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Date: December 21, 2007
Refer To: EP2007-0795

James P. Bearzi, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Subject: Submittal of the Response to the Notice of Disapproval for the Investigation Work Plan for the S-Site Aggregate Area and Revision 1

Dear Mr. Bearzi:

Enclosed please find two hard copies with electronic files of the Response to the Notice of Disapproval for the Investigation Work Plan for S-Site Aggregate Area as well as Revision 1 to the work plan. Also enclosed is an electronic copy of a redline/strikeout version of the changes. A table detailing the revisions to the original work plan that cross-references the New Mexico Environment Department's comments is also included.

This response is based on discussions with your staff during a telephone conference call held on December 10, 2007. If you have any questions, please contact John McCann at (505) 665-1091 (jmccann@lanl.gov) or Ed Worth at (505) 606-0398 (eworth@doeal.gov).

Sincerely,

Susan G. Stiger, Associate Director
Environmental Programs
Los Alamos National Laboratory

Sincerely,

David R. Gregory, Project Director
Environmental Operations
Los Alamos Site Office

SS/DG/JM/KB:sm

Enclosures: 1) Two hard copies with electronic files – Response to the Notice of Disapproval for the Investigation Work Plan for S-Site Aggregate Area (EP2007-0795)
2) Two hard copies with electronic files – Investigation Work Plan for S-Site Aggregate Area, Revision 1 (EP2007-0796)
3) Electronic file of redline-strikeout version of the work plan
4) Cross-walk table

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Cross-Reference between NMED November 29, 2007, Notice of Disapproval Comments on the "Investigation Work Plan for S-Site Aggregate Area" and Revision 1 of the Work Plan

NMED Comment No.	Section(s), Table(s), or Figure(s) in Original Work Plan	Page(s) in Original Work Plan	Section(s), Table(s), or Figure(s) in Revised Investigation Work Plan	Page(s) in Revised Work Plan	Nature of Revision to Investigation Work Plan
General Comments					
1	Table of Contents	vii–xi	Table of Contents	vii–xi	The table of contents has been revised to accurately reflect the actual pages where certain sections are located.
2	General comment for Sections 4.0, 4.2, 4.3, and 4.4	40–53	Sections 4.0, 4.2, 4.3, and 4.4	40–54	The text has been clarified. LANL intends to submit a minimum of 30% of field-screened samples and those samples with detections above background (based on field screening) for off-site analysis.
3	Tables 2.3-2, 2.3-3, 2.4-1, 2.4-2, 2.4-3	127–142	Tables 2.3-2, 2.3-3, 2.4-1, 2.4-2, 2.4-3	125–140	A footnote has been added to the tables specifying the units of measure.
4	General Comment regarding building designations	Entire document	No changes	None	LANL agrees that the naming convention for buildings and structures should be consistent between text and figures. However, because two different TAs are discussed in this work plan, removing the TA from the building designations in the text would lead to confusion (e.g., building 11-015 and building 16-015 would both become building 15). Therefore, LANL did not make changes to the text. Given the large number of figures that need to be revised, LANL is unable to correct them in the short time frame provided for submitting the revision.
5	Tables 5.3-1, 4.1-1, 4.5-1	164, 151–160	Tables 4.1-1, 4.5-1, and 5.3-1	163, 149–151, 160	Tables 4.1-1 to 4.5-1 were revised to indicate that U.S. Environmental Protection Agency (EPA) Methods 8330B and 8141A will be used for analysis of high explosives (HE). EPA Methods 8330B and 8141A ensure that the samples are analyzed for the constituents listed in Table III-1 of the March 2005 Compliance Order on Consent (the Consent Order).
6	Tables 1.1-1 and 1.1-2	101–117	Tables 1.1-1 and 1.1-2	99–108, 102–115	Tables 1.1-1 and 1.1-2 have been corrected and cross-checked with what they reference in the document.
7	Table 1.1-1	101–110	Table 1.1-1	99–108	The double listing for SWMU 11-006(c) has been removed from Table 1.1-1. SWMU 16-017(u)-99 is not within the S-Site Aggregate Area and is not part of Consolidated Unit 16-013-99. SWMU 16-017(u)-99 is located 1152 ft northwest of the V-Site Subaggregate and is part of the Cañon de Valle Aggregate Area.

