Los Alamos
NATIONAL LABORATORY
EST. 1943

Environmental Programs
P.O. Box 1663, MS M991
Los Alamos, New Mexico 87545
(505) 606-2337/FAX (505) 665-1812

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National Nuclear Security Administration
Los Alamos Site Office, MS A316
Environmental Restoration Program
Los Alamos, New Mexico 87544
(505) 667-4255/FAX (505) 606-2132

Date: January 31, 2008
Refer To: EP2008-0027

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 Notice of Disapproval for the Investigation Work Plan for Sites at Technical Area 49 Outside the Nuclear Environmental Site Boundary 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 Sites at Technical Area 49 Outside the Nuclear Environmental Site Boundary and Revision 1. 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.

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/DM/JM/:sm

Enclosures: Two hard copies with electronic files:
1) Response to the Notice of Disapproval for the Investigation Work Plan for Sites at Technical Area 49 Outside the Nuclear Environmental Site Boundary (EP2008-0027)
2) Investigation Work Plan for Sites at Technical Area 49 Outside the Nuclear Environmental Site Boundary, Revision 1 (EP2008-0028)
3) An electronic copy of the redline-strikeout version of the plan that includes all changes and edits to the plan
4) Cross-reference table of NMED comments

Cy: (w/enc.)
Neil Weber, San Ildefonso Pueblo
Kim T. Birdsall, Northwind
Ed Worth, DOE-LASO, MS A316
John McCann, EP-CAP, MS M992
RPF, MS M707 (with two CDs)
Public Reading Room, MS M992

Cy: (Letter and CD only)
Laurie King, EPA Region 6, Dallas, TX
Steve Yanicak, NMED-OB, White Rock, NM
Peggy Reneau, WES-DO, MS M992
EP-CAP File, MS M992

Cy: (w/o enc.)
Tom Skibitski, NMED-OB, Santa Fe, NM
Bonita Eichorst, DOE-LASO (date-stamped copy emailed)
Susan G. Stiger, ADEP, MS J591
Carolyn A. Mangeng, ADEP, MS J591
Alison M. Dorries, WES-DO, MS M992
Dave McInroy, EP-CAP, MS M992
IRM-RMMSO, MS A150

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
7	Section 4.4.6, Analysis Plan	26, paragraph 1	Sections 4.4, 4.4.1, 4.4.2, 4.4.3, 4.4.4, 4.4.5, and 4.4.6 Table 4.4-1	25–28 108	Because there are no screening levels for VOCs in pore gas that address the potential for groundwater contamination, screening levels are based on EPA groundwater MCLs or New Mexico Water Quality Control Commission groundwater standards, and Henry's law constants that describe the equilibrium relationship between vapor and water concentrations. This screening approach is conservative because the distance from the deepest vapor-phase samples to groundwater is greater than 600 ft. Sections 4.4, 4.4.1, 4.4.2, 4.4.3, 4.4.4, 4.4.5, and 4.4.6, and Table 4.4-1 of the work plan have been amended to reflect the addition of pore-gas sampling activities. In addition, section 5.4.2 has been added to this work plan to reflect VOC field-screening activities that will be conducted on core samples collected during borehole installation. VOC headspace vapor screening is necessary for determining which core samples will be submitted for laboratory analysis of VOCs and SVOCs, as well as for determining the pore-gas sampling intervals in select boreholes.

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
8	Section 5.4, Field-Screening Method	31	Section 5.3.4, Collection of Vapor Samples, Section 5.4, Field-Screening Method	33	LANL has added field-screening methodologies for vapor-screening for VOCs to sections 5.3.4 and 5.4. Radionuclides are the primary contaminants of concern at TA-49 based on past operations and confirmed by the results of RFI activities. Inorganic chemicals that are present due to historic operational activities would potentially occur with radionuclides because they were used concurrently during historical operations (i.e., experimental activities). Furthermore, concentrations of lead and other metals detected above BVs have been limited to central portions of each investigation area. Therefore, gross alpha and gross beta screening techniques will be used to target low-level radionuclide activity (see sections 4.3.1.1, 4.3.1.2, and 5.1.3). LANL has evaluated and eliminated XRF as an field-screening method at TA-49. XRF was eliminated because TA-49 lacks widespread, low-level inorganic contamination and because XRF screening data at LANL has historically indicated significant false positives (with respect to detecting the presence of inorganics above their respective BVs). The iterative approach will evaluate the extent of contamination using gross alpha and gross beta field screening, and subsequent laboratory results will identify the presence of radionuclides as well as any coexisting inorganic contaminants.
9	Figure 2.4-5, Figure 2.4-7, and Figure 2.4-8	51, 53, and 54	Figure 2.4-5, Figure 2.4-7, and Figure 2.4-8	55, 57, and 58	Figures 2.4-5, 2.4-7, and 2.4-8 have been revised to show an approximate boundary based on historical use as an added point of reference for AOC 49-008(b).

