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**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

February 12, 2016

Doug Hintze  
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Michael T. Brandt  
Associate Director  
Environment, Safety, Health  
Los Alamos National Laboratory  
P.O. Box 1663, MS M991  
Los Alamos, NM 87545

**RE: APPROVAL WITH MODIFICATION  
INTERIM MEASURES PROGRESS REPORT FOR SOIL-VAPOR  
EXTRACTION OF VOLATILE ORGANIC COMPOUNDS FROM MATERIAL  
AREA L, TECHNICAL AREA 54  
LOS ALAMOS NATIONAL LABORATORY  
EPA ID #NM0890010515  
HWB-LANL-15-048**

Dear Messrs. Hintze and Brandt:

The New Mexico Environment Department (NMED) has received the United States Department of Energy (DOE) and the Los Alamos National Security, LLC (LANS) (collectively, the Permittees) *Interim Measures Progress Report for Soil-Vapor Extraction of Volatile Organic Compounds from Material Disposal Area L, Technical Area 54* (Report) dated September 28, 2015 and referenced by LA-UR-15-26893/EP2015-0164. NMED has reviewed the Report and hereby provides this Approval with the following modifications that must be addressed in the upcoming Annual Report.

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**NMED Comments:**

1. A detailed description of sampling methods utilized to collect the data was not provided in the Report. NMED is unable to evaluate the validity of the data without this information. References to SOPs or work plans do not clarify whether those methods were strictly adhered to during field operations. Also, calculated data is presented in the Report with no explanation of how those values were calculated. For example, Figure 4.1-1 shows cumulative mass removal with no explanation as to how variable concentration data and flow rates were interpolated over time. In addition, Figure 2.1-1 illustrates a manual dilution air valve on the intake of the SVE units, but there is no indication of whether dilution air was utilized during operation of the units.

In the upcoming Annual Report, provide detailed descriptions of all methods used in the collection of data, including, but not limited to, how samples were collected from both the SVE units and the monitoring well ports and whether dilution air was added during operation of the SVE units. Also, include all methods for the calculation of any presented data, (e.g., VOC concentrations in ppmv, cumulative mass removal, and cumulative volume pumped) including variable values and example calculations.

2. A review of the 2014 baseline sample analysis results for well 54-24399 indicates that three samples were collected from this well/port on Sept. 23, 2014. The samples included a sample with a field duplicate sample collected at 12:47 from 568 to 608 feet (ft) below ground surface (bgs), followed by a second sample collected at 15:12 from 568 to 569 ft bgs. Analytical laboratory results for TCA, TCE, and PCE concentrations indicate that the later sample results, apparently collected with a dual packer system in place, was an order of magnitude higher in concentration than the earlier samples (e.g., 3653 ug/m<sup>3</sup> vs 196 ug/m<sup>3</sup> TCA). This practice was similarly conducted in the third quarter 2015 sampling. This issue was not mentioned or discussed within the Report. Compose the upcoming Annual Report to provide a detailed description of the sampling procedures for this well, including packer usage and purge volumes utilized. In addition, provide copies of field notes documenting purge procedures and volumes. Should future monitoring plans propose only one sampling method for this borehole, NMED recommends that only the dual packer system be utilized for the interval from 568 to 569 ft bgs.
3. Plate 1 graphically indicates that in most of the sampled wells, decreases in concentrations of VOCs were observed, with higher reductions in concentrations observed at the shallower monitoring ports. Conversely, in wells 54-02089 and 54-24238 located about 30 ft apart and approximately 80 and 100 ft, respectively, from the SVE-East extraction well, significant increases in VOC concentrations were observed between 44 and 84 ft bgs. The Report does not discuss this occurrence. Provide a discussion of these results in the upcoming Annual Report.

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4. In Appendix A, the Microsoft Excel file titled “SVE Data” appears to provide analytical data for effluent samples collected from the two SVE units. The data does not provide information on whether the sample was collected from the SVE-East or SVE-West well since the location code for both wells is the same. Provide the data for each well on separate spreadsheets for SVE-East and SVE-West or a column in the existing spreadsheet indicating the sampled well in order to enable sorting. Provide the data incorporating one of the options above in the upcoming Annual Report.
5. Section 3.2.3, SVE Plan, in the September 2014 approved *Interim Measures Work Plan for Soil-Vapor Extraction of Volatile Organic Compounds from Material Disposal Area L, Technical Area 54, Revision 1*(IMWP) states, “[m]onitoring data will be used to generate concentration versus time plots (similar to Figure 2.0-2)...”. These plots were not presented in the report. In the upcoming Annual Report, provide these plots for 1,1,1-TCA, TCE, and PCE for both SVE-East and SVE-West.
6. Section 3.2.4, Sampling Plan during SVE, of the IMWP states, “[p]er SOP 5074, the static pressure of the formation at each sampling interval will be documented, and no samples will be collected at ports that are clogged.” The data presented in Table 4.3-1, Differential Pressure Data at Sampling Ports Monitored during SVE Operations, indicates that pressure data was not collected at each sampling interval. For instance, the only data provided for well 54-02001 is for the port located 20 ft bgs; the other nine ports for this well are missing from the table. In addition, wells/ports that are a part of the quarterly monitoring program are shown as “[n]ot measured as part of quarterly sampling” or are missing from the table. Some wells/ports are shown as “[n]ot collected” with no explanation. Either include the missing data or include a section that lists and provides explanations for all deviations from the approved IMWP in the upcoming Annual Report. Also, provide two separate tables, one for baseline monitoring that includes all wells/ports listed on Table 2.0-1 of the IMWP and one for quarterly monitoring that includes all wells/ports listed on Table 3.2-1 of the IMWP. To facilitate NMED’s review, provide the data in these tables in the same order listed in Tables 2.0-1 and 3.2-1 of the IMWP.
7. Quarterly monitoring data for several wells/ports are missing from the Report. For instance, Plate 1 indicates that samples were not collected at the 20 ft port or the 100 ft port for well 54-02022. No explanation is provided for this deviation from the IMWP. Provide a section that lists, describes, and provides explanations for all deviations from the approved IMWP in the upcoming Annual Report.
8. Flow rate measurement data were not provided in the Report. Include flow measurements as both a summary table in the upcoming Annual Report and a Microsoft Excel spreadsheet in the Appendices.

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The Permittees must address all comments in the upcoming Annual Report. All submittals 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 include a response to the comments with the submittal of the Annual Report.

Please contact Ben Wear of my staff, at (505) 476-6042, should you have any questions or concerns.

Sincerely,



John E. Kieling  
Chief  
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
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