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8	General Comment regarding drainage samples		Section 4.5, Figures 4.1-1 through 4.5-1, Plate 4	54, 91–98	The drainage sampling proposed in this work plan will be supplemented by data collected by other LANL environmental sampling programs, which includes sampling the length of the drainage. Section 4.5, Extended Drainages, has been revised to clarify this approach. In addition, Figure 4.5-1 has been revised to show additional drainage sampling, and Plate 4 has been added to show the relationship between the sampling proposed in this work plan and the reaches being investigated under the South Canyons investigation work plan.
Specific Comments					
1	Section 4.1.1 and Table 4.1-1	42, 151	Section 4.1.1, Figure 4.4-1, and Table 4.1-1	42, 91, 151	Text, table, and figure have been revised to reflect that a total of 10 (5 surface and 5 subsurface) proposed sampling locations have been added in and around the site boundary to define the nature and extent of potential contamination. In addition, four samples will be collected downgradient of the site within a drainage to define the nature and extent of potential contamination.
2	Section 4.1.2 and table 4.1-1	42, 152	Section 4.1.2, Figure 4.4-1, and Table 4.1-1	42, 43, 91, 150, 151	The text, table, and figure have been revised to reflect that a total of 20 (10 surface and 10 subsurface) proposed sampling locations have been added in and around the SWMU 11-005(a) boundary to define the nature and extent of potential contamination. In addition, two samples will be collected downgradient within a drainage to define the nature and extent of potential contamination. The text, table, and figure have been revised to reflect that a total of 24 (12 surface and 12 subsurface) proposed sampling locations have been added in and around the SWMU 11-005(b) boundary to define the nature and extent of potential contamination. In addition, two samples will be collected downgradient within a drainage to define the nature and extent of potential contamination. The text, table, and figure have been revised to reflect that a total of eight (four surface and four subsurface) proposed sampling locations have been added in and around the boundary of SWMU 11-011(d) to define the nature and extent of potential contamination. Because SWMU 11-011(d) is adjacent to SWMU 11-005(b) and located within the same drainage, only one sample will be collected downgradient of SWMU 11-005(b).

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3	Section 4.1.3.3, Table 4.1-1	43, 151	Sections 2.1.3.1 and 4.1.3.3, Table 4.1-1	9, 43, 150, 151	Sampling location 16-05903 has been corrected to read 16-05902 in the text. Cyanide has added to the discussion of chemicals of potential concern (COPCs) for the catch basins and associated outfall in the text of section 2.1.3.1 and has also been added to the applicable tables.
4	Section 4.1.4, Table 4.1-1	43, 151, 152	Section 4.1.4, Figure 4.1-1, Table 4.1-1,	44, 91, 151	The text, table, and figure have been revised to reflect that a total of 10 (5 surface and 5 subsurface) proposed sampling locations have been added in and around the boundary of SWMU 11-005(c) to define the nature and extent of potential contamination. In addition, eight samples will be collected from the drainage downgradient of the site to define the nature and extent of potential contamination. The text, table, and figure have been revised to reflect that a total of eight (four surface and four subsurface) proposed sampling locations have been added in and around the boundary of SWMU 11-011(a) to define the nature and extent of potential contamination. The text, table, and figure have been revised to reflect that a total of eight (four surface and four subsurface) proposed sampling locations have been added in and around the boundary of SWMU 11-011(b) to define the nature and extent of potential contamination. In addition, 18 samples will be collected from the drainage downgradient of both SWMUs to define the nature and extent of potential contamination.

