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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 18, 2011

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RE: NOTICE OF DISAPPROVAL
UPPER CAÑADA DEL BUEY AGGREGATE AREA INVESTIGATION REPORT
LOS ALAMOS NATIONAL LABORATORY
EPA ID #NM0890010515
HWB-LANL-10-087

Dear Messrs. Rael and Graham:

The New Mexico Environment Department (NMED) has received the United States Department of Energy (DOE) and the Los Alamos National Security L.L.C.'s (LANS) (collectively, the Permittees) *Investigation Report for Upper Cañada del Buey Aggregate Area* (Report), dated November 2010, received November 19, 2010, and referenced by LA-UR-10-7539 / EP2010-0452. NMED has reviewed the Report and hereby issues this Notice of Disapproval (NOD).

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General Comments:

1. Several sample results for total petroleum hydrocarbons (TPH) Diesel Range Organics (DRO) include the "J" data qualifier. In many cases, data values less than 10 milligrams per kilogram (mg/kg) are flagged; in other cases, they are not. Similarly, several values greater than 100 mg/kg are flagged; others of similar magnitude are not. The qualifier is defined in Table A-3.0 (*Data Qualifiers Definitions*) and is associated with some degree of uncertainty concerning the estimated numerical value. The discussion in Appendix F (*Analytical Programs*) indicates assignment of the qualifier for TPH-DRO analyses may be due to low spike recoveries or because detection is between the practical quantitation limit (PQL) and the method detection limit (MDL). Include a brief discussion in Section 4.2.10 (*Matrix Spike Samples*) of Appendix F of how the assignment of the "J" and"J-" flags are determined, explain why the MDLs and PQLs are unusually high for the presumed method (SW-846, Method 8015C), and otherwise clarify the apparent inconsistent use of data qualifiers.

2. For many of the Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) discussed in the Report, detection limits (DLs) are higher than background values (BVs) at one or more sample locations or sample intervals for various analytes. In many of these cases, the Permittees conclude that no BVs were exceeded. This occurs in discussions of inorganic constituents found in Report sections that concern nature and extent of contamination. The example below is from Section 6.2.4.4, *Nature and Extent of Contamination, Inorganic Chemicals*, which pertains to SWMU 04-003(a), on page 18:

   > "Antimony was not detected above BV but had DLs (1.14 to 1.32 mg/kg) above the soil BV (0. 83) mg/kg) and DLs (1.0 to 1.12 mg/kg) above the tuff BV (0.5 mg/kg) in nine samples. Because antimony was not detected above BVs, the lateral and vertical extent of antimony are defined."

   BVs and DLs are not connected to nature and extent determinations; rather, nature and extent determinations are based on whether contaminant concentrations are decreasing or increasing with depth or lateral distance from the suspected source area.

   In general, the Permittees attach statements like this to discussions concerning antimony, cadmium, cyanide, mercury, and selenium. Replace the statement with a discussion of the contaminant concentration-based evidence concerning whether or not nature and extent are defined at a given AOC or SWMU.

3. The United States Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for mercury (inorganic salts) were used as comparison values for the residential and industrial scenarios. An SSL for the construction worker scenario was calculated in accordance with NMED's Technical Background Document (TBD) for Development of

Soil Screening Levels, Revision 5.0, Soil Screening Levels using toxicity data from the RSL tables. Clarify whether the analytical results define speciation of mercury, thus justifying the use of the RSLs and toxicity data for mercury salts.

4. For constituents of potential concern (COPCs) with no available NMED SSLs, construction worker SSLs were calculated based on toxicity criteria listed in the RSL tables and NMED TBD SSL input parameters and calculations. The calculated SSLs for the construction worker could not be duplicated by NMED. Provide the spreadsheets or calculation sheets with input parameters and formulae used to calculate the construction worker SSLs.

5. The SSLs and toxicity data for butyl benzene[n-] and butyl benzene[sec-] were taken from the USEPA Region 6 (2007) SSL tables and are based on National Center for Environmental Assessment (NCEA) data. NCEA data are no longer appropriate for use in risk assessments as these data have not undergone an extensive peer-review process and are not included in the current hierarchy of toxicological data summarized in the NMED TBD. The Region 6 SSL tables are outdated, and Region 6 currently refers to USEPA Regions 3 or 9 for risk-based, media-specific screening levels. Modify the risk assessment to use the current hierarchy of toxicological data.

