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ACTION REQUIRED

Name:	U1100210
Title:	Notice of Disapproval Supplemental Interim Measure Report Solid Waste Management Unit 01-001f LANL EPA ID NM0890010515 LANL-HWB-10-031
Date Received:	2/9/2011
Addressee Name:	M. Graham, ADEP
Originator:	J. Bearzi, NMED
Action Item Description:	
Action Due Date:	4/29/2011
Responsible for Action:	Search Graham, Michael J
Responsible Office:	ADEP
Distribution:	Michael J. Graham Isaac E. RichardsonIII Michael B. Mallory David J. McInroy Phoebe K. Sulna Kristine Smeltz Tina M. Sandoval Michael R. Anastasio Richard A. Marquez Deborah K. Woitte James C. Cantwell Anthony R. Grieggs Victoria A. George Scotty Jones

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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

February 2, 2011

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RE: NOTICE OF DISAPPROVAL
SUPPLEMENTAL INTERIM MEASURE REPORT
SOLID WASTE MANAGEMENT UNIT 01-001(f)
LOS ALAMOS NATIONAL LABORATORY
EPA ID# NM0890010515
LANL-HWB-10-031

Dear Messrs. Rael and Graham:

The New Mexico Environment Department (NMED) is in receipt of the Los Alamos National Security, L.L.C. and U.S. Department of Energy (the Permittees) document entitled *Supplemental Interim Measure Report for Solid Waste Management Unit 01-001(f)* (Report) dated October 2010 and referenced by LA-UR-10-6329/EP2010-0383. The Report was submitted in response to NMED's Direction to Modify (Direction) dated August 25, 2010 and the recommendations included in the Permittees' *Interim Measure Report of Solid Waste Management Unit 01-001(f) and Los Alamos Site Monitoring Area (LA-SMA-2)* dated May 2010 (referenced by LA-UR-10-2641/EP2010-0131). The Direction required completion removal and stabilization of PCB-contaminated soils from the drainage below Solid Waste Management Unit (SWMU) 01-001(f). The Report summarizes the continuation of interim measure activities to reduce the amount of PCB-contaminated media and control contaminant migration. NMED has

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reviewed the Report and hereby issues this Notice of Disapproval (NOD) with the following comments.

The Permittees used Multi Incremental (MI) sampling as the method to collect their confirmation samples for removal of the PCB-contaminated soils and tuff. The use of the MI sampling approach was not included in the approved *Los Alamos Site Monitoring Area 2 Interim Measure and Monitoring Plan* (IMP). The Permittees also failed to notify NMED prior to using MI sampling as the approach for confirmation sample collection. Not only was the approach unapproved by NMED, the application was inappropriate for removal of contaminated soil and tuff. MI sampling is typically used for characterization at detonation sites and should not have been used for confirmation sampling for PCB removal. In any event, the Permittees did not correctly perform the MI sampling method and deviated from the guidance document referenced in the Report.

Part I – Comments on MI Sampling

The Permittees state, "[t]he supplemental confirmation sampling approach for the excavated areas in the SWMU 01-001(f) outfall area and hillside drainage was based on MULTI INCREMENTAL (MI) sampling." MI sampling is inappropriate and was not conducted correctly for the following reasons:

Comment 1

The Permittees did not appropriately propose the MI sampling method in the IMP which states, "[s]oils and sediments will be sampled in accordance with the approved *Investigation Work Plan for Upper Los Alamos Canyon Aggregate Area* [Work Plan]." Table 10.0-1 of the Work Plan describes other sampling methods that were approved by NMED and MI sampling was not mentioned in the table. Also, the Permittees did not contact NMED to seek approval for modifying the sampling method prior to completing the supplemental interim measure. No response required.

Comment 2

The MI sampling method is inappropriate for this application, and may be acceptable as a screening tool in some situations, but it is not appropriate for compliance for cleanup activities.

a. MI sampling is acceptably applied for the "collection and processing of samples for characterization of secondary explosive and propellant residues [which are] heterogeneously distributed as particulates of various sizes, shapes, and compositions over large areas at firing point, around targets, and around individual detonation events" (EPA Method 8330B, Appendix A).

b. MI sampling is only appropriate for surface sampling and does not define the lateral extent of the contamination when applied to a soil removal action. The sampling method

also calls for larger decision units (EPA Method 8330B, Appendix A) than the Permittees used and requires the sampler to avoid areas that could dilute the sample.

