

TA-21

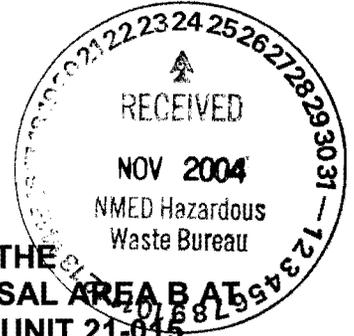


Los Alamos National Laboratory/University of California
Environmental Stewardship (ENV)
Remediation Services (RS), MS M992
Los Alamos, New Mexico 87545
(505) 667-0808/FAX (505) 665-4747

National Nuclear Security Administration
Los Alamos Site Operations, MS A316
Environmental Restoration Program
Los Alamos, New Mexico 87544
(505) 667-7203/FAX (505) 665-4504

Date: November 24, 2004
Refer To: ER2004-0671

Mr. James Bearzi
NMED-Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building 1
Santa Fe, NM 87505-6303



SUBJECT: RESPONSE TO THE NOTICE OF DISAPPROVAL FOR THE INVESTIGATION WORK PLAN FOR MATERIAL DISPOSAL AREA B AT TECHNICAL AREA 21, SOLID WASTE MANAGEMENT UNIT 21-015, DATED OCTOBER 22, 2004, LOS ALAMOS NATIONAL LABORATORY, EPA ID#NM0890010515

Dear Mr. Bearzi:

Enclosed are two copies of the response to the notice of disapproval for the "Investigation Work Plan for Material Disposal Area B (MDA B) at Technical Area 21, Solid Waste Management Unit 21-015," dated October 22, 2004, and received by the Environmental Stewardship–Remediation Services (ENV-RS) project office on October 26, 2004. To facilitate a review of these responses, New Mexico Environment Department (NMED) comments are included verbatim. Los Alamos National Laboratory's (LANL) responses follow each NMED comment, with specific indications of how and where the text of the investigation work plan will be modified.

Also included is the Certification by the ENV-RS Project technical representatives and replacement Figure 1 to the investigation work plan for MDA B.

If you have any questions, please contact Ron Rager at (505) 665-5064 or Woody Woodworth at (505) 665-5820.

Sincerely,

Sincerely,

for CW Curran
David McInroy, Deputy Project Director
Remediation Services
Los Alamos National Laboratory

for Thomas A. Rager
David Gregory, Federal Project Director
Department of Energy
Los Alamos Site Office

DM/DG/RR/jr



Mr. James Bearzi
ER2004-0671

2

November 24, 2004

Enclosures: 1. "Response to the Notice of Disapproval for the Investigation Work Plan for MDA B" (ER2004-0653).
2. Certification by the ENV-RS Project technical representatives.
3. Replacement figure for the Investigation Work Plan for MDA B (ER2004-0243).

Cy:(w/enc)

A. Dorries, ENV-ECR, MS M992
E. Rainey, ENV-ECR, MS M992
R. Rager, ENV-ECR, MS M992
D. Gregory, LASO, MS A316
L. Woodworth, LASO, MS A316
J. Schoepner, NMED-GWQB
J. Bearzi, NMED-HWB, (2 copies)
S. Yanicak, NMED-OB
M. Leavitt, NMED-SWQB
L. King, EPA Region 6
ENV-RS File, MS M992
CT File# C958
IM-5, MS A150
RPF MS M707
S-7, MS F674

Cy:(w/o enclosure)

D. McInroy, ENV-RS, MS M992
B. Rich, ADO, MS A104
C. Voorhees, NMED-OB

CERTIFICATION

**CERTIFICATION BY THE ENVIRONMENTAL STEWARDSHIP-REMEDIATION
SERVICES (ENV-RS) PROJECT
TECHNICAL REPRESENTATIVES**

Document Title: **RESPONSE TO THE NOTICE OF DISAPPROVAL FOR THE
INVESTIGATION WORK PLAN FOR MATERIAL DISPOSAL AREA B AT
TECHNICAL AREA 21, SOLID WASTE MANAGEMENT UNIT 21-015,
DATED OCTOBER 22, 2004, LOS ALAMOS NATIONAL LABORATORY,
EPA ID#NM0890010515**

I certify under penalty of law that these documents and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

Name: *David McInroy* Date: 11/23/04
David McInroy, Deputy Project Director
Remediation Services
Los Alamos National Laboratory

or

Ken Hargis, Division Leader
Environmental Stewardship Division
Los Alamos National Laboratory

Date: _____

David Gregory Date: 11/23/04
David Gregory, Federal Project Director
Environmental Restoration Program
Department of Energy/Los Alamos Site Office

or

John Ordaz,
Assistant Area Manager of Environmental Projects
Department of Energy/Los Alamos Site Office

Date: _____

**Response to the Notice of Disapproval for the Investigation Work Plan for
Material Disposal Area B at Technical Area 21, Solid Waste Management Unit 21-015,
Dated October 26, 2004**

INTRODUCTION

This submittal is the response by Los Alamos National Laboratory (LANL or the Laboratory) to the "Notice of Disapproval for the Investigation Work Plan for Material Disposal Area B at Technical Area 21, Solid Waste Management Unit 21-015," issued by the New Mexico Environment Department (NMED) Hazardous Waste Bureau on October 22, 2004. The Investigation Work Plan for Material Disposal Area (MBA) B, at Technical Area 21, Solid Waste Management Unit 21-015, (LANL 2004, 87290), was submitted by LANL to NMED in June 2004.

To facilitate the review of these responses, NMED's comments are included verbatim. The comments are divided into general and specific categories as presented by NMED. LANL's responses follow each NMED comment.