Specific Comments:

6. **Plates 1, 2, and 3, Inorganic, Organic and Radionuclide Chemicals Detected at SWMUs 46-002, 46-003(b), and 46-009(b):**

   NMED Comment: For future Report and Investigation Work Plan (IWP) illustrations that include differently scaled insets on a single figure or plate, all structure numbers common to both illustration types must be included on both illustration types for clarity. Revision of the three plates for this Report is not required.

7. **SWMU 46-002, Section 7.2.4.4, Nature and Extent of Contamination, Inorganic Chemicals, page 30:**

   Permittees' Statement: "Silver concentrations decreased with depth at all locations and decreased downgradient. The lateral and vertical extent of silver are defined."

   NMED Comment: According to Plate 1 and Table 7.2-2, concentrations of silver did not decrease with depth at sample location 46-611374. Initially, concentrations decreased, but then slightly increased again with increasing depth. A deeper sample may or may not reveal increasing concentrations of silver. Modify the text to indicate that initially concentrations are decreasing but then increase again with depth, and discuss the need to further determine whether the vertical extent of contamination of silver is defined relative to the applicable

relative to the applicable SSL.

8. **SWMU 46-003(a), Section 7.3.4.4, Nature and Extent of Contamination, Inorganic Chemicals, fifth paragraph, last line and sixth paragraph, penultimate and last sentences, page 34:**

   Permittees' Statement: "The lateral and vertical extent of nitrate are defined." and, "Selenium concentrations increased with depth at this location and decreased downgradient. The lateral extent of selenium is defined, but the vertical extent is not defined."

   NMED Comment: Nitrate concentrations at location ID 46-611268 increased slightly with depth. At ID 46-611271 concentrations were over twice as high in the deepest sample interval (14.5 to 15.5 feet below ground surface [bgs]) compared to the interval above it (9.5 to 10.5 feet bgs). Selenium concentrations did not increase with depth at ID 46-611269; they were the same (2.3 (J+) mg/kg) in both sample intervals. Modify the text to reflect the collected data and include a discussion of the need to further determine whether the vertical extent of contamination of nitrate and selenium is defined.

9. **SWMU 46-003(a), Section 7.3.7, Delayed Site Investigation Rational, last sentence, page 35:**

   Permittees' Statement: "It is proposed that site characterization and investigation be delayed until active utilities located around the septic tank are removed or rendered inactive."

   NMED Comment: Site activities and existing utility configurations at and near this SWMU will likely remain unchanged for an unknown number of years into the future. NMED cannot make any determinations with respect to Corrective Action Complete until the site investigation is complete at this SWMU. No response to this comment is necessary.

10. **SWMU 46-003(e), Section 7.7.1, Site Description and Operational History, last line, page 47:**

    Permittees' Statement: "The water layer, sludge, and septic tank were removed and managed as LLW at Area G at [Technical Area] TA-54 (Appendix D)."

    NMED Comment: Define the acronym "LLW" in the revised Report.

11. **SWMU 46-003(f), Section 7.9.4.3, Soil, Rock, and Sediment Sampling Analytical Results, Radionuclides, third sentence, page 57:**

Permittees' Statement: "Plate 18 shows the spatial distribution of radionuclides detected or detected above BVs/FVs."
NMED Comment: Radionuclide information for this SWMU is provided on Plate 9. Revise the text to include the correct plate reference.

12. **SWMU 46-004(a2), Section 7.11.4.4, Nature and Extent of Contamination, Organic Chemicals, fifth paragraph, last sentence, page 66:**

    Permittees' Statement: "The lateral and vertical extent of these inorganic chemicals are defined.

    NMED Comment: "Inorganic" should be "organic."

13. **SWMU 46-004(b), Nature and Extent of Contamination, Organic Chemicals, fourth paragraph, page 69:**

    NMED Comment: Provide a brief explanation in the Report text for the relatively high concentrations (10.1 to 25.3 mg/kg) of total petroleum hydrocarbons-diesel range organics (TPH-DRO) and trichloroethylene (11.9 mg/kg), including the assignment of "J" and "J-" qualifiers, respectfully. In the event the qualifiers were assigned by mistake, revise the appropriate column(s) of table 7.12-3 on page 353 as needed.