Comment 3

The Permittees did not correctly follow the sampling protocol for EPA Method 8330B, Appendix A or the State of Alaska Department of Environmental Conservation guidance document (DEC Guidance).

a. The Permittees state, "[t]hirteen MI confirmation samples were collected, one MI confirmation sample from each discrete decision unit. Within each decision unit, 25 increments were collected by stainless-steel scoop throughout the entire footprint of the decision unit and combined in a stainless-steel bowl into a single sample." According to the guidance documents that describe MI sampling methods, at least 30 subsamples must be collected across the entire decision unit to ensure proper representativeness of the homogenized sample across the entire decision unit. No response required.

b. From the description of the Report, it appears that the Permittees may have modified MI sampling by collecting and submitting the samples as a composite sample to the lab. The Permittees state, "25 increments were collected by stainless-steel scoop throughout the entire footprint of the decision unit and combined in a stainless-steel bowl into a single sample." The Permittees do not explain if the entire sample from the stainless-steel bowl was submitted to the laboratory or if only a portion of the sample was submitted for analysis.

    1. Provide more information regarding the sampling method used to collect and homogenize confirmation samples. Clarify if homogenization of the confirmation samples was conducted in accordance with EPA Method 8330B. If the Permittees did not conduct homogenization in the field per the EPA Method 8330B, verify that it was conducted by the analytical laboratory.

    2. Clarify that confirmation sampling was not completed as composite sampling, which is not appropriate. If the MI sampling method was modified, revise the Report to explain that a form of grid sampling method was used to collect confirmation samples which were composited into one sample for each "decision unit" and sent to the laboratory for analysis.

c. The Permittees do not explain if the samples were processed (i.e., processed by grinding and passage through a #10 (2mm) sieve) prior to being sent to the laboratory or if the laboratory processed the samples before they were analyzed. Processing the samples ensures compositional and distributional heterogeneity reducing the fundamental error and grouping and segregation error. Verify that the samples collected were processed prior to analysis, either in the field or at the laboratory.

d. The Permittees state, "[q]uality control samples were collected and include one field duplicate (FD) sample, to evaluate the reproducibility of the sample technique." Both the DEC Guidance and Appendix A of the EPA Method 8330 discuss the importance of taking a triplicate sample. "Triplicate samples must be collected in order to verify that an *MI* sample truly represents the decision unit." Explain why a triplicate sample was not collected if the MI sampling method was applied at SWMU 01-001(f) and include in the revised Report.

e. The Permittees state, "[t]he 95% upper confidence limit [UCL] of the mean has decreased from 46.0 mg/kg to 9.07 mg/kg, based on the characterization data presented in the Investigation Report for the Upper Los Alamos Canyon, Revision 1 and the confirmation data presented in this supplemental interim measure report." The Permittees did not provide an explanation as to how they arrived at this conclusion. Provide the supporting calculations for the 95% UCL and indicate how this approach was selected (i.e., clarify if it was based on the MI sampling guidance documents or from another source). If the Permittees used the MI sampling guidance documents to perform 95% UCL calculations, the analysis is incorrect because the Permittees did not take a triplicate sample and/or apply the calculation based on the multiple decision units. Provide further documentation and discussion to clarify the analysis in the revised Report.

NMED does not require additional sampling since the Permittees will be conducting additional investigation of SWMU 01-001(f) as part of the Upper Los Alamos Canyon Aggregate Area. However, the Permittees must provide clarification for the above comments to be included in the revised Report.

Part II - Other Comments

Comment 1 – Page 3 and 7, Section 3.0 and 6.0

The Permittees state, "SWMU 01-001(f) is regulated under the Laboratory's individual National Pollutant Discharge Elimination System [NPDES] permit for stormwater discharges from SWMUs and AOCs (individual permit). Under the individual permit, the Laboratory is required to implement best management practices (BMPs) and monitor stormwater discharges from SWMU 01-001(f). Additional corrective actions may be needed if concentrations of contaminants in stormwater discharges exceed target action levels. To date, the individual permit has not required additional corrective actions at SWMU 01-001(f)." Provide additional documentation, such as sampling and analytical results, to show that the target action levels are being met for stormwater discharge.

