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TA53

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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

June 23, 2009

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David McInroy
Remediation Services Deputy Project Director
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**RE: NOTICE OF DISAPPROVAL FOR THE INVESTIGATION WORK PLAN FOR
LOWER SANDIA CANYON AGGREGATE AREA
LOS ALAMOS NATIONAL LABORATORY
EPA ID #NM0890010515
HWB-LANL-09-016**

Dear Messrs. Gregory and McInroy:

The New Mexico Environment Department (NMED) has received the United States Department of Energy (DOE) and the Los Alamos National Security, LLC (LANS) (collectively, the Permittees) *Investigation Work Plan for Lower Sandia Canyon Aggregate Area (IWP)*, dated April 2009 and referenced by LA-UR-09-2076/EP2009-0100. NMED has reviewed this document and hereby issues this Notice of Disapproval (NOD).

General Comments:

1. At each site undergoing investigation, 20% of all samples must be sent for off-site laboratory analysis for polychlorinated biphenols (PCBs). The selected samples must be biased toward areas where field screening indicates the greatest potential contamination.
2. Plastics are typically associated with firing sites. During previous investigation of firing sites at TA-20, semi volatile organic chemicals (SVOCs) were not investigated. The Permittees must include SVOCs in the analytical suite for SWMUs 20-002(a), 20-002(b), 20-002(c), 20-002(d), 20-003(b), and 20-003(c) or provide documentation that SVOCs were not components of explosives used at these firing sites. Analyses of gamma emitting radionuclides, isotopic



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uranium and Sr-90 are included in the proposed analytical suite for these sites. The Permittees must explain whether tritium or any other alpha-emitting isotopes such as americium and plutonium were used at these sites, and should therefore be included in the analytical suite.

Specific Comments:

- 1. Section 4.1.1.3, SWMU 20-001(a), Proposed Activities, page 16:** The Permittees propose to collect sixteen samples from the eight 1995 RCRA Facility Investigation (RFI) sample locations to define the nature and vertical extent of contamination. The samples are proposed to be collected from two depths, i.e., 10-11 ft and 14-15 ft at each location. As stated in the Historical Investigation Report (HIR) that accompanied the IWP, the actual dimensions of the landfill are unknown, but a 1965 memorandum stated that it was approximately 5 ft deep. During the 1995 RFI investigations, samples were collected only from approximate depths of 10-11 ft. Potential contamination could be present beneath the landfill at shallower depths (5 to 10 ft) that have never been investigated. The Permittees must collect additional samples from 5-6 ft depths at the proposed eight locations. The Permittees must add analysis of tritium, plutonium and americium to the analytical suite or provide supporting documentation that these were not constituents of potential concern (COPCs). Additional samples must also be analyzed for the same analytical suite as proposed in Table 4.0-1 for SWMU 20-001(a).
- 2. Section 4.1.2.3, SWMU 20-001(b), Proposed Activities, page 17:** Three trenches were excavated during 1995 Phase 1 RFI investigations to locate the former landfill based on geophysical anomalies. Samples were collected at various depths during previous investigation of the three trenches, but the rationale for selecting the depths is not explained. It is not clear if the maximum depth of the landfill was ever determined. The Permittees have selected eight locations to collect the proposed samples. Samples will be collected from two depths (10-11 ft and 14-15 ft) at each location to define the vertical extent. Since the total depth of these exploratory trenches is not reported, it is not clear if the potential contamination underneath the landfill is being targeted. If the depth of landfill was shallower than 10 ft, then additional samples must be collected from immediately beneath the landfill. If additional samples are collected, they must also be analyzed for the same analytical suite as proposed in Table 4.0-1 for SWMU 20-001(b).
- 3. Section 4.1.3.3, SWMU 20-001(c), Proposed Activities, page 17:** The Permittees state that if no anomalies are identified during the geophysical survey, samples will be collected from two depths, (10-11 ft and 14-15 ft) at ten locations within the geophysical survey boundary. The Permittees must provide a rationale for selecting these depths or collect additional samples from the 5-6 ft depth interval at all proposed locations. Samples must be analyzed for the same analytical as proposed in Table 4.0-1 for SWMU 20-001(c).
- 4. Section 4.1.8.3, AOC 20-003(b), Proposed Activities, page 24:** According to Table 5.4-1 (p 5-22) of the 1996 RFI report, metals and Sr-90 analyses were not conducted, but Table 4.1-1 of the IWP indicates that these analyses were conducted. Resolve the discrepancies and revise the IWP accordingly. PCBs are not suspected to be associated with this site, but PCBs were detected in surface samples collected downgradient of the site. The Permittees must

include PCB analyses for the samples to be collected at the site to evaluate for the presence of PCBs.

