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Official Correspondence Form

Name:	U1101436
Title:	Notice of Disapproval Phase II Investigation Work Plan Upper Sandia Canyon Aggregate Area LANL EPA ID NM0890010515 HWB-LANL-11-026
Date Received:	8/8/2011
Addressee Name:	M. Graham, ADEP
Originator:	J. Kieling, NMED
Action Item Description:	The Permittees must respond to all comments/submit a revised IWP.
Action Due Date:	9/6/2011
Responsible for Action:	Search Graham, Michael J
Responsible Office:	PADCAP
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EP2011-5370

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

August 5, 2011

George J. Rael, Assistant Manager
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Michael J. Graham, Associate Director
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Los Alamos National Security, LLC
P.O. Box 1663, MS M991
Los Alamos, NM 87545

RE: NOTICE OF DISAPPROVAL
PHASE II INVESTIGATION WORK PLAN
UPPER SANDIA CANYON AGGREGATE AREA
LOS ALAMOS NATIONAL LABORATORY
EPA ID #NM0890010515
HWB-LANL-11-026

Dear Messrs. Rael and Graham:

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) *Phase II Investigation Work Plan for Upper Sandia Canyon Aggregate Area* (IWP), dated April 2011 and referenced by EP2011-0046. NMED hereby issues this Notice of Disapproval with the following comments.

1. **Section 4.1.3.3, Proposed Sampling at SWMU 03-009(a), page 8:**
   a. The *Investigation Report for Upper Sandia Canyon Aggregate Area, Revision 1* (Report) concluded that the vertical and lateral extent of chromium was not defined at Solid Waste Management Unit (SWMU) 03-009(a). During 2009 investigations, chromium was detected at two locations and concentrations

increased with depth at both of these locations. The samples were collected from depths of 4 - 20 ft below ground surface (bgs). The IWP proposes to collect two additional samples by extending the depth at these locations to 30 ft to define the vertical extent of chromium contamination. The IWP also proposes to collect samples from one new sampling location to define the lateral extent. Five samples are proposed to be collected from 0 to 20 ft bgs from the new location, 9a-1. Since chromium concentrations increased with depth at the previously sampled locations, the Permittees must also extend the depth of the boring to 30 ft at the new location to define the vertical extent. Similarly, lead concentrations increased with depth, with the highest concentration detected in the deepest sample at location 03-608178 (19-20 ft bgs). Lead analyses must also be included in the analytical suite for all samples to be collected from the boring location 9a-1.

b. The Permittees propose to collect six samples from the depths of 9 - 20 ft bgs at locations 03-608181 and 03-608182 to define the vertical extent of Aroclor-1260, Semi Volatile Organic Compounds (SVOCs), and Total Petroleum Hydrocarbons-Diesel Range Organics (TPH-DRO). Samples collected during previous investigations at these locations indicated that inorganic chemicals were not present. However, the samples were collected only from 0-1 ft and 1-2 ft bgs and deeper intervals were not sampled. Inorganic chemicals were detected only in samples collected from approximately 11 ft-20 ft bgs at locations 03-608178 and 03-608179 (located north of these locations). To define the extent of contamination, the Permittees must include analyses of inorganic chemicals in the analytical suite proposed for samples to be collected from locations 03-608181 and 03-608182.

2. **Section 4.1.9.1, Site Description and Operational History, page 16:**
The text states that each of the four sludge beds at SWMUs 03-014 (k,l,m,n) measure 35 ft x 10 ft. Figure 4.1-6 indicates the size of each bed to be much larger, approximately 70 ft x 25 ft. The Permittees must clarify if the dimensions are reported incorrectly or the SWMU boundaries indicated on the figure are incorrect or depict areas larger than the sludge-drying beds.