Comment 2 – Page 4, Section 4.1.1

The Permittees state, "[c]ontaminated soil, sediment, and tuff were excavated in the areas of previous confirmation sampling locations LA-609812, LA-609813, LA-609814, LA-609817, LA-611165, LA-611166, LA-611167, LA-611168, LA-611169, LA-611170, LA-611171, LA-

611172, LA-611173, LA-611174, and LA-611178." There are six other sample locations where aroclor concentrations exceed the PCB recreational screening levels (SSLs): LA-610960, LA-610964, LA-610966, LA-611150, LA-611183, and LA-611185. Explain why these other locations were not addressed during removal activities.

Comment 3 – Page 4, Section 4.1.2

The Permittees did not fully address Comment 3 in the Direction, which directed the Permittees to "provide a description of the methods of sample collection (e.g., method of location selections, use of a shovel or coring device, collection of loose material vs. in-place soils or tuff)." This information was not included in the previous Interim Measures Report. Provide the additional information (e.g. method of locations selections, collection of loose material vs. in-place soils or tuff) in Section 2.0 (Background) and Appendix B in the revised Report.

Comment 4 – Page 5, Section 4.1.2, Paragraph 1

The Permittees state, "MI confirmation samples "top depth" was the distance measured from the original ground surface to the current surface at the bottom of the excavation. The MI confirmation sample "bottom depth" was the distance measured from the original ground surface to the total depth where the MI confirmation sample was collected." Based on the confirmation sampling results, it appears that the vertical extent of PCB contamination has not yet been reached for each of the decision units and more removal may be required. However, the Permittees did not verify that the boundaries of the excavation extended to the lateral extent of the PCB contamination. Verify that the lateral extent of PCB contamination has been addressed by collecting confirmation samples from the side walls of the excavations as well as from beyond the excavation boundaries. Provide this information as well as a description of the confirmation sampling performed (i.e., method used, sampling equipment, results, and discussion) in the revised Report.

Comment 5 – Page 5, Section 4.1.2, Paragraph 3

The Permittees state, "[t]he expedited [polychlorinated biphenyls (PCB)] screening analyses used to help guide PCB removal activities implemented in late 2009 and early 2010, as reported in the May 2010 interim measure report (LANL 2010, 109422), were not used during supplemental removal and confirmation sampling activities implemented in June and July 2010. The expedited screening analyses, which used a more simplified solvent extraction technique than the standard analytical method, tended to bias results low. While useful for quickly identifying areas with high levels of contamination requiring removal, it is not appropriate for confirmatory analyses." Provide clarification that confirmation samples screened with the expedited screening analyses from the previous interim measure did not allow contaminated areas to be overlooked or underestimated for the residential and default PCB SSLs. Submit, in the revised Report, all expedited screening analysis results and provide a section for sampling methods, equipment used, analytical methods, discussion of results and verification that the screening analyses did not overlook areas due to biased results.

Comment 6 – Page 6, Section 4.3, Paragraph 1

The Permittees state, "[g]rab samples were collected from stormwater in both basins on July 26, 2010, following three days of rain." The Permittees did not include these data in the Report. Revise the Report to include the stormwater sample data for the two basins and provide discussion of the results.

Comment 7 – Page 6, Section 5.1, Paragraph 1

The Permittees state, "[a]lthough Table 5.1-1 shows that Aroclor-1254 and Aroclor-1260 were the only Aroclors detected, review of the analytical data in Appendix D indicates that there were a number of instances where detection limits for other Aroclors were greater than clean up levels. These elevated detection limits were associated with the analytical sample dilution needed because of high concentrations of Aroclor-1254 and/or Aroclor-1260. In no cases were the high detection limits for some Aroclors without at least one other Aroclor being detected at high concentrations. Therefore, although some Aroclors above cleanup levels may not have been quantified in all samples, the results were acceptable for identifying all locations requiring removal. Elevated detection limits were not an issue with the supplemental confirmation data set because samples were less contaminated and high sample dilution was not needed." NMED recognizes that analytical sample dilution is one reason Aroclor-1254 and Aroclor-1260 were the only Aroclors detected in the confirmation samples. Stormwater analytical data from SWMU 01-001(f) was reviewed by NMED and the results show that concentrations of Aroclor-1254 and Aroclor-1260 are the dominant Aroclors present in the surface water samples. No response required.