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5	Figure 2.1-1	72	Figure 1.1-2 and2.1-1, Plates 1, 2, 3 and 4	68, 72	Sampling location 16-05904 is not shown in Figure 2.1-1 because no organic chemicals were detected at that location. However, sampling location 16-05904 is shown in Figure 2.1-2 because inorganic chemicals were detected above background values. Figure 1.1-2 was revised and Plates 1, 2, and 3 were added to the work plan to show all the historical sampling locations for each of the subaggregates. In addition, Plate 4 provides an overview of all proposed sampling locations, including drainage samples, and shows the relationship between the drainage samples proposed in this work plan and the reaches being investigated as part of the South Canyons investigation work plan. The figure has been revised to reflect the appropriate concentrations of HMX (high-melting explosive [also 1,3,5,7-tetranitro-1,3,5,7-tetrazocine]) detected at sampling locations 16-05902, 16-05900, and 16-05901.
6	Table 4.0-1	143	Tables 4.0-1 and 4.1-1	140–141, 149–151	Boron has been added to the analytical suite for the K-Site Subaggregate investigation (see Table 4.1-1) and is included in Table 4.0-1 as a potential contaminant because analytical data are lacking.
7	Table 4.0-2	144			See Responses 7a through 7h below.
7.a	Section 2.2.1.1, Table 4.0-2, Row 2	11, 144	Section 2.2.1.1, Tables 4.0-2 and 4.2-1	11–12, 144, 152–153	Radionuclides have been added to the sampling strategy (Table 4.0-2) for SWMUs 16-035 and 16-036. The text and Tables 4.0-2 and 4.2-1 have been revised accordingly.
7.b	Section 2.2.3.1, Table 4.0-2, Row 3	13, 144	Section 2.2.3.1, Tables 4.0-2 and 4.2-1	13–14, 144, 152–153	Radionuclides have been added to the sampling strategy for SWMUs 16-029(h) and 16-003(p). The text and Tables 4.0-2 and 4.2-1 have been revised accordingly.
7.c	Section 2.2.1.1, Table 4.0-2, Row 4	11, 144	Section 2.2.1.1, Tables 4.0-2 and 4.2-1	12, 144, 152–153	Radionuclides have been added to the sampling strategy for SWMU 16-031(h). The text and Tables 4.0-2 and 4.2-1 have been revised accordingly.
7.d	Section 2.2.5.1, Table 4.0-2, Row 5	15, 144	Section 2.2.5.1, Tables 4.0-2 and 4.2-1	15, 144, 152–153	The sampling strategies for SWMUs 16-004(a), 16-004(b), 16-004(c), 16-004(d), 16-004(e), and 16-004(f) have been revised to include uranium and depleted uranium. The text and Tables 4.0-2 and 4.2-1 have been revised accordingly.
7.e	Table 4.0-2, Row 6	144	Table 4.0-2	144	The repeated row (Row 6) has been deleted.

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7.f	Section 2.2.1.1, Table 4.0-2, Rows 8 and 9	12, 144	Section 2.2.1.1, Tables 4.0-22 and 4.2-1	12, 144, 152–153	The sampling strategies for SWMUs 16-024(a) and 16-024(u) have been revised to include radionuclides, uranium, volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs). Tables 4.0-2 and 4.2-1 have been revised accordingly.
7.g	Table 4.0-2, Row 11	144	Table 4.0-2	142	The repeated row (Row 11) has been deleted.
7.h	Tables 4.0-2 and 4.2-1	144, 153–154	Tables 4.0-2 and 4.2-1	142, 152–153	Table 4.2-1 was revised to accurately reflect the revised sampling plan provided in Table 4.0-2. The revisions address NMED's comments (a–g).
8	Section 4.2.2.2, Figure 4.2-1	45	Section 4.2.2.2, Figures 4.2-1 and 4.2-2	46, 92, 93	Section 4.2.2.2 has been revised to reference the correct figure. Figure 4.2-1 depicts the sampling locations for SWMU 16-025(d2) and AOCs 16-024(a), 16-024(u), C-16-050, and C-16-060. Figure 4.2-2 shows the sampling locations for SWMU 16-031(h).
9	Section 4.2.2.3	45	Section 4.2.2.3	46	AOC C-16-049 is appropriate for no further action (NFA) because the only release of contaminants at this site could have occurred through the darkroom sink, which was connected to a septic tank that is being addressed as part of the investigation for SWMU 13-003(a) and its associated leachfield, AOC 13-003(b). The text has been modified to clarify why no sampling or characterization activities are proposed for AOC C-16-049.
10	Section 4.2.5	46	Sections 2.2.5.1 and 4.2.5, Figures 4.2-2 and 4.2-3	15, 47, 93, 94	The structure located in Figures 4.2-2 and 4.2-3 has been removed (see section 2.2.5.1). Figure 4.2-3 and sections 2.2.5.1 and 4.2.5 have been revised to accurately reflect the sampling strategy for SWMU 16-004(e). Ten samples (five surface and five subsurface) will be collected from the locations shown in Figure 4.2-3.

