5 containing closure report requirements for closure of permitted units does not include this condition nor has the basis for the inclusion of this permit condition in addition to the requirements of Permit Section 9.5 been explained. The list of items required by this section is limited to summarizations of "...all activities conducted during closure..." (emphasis added) rather than additional investigations associated with corrective action. The condition also does not describe the scope or location of investigations other than those that meet the reporting requirements set forth in Permit Section 11.12.3, which can be construed to mean all such investigations performed at LANL.*

Suggest deleting the requirement.

The Department has clarified the requirement in Attachment G.27, Section 8.0, Item 2, to require the closure certification report to follow the format of investigation reports set forth in Permit Section 11.12.3, as follows:

"2) the results of all investigations conducted during closure following the report format ~~that meets the reporting requirements~~ set forth in Permit Section 11.12.3;"

IX. Other Public Comments Received

Comment: *I have reviewed the Notice of Public Comment of January 14. I would not be able to attend a public hearing if called.*

I wish to express a general concern that reflects the position of many in the Eldorado area as well as my own: Any storage of radioactive and/or hazardous waste of any classification level in any kind of containment on the LANL property we consider an immediate threat to the lives of all downwind Santa Fe and Eldorado residents.

We protest that any handling, use, manufacture, experimentation with, storage or transport of waste of radioactive materials of any kind, from plutonium, a single molecule or atom of which constitutes a death threat, to low level lab rags that pass here on 285 in trucks is a direct threat in the event of accident or time deterioration or terrorist attack. A single serious breach, accident, careless

action could render Santa Fe, Eldorado and surrounding area and towns uninhabitable.

We intend to scan the community garden soil here in Eldorado before Spring planting for radiation from the Fukushima event from across the Pacific. Web maps of the spread of contamination from Fukushima showed clearly a very high level of readings in the entire northern section of New Mexico. It is a puzzle and bothers people here, Dave, that apparently ---- please inform me if I'm incorrect ---- no testing by your or any other involved department of soil or buildings has been done and reported. We are concerned that an event, big or small, at LANL, would be downplayed, no effective warning issued, and Santa Fe and Eldorado, the entire county could be a permanent wasteland within a few hours and the population devastated. There is no level of "national security" that justifies subjecting the population to that constant lethal threat.

As much as the potential is downplayed and reassurances given, you and I know that I am not exaggerating, especially if you and your family live downwind also. Past performance at LANL gives little reassurance either. The gross handling of waste and contamination in the past, the higher rate of cancer in the young and old from the water table contamination down slope, nothing in the history gives any sense of security.

Don't let the PR and money and political interests call the shots. Not only don't approve any further mods but work for the people's sake to get the hazardous radiation waste and processes away from our beautiful county. Please.

Comment noted.

The New Mexico Environment Department's Hazardous Waste Bureau (HWB) does not regulate the radioactive component of hazardous waste generated and stored at Los Alamos National Laboratory (LANL), nor does the Department determine the overall mission of LANL.

Furthermore, the HWB does not have the authority to test for the spread of contamination from the release of radiation from Fukushima.

The HWB regulates the generation, storage, and treatment of hazardous waste, including mixed waste (i.e., hazardous waste that also contains radioactive waste), at LANL.

The LANL hazardous waste Permit ensures that hazardous and mixed waste stored at the Transuranic Waste Facility meets all the applicable regulatory requirements to protect human health and the environment.

> Comment: *Hello, I received a letter from your department which is very hard for me to understand because of the way it is written. (Is that deliberate?) But I think it says that Los Alamos Natl Lab wants to store more hazardous stuff. And I want to let you know I'm dead against any more waste over there at Los Alamos. I'm downwind about 50 miles east of Los Alamos and as they are already storing some 30,000 barrels of nuclear waste in an outside facility, I do not like the idea of storing more toxic matter there. Yes, a hearing is needed and much more research needs to be done to learn how to neutralize the tons of radioactive material already being stored.*

Comment noted.

The primary purpose of the TWF is to replace the storage capabilities currently at TA-54, Area G. Addition of the TWF to the LANL hazardous waste Permit increases the storage capacity at LANL by 105,875 gallons, which is approximately 0.025% of the current storage capacity of the permitted hazardous waste storage at Area G. Upon closure of Area G at the end of calendar year 2015 in compliance with the 2005 Order on Consent, the total storage capacity at LANL will decrease by over 4 million gallons.

The Department does not regulate the neutralization of radioactive material stored at LANL.