GENERAL COMMENTS

NMED Comment

1. *All figures must include pertinent features and structures, underground utilities, and existing well and borehole locations. For example, Figure 1 (MDA B site plan), does not show the location of the abandoned radioactive liquid waste line along the southern boundary of the site, or the Los Alamos County sanitary sewer lift station near the southeast corner of the site. Also, Figure B-26 appears to be inaccurate with respect to the distance between the MDA B and MDA V boundaries. This information could affect the proposed sampling locations and therefore the overall work plan. Rather than resubmit these figures, ensure these changes are reflected in the Investigation Report.*

LANL Response

1. The investigation report site plan figures will be revised to show pertinent features and structures, underground utilities, and existing well and borehole locations.

NMED Comment

2. *The page numbers in the Table of Contents in this work plan are incorrect, beginning with section 5.6 (HazCat and Definitive Identification Screening Methods). The Permittees must update the Table of Contents with the correct page numbers.*

LANL Response

2. The table of contents in the work plan will be revised to correct the page numbers as requested. A revised table of contents will be submitted when the work plan is approved to avoid the need for further revisions.

NMED Comment

3. *NMED believes that Appendix B, Historical Investigation Report, is deficient with respect to moisture content data at MDA B. For example, historical borehole DPS-12 had a show of water (page B-32), likely from fracture-fill. Moisture data from cores collected in the tuff, especially from the upper units, is unreliable. The dry matrix surrounding the water-filled fractures tends to absorb the fluids/water rendering a much lower fluid saturation content. Also, during the 700 feet of drilling of the seven angled boreholes completed during the 1998 investigation, the Permittees did not bias sample selection enough at areas suspected of transmitting fluids and/or contaminants, such as fractures. On average, there were about seven samples selected from the 100 feet of core from each borehole, and of the approximately 70 samples, only three were derived from locations described as being fractured. Upper tuff units will most likely only transmit fluids/gases via fractures or along cooling units. The Permittees must bias any future sampling to target areas of higher permeability such as surge beds and fractures/fracture fill material, and moist zones.*

LANL Response

3. The HIR summarizes historical data reported in previously published documents as required by the September 1, 2004 proposed Consent Order without assessing the validity of said data. Test holes DPS-1 through DPS-6 completed in 1966 may or may not be representative of current subsurface conditions. The Laboratory agrees that future sampling should be biased to areas of higher permeability, such as surge beds and fractures, and to zones of elevated moisture content or field screening results. Borehole and trench sampling conducted during implementation of the work plan will target these areas to supplement existing data as specified in section 5.8 (Methods for Sampling Soil and Tuff) of the work plan for the trench samples.

NMED Comment

4. *The Permittees must include as an objective to remove material determined to "pose an immediate threat to either human or environmental safety" and determine whether it is stored, packaged, treated, or disposed on or off-site.*

LANL Response

4. The principle objective proposed in the work plan is to characterize the types and estimate the quantities of waste in MDA B and determine the nature and extent of contamination in the surrounding soil and rock. Materials removed from MDA B during the trenching activities will be managed to reduce the immediate threat to human or environmental safety. Removal, handling, and disposal of landfill contents would be the more appropriate primary objective of a site remediation effort. However, the Laboratory will not place materials that pose an immediate threat to either human or environmental safety back into the trenches once they are removed for characterization purposes. In addition, should such materials be encountered during excavation, the trenches will be expanded to remove them.

SPECIFIC COMMENTS

NMED Comment

1. *Section 3.2 Subsurface Conditions, page 6:*

The Permittees must provide more information regarding the abandoned radioactive liquid waste line. This information should include whether the waste line was identified in the 1998 geophysical survey, whether the anomaly along the southern boundary of MDA B in Figure B-26 could be this waste line, and how the Permittees will address this issue if it is determined that the waste line has not been removed.

LANL Response

1. The geophysical anomaly shown in Figure B-26 along the southern boundary of MDA B was not specifically identified in the geophysical survey report as the radioactive liquid-waste line. The Laboratory is currently conducting a site-wide geophysical survey at TA-21. These data may assist in better defining the previous geophysical anomaly along the southern boundary of MDA B.
2. The radioactive liquid-waste line is not part of the Solid Waste Management Unit (SWMU) 21-015 and is excluded from this investigation. If the radioactive liquid-waste is found to be present at this location during investigation activities, it will be addressed during facility decommissioning and disposition operations at TA-21.

NMED Comment

2. *Section 3.2.3.1 Infiltration, page 7, paragraph 4:*

NMED disagrees with this statement. Because ponding can occur at MDA B, infiltration is possible. Therefore any time there is ponding, the fractures beneath MDA B can become wet and conduct water. The Permittees must consider infiltration as a possible contaminant pathway and must propose and implement a remedy to this issue. In addition, as stated in more detail in specific comment #14, paragraph 5, moisture may accumulate underneath the asphalt, and potentially transport contaminants through gravity flow (fractures) and capillary forces.

LANL Response

3. The Laboratory agrees that infiltration should be recognized as a mechanism for mobilizing contaminants in the subsurface. Section 5.8 (Methods for Sampling Soil and Tuff) of the work plan states, "additional biased samples will be collected from the exploratory trench bottoms, side walls, or test pits, if any of the following features are present: evidence of contamination (e.g., staining or elevated screening levels), lithologic contacts, fractures, fracture fill material, surge beds, or a higher permeability unit," but does not explicitly include elevated moisture. This statement will be revised to include elevated moisture as a feature to trigger biased sample collection. The Laboratory notes that the requirement to propose and implement a final remedy, including the consideration of the nature and extent of contamination already released from this landfill, is premature because the investigation of MDA B has not been completed. Potential remedies will be addressed in the Corrective Measures Evaluation. See also response to Specific Comment 14 below.

NMED Comment

3. Section 4.0 Scope of Activities, pages 9-10:

Paragraph 1:

The Permittees must remove the section describing the implementation plan. Most of the elements described in this section are neither requirements nor concerns and should not be included as part of the work plan. Six of the last seven bullets (waste management, compositing, and packaging; definitive identification of unknown chemicals and materials; an electronic inventory management and tracking system; sample collection, handling, and documentation; surveying of sample locations, and trench geometries and features of excavations; and backfilling of exploratory trenches and test pits) should be detailed in sections 4 and 5 of this work plan. The clean cover replacement and compaction element should not be included in the work plan. This element implies final remediation activities and this work plan only addresses the objective of waste characterization.