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11	Section 4.2.5	46	Sections 4.2.3, 4.2.5 and 4.5, Figures 4.2-3 and 4.5.1, Table 4.2-1, Plate 4	47, 54, 94, 98, 152	LANL agrees that the number of sampling locations discussed in section 4.2.5 is inconsistent with those shown in Figure 4.2-3. The sampling locations along this drainage were removed from the figure and were added to Figure 4.5-1. The text in sections 4.2.3 and 4.5 has been revised to be consistent with the sampling locations shown in Figure 4.2-3. Although Figure 4.2-3 does not show the outfall in this drainage area, this outfall (National Pollutant Discharge Elimination System–permitted outfall, EPA-SSS03S) is shown in Figure 4.5-1. Table 4.2-1 has also been revised to be consistent with the text and Figure 4.5-1. The discussion of the number and locations of proposed sampling locations in the drainages downgradient of the wastewater treatment plant has been moved from section 4.2.5 to section 4.5, Extended Drainages. In addition, Plate 4 has been added to provide an overview of all proposed sampling locations, including drainage samples, and shows the relationship between the drainage samples proposed in this work plan and the reaches being investigated as part of the approved South Canyons investigation work plan.
12	Section 4.2.1	45	Section 4.2.1, Figure 4.2-2	45, 93	Figure 4.2-2 has been modified so that existing sampling locations now target drainages. In addition, section 4.2.1 has been revised to reflect that some sampling locations within the bullseye grid have been biased toward the drainages.
13	Figure 4.5-1	100	Section 4.5, Figure 4.5-1	54, 98	Figure 4.5-1 has been revised to show the drainage and the additional samples that have been added along the drainage between reaches MS-1 and SS-2. The text has been modified, and a revised sampling strategy is provided in section 4.5.
14	Section 2.3	16	Section 2.3	16, 17	The text has been revised to indicate that the National Pollutant Discharge Elimination System–permitted outfall (EPA-05A058) is situated southeast of building 16-306.
15	Section 2.3.3.1	20	Section 2.3.3.1	20, 21	Additional information has been included in the text regarding the historical analytical data reported and represented for SWMU 16-026(e) in Figures 2.3-1 through 2.3-8. The SWMU referenced in the second paragraph has been revised to read SWMU 16-026(e), not SWMU 16-026(d).

