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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

EP2012-5017

January 18, 2012

George J. Rael
Environmental Operations Manager
Los Alamos Site Office
Department of Energy
3747 West Jemez Road, MS A316
Los Alamos, NM 87544

Michael Graham
Associate Director Environmental Programs
Los Alamos National Security, L.L.C.
P.O. Box 1663, MS 991
Los Alamos, NM 87545

**RE: NOTICE OF DISAPPROVAL
INVESTIGATION REPORT FOR DP SITE AGGREGATE AREA DELAYED
SITES AND DP EAST BUILDING FOOTPRINTS AT TA-21
LOS ALAMOS NATIONAL LABORATORY (LANL)
EPA ID #NM0890010515
HWB-LANL-11-097**

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 L.L.C.'s (LANS) (collectively, the Permittees) *Investigation Report for DP Site Aggregate Area Delayed Sites [Consolidated Unit 21-004(b)-99 and Solid Waste Management Unit 21-011(b)] and DP East Building Footprints at Technical Area 21 (IR)*, dated December 2011 and referenced by LA-UR-11-6991/EP2011-0380. NMED has reviewed the IR and hereby issues this Notice of Disapproval (NOD). The Permittees must address the following comments.

Action Required

General Comments:

1) Data Summary Tables

In describing the nature and extent of soil and rock contamination, the Permittees frequently state that “concentrations decreased with depth at this location because the concentration in the shallower sample was below the soil BV but above the concentration in the deeper tuff sample” and reference data tables in Appendix C. This practice has been accepted in the past but creates difficulties for reviewers. All detected analytes, whether below BVs or not, must be included in the data summary tables in the IR and in future reports.

Section XI.C.12 (Tables) of the Consent Order states “[d]ata presented in the tables shall include the current data, dates of data collection, analytical methods, detection limits, and significant data quality exceptions. The summary analytical data tables shall include only detected analytes and data quality exceptions that could potentially mask detections.” Item 4 in Section XI.C.12 of the Consent Order requires the inclusion of “[a] table summarizing soil, rock, and/or sediment laboratory analytical data. It shall include the analytical methods, detection limits, and significant data quality exceptions that would influence interpretation of the data.”

Dates of data collection were not included in any of the summary analytical data tables, nor were detected analyte concentrations that fell below the BVs or FVs, analytical methods, or detection limits. The Permittees must include all detected analyte data in the summary analytical data tables, whether or not they are below BVs or FVs. The Permittees must also include all data that has a detection limit above BVs, because these data qualify as “significant data quality exceptions”. The Permittees must include dates of data collection in the summary analytical tables. All requirements listed above are specific requirements in the Consent Order and must be included in the revised IR and all future investigation report summary analytical data tables. The nature and extent discussions in the IR cannot be reviewed adequately until complete summary analytical tables are submitted.

In order to facilitate review of documents and evaluation of the extent of contamination, the Permittees must also provide an electronic appendix of SWMU/AOC specific analytical data tables which include all data for all samples collected at the AOCs and SWMUs, including non-detects. These tables need only be provided electronically and must follow the same format as the summary analytical data tables included in the IR. These data tables must be included in the revised IR and all subsequent submittals where analytical results are presented. The MS Excel spreadsheets provided in Appendix C will not suffice for this requirement, because they are not in the same format as the summary data tables provided in the IR and are not SWMU/AOC specific.

2) Borehole Logs

Section 8.4, Subsurface Sampling, of the *Investigation Work Plan for Delta Prime Site Aggregate Area Delayed Sites, Revision 1* (IWP) states, “[s]ubsurface samples will be collected using a drill rig with a hollow-stem auger advanced with a split spoon sampler or by hand augering. Field documentation will include detailed borehole logs to document the matrix material in detail; fractures and matrix samples will be assigned unique identifiers.”

Section B-5.2, Borehole Logging, of the IR states, “[t]he required sampling depths at all locations were reached by hand augers or a power auger attachment. A drill rig with a hollow-stem auger was not used to collect subsurface samples. Therefore, there were no boreholes to log.”

The last sentence of the quoted statements above is not accurate. Whether augering with a hollow-stem auger or a hand auger, a borehole is created. The approved IWP provided by the Permittees states that detailed borehole logs would be provided for all sampling locations for either hollow-stem augering or hand augering. The borehole logs were not provided. The IR is incomplete without detailed boring logs. In addition, the Permittees neglected identifying fracture and matrix samples, as required by the approved work plan. The Permittees must provide detailed boring logs for all boreholes advanced more than five feet below ground surface in the revised IR.

Specific Comments:

3) Section 4.3, Deviations, SWMU 21-011(b), page 20

Permittees’ Statement: In Section 5.2.3, Scope of Activities, in the IWP, the Permittees state, “20% of all samples will be analyzed for extended suite consisting of dioxins/furans, explosive compounds, and PCBs.”

NMED Comment: Only six of 50 samples for SWMU 21-011(b) were analyzed for the extended suite of contaminants, resulting in a 12% extended suite analysis. No mention of this change from the approved IWP was included in the Deviation section and no explanation was provided for this reduction in extended suite analysis. The Permittees must propose to collect samples for extended suite analysis in the Phase II Investigation Work Plan (Phase II IWP), including the samples required below sump structure 21-223, which were also omitted from the investigation with no explanation, in order to fulfill the 20% requirement from the approved work plan.

4) Section 4.3, Deviations, Former Building 21-155, page 21, bullet 2

Permittees’ Statement: “Location 21-614015 (LANL 2010, 110082.4, Figure 2.2-1) was moved 8 ft east of planned sampling location 39 because of the presence of concrete.”