LANL Response

Paragraph 1:

The section of the work plan describing the implementation plan will be removed. The six bulleted items identified by NMED are already detailed in sections 4 and 5 of the work plan. The clean cover replacement and compaction element describes the best management practices (BMPs) for properly backfilling the exploratory trenches and minimizing infiltration and erosion following this phase of investigation until implementation of the final remedy. These BMPs are not proposed as part of a final remediation.

NMED Comment

Paragraph 3:

The Permittees should be aware that they will be required to inform the NMED Air Quality Bureau to ensure no additional permits are required in order to install scrubbers on equipment, vent equipment outside the enclosure, or install a ventilation system.

LANL Response

Paragraph 3:

The Laboratory is aware of the air-quality regulations for exhaust scrubbers and ventilation systems. These issues will be addressed, and the appropriate actions will be taken to ensure compliance with emissions regulations.

NMED Comment

4. Section 4.1 Justification of Alternative Scope of Work, page 11:

Paragraph 1:

On page V of the Executive Summary, The Permittees state "there are no official waste inventory records for MDA B." On page 3, Section 2.1, Operational History, the Permittees state that, "During the fire, several cartons of waste caused minor explosions and, on one occasion, a cloud of pink gas arose from the debris in the dump." Based on the fact that the Permittees have no records of what

types of waste were disposed of at MDA B and explosions have occurred at the site, the Permittees must include HE in their analytical suite for all trench and boring samples in accordance with Section IV.C.2.d.iv, number 6 of the proposed Consent Order.

LANL Response

Paragraph 1:

The Laboratory agrees that because of the lack of documentation verifying high explosives (HE) were not deposited in MDA B, it cannot be excluded as a potential contaminant. HE field screening will be performed on the landfill contents and trench-wall samples, and HE will be included in the analytical suite for an off-site laboratory analysis of trench and borehole samples. The work plan will be revised to add HE to the analytical suite.

NMED Comment

Paragraph 2 (Table 1, Summary of Proposed Alternatives to NMED Order Specifications and Justification for Alternatives, page 39)

NMED does not agree that the 1998 angled boreholes define extent of contamination at MDA B. Large areas of the estimated pit locations (estimated by the geophysical survey) shown on Figure 1 (MDA B Site Plan) were not sampled during the 1998 sampling event (subsurface), nor did the Permittees complete a full analytical suite on the 1998 samples. Only TAL metals, SVOCs, americium, tritium, isotopic plutonium, isotopic uranium, and strontium were analyzed. The Permittees must excavate four additional trenches (See attached Figure) to more adequately ascertain the likely locations and contents of the estimated pit locations within MDA B. The Permittees must also drill two vertical boreholes to the base of the Cerro Toledo interval (See paragraph 5 comment below for additional information). In accordance with Section IX.B.2.d of the Consent Order appropriate technology must be utilized to detect vapors during drilling and sampling operations. If vapor-phase contamination is detected during drilling activities, vapor-monitoring wells will be installed. If groundwater (perched or regional) is encountered during drilling activities or if geophysical results indicate possible zone(s) of saturation, monitoring wells must be installed.

LANL Response

Paragraph 2:

The Laboratory will clarify that 1998 angled boreholes will be used in addition to work proposed in this work plan to define the nature and extent of contamination. The Laboratory will add four additional trenches (these new trenches are numbered T-2, T-6, T-10, and T-11) to the investigation work plan based on NMED's recommendation. The locations of the additional trenches are shown on the revised MDA B Site Plan (Figure 1) included with this response. All analyses proposed in this investigation will contain a full analytical suite as required by the September 1, 2004 proposed Consent Order.

The Laboratory will revise the work plan to include the drilling of up to two boreholes to the Cerro Toledo interval as part of this investigation. One borehole will be located north of the Eastern one-third of MDA B near the chemical waste disposal trenches, as shown on the revised MDA B Site Plan (Figure 1). This location was selected to address the potential contamination associated with the chemical trenches and positioned based on a northeast-southwest fracture orientation in the tuff. An alternate location for this borehole was also selected to address the paleotopography of the Cerro Toledo interval. The alternate location southwest of the chemical disposal trenches (Figure 1) will be

used if information from drilling at adjacent MDA V indicates the Cerro Toledo interval dips to the south in this area. The second borehole will be drilled to the Cerro Toledo interval near the far western side of MDA B (Figure 1) where the suspected north-south oriented chemical disposal trenches are located. However, this borehole will be drilled only if the suspected chemical disposal trenches are present and confirmed to contain liquid chemical waste, or if elevated moisture, trench water, etc., are detected, based on exploratory trenching in this area. After the MDA V data has been evaluated and trenching at MDA B is complete, the Laboratory will confer with NMED on the exact locations and number of Cerro Toledo boreholes.

Borehole drilling and sampling including field screening will be conducted in accordance with the September 1, 2004 proposed Consent Order. The work plan will be revised to include the specifications for borehole drilling and sampling.

NMED Comment

Paragraph 5:

The Permittees cannot use the planned borehole at MDA V as justification for alternative work and/or define permeability, subsurface conditions, perched groundwater, or any other subsurface features. The Permittees must drill two boreholes to the Cerro Toledo interval in locations based on the results of the exploratory trenches. Borehole locations must be approved by NMED. Sampling must be in accordance with Section IV.C.2.d.iv of the proposed Consent Order.

LANL Response

Paragraph 5:

See response to Specific Comment 4, paragraph 2 above.

