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**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

April 9, 2007

David Gregory
Federal Project Director
Los Alamos Site Office
Department of Energy
528 35th Street, Mail Stop A316
Los Alamos, NM 87544

David McInroy
Remediation Services Deputy Project Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop M992
Los Alamos, NM 87545

**RE: APPROVAL WITH MODIFICATIONS
PHASE II INVESTIGATION WORK PLAN FOR CONSOLIDATED UNIT 21-016(a)-99, MATERIAL DISPOSAL AREA T, AT TECHNICAL AREA 21
LOS ALAMOS NATIONAL LABORATORY, NM0890010515
HWB-LANL-06-017**

Dear Messrs. Gregory and McInroy:

The New Mexico Environment Department (NMED) is in receipt of the United States Department of Energy and the Los Alamos National Security, LLC's (collectively, the "Permittees") document entitled *Phase II Work Plan for Consolidated Unit 21-016(a)-99, Material Disposal Area T, at Technical Area 21*, dated February 15, 2007 and referenced by LA-UR-07-0930/EP2007-0105 (Work Plan). The Work Plan is required as part of the approval with directions issued for the *Investigation Report for Material Disposal Area T, Consolidated Unit 21-016(a)-99, at Technical Area 21* (dated September 2006 and referenced by LA-UR-06-6506/EP2006-0779). The approval with directions contained several required actions that were to be addressed in a Phase II work plan. NMED has reviewed this Work Plan and hereby approves this document with the modifications described in the following comments.



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1. In required action #2, NMED states that “the data set evaluated for human health risk under the construction worker scenario in the vicinity of building 21-257 significantly exceeds (greater than 25 times) DOE’s target dose limit of 15 mrem/yr.” NMED required the Permittees to provide “the human health risk assessment and cite appropriate references regarding the precautions that will be taken during D&D to protect construction workers from receiving unacceptable dose in the Phase II Investigation Report.” The Permittees did not respond completely to the comment.

In the response, the Permittees state that “[t]he risk assessment addresses potential exposure that may occur following completion of corrective actions. Decontamination and decommissioning (D&D) activities will be conducted prior to corrective actions at MDA T and the DP Aggregate and, therefore, are not considered in the risk assessment.” NMED considers the risk assessment a tool to determine the presence of contamination at which a site poses an unacceptable risk for a receptor. The potential risk is present (in the case of the construction worker scenario) whether or not D&D activities occur. At MDA T, the construction worker scenario was evaluated to determine the risk to a receptor that was exposed to contamination to a depth of 10 feet. This would likely include a D&D worker. NMED requested information on how the Permittees are going to manage the risk at a site currently on its hazardous waste permit. NMED requires information on exposure to the construction worker as a direct result from a release of contamination to the soil and tuff at this site related to the SWMU rather than the potential contamination from the building itself.

2. In required action #3, NMED directed the Permittees to “remove the slough from the boreholes and collect pore-gas samples from the [total depth], similar to the additional work performed at MDAs U and V.” As stated in the approved work plan, the Permittees were to collect one pore-gas sample at a depth nearest to the disposal unit and one at the total depth of the borehole. The Permittees were to collect the samples twice. The Permittees did not collect the second round of samples from the total depth because of the slough.

In their response, the Permittees have proposed to install a single pore gas monitoring well at location 21-25262 and plug and abandon all boreholes remaining open. The Permittees must remove the slough from all three pore-gas sampling locations (21-25262, 21-25263, and 21-25264) and install permanent pore-gas monitoring wells. Prior to completion, the Permittees must submit a long-term vapor monitoring and sampling work plan pursuant to Section IV.C.2.e.vi of the Consent Order. The lack of data prohibits NMED from determining if the extent of contamination has been determined and from making

any remedy decisions following the corrective measures evaluation.

3. In required action #7, NMED directed the resampling of certain boreholes to determine the vertical extent of americium-241. In their response, the Permittees state that the extent of americium-241 is defined with nearby deep boreholes. NMED disagrees with this statement for four of the eight locations.

The first three locations (21-02547, 21-25609, and 21-02610) are not defined by the deep borehole 21-25262 because these three boreholes are located within a small area that contains several SWMUs and AOCs and 21-25262 is located outside of this area. These SWMUs and AOCs consisted of underground storage tanks, manholes, an aboveground storage tank, and other tanks, as described in the *TA-21 Operable Unit RFI Work Plan for ER*. According to the *MDA T Historical Investigation Report*, these SWMUs and AOCs were the location of detected contamination during drilling in 1994. Americium-241 was detected in a sample collected from a 5-10 foot interval. Because it is not clear that the detected contamination is attributable to the bottom of the sampling interval (e.g., contamination at 5 feet or at 10 feet) and the vertical extent of contamination in this small area has not been defined, the Permittees must drill an additional borehole close to 21-02547. The Permittees must collect a sample from the 8-10 foot interval and additional samples at deeper intervals in the tuff until the extent of contamination is defined. In order to define the extent of contamination, the Permittees should analyze these samples for americium-241, plutonium-238, plutonium-239, and strontium-90.

Contamination at the fourth location (21-02541) is not defined by locations 21-02540 and 21-25358. Americium-241 and plutonium-239 were detected at elevated concentrations in borehole 21-02451 at 10-12.5 feet. The sample collected from borehole 21-02540 was collected from 7.5-10 feet. The samples collected from borehole 21-25358 were collected at 6.8-7 feet and 38-40 feet, respectively. Also, the concentrations of several constituents (americium-241, cesium-137, plutonium-238, plutonium-239, strontium-90, and tritium) increase with depth in borehole 21-02541. To adequately determine extent of contamination, the Permittees should have collected samples starting at 12.5 feet at these locations. The Permittees must adequately define vertical extent of contamination in this borehole by collecting a sample starting below the 12.5-foot interval and additional samples at deeper intervals until extent is defined. The Permittees should analyze these samples for americium-241, cesium-137, plutonium-238, plutonium-239, strontium-90, and tritium.

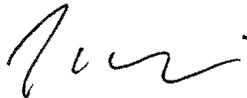
4. The Permittees must submit the Phase II Investigation report following

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completion of the field activities discussed in the "work description" column for comment #1 of the Work Plan no later than November 15, 2007.

The Permittees must address these modifications as part of the approved Work Plan. Noncompliance with the modifications outlined in the approval letter may result in automatic rescission of the Work Plan approval and potentially subject the Permittees to an enforcement action. Furthermore, the Permittees shall not respond to comments in an approval with modifications unless NMED specifically requires a response, in which case the response must be limited to only those required by NMED. All submittals must be in the form of two paper copies and one electronic copy in accordance with section XI.A of the Consent Order. Should you have any questions regarding this letter, please contact Darlene Goering of my staff at (505) 476-6042.

Sincerely,



James Bearzi
Chief
Hazardous Waste Bureau

JPB:dxg

cc: D. Goering, NMED HWB
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file: Reading and LANL TA-21 '07