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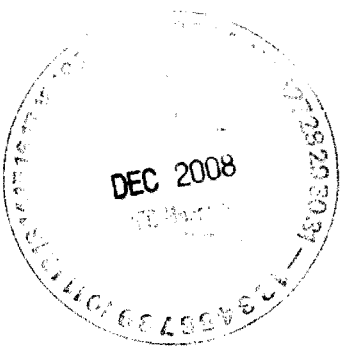

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December 18, 2008

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Mr. David Cobrain
Hazardous Waste Bureau
2905 Rodeo Park Dr. E/Bldg 1
Santa Fe, NM 87505

RE: Draft Technical Review of the Supplemental Interim Measures Work Plan to Mitigate Contaminated Sediment Transport in Los Alamos and Pueblo Canyons, October 2008, Los Alamos National Laboratory.

Dear Mr. Cobrain:

Ms. Kristen Van Horn requested a technical review (via email dated December 16, 2008) of the above-referenced document. Specifically Ms. Van Horn requested that the "hazard of spreading the soil and the water infiltration in terms of leaching" be evaluated. This letter addresses technical comments noted during the review.

1. The primary objective of the proposed interim measures is to reduce transport of contaminated sediment within the Los Alamos and Pueblo Canyon watersheds. In order to achieve this goal, Los Alamos National Laboratory (LANL) has proposed the excavation of contaminated sediments from filled weirs and then spread the excavated sediments on a nearby berm. From the description presented in the Work Plan, it appears that the sediments are fairly stabilized and that the intent is to mitigate re-mobilization of sediments during periods of high water flow. Comments are provided below:

    a. It is not clear from the report whether the source term removal has been completed. From review of investigation reports for Los Alamos and Pueblo Canyons, it appears that sources have been at least identified. Confirmation is recommended that source term removal has either been completed or is under corrective measures is needed; otherwise, the removal of the contaminated sediments should be delayed until source term removal/mitigation is complete.

    b. The report infers that water currently is present in these canyons. As such, excavation of the sediments will result in re-mobilization and downstream transport unless water flow is temporarily diverted during the removal action. It is not clear from the Work Plan how water will (or if) will be diverted. If water is not to be diverted, then additional measures, such as sediment traps, should be used downstream to minimize downstream transport of sediment during the removal action.

c. The Work Plan does not address whether any long-term maintenance will be required, to include routine maintenance as the weir is again filled by contaminated sediments.

2. The Work Plan indicates that the maximum detected concentrations of contaminants in the sediments are below the Environmental Protection Agency's Land Disposal Restrictions (LDR) Treatment Standards, although an actual comparison of site concentrations to the LDR standards does not appear to be included in the Work Plan. It is not clear why the treatment standards are entirely relevant, as no treatment of the sediment is planned. Under the regulations for LDRs, soil must be treated or processed to show a reduction of constituents of concern. The contaminated sediment is not being treated, just moved. Regardless of the applicability of the LDR standards, a comparison of the site data tabulated in Table 2.0-4 and 2.0-5 to the land treatment standards in 40 Code of Federal Regulations (CFR) §268.48 was conducted as part of this review. The maximum detected concentrations for organics and inorganics are below the LDR treatment standards.

3. A comparison of maximum concentrations to risk-based residential screening criteria was conducted. However, of equal concern is whether the sediment could pose any ecological concern when spread on the ground surface. The Work Plan should be revised to address potential for ecological exposure.

4. The Work Plan does not address the potential for constituents in soil to migrate to groundwater. An initial comparison of the maximum detected concentrations for organics and inorganics to the Regional Screening Level database for migration to groundwater screening levels (SSLs) based upon a dilution attenuation factor (DAF) of one was conducted. Several constituents had concentrations that exceeded the SSLs. A second look was conducted comparing the site data to the New Mexico Environment Department's (NMED) SSLs based upon a DAF of 20. The site maximums were below the NMED SSLs. Therefore, the potential for the sediments to act as a source for groundwater contamination is unlikely.

5. It is assumed that when the contaminated sediment is excavated, a certain amount of surface water will also be removed and spread over the ground surface. The Work Plan does not address surface water characterization and whether there are contaminants at greater concentrations in surface water than in sediment. It is likely that the sediments would exhibit higher concentrations that surface water; however, it should be addressed in the Work Plan.

If you have any questions, please call me at (801) 451-2864 or contact me via email at paigewalton@msn.com.

Sincerely,

Paige Walton

Paige Walton
Senior Scientist, AQS

cc: Joel Workman, AQS (electronic)
Kristen Van Horn, NMED (electronic)