NMED Comment

5. Section 4.2 Regulatory Basis for Technical Approach, page 12:

Paragraph 1:

NMED requires the Permittees to submit a request for approval of an area of contamination (AOC) designation. The Permittees have not requested approval for the AOC designation. Delineation of an AOC must be reviewed and approved by NMED prior to implementation of this work plan. EPA defines an AOC as certain discrete areas of generally dispersed contamination that can be equated to Resource Conservation and Recovery Act (RCRA) units or landfills. Wastes may be either consolidated or treated in-situ within the AOC without triggering RCRA requirements. Neither of these actions is proposed at MDA B. NMED believes the Permittees are not applying the AOC concept properly to this site. While NMED doesn't agree with the Permittees' application of the AOC Concept to this site, NMED approves of the Permittees' proposal to return environmental media to its point of origin at MDA B. As stated in Section 4.4.2, Guidelines for Excavated Materials, "environmental media include surface soils, bedrock, sand, gravel, cobbles, and boulders." Although NMED approves this activity, please note that this is not considered a final remedy for this site and the Permittees may be required to remediate/excavate MDA B at a future date. Although environmental media (as defined above) will be permitted to return to its point of origin, the Permittees must manage their waste (drill cuttings, decontamination water, PPE, and all other IDW) from other activities in accordance with Section IX.B.5 of the Consent Order.

LANL Response

5. Section 4.2 Regulatory Basis for Technical Approach, page 12:

Paragraph 1:

The Permittees have not submitted a separate request for the approval of an area of contamination (AOC) designation because the work plan describes how and where materials removed from the test trenches will be handled in accordance with the Environmental Protection Agency's (EPA) AOC policy. Approval of the work plan implies the approval of proposed methods of material management for trench-characterization-related activities. An AOC will be requested if full trench removal is carried out as a Voluntary Corrective Action at MDA B. As described in Section 4.2 (Regulatory Basis for Technical Approach), use of the AOC concept is integral to the investigation. If NMED requires a separate request for approval, LANL can submit the same information to NMED in a separate document.

The activities allowable within an AOC are not limited to consolidation or in-situ treatment. EPA's original AOC guidance (55 FR 8758) referred generally to the "movement of hazardous wastes" within an AOC and stated that "placement does not occur when waste is consolidated within an AOC, when it is treated in situ, or when it is left in place." Other EPA guidance (EPA 1996, 82288) states that placement does occur "when waste is actively managed (e.g., treated ex-situ) within or outside the AOC and returned to the land." The activities that will be performed upon materials removed from and returned to the trenches do not constitute active management or ex-situ treatment, nor are the activities considered the final remedy.

Investigation-derived waste (IDW) generated from trenching and borehole drilling will be managed in accordance with Section IX.B.5 of the September 1, 2004 proposed Consent Order and as described in Section 5.7 (Final Waste Segregation Methods), Section 5.11 (Waste Management), and Appendix C (IDW Management Plan) of the work plan.

NMED Comment

Paragraph 2:

The Permittees must explain the relevance of their conclusion that MDA B meets the definition of a landfill in accordance with 40 CFR 260.10.

LANL Response

Paragraph 2:

The statement regarding the definition of landfills relates to the applicability of the AOC concept (i.e., the AOC must be designated as a Resource Conservation and Recovery Act [RCRA] unit).

NMED Comment

Paragraph 3:

Based on the definition of treatment provided in Section 40 C.F.R. part 260.10, segregation of wastes once excavated will render material less hazardous, non-hazardous, or will recover material sources from the waste and is therefore considered treatment and can be subjected to the RCRA Subtitle C hazardous waste requirements. However, because this is not considered a final remedy, wastes may

be returned to the trenches. NMED may require excavation of these materials as part of a final remedy.

LANL Response

Paragraph 3:

The definition of treatment in 40 CFR 260.10 requires that the treatment be “designed to change the physical, chemical, or biological character or composition of any hazardous waste ... so as to render such waste nonhazardous, or less hazardous...” The waste segregation described in section 4.2 (Regulatory Basis for Technical Approach) is designed to address the extrinsic hazard posed by the collocation of potentially incompatible materials. It will not change the intrinsic physical or chemical characteristics of the waste and, therefore, does not constitute treatment or final remedy.

NMED Comment

6. *Section 4.4.2 Guidelines for Excavated Materials, page 15, paragraph 2:*

The Permittees must explain how they will determine if environmental media can be returned to MDA B without increasing the potential impact on human health and the environment.

LANL Response

6. Landfill materials excavated from exploratory trenches will undergo initial segregation as described in section 5.4 (Initial Waste Segregation Methods) and section 5.6 (HazCat and Definitive Identification Screening Methods) of the work plan. Media that are determined to be “High-Hazard Waste”—waste to be processed, packaged, and transported for treatment and disposal—includes, but is not limited to the following:

- reactive, flammable, corrosive and/or shock-sensitive chemicals,
- spent wastes or product chemicals in intact or partially intact containers,
- liquid RCRA hazardous waste,
- high-level radioactive material exceeding U. S. Department of Transportation (DOT) A2 quantities,
- transuranic (TRU) wastes,
- bulk material with radiological concentrations exceeding 1000 times the Laboratory industrial screening action level (SAL),
- Bulk material with hazardous chemical concentrations exceeding 1000 times the Laboratory regulatory limit as provided on the Waste Profile Form (WPF), and
- Mixed low-level waste (MLLW) with radiological concentrations in excess of the industrial SAL and the regulatory limit identified above.

High-hazard waste material will not be placed back into the trenches. Other waste and excavated material will be returned to the trenches. In addition, appropriate controls will be implemented, as necessary, during waste handling to minimize potential impacts on human health and the environment. This list will be added to the work plan.

NMED Comment

See NMED Comment #5, paragraph 1.

LANL Response

See response to Specific Comment 5 regarding AOC concept.

NMED Comment

7. *Section 4.7 Removal of Chemical Containers, page 16:*

The Permittees must inspect all containers for leaks, and sample medium at locations of leaks. The Permittees must explain if the containers will be double contained on site, whether they will be sent to a staging area, and the location of final disposal.

