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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 Comments on the *Phase II Investigation Report for the TA-16-340 Complex [Consolidated Units 13-003(a)-99 and 16-003(n)-99 and Solid Waste Management Units 16-003(o), 16-026(j2), and 16-029(f)]*, Los Alamos National Laboratory, New Mexico

Dear Mr. Cobrain:

Attached please find draft technical review comments on the *Phase II Investigation Report for the TA-16-340 Complex [Consolidated Units 13-003(a)-99 and 16-003(n)-99 and Solid Waste Management Units 16-003(o), 16-026(j2), and 16-029(f)]*, Los Alamos National Laboratory (LANL), New Mexico (September 2008). Per request, the primary focus of the review was on the human health and ecological risk assessment portions of the report. Additionally, as part of this review, previously drafted risk assessment comments on the Phase I Investigation Report and the approved Work Plan were used as references for the risk assessment evaluation. There were few technical comments related to the human health and ecological risk components of the report.

A complete exposure pathway is defined for a construction worker, but not evaluated. Risks to a construction worker may occur upon further development of this site. As noted in Appendix I, in the event that the site were to be developed, a construction worker scenario would be evaluated prior to development. While it would be preferred that the construction worker scenario be evaluated as part of this report, LANL alludes that future development is not immediately anticipated. However, if closure with controls is granted for the Technical Area (TA) 16-340 Complex, a restriction requiring an evaluation of the risks to the construction worker prior to any development must be in place.

Solid Waste Management Unit (SWMU) 16-003(o) was the only area where industrial risk was above the target risk level of 1E-05. The area of soil with elevated levels of benzo(a)pyrene and arsenic contributes the largest percent of excess risk. This area of soil appears to be relatively small and is located on a steep embankment. The target risk level was only slightly exceeded (3E-05). However, one of the objectives of the Phase II investigation was to remove contaminated soil and mitigate risks. Since the residual risk at SWMU 16-003(o) to the industrial worker is reasonably within the risk range of 1E-04 and 1E-06, and only slightly above the target risk level of 1E-05, there does not appear sufficient data to warrant additional soil

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Comments should not be evaluated as a final work product.*

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removal. However, clarification as to how the locations for soil removal at SWMU 16-003(o) were determined is needed to fully understand why all soil exhibiting elevated (above industrial levels) was not included in the corrective actions. A comment has been drafted concerning this issue.

After application of the area use factor, hazard indices above a target level of one still exist for some ecological receptors. However, the most dominant driver was bis(2-ethylhexyl)phthalate for the robin and for plants, there were several contributing constituents. With the uncertainties associated with ecological screening levels for plants, the fact that bis(2-ethylhexyl)phthalate is a common laboratory contaminant, and the spatial variation of the contamination (random elevated levels), it is believed that the likelihood that adverse ecological impacts would occur due to residual contamination at the TA 16-304 Complex is minimal.

As several of the surface water and groundwater screening criteria were exceeded, especially when evaluating ecological receptors, it is agreed that continued surface water and groundwater monitoring is needed.

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

Thank you,

Paige Walton  
AQS Senior Scientist and Project Lead

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

**Draft Technical Review Comments on the Phase II Investigation Report for the TA-16-340 Complex [Consolidated Units 13-003(a)-99 and 16-003(n)-99 and Solid Waste Management Units 16-003(o), 16-026(j2), and 16-029(f)], Los Alamos National Laboratory, New Mexico, September 2008**

1. The only area within the Technical Area (TA) 16-340 Complex where industrial risk exceeded the target risk level of  $1E-05$  was at Solid Waste Management Unit (SWMU) 16-003(o). The primary drivers for the excess risk were benzo(a)pyrene (BaP) and arsenic. In reviewing the figure showing the 2008 soil removal locations (Figure 3.1-2) for SWMU 16-003(o), there was an area around the 7500 foot contour line where soils with elevated levels of BaP and arsenic were not excavated (more clearly shown on Figure 2.3-1). The report did not appear to contain a discussion of how the locations for soil removal were determined and why this area of soil with elevated levels of contamination was not included in the corrective action. It is assumed that based upon the description for this area and from review of the topographic map, that the steepness of the area may have been a contributing factor for excluding the area from soil removal. Please clarify why this area of contaminated soil was not included in the 2008 soil removal activities.
2. As part of the assessment of the potential for contaminants to migrate to groundwater, a comparison of pore water concentrations were compared to derived screening levels. These screening levels are depending on the Henry's Law constant for individual constituents. Physical/Chemical properties for the constituents detected in pore water were obtained from either the New Mexico Regional Screening Level document or the Pennsylvania Department of Environmental Protection chemical and physical properties database. For the ecological screening assessment, physical/chemical properties were taken from the Risk Assessment Information System (RAIS) database. It is not clear why the Pennsylvania database was used over the Region 6 medium-specific screening level (MSSL) database or why multiple database were applied for physical/chemical data. While no real discrepancies were noted, please clarify the rationale for the use of different databases in the same assessment.
3. Section 5.2, Screening Levels, page 24. It is noted that if New Mexico specific soil screening levels (NMED SSLs) were not available, either United States Environmental Protection Agency (EPA) Region 6 media-specific screening levels (MSSLs) or EPA Region 9 preliminary remediation goals (PRGs) were applied. This hierarchy of screening levels is based on the Order on Consent (Section VIII). In July 2008 (and updated in September 2008), Regional Screening Levels (RSLs) were posted as inter-regional screening levels for EPA Regions 3, 6, and 9. These new RSLs supersede the previously used MSSLs and PRGs. As noted on the regional web pages, use of the individual regional screening levels should be discontinued (<http://www.epa.gov/region09/waste/sfund/prg/rsl-table.html> or [http://www.epa.gov/reg3hwmd/risk/human/rb-concentration\\_table/index.htm](http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm)). The Phase II investigations were conducted between June and August of 2008. Thus, the risk evaluation would have been conducted after August 2008 and the RSLs should have been applied. A preliminary comparison of the screening levels used in the report to the RSLs (where a MSSL or PRG was applied) was conducted. Since the assessment as presented in the report is conservative (i.e., use of a RSL would not result in a higher risk/hazard), no modification

of the screening is warranted. Please note that for all future risk evaluations the RSLs should be used over either MSSLs or PRGs.

4. Appendix I, Section I-5.4.8, pages I-23 through I-26. Several constituents were eliminated as constituents of potential ecological concern (COPEC) due to low detection frequencies, low potential for toxicity, and/or no available ecological screening level in the Ecorisk database.
  - Constituents that have historically been used at a site and/or potentially are present due to site activities should not be excluded from a risk assessment based on low frequency of detection. As historical data are not available to demonstrate that these constituents are not potentially site-related, the use of low detection frequency should not be used as a line of evidence for eliminating the constituents as a COPEC. The constituents should be retained as a COPEC and discussed in the uncertainty analysis. Please revise accordingly.
  - Constituents should also not be excluded based on the constituent not being included in the Ecorisk database or because a surrogate screening level was applied. Where an ESL is not available in Ecorisk, other sources, such as the EPA's Integrated Risk Information System (IRIS) should be used to obtain toxicological data. When a surrogate screening level is applied, the constituent should be retained and the associated risk addressed in the uncertainty analysis.
5. Minor editorial comments were noted with the footnotes on Table 5.2-1: Carbon disulfide does not require a footnote; a footnote "a" should be added to 1,3-dinitrobenzene; and a footnote "a" should be added to 1,3,5-trinitrobenzene. No response to this comment is required.