Cross-Reference between NMED Notice of Disapproval Comments (December 20, 2007) on "Investigation Work Plan for Sites at Technical Area 49 Outside the Nuclear Environmental Site Boundary" and the Revised 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 4.4-1	104	Table 4.4-1	108	Table 4.4-1 has been reformatted to match the formatting of Tables 4.1-1 through 4.5-1 of the "S-Site Aggregate Area Investigation Work Plan."
Specific Comments					
1	Section 1.0, Introduction	1	Section 1.0, Introduction	1, Paragraph 5	The text in section 1.0 has been revised to read, "This work plan includes one nondeferred site (SWMU 49-006) per Table IV-1 of the Consent Order and a site [AOC 49-005(b)] not listed on the deferred list, which are located within the boundaries of AOC 49-008(a)."
2	Section 1.0, Introduction; Section 4.3, Surface Investigations; Section 4.3.3, SWMU 49-004; Table 1.1-1, List of TA-49 SWMUs and AOCs Outside the NES Boundary	1, 20, 23, 83	Section 1.0, Introduction	1, Paragraph 5	Language was changed to clarify SWMU 49-006 and AOC 49-005(b) have no surface component and therefore surface sampling is not proposed in the work plan. The text in section 1.0 has been revised to provide further clarification. The text now reads, "The nondeferred site, SWMU 49-006, and a site not listed on the deferred list, AOC 49-005(b), are both subsurface sites with no surface component. Therefore, this work plan only proposes subsurface sampling for these sites."
3	Section 4.1, Investigation Objectives	19, bullet 2	Section 4.1, Investigation Objectives	19, bullet 6	Added bullet to describe additional investigation at open trenches located west of SWMU 49-004. LANL has revised the text of the work plan to incorporate the collection of soil samples from shallow boreholes or test pits. Field screening of the soil will be conducted if nonnative material is encountered during drilling or excavation.
4	Section 4.3.1, Area 5: Transformer Pads	20	Section 4.3.1, Area 5: Transformer Pads Figure 4.4-1	20 82	Added in reference to figure and added sampling locations to Figure 4.4-1.

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
5	Section 4.3.2, Area 6 West, SWMU 49-004 and Area 10: AOC 49-002 and SWMU 49-005(a)	21-22	Section 4.3.2, Area 6 West, SWMU 49-004 and Area 10: AOC 49-002 and SWMU 49-005(a) Table 1.1-1	20–24	LANL has provided additional text and added flow charts to clarify the iterative sampling strategy discussed in section 4.3.2. Table 1.1-1 was revised to reflect the surface sampling proposed at SWMU 49-004.
6	Section 4.4.2, Subsurface Investigations, SWMU 49-004	24	Section 4.4.2, Subsurface Investigations, SWMU 9-004	26	Please refer to the response to Specific Comment 3. The text has been revised to incorporate subsurface sampling at the four trenches.
7	Section 4.4.6, Analysis Plan	26, paragraph 1	Sections 4.4, 4.4.1, 4.4.2, 4.4.3, 4.4.4, 4.4.5, and 4.4.6 Table 4.4-1	25–28 108	The text in section 4.4.6 has been clarified to indicate that samples will be submitted for laboratory analysis based on the criteria detailed in the plan; therefore, only a subset of samples will be submitted for laboratory analysis. Vapor-phase sampling will be conducted in shallow, angled boreholes beneath the Area 5 landfill [AOC 49-005(b)] and Area 10 landfill [SWMU 49-005(a)], and within one 65-ft angled borehole beneath the Area 6 West landfill (SWMU 49-004), following the completion of borehole installation and core sampling and screening activities. Pore-gas samples collected from these boreholes will be submitted for laboratory analyses of VOCs and tritium If VOCs are detected in vapor-phase samples at concentrations greater than 10% of screening levels based on equilibrium partitioning with groundwater cleanup levels (maximum contaminant levels [MCLs]) or if tritium is detected in vapor-phase samples at concentrations greater than the groundwater MCL, each borehole will be completed as a vapor-monitoring well.