3. **Section 4.1.9.3, Proposed Sampling at SWMU 03-014(k), page 17:**
   a. The Report concluded that the lateral and vertical extent of cyanide is not defined at SWMUs 03-014 (k,l,m,n). The IWP proposes to collect shallow subsurface samples from sampling location 03-03265 to define the vertical extent of cyanide. To define the lateral extent of cyanide, samples are proposed to be collected from new location 14k-1, which is west of sampling location 03-608272. During previous investigations, cyanide was detected in two of the four samples that were collected along the perimeter of the sludge-drying beds to define the lateral extent. The maximum detected concentration of cyanide (9.48 mg/kg) was in a sample collected from location 03-608273. However, the Permittees did not propose cyanide analysis for samples proposed to be collected from a location north of 03-

608273 (i.e., 14k-4) to define the lateral extent of contamination. The Permittees must include cyanide in the analytical suite for samples to be collected from proposed location 14k-4.

b. Lead was detected at 125 mg/kg at sampling location 03-608270 during previous investigations, significantly higher than the background value of 22.3 mg/kg. The Report concluded that the lateral extent of lead was defined since the concentration was lower than the maximum detected concentration of 217 mg/kg from a sample collected at location 03-03202, which is southwest of location 03-608270. However, the Permittees propose to collect samples from a new location (14k-3) that is east of location 03-03202. Lead analysis must also be included for samples proposed to be collected from location 14k-3 to further define the lateral extent of lead.

c. The Report concluded that the vertical extent of silver was not defined at location 03-03265. However, the Permittees did not propose analysis of silver for the two samples to be collected from 10-11 ft and 14-15 ft bgs at location 03-03265. The Permittees must define the vertical extent of silver and revise the text and tables accordingly.

d. The Report concluded that the extent of tritium was not defined to the east of the sludge-drying beds. However, tritium analyses are not proposed for samples to be collected from the new location 14k-3 that is east of location 03-608270, where the maximum concentration of tritium was detected during previous investigations. Revise the IWP to include tritium analysis for samples to be collected from location 14k-3.

4. **Section 4.1.13.2, Previous Investigations, page 20:**
According to the Report, the vertical extents of both Aroclor-1254 and Aroclor-1260 are not defined at sampling location 03-608279, not Aroclor-1254 only. The concentrations increased with depth for both of these compounds at sampling location 03-608279 at SWMU 03-014(o). In addition, the Report stated that the lateral extent of Arcolor-1254 was not defined to the east, south, and west of the beds. However, PCB analyses are not proposed for samples to be collected from the new location 14o-1 that is located east of the beds. The Permittees must resolve these discrepancies and revise the proposed sampling to add PCB analyses.

5. **Section 4.1.14.3, Proposed Sampling at SWMU 03-014(u), page 22:**
The text indicates that additional samples will not be collected from previous sampling location 03-608287 at SWMU 03-014(u). However, Figure 4.1-6 indicates that location 03-608287 (denoted by a triangle) is a proposed sampling location. NMED concurs with the Permittees that the vertical extent of lead is defined at this location and additional sampling is not required. Revise the figure to depict the proposed sampling locations accurately.

6. **Section 4.1.20.3, Proposed Sampling at SWMU 03-045(b), page 30:**
The text indicates that additional samples will not be collected from previous sampling location 03-608197 at SWMU 03-045(b). However, Figure 4.1-4 indicates that location 03-608197 (denoted by a triangle) is a proposed sampling location. Clarify the discrepancy and revise the figure or text accordingly.

7. **Section 4.1.25.1, Site Description and Operational History, page 35:**
Figure 4.1-9 indicates that the drainage from SWMU 03-045(h) continued northeast before joining a channel north of Eniwetok Drive to ultimately drain into Sandia Canyon, rather than extending south as stated in the text. Analytical data from AOC 03-052(b) (located northeast of the outfall) is used to determine nature and extent of contamination to the north of SWMU 03-045(h). The IWP also states that all data collected as part of the investigation of SWMU 03-045(h) are presented in the 2009 investigation report for Upper Mortandad Canyon Aggregate Area. The Permittees must clarify if contamination from SWMU 03-045(h) migrated to the north and south of the site (to Sandia and Mortandad Canyons, respectively) and whether these potentially contaminated areas were investigated separately. Revise the text accordingly.