14. **SWMU 46-004(c), Section 7.14.4.4, Extent of Contamination, Inorganic Chemicals, eighth paragraph, last line, page 77:**

    Permittees' Statement: "The lateral and vertical extent of silver are defined."

    NMED Comment: Silver concentrations at sample location ID 46-611622 (which included samples collected from eight to 24 feet bgs) decreased in sample intervals from eight to 19 feet bgs. Silver concentration then increased in the 23 to 24 feet interval. The vertical extent of silver at this location is not defined. Revise the Report text to reflect the analytical results at this location.

15. **SWMU 46-004(c), Section 7.14.4.4, Nature and Extent of Contamination, Organic Chemicals, pages 77 and 78:**

    NMED Comment: Soil samples from the two sample locations at this SWMU (46-611622 and -611623) contained a considerable variety of volatile and semi-volatile compounds (VOCs and SVOCs) from ground surface to 24 feet bgs. Acetone and Aroclor-1242, -1254, and -1260 either increase or remain at approximately the same concentrations at 24 feet bgs compared to conditions at eight feet bgs. The historical activities at the SWMU as described in the Report do not suggest that organic compounds would been associated with the SWMU. While NMED agrees that the lateral and vertical extent of various organic

extent of various organic compounds has been determined for the area north and down-slope of SWMU 46-004(c), additional sampling locations are necessary to determine lateral and vertical extent south, east, and west of the SWMU. A probable source(s) of these compounds will need to be identified by the Permittees. The site description and operational history discussed for SWMU 46-004(b) (which also discharged to the SWMU 46-004(c) dry well) indicates the tank at that SWMU contained either butanol or kerosene; it would nonetheless not seem to be a likely source of the variety of organic compounds found at SWMU 46-004(c). However, the tank was located less that 15 feet west of the dry well and the accuracy of the Permittees' understanding of past activities at SWMU 46-004(b) may be incomplete. Revise the text as needed to address these issues.

16. SWMU 46-004(c2), Section 7.15.4.1, Soil, Rock and Sediment Sampling, pages 79 and 80 and Figure 7.11-1, page 274:

NMED Comment: There is a southwest to northeast trending drainage illustrated on Figure 7.11-1 of the Report and located approximately 80 feet north of the triangle designated as SWMU 46-004(c2). The drainage was not sampled during the 2010 investigation. A possible reason sample locations were not proposed in the September 2008 IWP, Revision 1 for the Aggregate Area, or required by NMED, is that the drainage was not shown on Figure 5.12-1 of the 2008 IWP.

Since nature and extent evaluation is not complete at this SWMU, the drainage must be evaluated during the future Phase II investigation.

17. SWMU 46-004(d), Section 7.16.1.4, Nature and Extent of Contamination, Inorganic Chemicals, sixth paragraph, last line, page 86:

Permittees' Statement: "The lateral and vertical extent of lead are defined."

NMED Comment: The vertical extent of lead is not defined. Lead at sample ID location 46-611560 increases from 23.9 mg/kg in the zero to one foot bgs interval to 26.1 mg/kg in the one to two feet interval and there are no deeper samples reported for this location. Additional evaluation at this location must be proposed in the future Phase II investigation of this SWMU. *See* Comment 18 below concerning copper, since data from location IDs 46-611558 through 46-611560 are evaluated for SWMU 46-004(d) and (e).

18. SWMU 46-004(e), Section 7.16.2.4, Nature and Extent of Contamination, Inorganic Chemicals, sixth paragraph, last line, page 90:

Permittees' Statement: "Copper concentrations decreased with depth at all locations and decreased downgradient. The lateral and vertical extent of copper are defined."

NMED Comment: The vertical extent of copper is not defined. Copper at location ID 46-611561 increases from 102 mg/kg in the 17.5 to 18.5 bgs interval, and increased to 126 mg/kg in the 22.5 to 23.5 feet interval. There were no deeper samples reported for this location. Additional evaluation at this location must be proposed in the Phase II IWP for this SWMU.