LANL Response

7. If any containers have leaked, resulting in staining or other visible indicators in the medium surrounding a container, the medium will be treated as described in sections 5.3 (Initial IDLH Screening Methods), 5.4 (Initial Waste Segregation Methods), 5.6 (HazCat and Definitive Identification Screening Methods), and 5.7 (Final Waste Segregation Methods). If leakage extends from the waste zone to the underlying rock, the underlying rock will be targeted as a biased trench bottom sample and sampled as described in section 5.8 (Methods for Sampling Soil and Tuff). The work plan describes the inspection, handling, and sampling of containers discovered during the investigation in sections 5.4 (Initial Waste-Segregation Methods) and 5.7 (Final Waste-Segregation Methods).

NMED Comment

The Permittees must provide additional information regarding the meaning of 'safely backfilled' and who will make this determination.

LANL Response

The term "safely backfilled" means site conditions are such that backfilling and compaction of the excavation will not cause damage to adjacent trench waste that could create an additional release to the environment beyond what has already occurred. For example, carboys of liquid chemicals will not be left in the bottom of a trench because they may break and release chemicals to the environment as backfill is emplaced and compacted. The investigation team leader will be responsible for directing the excavation and determining when the conditions are favorable for backfilling to minimize the impacts to the materials remaining in the landfill. The work plan will be modified to clarify this approach.

NMED Comment

8. *Section 4.8 Exploratory Trench Logging and Identification of Excavated Materials, pg 17:*

The Permittees must include the following information on their logs: the soil or rock type classified in general accordance with ASTM D2487 (Unified Soil Classification System) and D2488, or AGI Methods for soil and rock classification, the name of the qualified engineer or geologist inspecting the samples, presence of water-bearing zones, and any unusual or noticeable conditions encountered during excavation.

LANL Response

8. The formal logging procedure referred to in section 4.8 (Exploratory Trench Logging and Identification of Excavated Materials) and section 5.5 (Exploratory Trench Logging Methods) specifically describes the waste-zone materials in the MDA, not for lithology of the soil and rock. The Laboratory's standard operating procedures (SOPs) for describing soil, rock, and subsurface conditions meet the specifications identified by NMED for visually logging the natural materials exposed in the trenches. The Laboratory's SOPs do not fully describe the logging of waste material in trenches, thus requiring the development of the activity-specific logging procedure described in Section 4.8.

NMED Comment

9. *Section 4.9 Hazard Characterization (HazCat) Screening, page 17:*

NMED has reviewed Table 3, which includes the instruments to be used for field screening, the screening methods, and the sequence associated with the HazCat screening process. NMED has concluded that the proposed methods for providing basic information and performing primary identification are suitable for initial screening, however, off-site laboratory analysis must be performed prior to shipment of wastes off-site and must be used for site characterization.

LANL Response

9. Off-site laboratory analysis will be used for waste characterization as stated in section 4.10 (Waste Management), section 5.11 (Waste Management), and Appendix C (IDW Management Plan) of the work plan. Site characterization samples will be submitted to an off-site laboratory as specified in section 4.13 (Sampling of Exploratory Trenches and Sidewalls) and Table 5 of the work plan. Waste leaving the site will be analyzed as necessary to meet the waste acceptance criteria (WAC) of the receiving Treatment Storage and Disposal Facility (TSDF).

NMED Comment

10. *Section 4.10.1 Waste Compositing, page 18:*

Please refer to comment #9 above. Additionally, using field-screening methods only to categorize waste for compositing increases the risk of waste dilution, which is treatment under RCRA and would require a permit.

LANL Response

10. Compositing materials removed from the trench does not constitute treatment (see response to Specific Comment 5, paragraph 3). If materials are composited before off-site disposal, all original EPA waste codes will be retained for the container of composited waste.

The HazCat screening process is designed to identify the hazard categories of excavated material and will be used to ensure compatibility for waste storage. After waste determinations are made (hazard categories and waste constituents have been identified) on individual wastes, similar waste streams may be appropriately composited for disposal, depending on the WAC of the receiving facility.

NMED Comment

11. *Section 4.15 Exploratory Trench Backfilling, Compaction, and Clean Cover Replacement,*

The Permittees must provide additional information regarding the existing cover material. There is no documentation describing the thickness, composition, or origin of the existing cover material. All that is known is that a soil cover was placed over the eastern side of MDA B in 1982. Also, compaction and clean cover replacement are remediation activities and should not be addressed in this work plan.

LANL Response

11. The specifications of the existing landfill cover are not available, with the exception of the landfill cover study plots in the eastern end of the MDA. A report on the landfill cover study has been sent to NMED under separate cover and is referenced in Appendix B of the work plan (Nyhan et al. 1998, 71345).

The landfill cover replacement referred to in this work plan is intended to be a BMP to stabilize the site and control erosion and surface water infiltration as part of the trench backfilling operations, not an engineered landfill cover. This is an important component of the excavation process and is an important element of the work plan as required by the September 1, 2004 proposed Consent Order. These activities are not proposed as a final remedy for the site.

NMED Comment

12. *Table 1, Summary of Proposed Alternatives to NMED Order Specifications and Justification for Alternatives, pages 38-43:*

General Comment:

Items associated with nature and extent of contamination; previous investigations; analytical results; investigation and sampling methods and requirements; monitoring well installation (groundwater and vapor); and field-screening and laboratory sample selection. NMED does not agree with the justifications provided by the Permittees in Table 1 for these items. The following comment will address the problems with the justifications of the items specified above.

LANL Response

12. Table 1, Summary of Proposed Alternatives to NMED Order Specifications and Justification for Alternatives, pages 38-43:

See comments for each item addressed below.

NMED Comment

Items 2, 3, 10, & 16:

See Comment #4, paragraph 5

LANL Response

Items 2, 3, 10, and 16:

See response to Specific Comment 4, paragraph 2.

NMED Comment

Item 11:

See Comment #9

LANL Response

Item 11:

See response to Specific Comment 9.

