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CERTIFIED MAIL-RETURN RECEIPT REQUESTED

August 22, 2006

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**SUBJECT: NOTICE OF DISAPPROVAL FOR INVESTIGATION WORK PLAN FOR
UPPER LOS ALAMOS CANYON AGGREGATE AREA
LOS ALAMOS NATIONAL LABORATORY EPA ID No: NM0890010515
HWB-LANL-06-012**

Dear Messrs. Gregory and McInroy:

The New Mexico Environment Department (NMED) has received the United States Department of Energy and Regents of the University of California report entitled *Investigation Work Plan for Upper Los Alamos Canyon Aggregate Area (WP)* dated April 2006 (referenced by LA-UR-06-2464 and ER2006-0226). NMED hereby issues this Notice of Disapproval of the aforementioned Work Plan.

General Comments:

1. To facilitate the review, please provide a map of Upper Los Alamos Aggregate area depicting existing and proposed sampling locations for the entire aggregate.
2. Most of the area being investigated has been disturbed in the past due to various development and construction activities. Several feet of fill has been placed at some sites at different times in the past. The United States Department of Energy/Los Alamos National Security (collectively the Permittees) must take measures to ensure that samples being collected are not from the fill but from the appropriate soil/tuff media that was potentially affected by historical laboratory operations. The selection of appropriate sampling locations and depths should be documented and provided in the report.



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Specific Comments:

1. Section 3.1.1.1, Underground Industrial Waste Lines, Page 11:

SWMU 0-017 comprises 39,000 feet of underground acid/industrial waste line and associated sumps and pumps that were used for transportation of radiological and chemical waste to various treatment facilities, according to the 1990 SWMU report. The SWMU report further states that the lines and associated structures have become contaminated. The RFI Report for Potential Release Site 0-017 (July 1999) only addressed former Line 167, Lines 170 and 171, and manhole ULR 33-not the entire SWMU. In response to NMED's Request for Supplemental Information, LANL withdrew its no further action (NFA) request for SWMU 0-017 in April, 2000.

An underpinning of WP is that only Lines 170 and 171 remain of the former waste lines and Lines 170 and 171, former Line 167 and manhole ULR 33 are designated as SWMU 0-017. No documentation has been provided that shows when this designation was made and who authorized it. To back up the assertion, the Permittees must provide an updated map of the entire length of underground acid/waste line system, depicting locations of former and existing lines.

The Historical Investigation Report for Upper Los Alamos Canyon Aggregate Area (HIR), dated April, 2006, does not provide sufficient details of past removal activities. It appears from the HIR that after removal of sections of the waste lines, only radiological screening was done to determine the nature and extent of contamination; no laboratory analyses were performed for radiological or hazardous constituents. Although, the waste lines were also used for the transport of chemical wastes, and leaks from waste lines and sumps have been documented, the nature and extent of hazardous constituents was never investigated. The "Radioactive Liquid Waste Lines Removal Project at Los Alamos (1981-1986)," which documents the historical removal of portions of waste lines, states that approximately 46 items were left in place, consisting of total waste line length of about 6000 ft. Please provide updated information on the portions of waste lines that were not removed between 1981 and 1986 and any lines that may have been removed later. Investigation of only a portion of SWMU is not sufficient to make a determination regarding whether corrective action is complete for the entire SWMU.

2. Section 3.1.2, Summary of Releases, Transport Mechanisms, and Potential Receptors, page 11:

The WP states that SWMU 00-017 is part of underground industrial waste lines. As explained in the comment #2, SWMU 00-017 is comprised of the entire waste line system not just a portion of it. Revise the text accordingly.

3. Section 3.2.1, Summary of Previous Investigations for SWMU 00-017, Page 13:

The RFI report for SWMU 00-017 (July, 1999) reports that 45 samples from 29 locations were analyzed at off-site laboratory not 40 samples from 26 locations as reported in the WP. Resolve the discrepancy and revise the WP and HIR accordingly.

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4. Section 3.2.2, Summary of Data for SWMU 00-017, Page 13-14:

Chromium was retained as a chemical of potential concern (COPC) in the RFI Report because it was detected in two samples at concentrations greater than background values. The WP states that it was detected within the range of background concentrations implying that it is not retained as a COPC. Please explain the discrepancy.

The WP states that no organic chemicals were detected, even though Aroclor 1254 was detected at location 00-10125 (according to the RFI Report). Resolve the discrepancy and revise the text accordingly.