19. SWMU 46-004(g), Section 7.17.3.4, Nature and Extent of Contamination, Organic Chemicals, pages 102 and 103:

NMED Comment: Selected text must be reviewed by the Permittees and edited as appropriate. For location IDs 46-611444, -611445, and -611446 certain organic compounds are increasing with depth, contrary to what is described in the Report. While the concentrations are very low in all cases, and further investigation at these locations is likely unnecessary, the text must be revised to accurately reflect site conditions. This comment may also affect the list of constituents found in the *Summary of Nature and Extent* portion of Section 7.17.3.4.

20. AOC C-46-003, Section 7.18.4.4, Nature and Extent of Contamination, Organic Chemicals, page 113:

NMED Comment: Selected text must be reviewed by the Permittees and edited as appropriate. For location ID 46-611022, three organic compounds are increasing with depth, contrary to what is described in the Report. While the concentrations are very low in all cases, and further investigation at these locations is likely unnecessary, the text must be revised to accurately reflect site conditions. This comment may also affect the list of constituents found in the *Summary of Nature and Extent* portion of Section 7.18.4.4.

21. SWMU 46-004(p), Section 7.22.4.4, Nature and Extent of Contamination, Inorganic Chemicals, second paragraph, last three sentences, page 129:

Permittees' Statement: "The maximum concentration of 0.227 mg/kg was detected at location 46-611627 from 25.0–26.0 ft bgs. Cesium concentrations were consistent with depth (from 10.0 to 26.0 ft bgs) and laterally. The lateral and vertical extent of cesium are defined."

NMED Comment: Based on the results for the two sample locations at the SWMU, cesium is still increasing in the deepest sample interval (25 to 26 feet bgs) at both locations, indicating vertical extent is not defined at this SWMU. Lateral extent is not defined, based on results for either location. If the Permittees are considering the cesium results for sample locations associated with nearby SWMU 46-007 as part of the lateral extent determination (and the Report text does not confirm this), lateral extent for cesium is also not defined by data from location IDs 46-611754 through 46-6117558. Vertical extent for cesium (and

extent for cesium (and several other metals) has also not been determined at SWMU 46-007. Revise the Report to reflect actual site conditions.

22. SWMU 46-004(p), Section 7.22.5, Summary of Human Health Risk, page 130:

NMED Comment: While cesium concentrations in soil are quite low at this SWMU, text must be added to the Report that considers potential groundwater impacts from cesium in light of the nature of past operations, particularly the historical use of the dry well.

23. SWMU 46-004(q), Section 7.23.4.4, Nature and Extent of Contamination, Radionuclides, first paragraph, page 134:

Permittees' Statement: "Cesium-137 was detected in two soil samples at two locations. The maximum activity of 0.591 [pico curies per gram] pCi/g was detected at location 46-611504 from 0.0–1.0 ft bgs, which is below the soil FV (1.65 pCi/g). Cesium-137 activities decreased with depth at both locations and decreased downgradient. The lateral and vertical extent of cesium-137 are defined."

NMED Comment: The two cesium-137 detections shown on Plate 15 and summarized in Table 7.23-4 were at location ID 46-611501 (0.119 pCi/g, one to two feet interval) and location ID 46-611504 (0.33 pCi/g, one to two feet interval). The discussion does not match the information in the plate or table. If the data on the plate and in the table are correct, vertical extent is not defined at either location ID. Review the text, plate, and table, and revise as needed for consistency. Revise the extent discussion, if appropriate. Resolution of this comment may also require revision of the *Summary of Nature and Extent* portion of the discussion at the end of the section. Note also that the pCi/g acronym is not defined in the Appendix A listings, or in footnotes to the table; it is defined on the plates.

24. SWMU 46-004(r), Section 7.24.4.4, Nature and Extent of Contamination, Inorganic Chemicals, first paragraph, last line, page 136:

Permittees' Statement: "The lateral and vertical extent of cadmium are defined."

NMED Comment: The highest cadmium concentration is in the deepest sample interval collected at location ID 46-612231. Cadmium vertical extent is not defined at that location. Revise the Report to reflect site conditions at this SWMU.

25. SWMU 46-004(r), Section 7.24.4.4, Nature and Extent of Contamination, Organic Chemicals, first paragraph, last two lines, page 137:

Permittees' Statement: "Because of the small incremental depth intervals sampled, the concentrations did not change substantially with depth. The lateral and vertical extent of these organic chemicals are defined."

