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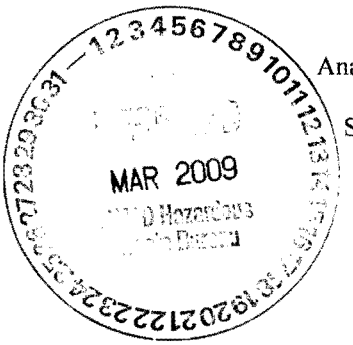

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ENTERED

March 2, 2009

DCN: NMED-2009-04

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

RE: Los Alamos Canyon Low-Head Weir Ecological Risk Screening, Los Alamos National Laboratory, New Mexico

Dear Mr. Cobrain:

In New Mexico Environment Department's (NMED) approval with modifications (dated January 7, 2009) on Los Alamos National Laboratory's (LANL) Supplemental Interim Measures Work Plan to Mitigate Contaminated Sediment Transport in Los Alamos and Pueblo Canyons, LANL was requested to provide additional information regarding levels of detected analytes in sediments to ecological screening levels (ESLs). A discussion of LANL's response (dated February 10, 2009) is addressed below.

LANL indicates that the proposed methodology is consistent with biota plans for the other canyons. AQS has not been involved in the review of the biota plans referenced in the response, and as such, no comments were noted concerning this issue.

Overall, using the justification that certain concentrations detected in various media were deemed to have no significant ecological concern at other areas is not an acceptable line of evidence to indicate that the sediment would not pose ecological risk within Los Alamos Canyon. Using this type of comparison line evidence is not appropriate and should not be applied to any other sites in the future. It would have been preferred that LANL provided an actual screening analysis and calculation of hazard indices for indicator species.

In lieu of requesting additional analysis from LANL, the following assessment was conducted to determine whether adverse ecological impact might result from relocation of the contaminated sediments.

1. The volume of contamination appears to be rather minimal and would not likely result in a large area of impact once removed sediments are spread on the slope sides.

2. Sediment concentrations listed for lead, copper, and cyanide appear minimally elevated. The reported concentration of lead [22 milligrams per kilogram (mg/kg)] falls within the LANL background range for sediment (2 – 25.6 mg/kg) and soil (2 –

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26 mg/kg). While no statistical comparison was conducted, lead does not appear significant with respect to background. As such, ecological exposure to lead in the sediment would not likely result in adverse ecological impact.

3. Copper (32.6 mg/kg) is slightly elevated compared to background for sediment (0.77 – 12 mg/kg) and soil (0.25 – 15 mg/kg). Using a simple screening analysis for avian receptors (horned lark), the resulting hazard quotient (HQ) would be around 2.0 (compared to the target HQ of 1.0). If a Tier 2 analysis was performed and an area use factor was included in the refinement, the HQ would most likely drop below a HQ of 1.0.

4. Cyanide (2.21 mg/kg) is fairly high compared to sediment background (0.075 – 0.53 mg/kg). No background data are available for cyanide for LANL soil. A screening assessment would result in an HQ of roughly 11.0 for the horned lark. However, applying an area use factor and a lowest-observed adverse effect level (LOAEL) instead of a no-adverse observed effect level (NOAEL) in a Tier 2 assessment would probably drop the HQ to around 2. While still elevated, the HQ is not significantly elevated compared to the target level of 1.0

Given the above analysis, it appears that spreading of the sediment from the weirs will most likely not result in adverse ecological impact. The above analysis was conducted as a time saving measure, but for future reports, it is anticipated that deficiency comments would be generated and requests for LANL to provide more detailed screening analyses be requested.

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

Thank you,

Paige Walton
AQS Senior Scientist and Project Lead

cc: Joel Workman, AQS (electronic