According to the RFI Report, cesium-137 was detected at location 00-10125 at 3.27mg/kg (18.5-19 ft) and americium-241 was detected at two locations. The WP states that lateral extent is defined for all radionuclides in the canyon portion of SWMU 00-017, even though the lateral extent for cesium-137 and americium-241 is not defined, and both of these radionuclides were retained as COPCs in the RFI Report. Sampling location 00-10125 is not depicted on the Figure 3.2-1. Provide an explanation for not including results from sampling location 00-10125 in the WP, or modify the WP accordingly.

5. Section 3.3, AOC 00-031(a), Soil Contamination beneath Former Service Station, Page 15:

According to the 1992 Work Plan for OU 1071, there were three 25,000 gallon underground storage tanks (USTs) at the site that could have released potential contaminants (e.g., lead, solvents, oil and grease) to the environment, prior to the transfer to a private owner. No previous investigations have been conducted at the site. LANL (November 9, 1995) sent a letter to EPA stating that no investigation is warranted at the site because of the subsequent commercial use of the property by private owner for twenty years. In response, EPA (December 6, 1995) asked DOE to clarify whether the site was their responsibility. It is not clear from the WP that the issue of 'responsible party' raised by EPA was ever addressed. Even though DOE concurred with LANL's no further action (NFA) recommendation in 1998, NMED does not consider DOE to be the appropriate authority to make a NFA determination for the site that may have RCRA constituents. NMED considers LANL responsible for the investigation of the USTs that were used by LANL and may have contributed to the release of contaminants to the environment. Include investigation of AOC 00-031(a) in the WP or provide documentation that corrective action at the site has been completed or is no longer needed.

6. Section 3.4.2, Summary of Data for AOC 00-031(b), Page 16:

Lead was detected above background in a number of samples collected during RFI investigations (August, 1996), but was not identified as a COPC in the WP. Provide documentation of NMED approval of the cleanup of the site or include lead as a COPC.

7. Section 4.2, Scope of Activities for SWMU 01-001(a), Page 22:

It is not clear if sampling is proposed for the entire length of the drainage. Samples must be collected along the entire length of the drainage and to the toe of the colluvium because contamination may have migrated to the canyon bottom over time. Sample locations must be selected based on geomorphic relationships and sedimentary packages following canyon investigation procedures.

8. Section 4.2, Scope of Activities for SWMU 01-001(b), Page 24:

See specific comment # 7.

9. Section 4.14.3, Scope of Activities for SWMU 01-003(a), Page 43:

Contaminated debris from Sigma Building was disposed of at SWMU 01-003(a) and covered with 4 ft of earthen fill. Additional fill was deposited at the site when the area was developed for housing. Explain how the proposed depths for samples to be collected from the area overlain by fill (i.e., 0-0.5 ft and 2.0-3.0 ft) will be adequate to define the nature and extent of contamination at the site.

The proposed depths will likely result in collecting samples from the clean fill. The Permittees must collect additional samples from greater depths to ensure potentially contaminated soil is targeted.

10. Section 4.15.3, Scope of Activities for SWMU 01-003(b), Page 44:

The disposal area may currently be covered with fill. Proposed samples that will be collected at the disposal area may not be adequate to define the nature and extent of contamination at the site. The proposed depths (i.e., 0-0.5 ft and 2.0-3.0 ft) for sample collection may result in samples being collected from the clean fill. The Permittees must collect additional samples from greater depths to ensure potentially contaminated soil is sampled.

11. Section 4.17.2, Summary of Data for SWMU 01-003(d), Page 45:

The data from 1992, Phase I RFI investigations, indicate very high detection limits for antimony. The WP states that downgradient lateral extent has been defined for antimony. It is not clear how the lateral extent for antimony is considered defined when sample detection limits were much greater than the background values. Similar statements have been made for other SWMUs and other COPCs throughout the document. However, since proposed sampling locations in this WP would likely result in defining the lateral extent for these SWMUs, no revision is necessary.

12. Section 4.28.3, Scope of Activities for SWMU 01-007(a) and Adjacent SWMUs 01-006(b,n), Page 56:

The WP states that samples in the area of SWMU 01-007(a) does not need to be analyzed for cyanide, nitrates, perchlorate and organic chemicals. Building D was primarily used for processing plutonium, and solvents, and other chemicals also may have been used in the

building. Since the 1997 investigations carried out by Ahlquist focused only on radiological survey and contamination, it should not be assumed that other contaminants were not present. Sample analysis must include cyanide, nitrate, perchlorate, organic chemicals and gamma analysis.