- 5. Section 4.1.10.3, AOC 20-004, Proposed Activities, page 26:** The Permittees must investigate the potential contamination beneath the inlet drainlines that connected the buildings to the septic tank. Radiological contamination may exist in the soils beneath the former tank and drainlines. The Permittees must revise the IWP to include investigation of the soils beneath the drainlines and must include gamma spectroscopy in the analytical suite.
- 6. Section 4.1.11.3, AOC 20-005, Proposed Activities, page 27:** The Permittees must include investigation of the drainline connecting building 20-1 to the septic tank in current investigations. The samples must be collected at two depths at each additional sampling location beneath the former drainline and analyzed for the same analytical suite as proposed in Table 4.0-1 for AOC 20-005. The Permittees must also include gamma spectroscopy analysis for all samples to be collected at the site.
- 7. Section 4.2.1.3, SWMU 53-001(a), Proposed Activities, page 29:** The former storage area was used as a satellite accumulation area for building 53-2. The nature of waste stored at the site prior to using it for storing dielectric oil is not known. Only four samples were analyzed for metals during the 1995 investigations. Additional samples were collected during 1997 investigations but were not analyzed for metals because the investigation was focused on PCBs only. Ten cubic yards of contaminated soil were removed during the 1997 Voluntary Corrective Action activities; confirmatory samples collected after soil removal were analyzed for PCBs only. The Permittees must propose to collect samples at two depths (0-1 ft and 2-3 ft) from two additional locations in the drainage. The nature and extent of contamination has not been defined for inorganic and organic chemicals. The Permittees must propose to analyze the samples for inorganic and organic chemicals to define the nature and extent of residual contamination at the site.
- 8. Section 4.2.4.3, SWMUs 53-006(b) and 53-006(c), Proposed Activities, page 33:** At SWMUs 53-006(b) and 53-006(c), two underground storage tanks received waste water from Building 53-3. In 2000, both tanks were cleaned and decontaminated, and the drainlines to the tanks were cut and capped. The tanks were inspected and found to be intact with no cracks or fractures. The Permittees propose to delay the investigation of the site because of its proximity to an operating nuclear environmental site. Since the source of contamination has been removed and there is currently no indication that releases have occurred from the tanks, NMED concurs that these SWMUs can be investigated at the time of removal of the tanks. The Permittees must ensure that the potential contamination beneath the drainlines connecting the buildings to the tanks are included in the future investigations.
- 9. Section 4.2.5.3, SWMUs 53-006(d) and 53-006(e), Proposed Activities, page 34:** SWMUs 53-006(d) and 53-006(e) comprise two compartments of an inactive underground tank associated with the radioactive liquid waste system at TA-53. The tank was used as holding area to allow short-lived activation products to decay before the waste was discharged to surface impoundments at TA-53. In 2000, the tank was cleaned and the drainlines to the tank were cut and capped. The tank was inspected and found to be intact with no cracks or fractures. The tank

was backfilled with sand following decontamination. The tank is currently located beneath a building. The Permittees propose to delay the investigation of SWMUs because of its proximity to an operating facility and its inaccessibility. Since the source of contamination has been removed and there is currently no indication that releases have occurred from the tank, NMED concurs that these SWMUs can be investigated at the time of deactivation of nearby facilities. The Permittees must ensure that the potential contamination beneath the drainlines connecting the buildings to the tanks and connecting tank to the impoundments are included in the future investigations.

10. Section 4.2.6.3, SWMU 53-006(f), Proposed Activities, page 35: SWMU 53-006(f) is an inactive storage tank located beneath building 53-1. The tank was used to store neutralized radioactive liquid waste, and the tank also received hazardous waste. The tank was emptied, decontaminated and the piping leading into and out of the tank was capped. The Permittees propose to delay investigation of the tank because of limited accessibility and proximity to an operating facility. NMED concurs that potential releases from the tank can be investigated at the time of tank removal. The Permittees propose to collect samples from three locations next to the transfer pad located outside building 53-1. The Permittees must add analyses of isotopic plutonium, isotopic uranium, strontium 90, tritium and perchlorate to the analytical suite or provide documentation that these are not COPCs at the site.