NMED Comment

Items 12 & 13:

Based on the objective of characterizing and quantifying waste outlined in this work plan, the number and location of samples within the exploratory trenches proposed by the Permittees is acceptable. However, once waste has been characterized and quantified, the Permittees must provide a plan outlining the remaining characterization and any remediation activities for MDA B. The eight exploratory trenches, two deep boreholes, and previous sampling and analysis events may not be sufficient for defining the extent of contamination and additional subsurface sampling may be required.

LANL Response

Items 12 and 13:

Following the implementation of this work plan, an investigation report will be prepared to evaluate the results of the MDA B waste characterization efforts and nature and extent of contamination in the subsurface, and conclusions will be made as to the adequacy of the existing characterization data in defining the extent of contamination. If additional investigations are required, the investigation report will propose a date for submittal of the supplemental work plan.

NMED Comment

Specific Comments:

Item 3, page 39:

The Permittees must explain which deep borehole they are referring to in this statement. Do the Permittees mean the previous deep borehole at MDA V, which is located approximately 370 ft east of MDA B, or the planned deep angled borehole proposed in the work plan for MDA V?

LANL Response

Item 3, page 39:

In this statement, the Laboratory is referring to both MDA V boreholes. The work plan will be revised to clarify that the previously drilled and the planned MDA V boreholes may be used, along with boreholes installed during implementation of this plan, to evaluate the presence or absence of perched groundwater in the Cerro Toledo interval (see response to Specific Comment 4, paragraph 2).

NMED Comment

Item 10, page 40:

See NMED Comment # 4, paragraph 5

LANL Response

Item 10, page 40:

See response to Specific Comment 4, paragraph 2.

NMED Comment

Item 11, page 41:

The reference to Table 4 in this section of the Justification Table is incorrect. The reference should be made to Table 3.

LANL Response

Item 11, page 41:

The "Table 4" reference will be corrected in the text to read "Table 3."

NMED Comment

Item 13, page 41:

As a reminder, the Permittees must sample beneath the pits into the tuff to background levels. They are not permitted to sample only within the estimated boundaries of the waste pits. Additionally, SVOC analysis will only detect some HE compounds. Therefore, previous HE analysis and sampling will not be sufficient to meet the requirements for this work plan. Refer to comment #4, paragraph 1.

LANL Response

Item 13, page 41:

Samples will be collected from beneath the pits as discussed in section 4.13 (Sampling of Exploratory Trenches and Sidewalls) and section 5.8 (Methods for Sampling Soil and Tuff) of the work plan. At each location, one sample will be collected at the waste zone/tuff interface and another at a depth of 1.5 to 2.0 ft below the interface. The deeper samples will be collected at depths with little or no evidence—based on visual observation and field-screening results—of contamination; however, the depth of the samples will be subject to the physical limits of the excavator.

Analytical results of the samples collected along with visual and field screening information will be evaluated in the Investigation Report to determine the need for additional investigations at MDA B, which may include additional borings to identify the nature and extent of contamination in the underlying bedrock. (See also the response to Comment 12, Items 12 and 13.)

HE analysis and sampling is included in Item 13, page 41 and will be added to Table 5 of the work plan.

NMED Comment

Item 16, page 42:

The Permittees may not use the previous deep borehole completed at MDA V as justification for not completing two deep boreholes at MDA B. The MDA V borehole is approximately 370 ft east of MDA B and cannot predict the subsurface conditions around and beneath MDA B. Perched groundwater and vapor-phase contamination could be locally encountered closer to and beneath MDA B. Also, the additional borings should be focused in directions and depths that follow typical fracture orientation, the old alluvium, and the paleotopography controlling the Cerro Toledo interval.

LANL Response

Item 16, page 42:

See response to Specific Comment 4, paragraph 2.

NMED Comment

13. Appendix B, Historical Investigation Report, Section B-2.2.2, MDA B Subsurface Features, page B-3, paragraph 1:

Figure B-6, entitled Surface Water run-off at MDA B, illustrates run-off from the site, not trench locations. The Permittees must ensure that all Figures in this document are referenced appropriately in the text.

LANL Response

13. The typographical error in the figure reference will be corrected. The text will be revised to reference Figure B-5, which shows the trench locations based on historical information and as presented in the TA-21 RCRA Facility Investigation (RFI) work plan.

NMED Comment

14. Appendix B, Historical Investigation Report, Section B-4.4.2, 1998 RFI Surface Soil Investigation, page B-16 & B-17:

The references to all tables in paragraph one of this section are inaccurate. The text must be revised to reflect the correct referenced table numbers.

The document mentions that the asphalt pad that partially covers the site may "increase subsurface moisture content by restricting the natural loss of moisture from the soil profile through evaporation and transpiration by plants." Not unlike MDA AB at Technical Area 49, the lack of evapotranspiration at the site may be producing and potentially transporting, through gravity flow and capillary forces, contaminated water. This condition, if it exists, is a major component of the hydro-contaminant conceptual model for the site, and therefore needs to be incorporated into the investigation plan. It is required that at least one or two of the exploratory trenches be placed across areas that show topographic lows as indicated by geophysics and that a contingency plan be developed to address the characterization of water should it be intercepted during the trenching process.

LANL Response

14. The incorrect table references will be corrected in the text. Tables B-42, -43, -44, -45, -46, 47, and -48 will be corrected in the text to read B-41, -42, -43, -44, -45, -46, and -47, respectively.

As stated in section 4.13 (Sampling of Exploratory Trenches and Sidewalls) of the work plan, additional biased samples will be collected from suspected contaminated areas based on field screening or visual inspection. Although not explicitly stated, this would include areas of high moisture content (See response to Specific Comment 2). Section 4.13 (Sampling of Exploratory Trenches and Sidewalls) will be revised to include collection of water samples if free water is encountered in the trench bottoms in sufficient quantities to produce a representative sample. If a representative water sample can be obtained it will be submitted for off-site laboratory analysis. The analytical suite for water samples will be in accordance with section IV.C.2.d.ix, Item 3, of the September 1, 2004 proposed Consent Order. The occurrence of saturated or high-moisture conditions will be evaluated as part of the investigation. Samples taken 1.5 to 2 ft below the waste zone-tuff interface will be located in these free water zones, if encountered, to evaluate the vertical movement of moisture.