NMED Comment: Several of the polycyclic aromatic hydrocarbons (PAHs) and VOCs discussed in this paragraph increased in concentration with depth, while others decreased. In both cases, the magnitude of change in either direction is slight. There is sufficient uncertainty in concentration trends for both PAHs and VOCs that additional subsurface evaluation is necessary at this location as part of the future Phase II activities planned for this SWMU.

26. SWMU 46-004(t), Section 7.26.4.3, Soil, Rock, and Sediment Sampling Analytical Results, page 142 and Appendix B, Section B-10.0, Deviations From the Work Plan, page B-9:

NMED Comment: Although collection of soil samples from below the drain line associated with this SWMU was discussed in the approved IWP, methods to be used to locate the line were not discussed. Include a discussion, either in this Report Section or in Appendix B, that explains why a hand auger was used instead of a backhoe to locate the drain line. This line is relatively long (approximately 490 feet as illustrated on Plate 7) and there is some uncertainty concerning where the 2010 sample locations were placed relative to the actual location of the line. Also, propose in the Phase II IWP, to use a backhoe to locate the line and verify that the 2010 sample locations were placed to adequately determine potential impacts associated with various segments of the line. Alternatively if there are underground utility concerns, non-invasive geophysical techniques may be proposed to locate the line.

27. SWMU 46-005, Section 7.33.4.4, Nature and Extent of Contamination, Inorganic Chemicals, second paragraph, last line, page 172:

Permittees' Statement: "The lateral and vertical extent of beryllium are defined."

NMED Comment: The vertical extent of beryllium is not defined at one location. At location ID 46-611637 beryllium was not detected in the upper one foot interval but was reported at 2.7 mg/kg in the three to four foot depth interval. Revise the text accordingly.

28. SWMU 46-006(b), Section 7.35.4.4, Nature and Extent of Contamination, Inorganic Chemicals, page 178:

Permittees' Statement: "Chromium was detected above the tuff BV (7.14 mg/kg) in one sample at a maximum concentration of 10.7 mg/kg. Chromium concentrations were below the maximum tuff background concentration (13 mg/kg) (Figure H-47). The lateral and vertical extent of chromium are defined."

NMED Comment: The chromium detection was present in the two to three feet interval at location ID 46-611371 and deeper samples were not collected. The upper one foot increment at the same location was non-detect, indicating the vertical extent of chromium is not defined at that location. Revise the text accordingly.

29. SWMU 46-006(b), Section 7.35.4.4, Nature and Extent of Contamination, Organic Chemicals, page 179:

Permittees' Statement: "Acetone was detected in one soil sample at a concentration of 0.00241 mg/kg at location 46-611371 from 1.0–2.0 ft bgs. Acetone concentrations were below the EQL and decreased downgradient. The lateral and vertical extent of acetone are defined."

NMED Comment: This is inconsistent with Table 7.35-3 and Plate 5 which indicate that acetone was not detected from one to two feet bgs but was detected from two to three feet bgs. Therefore, the concentration of acetone is increasing with increasing depth indicating that the vertical extent of acetone contamination is not defined. Modify the text to include the correct depths at which acetone was detected or modify the table and plate information if the text is correct. Indicate whether or not further evaluation at this location is necessary. Revise the *Summary of Nature and Extent* portion of the section, if appropriate.

30. SWMU 46-008(b), Section 7.42.4.4, Nature and Extent of Contamination, Inorganic Samples, first paragraph, third sentence, page 209:

Permittees' Statement: "The maximum [antimony] concentration of 1.29 mg/kg was detected at location 46-611203 from 2.0–3.0 ft bgs."

NMED Comment: According to Table 7.42-2 and Plate 22, the highest antimony concentration (1.29 mg/kg) was detected at location ID 46-611203 from zero to one foot bgs. Revise the text to resolve the discrepancy.

31. SWMU 46-008(b), Section 7.42.4.4, Nature and Extent of Contamination, Inorganic Samples, fourth paragraph, page 210:

Permittees' Statement: "Selenium was detected above the tuff BV (0.3 mg/kg) in one sample at a concentration of 0.61 mg/kg at location 46-611200 from 2.0–3.0 ft bgs. Selenium was detected at a concentration of 1.09 mg/kg, which is below the soil BV (1.52 mg/kg), from 0.0–1.0 ft bgs at this location and decreased with depth at this location. Selenium concentrations decreased downgradient. The lateral and vertical extent of selenium are defined."

