



TASY

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April 20, 2009

DCN: NMED-2009-08

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



RE: Evaluation of the Response to Notice of Disapproval for the *Middle Cañada del Buey Aggregate Area Investigation Report*, Los Alamos National Laboratory, New Mexico, dated March 5, 2009

Dear Mr. Cobrain:

This letter addresses the evaluation of Los Alamos National Laboratory's (LANL) responses to Notice of Disapproval comments on the *Middle Cañada del Buey Aggregate Area Investigation Report*, LANL, New Mexico (March 2009). As noted in an email dated April 9, 2009, Ms. Neelam Dhawan requested an evaluation of the responses to the risk assessment-related comments but also specifically requested review of responses to General Comment Nos. 1, 2, and 4.

#### General Comments

1. LANL has requested direction and clarification as to the procedure(s) that should be used in future reports for comparing site data to background. The following general method is preferred by NMED for evaluating background whether the constituent of concern is an inorganic or radionuclide. Additional guidance may be found in *Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites* (<http://www.epa.gov/oswer/riskassessment/pdf/background.pdf>).
  - a. As an initial screen, the maximum detected site concentration for each medium (soil, sediment, and tuff) should be compared to the appropriate background reference datum. This background datum is defined as the upper tolerance limit (UTL) in the LANL document *Inorganic and Radionuclide Background Data for Soils, Canyon Sediments, and Bandalier Tuff at Los Alamos National Laboratory*. If the site maximum is less than the background UTL for a given medium, then the conclusion may be drawn that the detected site concentrations are representative of background.
  - b. If the initial screen indicates that the maximum detected concentration is greater than the background UTL, and sufficient data are available, a statistical

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comparison (site attribution analysis) of site concentrations to background should be conducted. The statistical evaluation will provide results to assess whether the site data are significantly different from the background population. It is recommended that the statistical test be based on the distribution of the datasets. While either parametric or nonparametric tests may be used, the most commonly applied test for comparing site data to background is the nonparametric Wilcoxon Rank Sum (WRS) test.

- c. Additional methods may be used in conjunction with the statistical tests, to include box and whisker plots, histograms, and/or geochemical analyses.
  - d. If sufficient data are not available to conduct a robust statistical evaluation, additional site samples may be required to support either the determination of nature and extent or to support human health or ecological risk assessments. However, graphical methods, comparison to the background range(s) of data, and other lines of evidence may be evaluated on a case by case basis.
2. The response indicates that the maximum concentration for a chemical may have been the estimated quantitation limit or the estimated detection limit, which would carry a “U” qualifier. From the review of the data provided in Appendix H, it did not appear that any of the maximum concentrations were a “U” qualified datum but rather the highest “J” flagged datum was applied. The proposed footnote, while providing some clarification on this issue, is still a little vague. It is suggested that some additional language be added to the proposed footnote indicating that the maximum result may be a nondetect and thus the maximum detected concentration may be less than the maximum result.
  3. LANL’s response to this comment concerning ecological toxicity reference values as directly relating to the *Middle Cañada del Buey Aggregate Area Investigation Report* is adequate as provided. However, LANL does not provide a discussion that they will conduct a literature review for chemicals identified as ecological constituents of concern but are not addressed in ECORISK. It is not clear from the response that LANL intends to comply with NMED’s request on future reports. I anticipate this may continue to be an on-going issue/comment.
  4. The response to this comment is adequate. As the resultant radiological dose is below the acceptable limit of 15 millirem per year (mrem/yr), an in-depth as low as reasonably achievable (ALARA) analysis is not required. However, the added text does ensure that if the Middle Cañada del Buey Aggregate Area is released from LANL control, more in-depth ALARA analysis will be conducted.

Specific Comments

The responses to the specific comments are adequate as presented.

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: Neelam Dhawan, NMED (electronic)  
Joel Workman, AQS (electronic)