11. Section 4.2.7.3, SWMU 53-007(a), Proposed Activities, page 36: SWMU 53-007(a) is an inactive aboveground storage tank located in the basement of building 53-1. The tank was used to neutralize radioactive liquid waste generated in the radiochemistry laboratories in building 53-1. The tank also received hazardous waste. The tank was emptied, decontaminated and the piping leading into and out of the tank was capped. The Permittees propose to delay investigation of potential releases from the tank because it is located in an operating facility. NMED concurs that potential releases from the tank can be investigated at the time of deactivation of building 53-1. The Permittees must ensure that the drainlines connecting the tank to the radiochemistry laboratories and the storage tank (i.e., SWMU 53-006(f)) are also investigated for potential contamination at the same time.

12. Section 4.2.8.3, AOC 53-008, Proposed Activities, page 37: AOC 53-008 is a large storage area where material and equipment used at TA-53 was stored. The text states that the nature and extent of contamination down the main drainage from this site has been defined during previous investigations. The Permittees must include sampling locations from the drainage investigations in Figure 4.2-14. Antimony and lead were detected in samples collected from location 53-01557 (0.0-0.17 ft) during 1998 investigations. Samples were analyzed only for only gross gamma, gross alpha/beta, and metals. Sampling location M8-11 must be moved to this location to evaluate the nature and vertical extent of contamination at this location. Cesium-134 and Cobalt-60 were detected at location 53-01070 during investigations conducted in 1995. Gross alpha/beta screening was not conducted at that time. The Permittees must include analyses of isotopic plutonium, isotopic uranium, and tritium or provide explanation for excluding them from the analytical suite.

13. Section 4.2.9.3, AOC 53-009, Proposed Activities, page 38: AOC 53-009 is a storage area where liquid scintillation oil was stored. Previous investigations did not include analysis of

metals. The Permittees must include analysis for inorganic chemicals in the analytical suite or provide documentation that metals are not COPCs at the site.

14. Section 4.2.10.3, AOC 53-010, Proposed Activities, page 39: AOC 53-010 is a storage area where liquid scintillation oil was stored in tanks and drums. Previous investigations did not include analysis of metals. The Permittees must include analysis for inorganic chemicals in the analytical suite or provide documentation that metals are not COPCs at the site.

15. Section 4.2.11.3, AOC 53-012(e), Proposed Activities, page 41: AOC 53-012(e) is a drainline and former outfall associated with building 53-2. The Permittees must include strontium-90 and alpha-emitting radionuclides in the analytical suite to evaluate the nature and extent of contamination at the site.

16. Table 4.1-1, Summary of Historical Samples Collected and Analyses Requested at Former TA-20, page 127: The request numbers provided for several analyses are different from the request numbers reported in Table 5.1-1 of the 1996 RFI Report. For example, for SWMU 20-001(a), the request number for Sr-90 analysis is reported as 297 in the IWP, but the Table 5.1-1 of the RFI Report indicates that Sr-90 was not analyzed. The request number 297 is for gamma analysis. Sr-90 is usually not analyzed by gamma spectrometry. The Permittees must resolve the discrepancies and revise the IWP accordingly.

17. Table 4.2-1, Summary of Historical Samples Collected and Analyses Requested at TA-53, page 145: Column four of the Table 4.2-1 describes the media type for samples. For some locations, two samples collected from the same depth are described by two different media types. For Example, for location 53-01051, two samples were collected from a depth of 0.0-0.5 ft; one sample (ID # 0253-95-0375) is described as a fill sample and a second sample (ID # 0253-95-0001), collected from the same location and same depth, is described as a soil sample. The Permittees must explain why two different media types are assigned to samples collected from the same depth and location.

The Permittees must address all comments and submit a revised Plan by July 23, 2009. As part of the response letter that accompanies the revised IWP, the Permittees must include a table that details where all revisions have been made to the IWP and that cross-references NMED's numbered comments. All submittals (including maps and tables) must be in the form of two paper copies and one electronic copy in accordance with Section XI.A of the Order. In addition, the Permittees must submit a redline-strikeout version that includes all changes and edits to the IWP (electronic copy) with the response to this NOD.

Messrs. Gregory and McInroy
June 23, 2009
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Please contact Neelam Dhawan of my staff at (505) 476-6042 should you have any questions.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

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File: LANL, Lower Sandia Canyon Aggregate Area (TA-20, -53 and -72), 2009