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CERTIFIED MAIL
RETURN RECEIPT REQUESTED

September 14, 2004

David Gregory, Federal Project Director
Los Alamos Site Office
Department of Energy
528 35th Street, Mail Stop A316
Los Alamos, NM 87544

G. Pete Nanos, Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop A100
Los Alamos, NM 87545

**RE: NOTICE OF DISAPPROVAL FOR THE INVESTIGATION WORK PLAN FOR
SOLID WASTE MANAGEMENT UNIT 21-018(a)-99, MATERIAL DISPOSAL
AREA V, AT TECHNICAL AREA 21
LOS ALAMOS NATIONAL LABORATORY (LANL), EPA ID #NM0890010515
HWB-LANL-04-009**

Dear Messrs. Gregory and Nanos:

The New Mexico Environment Department (NMED) is in receipt of the *Investigation Work Plan for Solid Waste Management Unit 21-018(a)-99, Material Disposal Area V, at Technical Area 21*, dated June 2004 and referenced by LA-UR-04-3699 (ER2004-0278). NMED hereby issues this Notice of Disapproval of the aforementioned Work Plan. The Department of Energy and the Regents of the University of California (collectively the "Permittees") must respond to the comments as outlined in the attachment to this letter within thirty (30) days of receipt of this letter. Please note the NMED does not consider this a final remedy because of the objectives stated in Section 1.2 this Work Plan. The two main objectives are to characterize contamination associated with the SWMUs/AOC included in consolidated SWMU 21-018(a)-99 and to reduce or prevent the migration of contamination via the removal of infrastructure and environmental media known to contain contaminants at concentrations exceeding residential screening action levels (SALs) for radionuclides (LANL 2002, 73705), or residential soil screening levels (SSLs) for inorganic and organic chemicals (NMED 2004, 85615).

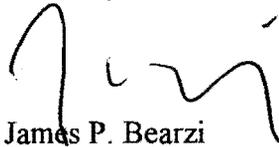


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Messrs. Gregory and Nanos
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Should you have any questions, please feel free to contact Kathryn Chamberlain at (505) 428-2546 or Darlene Goering at (505) 428-2542.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

JPB: kc

cc: D. Goering, NMED HWB
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B. Ramsey, LANL RRES/DO, MS M591
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file: Reading and LANL '04

Attachment
**Investigation Work Plan for Solid Waste Management Unit 21-018(a)-99, Material
Disposal Area V, at Technical Area 21**

General Comments:

1. **NMED Comment:** All figures must include pertinent features and structures, underground utilities, and existing well and borehole locations. This must include fence-lines and SWMU and AOC boundaries. For example, Figure 1.1-2 (Site map of consolidated SWMU 21-018(a)-99 and adjacent SWMUs/AOCs) does not depict the locations of pipes, drainlines, or the sump at SWMU 21-018(b) (Building 21-20). Figures in this Work Plan only show previous sample locations. All figures must distinguish between previous surface soil sample locations and borehole locations. The Permittees must ensure these changes are also reflected in the Investigation Report.
2. **NMED Comment:** During a site visit on July 7, 2004 NMED observed that the best management practices (BMPs) located along the diversion ditch that runs between MDA V and MDA B are not being properly maintained. According to Section 3.1.1 Surface Water, SWMU 21-013(b) and AOC 21-013(g) were given erosion scores of 67.0 in 1998, indicating a high potential for erosion. The NMED expects that BMPs be properly maintained to prevent stormwater from running onto the SWMU and AOC which could result in the migration of contaminants into BV Canyon.
3. **NMED Comment:** The proposed sampling plan appears to meet the requirements to determine the lateral and vertical extent of contamination only within the defined SWMU 21-018(a) boundary. The Permittees must determine the extent of contamination that has migrated beyond the SWMU/AOC boundaries, and if necessary, implement corrective action beyond the boundaries (40 CFR 264.101). Based on past and proposed sampling, the extent of contamination outside SWMU/AOC boundaries has not been defined; therefore, the Permittees must drill additional boreholes in the areas specified by the NMED. Three additional boreholes must be drilled within the boundary of MDA V. Additional surface soil samples must also be collected down-slope of SWMU 21-013(b) and AOC 21-013(g) and in the bottom of BV canyon. The attached map depicts the required additional sampling locations within MDA V.