13. Section 4.31.3, Scope of Activities for SWMU 01-007(d), Page 59:

The WP states that samples in the area of SWMU 01-007(d) will not be analyzed for cyanide, nitrate, perchlorate and organic chemicals. Soil contamination was found around buildings H and Theta and was due to overflow from industrial waste lines. Because previous investigations focused only on radioactive contamination, it should not be assumed that other contaminants are not present. Sample analysis must include cyanide, nitrate, perchlorate, and organic chemicals.

14. Section 4.32.3, Scope of Activities for SWMU 01-007(e), Page 60:

The WP states that samples in the area of SWMU 01-007(e) will not be analyzed for inorganic and organic chemicals. COPCs associated with SWMU 01-007(e) included radionuclides, solvents and metals (1996 RFI Report, page 30). Because previous investigations focused only on radioactive contamination, it should not be assumed that other contaminants are not present. Sample analysis must include metals, cyanide, nitrate, perchlorate, and organic chemicals.

15. Section 4.33.3, Scope of Activities for SWMU 01-007(j), Page 63:

The WP states that samples in the area of SWMU 01-007(j) will not be analyzed for inorganic and organic chemicals. Sources of contamination at SWMU 01-007(j) (comprised of twelve areas of suspected subsurface contamination) are not known. Subsurface contamination observed in these areas likely resulted from leaks from industrial waste lines that originated at and were connected to various buildings at TA-1. Industrial waste lines from these buildings transported chemical as well as radioactive materials. Previous investigations focused only on radioactive contamination, however, it should not be assumed that other contaminants are not present. Additionally, 1996 RFI Report listed metals including chromium as a COPC (page 50). Sample analysis must include metals, cyanide, nitrates, perchlorate, and organic chemicals.

16. Section 6.2.3, Scope of Activities for SWMU 32-001, Page 73:

Vertical extent for previous sampling locations was not defined. Include an additional sampling location in the center of the base of the former incinerator and collect samples from at least 0-1.0 ft and 2.0 to 3.0 ft below ground surface. If field screening during sample collection indicates the presence of contaminants, then samples must be collected from greater depths to define the vertical extent.

17. Section 6.3.3, Scope of Activities for SWMU 32-002(a), Page 75:

Location 32-06375 is the location of third highest lead concentration, not second highest concentration as indicated in the text (530 mg/kg at location 32-06373 and at 110 mg/kg at location 32-06369). Mercury was detected at the highest concentration (43 mg/kg) at location 32-06373, not at location 32-06368. Location 32-06369 is not the location of highest lead

concentration. Make appropriate corrections to the text. Move the location of the proposed sample to adjacent to the previous sampling location 32-06373 instead of 32-06375.

18. Section 6.4.3, Scope of Activities for SWMU 32-002(b), Page 77:

Location 32-06344 is the location of highest concentrations of lead, mercury, thallium, and plutonium-239, not location 32-06365 as indicated in the text. The lateral extent of contamination is not defined at the outfall area, as mercury was detected at the concentration of 12 mg/kg at location 32-06325 (the sample collected farthest down in the drainage). Mercury was detected at 303 mg/kg and lead at 1500 mg/kg at location 32-1016 (0-5 in) during Phase I activities according to 1996 Phase II and VCA report. Although approximately 1 cubic foot of soil was removed from location 32-1013 during Phase II activities to remove PCB contaminated soil, apparently no soil was removed from location 32-1016. Additional samples should be collected from former sampling location 32-1016, and from at least two depths to define the vertical extent. Even though a decreasing trend is evident from the limited number of samples collected in the past, higher concentration of contaminants may exist in the drainage downstream at locations of sediment accumulation. Data from the 1995 RFI, though of screening level quality, indicates the presence of PCBs, and inorganic chemicals like lead and mercury at high concentrations. It is not clear if sampling is proposed for the entire length of the drainage. Samples must be collected along the entire length of the drainage and to the toe of the colluvium because contamination may have migrated to the canyon bottom over time. Sample locations must be selected based on geomorphic relationships and sedimentary packages following canyon investigation procedures.

19. Section 6.5.3, Scope of Activities for AOC 32-003, Page 78:

It is not clear if sampling is proposed for the entire length of the drainage. Samples must be collected along the entire length of the drainage and to the toe of the colluvium because contamination may have migrated to the canyon bottom over time. Sample locations must be selected based on geomorphic relationships and sediment packages following canyon investigation procedures. PCBs were detected in the storm water samples recently collected downgradient of the SWMU in Los Alamos Canyon by NMED OB. The data from the 1995 RFI report (screening level data) indicates that lead and zinc were detected above background levels. Therefore, the Permittees must include metals in the analytical suite for all samples to be collected at AOC 32-003. Acetone and toluene were also detected at the site. Therefore, organic chemicals must be included in the analytical suite.