8. **Section 4.1.25.2, Previous Investigations, page 36:**
The Permittees state that based on the sampling results presented in the investigation report, the lateral and vertical extent of all inorganic chemicals, organic chemicals, and radionuclides are defined at SWMU 03-045(h), except for the vertical extent of barium and cobalt at location MO-604952. However, the 2010 investigation report (p 280) concluded that the vertical extent of some metals (aluminum, barium, calcium, chromium, cobalt, copper, and nickel) is not defined. Resolve the discrepancy and revise the analytical suite for samples proposed to be collected at location MO-604952 accordingly.

9. **Section 4.1.28.2, Previous Investigations, pages 39-40:**
Permittees Statement: Because concentrations of benzo(b)fluoranthene, fluoranthene, and indeno(1,2,3-cd)pyrene were not detected at upgradient locations, the detected concentrations are most likely the result of runoff from surrounding parking lots and not from AOC 03-052(b). Therefore, the lateral extent of benzo(b)fluoranthene, fluoranthene, and indeno(1,2,3-cd)pyrene is defined.

NMED Comment: Review of the data indicates that benzo(b)fluoranthene, fluoranthene, and indeno(1,2,3-cd)pyrene were detected in samples collected upgradient of locations 03-608330 and 03-608331. The Report also concluded that lateral extent of benzo(b)fluoranthene, fluoranthene, and indeno(1,2,3-cd)pyrene was not defined. The maximum concentration of benzo(b)fluoranthene at the site was detected at an upgradient location (03-03291). Similarly, fluoranthene, and indeno(1,2,3-cd)pyrene were also detected in samples collected at locations upgradient of locations 03-608330 and 03-608331. However, the low detected concentrations indicate that additional samples are

not necessary at this time. Correct the statement to reflect the accurate characterization of the site.

10. **Section 4.1.34.2, Previous Investigations, page 47:**
Review of the Report indicates that the vertical extent of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, and indeno(1,2,3-cd)pyrene is not defined at locations 03-608386 and 03-608377. However, the text states that the extent of these compounds is not defined only at location 03-608386. Table 4.1-59 also indicates that samples collected from both locations would be analyzed for SVOCs. Revise the text to resolve discrepancy.

11. **Section 4.2.4.3, Proposed Sampling at SWMU 60-007(a), page 53:**
The Report concluded that the vertical extent of antimony, Total Petroleum Hydrocarbon (TPH)-Diesel Range Organics (DRO), and TPH-Lubrication Range Organics (LRO) was not defined at SWMU 60-007(a). The IWP proposes to collect samples from four locations (60-10001, 60-10004, 60-10005 and, 60-10006) and analyze them only for TPH-DRO. Review of the data indicates that vertical extent of heavier than diesel range hydrocarbons was not defined at locations 60-10001, 60-10005 and, 60-10006. During 2001 investigations, only surface samples (0.0 - 1.0 ft) were collected from these locations. The Permittees must revise the IWP to include analysis of TPH-DRO extended (using EPA method 8015M) for samples proposed to be collected from locations 60-10001, 60-10004, 60-10005 and, 60-10006.

12. **Section 5.3, Surface and Shallow Subsurface Sampling, pages 56-57:**
The Permittees must provide a written description that contains sufficient detail of methods to be used to collect surface and subsurface samples to allow for evaluation of the adequacy of the proposed methods. This includes providing a detailed description of the methods used to collect samples for volatile organic samples (VOCs) analyses. The methods employed must minimize the loss of VOCs during sample collection and produce defensible data. Revise the text and Table 5.0-1 accordingly.

The Permittees must respond to all comments and submit a revised IWP by **September 6, 2011**. 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.

Please contact Neelam Dhawan of my staff at (505) 476-6042 should you have any questions.

Sincerely,

John E. Kieling
Acting Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
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File: LANL, Upper Sandia Canyon Aggregate Area Phase II IWP, 2011.
LANL 11-026

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