The geophysical surveys were inconclusive with respect to an east-west slope of the trench bottoms indicative of topographic lows where fluids are likely to accumulate. However, the test pits will be used to estimate the base topography and areas prone to moisture accumulation.

NMED Comment

15. *Appendix B, Historical Investigation Report, Section B-5.2, General Discussion of Sediment, page B-19, paragraph 1:*

In Appendix B, Section B-5.1, General Discussion of Surface Data, the Permittees state that "Plutonium-239 activities are elevated along the perimeter of MDA B, and the concentrations decrease, in general, with distance away from the site as shown in Figure B-49." Based on Figure B-49, there is no obvious trend of Plutonium-239 in surface soils or sediments. The Permittees must explain why they have conflicting statements regarding a trend in Plutonium-239 concentrations at MDA B.

LANL Response

15. The subject statements are not in conflict because they refer to different data sets. The statement in section B-5.2 (General Discussion of Sediment) refers to BV Canyon channel sediments only and the statement in section B-5.1 (General Discussion of Surface Data) refers to surface soils within and around MDA B. The Laboratory will remove the statement in Section B-5.1 from the work plan.

NMED Comment

16. *Appendix C Investigation Derived Waste Management, page C-1-C-2:*

NMED does not approve the Permittees' plan for handling Investigation Derived Waste (IDW). Specifically, the Permittees may not return drill cuttings, decontamination water, PPE or other IDW to their point of origin. Rather, the Permittees must contain all IDW, and characterize it to ensure proper handling, including but not limited to, final disposal.

In their description of the methods and procedures used to characterize and manage all IDW, the Permittees may not substitute a reference to their SOPs for a description of its procedures (see Section IX.A of the proposed Consent Order).

Drill cuttings, purge and decontamination water, personal protective equipment (PPE), and all other IDW must be containerized and characterized prior to disposal. Each container of waste generated must be properly labeled immediately following containerization. All IDW must be sampled and analyzed for hazardous contaminants that are suspected or detected prior to or during investigation activities. All suspected radioactively contaminated waste/material should be sampled or surveyed for radionuclides. All IDW must be disposed of properly at an appropriate disposal facility. The methods used to store, control, and transport each waste type and classification must be included in the investigation report.

LANL Response

16. The Laboratory would like to clarify the statement in Appendix C regarding returning environmental media: it refers only to the exploratory trenches as no boreholes were included in the work plan. In specific comment 5, paragraph 3 above, NMED agrees that environmental media may be returned to the excavations. In addition, Table C-1 indicates all waste generated, including IDW, will be characterized for off-site disposal.

Appendix C will be revised to include a more descriptive work plan for investigation-derived waste (IDW) management. This plan will further describe the methods proposed for placing in containers, characterizing, storing, transporting, and disposing of IDW generated from the investigation activities. Specifically, the reference to returning drill cuttings to their point of origin will be removed from the appendix.

LANL will abandon all boreholes by filling them with bentonite grout. Using a tremie pipe, LANL will fill upward from the bottom of the borehole to within 20 ft of the surface. After emplacing the bentonite grout, the remaining portion of the borehole will then be sealed with a Portland Type-I or Type-II cement that contains 2% to 5% bentonite. All cuttings will be managed as discussed below. This information will be included in the revised investigation work plan.

The methods and procedures used to characterize and manage all IDW will be described as explained above. However, reference to the applicable LANL operational requirements documents and SOPs will be retained, not as a substitute for this description but for clarity. IDW will be characterized in accordance with ER-SOP-01.10, Waste Characterization, and in accordance with the regulatory requirements incorporated by reference in ER-SOP-01.10. The Permittees expect some wastes to be characterized on the basis of acceptable knowledge (AK), rather than on direct waste analysis. AK will consist of the results of analysis of the environmental media associated with each waste stream. For example, spent personal protective equipment (PPE) and disposable sampling supplies that potentially come in contact with contaminated media will be characterized based on the results of analysis of that media. Similarly, borehole cuttings will be characterized on the basis of analytical results of the core samples from that borehole. If decontamination fluids are to be sent off-site for disposal, they will be sampled to demonstrate compliance with the waste-acceptance criteria of the receiving facility. Otherwise, less than 6/gal./day of decontamination fluid can be discharged to the ground in accordance with an existing Notice of Intent (NOI) to discharge that was approved by the NMED Ground Water Quality Bureau.

For planning purposes, LANL is anticipating PPE and other contact wastes from the investigation of MDA B will be categorized as low-level waste (LLW); however, ultimate disposal determinations will be based on the results of the waste characterization.

NMED Comment

Table C-1, page C-2:

The Permittees have estimated 100 yd³ of Transuranic (TRU) and mixed TRU waste to be excavated from the exploratory trenches and test pit spoils. All waste discovered at MDA B will have been disposed of prior to 1970. If TRU waste is discovered in intact drums, with accurate labeling, the Permittees must determine under what legal authority/justification this waste will be disposed of at the Waste Isolation Pilot Plant (WIPP).

The Permittees cannot assume that PPE, plastic, and other IDW are solid, low-level waste to be disposed of at TA-54, Area G. As stated above, all IDW must be sampled and analyzed for hazardous contaminants prior to storage or disposal off-site.

LANL Response

Table C-1, page C-2:

During the 1940s, at the time of the original disposal of waste in the MDA, a TRU waste category had not been legislated or established. As such, no material proposed for excavation will have been labeled or otherwise identified as TRU waste. Following the excavation of material from the MDA, radiological screening and analyses will characterize the waste materials. Waste characterization will establish the radiological contamination level and will determine if a particular excavated material meets the requirements for TRU, hazardous, or mixed waste.