Specific Comments:

1. Section 2.4.1 Potential Contaminant Sources, page 5:

Permittees' Statement: "The conceptual site model for SWMU 21-018(a)-99, shown in Figure 2.4-1, includes both surface and subsurface sources of potential contamination:

- a. Surface – overflows from MDA V, the DP laundry facility footprint, the septic system outfall, and the surface debris disposal areas.
- b. Subsurface – MDA V absorption beds and distribution lines, the DP laundry facility blowdown sump and drainline, and the former septic system tank and associated lines.”

NMED Comment: AOC C-21-015 should be considered as a potential contaminant source for SWMU 21-018(a)-99. In Section 2.3 (Relationship to Other SWMUs and AOC's) on page 4, AOC C-21-015 is listed as a former waste treatment laboratory (Building 21-45), which transferred waste to and from the DP laundry facility via steel piping, eventually discharging to MDA V. The building was removed in 1954. The TA-21 Operable Unit RFI Work Plan for Environmental Restoration, Volume III (LANL 1991, 07680), lists AOC C-21-015 (Building 21-45) as a safety training building. It also states that the building was demolished and underlying soils were removed down to tuff. The VCA Report for C-21-015 states that Building 21-45 was used as both a training facility and a waste treatment laboratory. There is conflicting documentation and there is no discussion as to whether the piping associated with Building 21-45 was removed. The Permittees must provide additional information regarding AOC C-21-015 (Building 21-45), including its use and associated removal activities.

2. Section 4.2.1 Borehole Sampling, page 15:

Permittees' Statement: “One angled borehole and 12 vertical boreholes will be used to characterize vertical and lateral extent of contaminants from SWMUs 21-018(a) and 21-018(b), as well as to characterize fractures in Tshirege units Qbt 2 and Qbt 3.”

NMED Comment: Based on “*Earth Science Investigations for Environmental Restoration – Los Alamos National Laboratory, Technical Area 21*” (June 1995, LA-12934-MS), fractures have already been characterized at MDA V in TA-21. The proposed angled borehole may not define the extent of contamination if contamination above background values, fallout values, or detection limits is detected along the length or is still present at the total depth of the borehole. Angled boreholes may be useful in areas where there are several units located close together and access is limited. This is not the case at MDA V; therefore, the Permittees must drill a vertical borehole at the location of the proposed angled borehole and the additional boreholes discussed in general comment #3.

3. Section 4.2.2 Surface and Shallow Subsurface Sampling, page 16:

Permittees' Statement: “At MDA V, shallow subsurface (*i.e.*, 10 ft bgs or less) samples will be collected from the bottom of excavation trenches to determine the extent of contamination within and around the absorption beds, and to guide remediation and waste disposal activities.”

NMED Comment: If contamination is present at 10 feet below ground surface (bgs) (values above background levels or detection limits), samples must be collected at depths greater than 10 feet bgs in order to determine extent of contamination. The Permittees must provide the expected depth of the absorption beds. The diagrams provided indicate that the beds may be deeper than 10 ft bgs.

4. Section 4.3.1 SWMU 21-018(a), page 17:

Permittees' Statement: "Absorption bed materials will be removed to SALs/SSLs or to a maximum depth of 12 feet [per the EPA's risk assessment guidance, human health evaluation (EPA 1989, 080210), whichever condition is met first.]"

NMED Comment: It is premature to discuss risk assessment in this Work Plan. The Permittees are required to determine extent of residual contamination following remediation and to determine the potential for migration of contamination. A maximum excavation depth of 12 feet is appropriate for calculating risk; however, it may not be appropriate for cleanup should contamination exist below 12 feet. NMED suggests the Permittees adhere to Chapter VIII (Clean-up and Screening Levels) of the proposed Consent Order when proposing clean-up levels. NMED will determine if further action is warranted based on the results of the work contemplated in this Work Plan.

Clarification is needed as to the depth of the absorption beds and where the removal of contaminated media will begin. It is not clear whether excavation will terminate at a depth 12 feet below the current ground surface or 12 feet below the start of absorption bed materials. The IM Completion Report for the NTISV Hot Demonstration at MDA V (LANL 2003, 80923) reports that several feet of soil and gravel were placed over MDA V during and following the test. Additional information is required regarding the thickness of fill overlying the original absorption beds.

Permittees' Statement: "Field screening will be conducted during this sampling to explore the possibility of correlating fixed-laboratory data with field screening data to guide removal of additional absorption bed materials, as needed."