20. Section 7.2.3, Scope of Activities for SWMU 41-001, Page 85:

It is not clear if sampling is proposed for the entire length of the drainage. Samples must be collected along the entire length of the drainage and to the toe of the colluvium at the main channel because contamination may have migrated to the canyon bottom over time. Sample locations must be selected based on geomorphic relationships and sedimentary packages following canyon investigation procedures.

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21. Section 7.3.3, Scope of Activities for SWMU 41-002(a,b,c), Page 87:

Site investigation for this site has been deferred until future D&D of the sewage treatment plant. Note that no data are available for metals for this consolidated unit. Therefore, metals must be included in the sample analytical suite during future investigations to be conducted at the time of D&D.

22. Section 7.4.3, Scope of Activities for AOC 41-003, Page 88:

Site investigation for this site has been deferred until the storage tunnel is decommissioned. Note that the previous investigation only focused on radioactive chemicals, full suite of analysis must be included for samples collected during future investigations.

23. Section 8.4.3, Scope of Activities for AOC 43-001(b2), Page 93:

Samples must be collected along the entire length of the drainage and to the toe of the colluvium at the main channel because contamination may have migrated to the canyon bottom over time. Sample locations must be selected based on geomorphic relationships and sedimentary packages following canyon investigation procedures. Additional samples must be collected from the soil beneath the drain lines, since waste could have leaked from the drain lines in the past and resulted in the contamination of subsurface soil.

24. Section 8.6.3, Scope of Activities for AOC C-43-001, Page 95:

See Specific Comment # 23.

25. Table 1.1-1, Pages 209-213:

For solid waste management units (SWMUs) 00-003, 00-012, and 01-001(m), the correct reference would be NMED's letter (dated August 6, 2003) that granted NFA status to these units, not approval of the investigation reports.

Under 'Site Status' column, the WP indicates that areas of concern (AOCs) 01-006(i), 01-006(k), 01-006(l), 01-006(m), 01-006(p), 01-006(t), 01-007(f), 01-007(g), 01-007(h), 01-007(i), 01-007(m), 01-007(n), 01-007(o), and 01-007(p) are not included in this investigation because NFA was granted by the Environmental Protection Agency (EPA) in 1994. The EPA letter cited as a reference does not grant NFA to these sites. To the contrary, the letter states that even though some of the units are not identified as SWMUs and do not have to be added to the HSWA Permit, LANL may continue investigation of these units under the Environmental Restoration program. However, these sites were included in the EPA letter (dated January 21, 2005) that granted NFA approval to 542 AOCs based on prior decisions. Revise the Table with correct references.

SWMUs 01-001(h), 01-001(i), 01-001(j), 01-001(k), 01-001(l), and 01-001(n) were not granted NFA by EPA in 1993 as indicated in the Table. The letter cited as a reference did not grant NFA for these sites rather stated that "Contingent upon approval from the New Mexico Environment

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Department (NMED), Los Alamos National Laboratory (LANL) may request a Class III permit modification to remove those SWMUs that are currently in the HSWA permit.” However, a permit modification request was submitted by LANL on March 27, 1995 and NFA was granted by NMED on December 23, 1998. Revise the Table with correct references.

The correct reference for NFA for AOC 30-001 is the EPA letter dated January 21, 2005. The United States Department of Energy (DOE) approval cited is not appropriate since DOE is not the appropriate authority to grant NFA for this AOC. Revise the Table with correct reference.

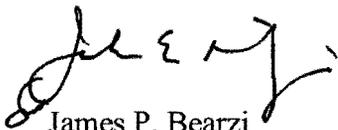
41-004 is not a SWMU as indicated in the table. It is an AOC.

26. Table 3.1-1, Pages 214-216:

The data provided in Table 3.1-1 for SWMU 00-017 eliminated some samples that were reported in Table 2.3-2 and Appendix D of the RFI Report (July, 26 1999), (e.g., samples collected at locations 00-10125 (18.5-19ft.), 00-10126 (20-20.6 ft.), and 00-10142 (5-9 ft.)). Additionally, the RFI Report had included volatile organic chemicals (VOCs) data for sampling locations 00-10143, 00-10144 and 00-10145. The results are not included in Table 3.1-1, and the WP states that VOC analyses were not requested. Explain the reason for omitting these data and revise the Table and the HIR accordingly.

The Permittees must respond to all comments as outlined in this letter within forty five (45) days of receipt of this letter. If you have any questions, please contact Neelam Dhawan at (505) 428-2540.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:nmd

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