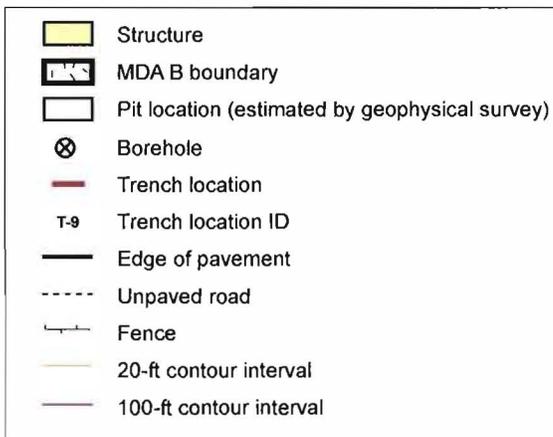
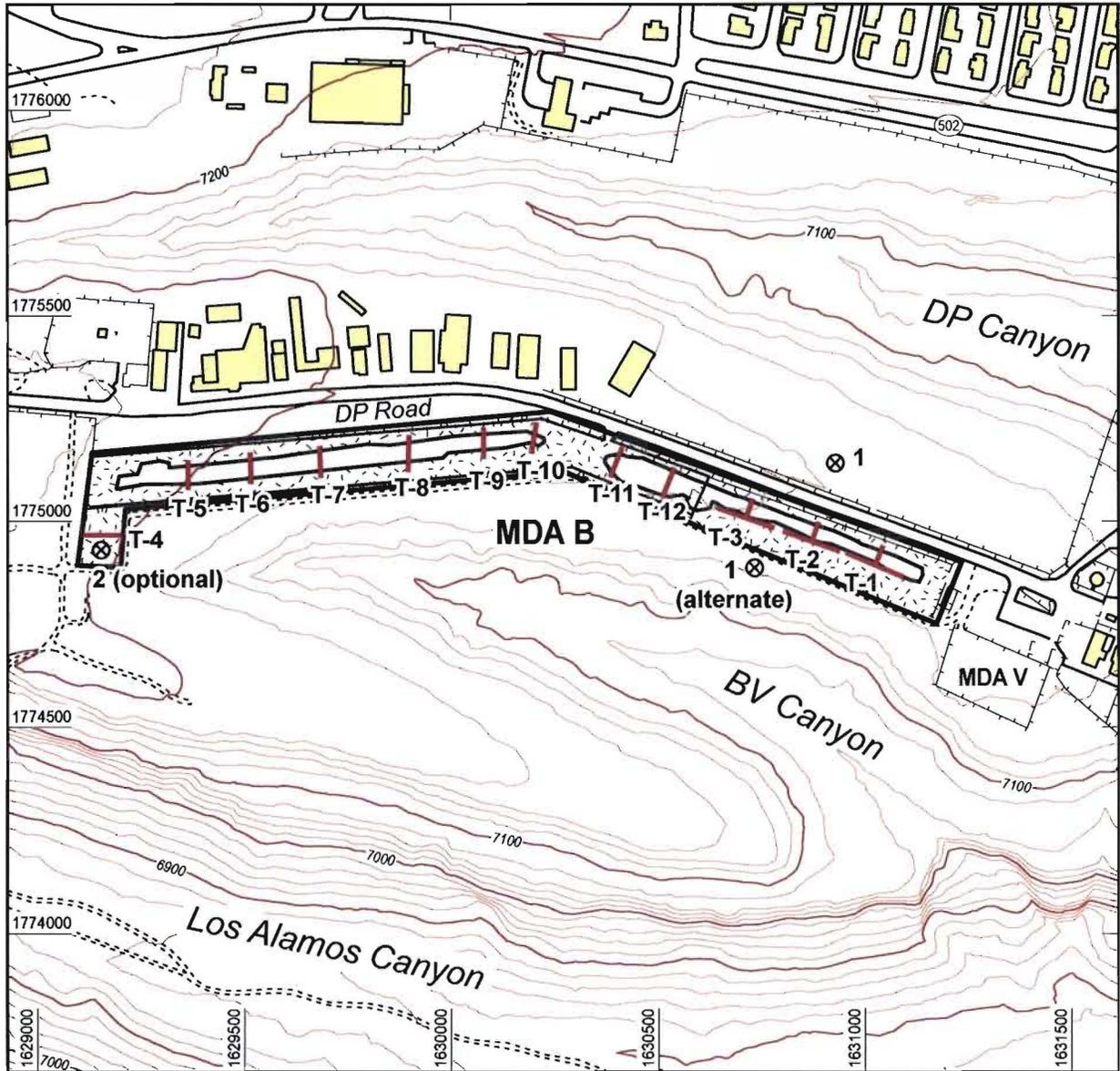
References

EPA (Environmental Protection Agency). 1988. "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA," OSWER Directive 9355.3-01, Office of Emergency and Remediation Response, Washington, D.C. (EPA 1988, 59107)

EPA (Environmental Protection Agency), 1996. "Use of the Area of Contamination (AOC) Concept During RCRA Cleanups," Memorandum from Stephen D. Luftig and J. Clifford to RCRA Branch Chiefs and CERCLA Regional Managers. (EPA 1996, 82288)

LANL (Los Alamos National Laboratory), June, 2004. "Investigation Work Plan for Material Disposal Area B at Technical Area 21, Solid Waste Management Unit 21-015," Los Alamos National Laboratory document LA-UR-04-3713, Los Alamos, New Mexico. (LANL 2004, 87290)

Nyhan, J. W., Salazar, J. A, Breshears, D. D., Barnes, F. J., 1998. "A Water Balance Study of Four Landfill Cover Designs at Materials Disposal Area B in Los Alamos, New Mexico," Los Alamos National Laboratory report LA-10573-MS, Los Alamos, New Mexico. (Nyhan et al. 1998, 71345)



Source: RRES db, MW-H(SEA), 09/03
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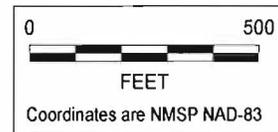


Figure 1. MDA B site plan