NMED Comment: The Permittees should note that field-screening data cannot be used for compliance purposes or risk assessment. Laboratory analysis must be used for confirmatory samples.

5. Section 4.3.1 SWMU 21-018(a), page 18:

Permittees' Statement: "In absorption bed 1, the DOE sponsored an NTISV demonstration, resulting in a large glass block, approximately 30 ft. wide by 20 ft. long by 10 ft. thick, covered with 10 ft. of clean fill. Because the glass contains plutonium-239 in excess of the SAL, it should be removed to a depth of 12 ft."

NMED Statement: The Permittees must provide additional information regarding the proposed removal of the block of glass from Absorption Bed 1. Pertinent information should include whether the glass will be removed as one piece or broken into smaller pieces; whether sampling or additional remediation will be conducted beneath and adjacent to the glass block following the removal; and how it will be characterized and disposed. The Permittees cannot assume that this glass block is low-level waste (LLW).

6. Section 4.3.3 SWMU 21-013(b) and AOC 21-013(g), page 18:

Permittees' Statement: "It is possible that some of the larger blocks of concrete, if found to be uncontaminated, will be left on the slope if technical and/or safety issues preclude their removal."

NMED Comment: The Permittees must provide an explanation as to how debris will be determined as 'too large' to remove, and who will make this determination. If debris is left in place and soil underneath the debris can't be sampled, a final site determination cannot be made by NMED. NMED recommends that the Permittees consider breaking up the larger pieces to facilitate removal and sampling.

7. Section B-1.2, page B-4:

Permittees' Statement: "Compounds associated with synthetic detergents are not suspected because it was determined that ordinary soaps would adequately decontaminate the radioactively contaminated clothing (Mead and Newell 1952, 6203, pp. 14 and 15)."

NMED Comment: There is previous documentation, *A History of Liquid Waste Management at Los Alamos* (January 1996, LA-UR-96-1283), which contradicts the Permittees' claim that ordinary soap was proven to be effective in decontaminating radioactive clothing. The document states that, "Laundry soaps, such as Ivory Snow, readily available on the market, were used as cleaning agents but were found to have a relatively low efficiency in removing isotopes of plutonium and polonium. Studies were conducted and experiments undertaken to discover agents that might be more effective." Eventually it was determined that "the citric and tartaric acid solutions were the most effective decontaminating agents." Based on this information, the Permittees are required to identify and test for compounds associated with any synthetic detergents that may have been used.

8. Table 4.2-3 Analytical Suites for Proposed Samples at SWMU 21-018(a)-99, page 49:

NMED Comment: A minimum of four samples must be selected from each boring for submittal to a laboratory for analysis of VOCs, SVOCs, explosive compounds, pH, PCBs, dioxins, furans, nitrates, perchlorate, TAL metals, and cyanide.

9. Appendix C Management of Investigation Derived Waste, page C-1-C-3:

NMED Comment: 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. AOCs may be either consolidated or treated in-situ within the AOC without triggering RCRA requirements. Neither of these actions is proposed at MDA V. NMED therefore believes the Permittees are not applying the AOC concept properly to this site.

The Permittees must provide brief descriptions of the methods and procedures used to characterize the waste streams. As stated in section IX.A of the September 1, 2004 draft Consent Order, the Permittees cannot substitute a reference to their SOPs and website for a description of procedures.

The Permittees cannot use previous sampling data for the purpose of characterizing newly generated waste streams. The Permittees must collect samples of all newly generated waste streams related to IDW and submit the samples for laboratory analysis.

The Permittees did not provide information on how drill cuttings will be handled during and after the investigation. The Permittees must describe how this waste stream will be managed and characterized, and where it is anticipated to be disposed.

The Permittees assume that most of the waste streams generated will be disposed of as low level waste (LLW) at TA-54 MDA G. Absorption Beds 2 and 3, which the Permittees propose to manage as LLW, received the same effluent as Absorption Bed 1. Excavated fill from Absorption Bed 1 is being managed as mixed LLW. The Permittees must manage soil from Absorption Beds 2 and 3 in a similar manner. Before disposal, the Permittees must characterize the waste. At that point, a determination can be made as to where the waste may be disposed.

It is not clear how the Permittees are going to handle the cast iron pipe and VCP. The text of the Work Plan discusses what has been done historically, but does not discuss what the Permittees propose to do as part of this work. The Permittees must revise the text to discuss how this waste stream will be managed.

