NEW MEXICO ENVIRONMENT DEPARTMENT

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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

June 16, 2010

George J. Rael
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Michael J. Graham
Associate Director Environmental Programs
Los Alamos National Security, LLC
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RE: WITHDRAWAL OF THE PROPOSED REMEDY SELECTION FOR MATERIAL DISPOSAL AREA H, SOLID WASTE MANAGEMENT UNIT 54-004, AT TECHNICAL AREA 54,
LOS ALAMOS NATIONAL LABORATORY EPA ID No: NM0890010515
HWB-LANL-03-007

Dear Messrs. Rael and Graham:

The New Mexico Environment Department (NMED) issued a public notice for proposed selection of remedies for Material Disposal Area (MDA) H, Solid Waste Management Unit (SWMU) 54-004, at Technical Area (TA) 54, on November 5, 2007. NMED received comments from the public and the United States Department of Energy and the Los Alamos National Security, LLC (collectively, Permittees) opposing the proposed remedy selections for various reasons. NMED hereby withdraws the selected remedies proposed in the aforementioned public notice and directs the Permittees to submit a Corrective Measures Evaluation (CME) Report that presents an evaluation of remedial alternatives that will be protective of human health and the environment.

Background

The Permittees conducted a Corrective Measure Study (CMS) for MDA H and submitted a CMS Report to NMED in June 2005. The Permittees evaluated five corrective measure alternatives (three containment and two removal alternatives) and recommended an engineered

evapotranspiration (ET) cover combined with long term maintenance and monitoring. The CMS Report contained limited information regarding subsurface vapor-phase volatile organic compounds (VOCs) contamination and did not include site-specific groundwater data. Based on the limited information available at that time, instead of selecting the Permittees recommendation, NMED proposed a more conservative alternative that included complete encapsulation of the shafts overlain by an ET cover with a monitoring and maintenance program. In addition, NMED proposed installation of a soil-vapor extraction (SVE) system both to remove and to control migration of subsurface vapor phase contamination.

On January 8, 2008, the Permittees provided comments on NMED's proposed selection of remedies and requested that NMED re-examine the selected remedies because the Permittees had acquired additional information since submittal of the revised CMS Report, and the use of grout for encapsulation of shafts in dry climates could pose a potential risks to workers and public, including ignition of the pyrophoric and or high explosive materials. In addition, the Permittees asserted that the new sub-surface vapor data collected for VOCs did not support the requirement for installation of SVE system at MDA H. To address NMED's concerns of biointrusion with the proposed ET cover, the Permittees proposed an 8-ft thick ET cover instead of the remedy selected by NMED.

Site Conditions

Subsurface Vapor-Phase Contamination

The Permittees conducted investigations to evaluate for releases of contaminants from the disposal shafts at MDA H beginning in the 1990s. As part of the investigations, the Permittees collected samples of subsurface pore gas and detected several VOCs. Sampling of subsurface pore gas consisted of collection of samples from intervals within each borehole using temporary packers to isolate the sample intervals. One of the detected compounds, trichloroethylene (TCE), was detected in the subsurface pore gas at a concentration of 2,600 micrograms (µg) per cubic meter, which is at a high enough concentration to partition into groundwater and potentially result in an aqueous concentration greater than the drinking water maximum contaminant level (MCL) of 5 µg per liter.

After issuance of the public notice for the remedy selection, NMED received the subsurface vapor phase sampling data that was collected after installation of the Flexible Liner Underground Technology (FLUTe) membranes in three existing boreholes at MDA H. The FLUTe sampling system replaced the original sampling system. Measured concentrations of the VOCs were significantly lower after installation of the FLUTe sampling system compared to the old data sets. NMED was concerned that the material used for construction of the membranes may have influenced the sampling results and directed the Permittees to evaluate the effects of FLUTe system on VOC concentrations in a letter dated December 21, 2007. NMED subsequently informed the Permittees and the public on February 26, 2008 that the remedy selection would be delayed until additional data was collected and reviewed, and the issue was resolved.

The Permittees collected samples using both packer and FLUTe vapor-sampling systems and concluded that there was no significant difference between the data collected from the two systems. However, during the December 2008 sampling event, the Permittees discovered that in one of the boreholes, the samples collected were assigned to wrong depths because the connections from the FLUTe sampling ports were misaligned. The Permittees corrected the old data based on this discovery. However, the error still could have resulted in inadequate purge volumes and incorrect measurements.

On June 23, 2009, NMED directed the Permittees to drill a new borehole north of MDA H to a depth of 300 ft below the ground surface (bgs), to extend depths of the existing boreholes to their original intended depths, and to replace FLUTe sampling systems with new stainless steel tubing sampling system in the newly installed boring and in the two deepest existing boreholes. The Permittees have acquired data for two quarters from the four boreholes at MDA H after implementing above mentioned directions. The Permittees have been directed to continue to collect quarterly data with the new sampling system to establish temporal trends.

Groundwater Monitoring

At the time of the remedy selection for MDA H, the groundwater monitoring network surrounding TA-54 consisted of five wells intersecting the regional aquifer and two wells intersecting perched intermediate zone groundwater. Beginning in 2007, NMED directed the Permittees to further characterize groundwater in the vicinity of TA-54 with the intent of completing a groundwater monitoring network sufficient to both assess groundwater conditions and monitor groundwater quality for the foreseeable future at TA-54. The Permittees have installed 13 regional aquifer monitoring wells and one intermediate zone monitoring well in the past two years. Evaluation of groundwater conditions and the current monitoring well network is ongoing and, in some instances, just beginning. The recently installed wells in the vicinity of MDA H have been monitored for a limited time period; therefore, a full evaluation of groundwater conditions cannot be made. The data collected from the existing and newly installed monitoring wells must nevertheless be used as part of the re-evaluation of remedial alternatives for MDA H.

Requirement to Submit a Corrective Measures Evaluation

With this letter, NMED withdraws the proposed selected remedies because of the questionable reliability and quality of the data and information upon which NMED based it previous proposed selection. The Permittees must submit a CME Report for MDA H to replace the June 2005 CMS Report. The Permittees must consider all of NMED's comments regarding the CME Reports for MDA G and MDA L that are applicable to MDA H. The Permittees must use all available data from subsurface vapor phase sampling and groundwater monitoring when evaluating corrective measure alternatives. The CME report must be prepared in accordance with Sections VII.D and XI.F of the March 1, 2005 Consent Order and submitted no later than December 31, 2010. 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 Consent Order.

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

Sincerely,

James Bearzi
Chief
Hazardous Waste Bureau

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