Comment 8 – Page 7, Section 6.0, Paragraph 2

The Permittees state, "[t]o further control migration of residual contamination at the site, it is recommended that run-on be diverted from the outfall area and hillside drainage portions of the site and that additional stabilization measures be implemented within the hillside drainage. These activities will be coordinated with the installation of BMPs and other controls under the individual permit. To date, the individual permit has not required the installation of run-on controls or monitoring at the top of the SWMU 01-001(f) drainage." In Section 3.2 of the Interim Measure Report for SWMU 01-001(f) and LA-SMA-2, the Permittees state, "[a]dditional actions to be taken at SWMU 01-001(f), including those to be implemented above the drainage, will be identified in the Phase II work plan."

a. NMED has reviewed the Upper Los Alamos Canyon Aggregate Area Phase II Work Plan and did not identify any activities pertaining to the top of the drainage for SWMU 01-001(f). No response required.

b. Per Comment 2 of the *Approval with Modifications* (Approval) letter dated August 25, 2010, NMED directed the Permittees to "take all measures necessary to prevent contaminants from the mesa top from migrating into the drainage below SWMU 01-

001(f)." The Permittees state, "to date, the individual permit has not required the installation of run-on controls or monitoring at the top of the SWMU 01-001(f) drainage." Part 1, Section A.2 of the NPDES Permit No. NM0030759, states "[n]othing in this permit relieves the Permittees of the obligation to implement additional control measures required by other Federal authorities, or by a State or local authority." Therefore, address Comment 2 of the Approval and provide documentation that installation occurred and include in the Phase II Investigation Report.

Comment 9 – Page 7, Section 6.0, Paragraph 4

The Permittees state, "[t]o evaluate the potential need for further cleanup activities within the hillside drainage portion of the site, a risk assessment is recommended for this area. This risk assessment would evaluate the risk associated with current and potential future use of the site. It is recommended that this risk assessment be performed as part of the Phase II investigation for Upper Los Alamos Canyon Aggregate Area and that any additional clean up activities be implemented as part of corrective measures for the aggregate area. The Phase II investigation will also address the determination of the nature and extent of contamination at SWMU 01-001(f), including at the five sampling locations at the former location of SWMU 01-001(f) septic tank."

a. The risk assessment must be completed once the Phase II investigation has been completed for the Upper Los Alamos Canyon Aggregate Area and must include all hazardous constituents of concern. No response required.

b. Clarify if samples have been collected from the five sampling locations cited above in the Report. They are not mentioned in Section 2.5.3 (Proposed Extent Sampling at SWMU 01-001(f)) of the Phase II Investigation Work Plan.

Comment 10 – Page 20, Table 5.1-1

Revise Table 5.1-1 as follows:

a. Superscript "a" states "SSLs from NMED (2009, 108070)." NMED does not include recreational SSLs in its soil screening guidance. Revise the Notes section to resolve this discrepancy.

b. Revise the Table to include a footnote defining "QBT3."

c. Revise the Table to include a footnote to indicate when samples were collected (i.e., initial and supplemental interim measures).

d. Revise the Table to include the duplicate sample collected as part of the MI confirmation samples.

e. In the final report, include all confirmation and expedited screening analysis samples.

Comment 11 – Page B-2, Section B-4.4

Clarify that all heavy equipment used for excavation were also decontaminated prior to demobilization from the SWMU 01-001(f) outfall and drainage area.

Comment 12 – Plate 1

Revise Plate 1 as follows:

a. Include symbols representing LA-SMA-2.1 and former LA-SMA-2.

b. Include missing data for samples 01-609991, 01-609994, 01-611286 LA-60815, LA611127, LA-611128, LA-611151, LA-611152, and LA-611156.

c. Depict the entire excavation boundary within SWMU 01-001(f).

The revised figure must be submitted with the revised Report.

The Permittees must address all comments contained in this NOD and submit a revised Supplemental Interim Measure Report on or before **April 30, 2011**. The revised Report must include a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, an electronic version of the revised Report must be submitted that identifies where all changes have been made in red-line strikeout format.

Please contact Leona Tsinnajinnie of my staff at (505) 476-6057 if you have questions.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: J Kieling, NMED HWB
D.Cobrain, NMED HWB
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File: Reading and LANL General (Los Alamos and Pueblo Canyons, Surface Water)

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