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16	Section 4.3.4	48	Section 4.3.4	49	The typographical error has been corrected to reflect the proper building, 16-306.
17	Figure 1.1-4	70	Section 2.3.1.1	17	The text has been revised to explain that the spatial extent of this SWMU is relatively small, and therefore, it is not readily visible on the figure because of the scale.
18	Table 4.0-3	146	Section 4.5, Figure 4.5-1, Tables 4.0-3 and 4.3-1	54, 98, 144, 154	Cyanide has been added to the analytical suite for SWMUs 16-026(z), 16-003(d), 16-026(e), and 16-029(d) in Table 4.0-3. Ten samples (four surface and six subsurface) will be collected at five locations to investigate the dry well and its associated T-pipe. Eight samples (three surface, five subsurface) will be collected from the sides of the dry well and beneath the T-pipe, and two (one surface, one subsurface) will be collected from the center of the dry well's footprint. Because the total depth of the dry well is unknown, an assumed depth of 5 ft was used to estimate the depth of samples in Table 4.3-1. Therefore, samples will be collected at 5.5 ft from the native soil/tuff directly beneath the fill material associated with the dry well and 11.0 ft. Radionuclides have been added to the analytical suite for all 300s Line Subaggregate SWMUs and AOCs. The text in section 4.5 and Figure 4.5-1 have been revised to include additional sampling locations in the extended drainages.
19	Section 2.4.1.1, Table 4.4-1	24	Section 2.4.1.1, Tables 4.0-4 and 4.4-1	24, 145, 146, 156	VOCs, HE, and perchlorate have been added to the analytical suite for SWMU 16-017(q)-99. The text and Tables 4.4-1 and 4.0-4 have been revised to reflect this change.
20	Section 2.4.1.1	25	Section 2.4.1.1	25	The text in Section 2.4.1.1 was revised to read as follows: "The building, sump, and a portion of the drainline were removed in 1960 (LANL 1994, 039440, p. 5-504; LANL 1997, 055653, p. 7, IT Corporation 1999, 087145, pp. 98). In 1997, the remainder of the drainline from former building 16-100 was removed (IT Corporation 1999, 087145, pp. 91-97)."

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21	Section 2.4.1.1	25	Section 2.4.1.1	25	The text in Section 2.4.1.1, SWMU 16-029(x), was revised to provide information on the nature of the contamination and soil disposal. The text now reads as follows: "Removal activities began in October 1998. Drainline and sump from former 16-515 and 3 yd^3 of contaminated soil were removed based on field-screening results. Field screening indicated HE contamination above cleanup levels at four locations (16-003054, 16-003064, 16-003068, and 16-003072). Radiological and organic chemical screening results were at or below background. Barium, chromium, and nickel were identified in the screening samples. The contaminated soil was placed in a roll-off container with other excavated soil. Soil from the roll-off container was sampled and the soil was disposed of (IT Corporation 1999, 087145, pp. 98-119)."
22	Section 2.4.1.1, Table 4.4-1	27, 160	Section 2.4.1.1, Table 4.4-1	27, 158	VOCs and SVOCs have been added to the analytical suite for AOC 16-024(n). The text and Tables 4.4-1 and 4.0-4 have been revised accordingly.
23	Section 4.4.1.3	51	Section 4.4.1.3, Figure 4.4-1, Plate 4	52, 96, 156, Plate 4	The sampling strategy for the V-Site Subaggregate has been revised to include samples added on the south and west sides of building 16-517.
24	Section 4.4.3	52	Section 4.4.3, Figure 4.4-1, Plate 4	52, 981, Plate 4	The sampling strategy for the V-Site Subaggregate has been revised to include samples added on the north and west sides of building 16-516.
25	Section 4.4.1.2, 4.4.3, Table 4.4-1	51, 52, 158	Section 4.4.1.2, 4.4.3, Table 4.4-1	51, 52, 157	Surface samples will be collected from all four borehole locations. The text and Table 4.4-1 have been revised accordingly. Surface samples will be collected at all sampling locations at the outfall. The text and Table 4.4-1 have been revised accordingly.
26	Figures 2.4-2 and 4.4-1	83, 98	Figures 1.1-5, 2.4-3, 2.4-4, 2.4-5, 2.4-6, 4.4-1 and 4.4-2	None 71, 84–87, 96, 97	The figures have not been revised because the locations of the SWMUs and AOCs cited in the comment already appear in the existing work plan but in different figures than those referred to in NMED's comment. LANL's response gives the correct figures for each subcomment. Former building/structure designations have been added to the relevant figures.