NMED Comment: The presence of concrete is not suitable justification for movement of a sampling location which was specifically located within the pit in order to characterize the extent of contamination from the pit. The Permittees were aware of the concrete at the bottom of the pit when the location was proposed for sampling in the *Delta Prime East Building Building Footprints Letter Work Plan* (Footprint WP). Concrete can easily be cored with readily available equipment to obtain samples from below the pit. The Permittees must propose to sample the original location below the northeast pit of building 21-155 in the Phase II IWP.

5) **Section 4.3, Deviations, Former Building 21-155, page 21**

NMED Comment: Sample location 42 shown on Figure 2.2-1 of the Footprint WP was apparently relocated to location 21-614023 shown on Figure 2.5-1 of the IR. This location was chosen to sample below cooling tower 21-220 piping, but was relocated approximately 30-ft to the east and below cooling tower 21-420 piping. This change was not listed in the Deviation section, or any other place in the IR, and no explanation was provided for the deviation from the approved Footprint WP. The Permittees must discuss this change in the Deviation section and must propose to collect samples at the original location 42 in the Phase II Work Plan.

6) **Section B-5.1, Surface Sampling Methods, page B-2**

Permittees' Statement: "Surface samples were collected in accordance with approved subcontractor procedures technically equivalent to SOP-06.10, Hand Auger and Thin-Wall Tube Sampler, or SOP-06.09, Spade and Scoop Method for the Collection of Soil Samples. A hand auger or spade and scoop were used to collect material in prescribed sampling increments. Samples for volatile organic compound (VOC) analysis were immediately transferred from the sample collection device to the sample container to minimize the loss of subsurface VOCs during the sample collection process. Containers for VOC samples were filled as completely as possible, leaving no or minimal headspace, and sealed with a Teflon-lined cap."

NMED Comment: Surface samples were not collected for VOC analysis. The Permittees must remove the reference to VOC analysis from the Surface Sampling Methods discussion or provide an explanation for its inclusion.

7) **Section B-5.3, Subsurface Tuff Sampling Methods, page B-2**

Permittees' Statement: "Subsurface samples were collected in accordance with approved subcontractor procedures technically equivalent to SOP-06.10, Hand Auger and Thin-Wall Tube Sampler, or SOP-06.26, Core Barrel Sampling for Subsurface Earth Materials."

"Samples for VOC analysis were immediately transferred from the sample collection device to the sample container to minimize the loss of subsurface VOCs during the sample

collection process. Containers for VOC samples were filled as completely as possible, leaving no or minimal headspace, and sealed with a Teflon-lined cap.”

NMED Comment: Core barrel sampling was not utilized on this project; therefore, specifying that samples were collected in accordance with SOP-06.26 in the quoted statements above is not accurate. The Permittees must remove the reference to SOP-06.26 or provide an explanation for its inclusion.

References to SOPs are inadequate for description of sampling activities in the IR. Section IX.A of the Order specifically requires descriptions of the methods and procedures proposed for use or used during site investigations and remediation activities. In addition, Section XI.C.9.a of the Order states the requirements for description of soil, rock and sediment sampling in an Investigation Report. The Permittees must describe in detail the methods used for collection of samples for analysis. Detailed description must include specifications of the “sample collection device” referenced in the quotation above, specifications of the hand auger and/or thin-walled tube sampler utilized, specifications of the power auger attachment, and the specific methodology (step by step) followed when using these devices. The Permittees must also provide a detailed description of how sampling was conducted in the 20-ft deep isotope separation pit below building 21-155, as well as how 21-22 ft deep samples were collected using a power auger attachment and/or a hand auger.

8) **Section B-8.0, Deviations from the Work Plans (SWMU 21-011(b)), page B-5, bullet 3**

Permittees’ Statement: “Sump structure 21-223, which extended at least 15 ft belowgrade, was demolished to below 10 ft belowgrade. The remaining lower portion of this cast-in-place sump was poured against competent tuff bedrock. Because of the sump’s location on a relatively steep sloping site area, the presence of active fire water lines on parts of two sides of the excavation, and a nearby power pole, the Laboratory’s site engineer determined that complete removal of the sump was impracticable; at the direction of the Laboratory’s subcontractor technical representative, it was left in place. The remaining portion of the sump was filled with bentonite and soil before the excavation was filled to grade with clean soil. This did not prevent planned sample collection at the site.”

NMED Comment: Planned sample collection included Location 14 from Table 5.2-1 and Figure 4.1-1 of the approved Delayed Sites IWP. These samples were not collected and no explanation was provided to justify their omission. The Permittees must propose to sample below Sump structure 21-223 in the Phase II IWP.

Messrs. Rael and Graham

January 18, 2012

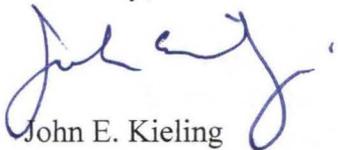
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NMED considers the Radiological Survey Reports provided in Appendix D as reference documents and did not conduct a technical review of these reports. Approval of the revised IR does not include technical approval of the Radiological Survey Reports.

The Permittees must address all comments herein and submit a revised IR by **March 23, 2012**. Any additional work proposed for the next phase of investigation (Phase II) must be listed in the Recommendations Section of the IR. All submittals (including maps) 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 Investigation Work Plan (electronic copy) with the response to this NOD.

Please contact Ben Wear at (505) 476-6041 should you have any questions.

Sincerely,



John E. Kieling
Acting Chief
Hazardous Waste Bureau

cc:

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File: LANL '12, TA-21, DP Site Aggregate Area

Action Required