NMED Comment: According to Table 7.42-2 and Plate 22, selenium was detected only at one location (ID 46-611200 at 0.61 (J) mg/kg). That concentration was reported for the two to three feet bgs interval, indicating selenium's vertical extent is not defined at that location. Review the text, table, and plate, and revise as needed for consistency.

32. SWMU 46-008(b), Section 7.42.4.4, Nature and Extent of Contamination, Organic Samples, first full paragraph, last sentence, page 211:

Permittees' Statement: "The lateral and vertical extent of TPH-DRO are defined."

NMED Comment: According to Table 7.42-3 and Plate 23, TPH-DRO was present at location ID 46-611201 (3.64 (J) mg/kg) in the two to three feet bgs interval indicating vertical extent is not defined at that location. The vertical extent of TPH-DRO at this location must be addressed in the Phase II IWP.

33. SWMU 46-008(d), Section 7.43.4.4, Nature and Extent of Contamination, Inorganic Samples, first paragraph, last sentence, page 214:

Permittees' Statement: "The lateral and vertical extent of chromium are defined."

NMED Comment: According to Table 7.43-2 and Plate 7, the two highest chromium concentrations are present in the deepest sample intervals at location IDs 46-611343 and 46-611347 indicating chromium vertical extent is not defined at those locations. Vertical extent at this location must be addressed in the Phase II IWP.

34. SWMU 46-008(d), Section 7.43.4.4, Nature and Extent of Contamination, Inorganic Samples, third paragraph, last sentence, page 214:

Permittees' Statement: "The lateral and vertical extent of lead are defined."

NMED Comment: According to Table 7.43-2 and Plate 7, the highest lead concentration is present in the deepest sample interval at location ID 46-611343, indicating lead vertical extent is not defined at that location. Vertical extent at this location must be addressed in the Phase II IWP.

35. SWMU 46-008(g), Section 7.46.4.4, Nature and Extent of Contamination, Radionuclides, first two sentences, page 228:

Permittees' Statement: "Cesium-137 was detected in one soil sample at one location. The maximum activity of 0.594 pCi/g was detected at location 46-611752 from 0.0–1.0 ft bgs, which is below the soil FV (1.65 pCi/g)."

NMED Comment: According to Table 7.46-4, the highest cesium-137 concentration (0.155 pCi/g) was in the deepest sample interval at location ID 46-611752. Note that the value shown on Plate 9 is 0.154 pCi/g. Review the pertinent analytical information and make the necessary revisions to the text, table, or plate for consistency.

36. SWMU 46-009(b), Section 7.48.1, Site Description and Operational History, first sentence, page 234:

Permittees' Statement: "SWMU 46-009(b) is a surface disposal area located approximately 325 southeast of building 46-77 at TA-46 (Figure 7.2-1)."

NMED Comment: Add units to the distance measurement.

37. SWMU 46-009(b), Section 7.48.4.4, Nature and Extent of Contamination, Organic Chemicals, third paragraph, last sentence, page 237:

Permittees' Statement: "The lateral extent of chloromethane is not defined, but vertical extent is defined."

NMED Comment: Chloromethane was detected in only one sample from one location at a very low concentration (0.00307 (J+) mg/kg). The horizontal extent of chloromethane is defined at this SWMU.

38. SWMU 52-001(d), Section 10.2, Recommendations for Corrective Action, last paragraph, page 251:

NMED Comment: NMED agrees that additional corrective actions at this SWMU are not necessary. The Permittees may submit a request for a Certificate of Completion.

39. Table F-1.0-1, Inorganic Chemical, Organic Chemical, and Radionuclide Analytical Methods for Samples Collected in the Upper Cañada del Buey Aggregate Area, page F-13:

NMED Comment: The table does not include a listing indicating what analytical method(s) were used for analyses of TPH-DRO. Revise the table to include the information.

40. Table F-1.0-1, Inorganic Chemical, Organic Chemical, and Radionuclide Analytical Methods for Samples Collected in the Upper Cañada del Buey Aggregate Area, page F-13:

NMED Comment: The table indicates EPA Method TO-15 was used for analyses of VOCs. Method TO-15 is typically used for canister-based analyses of air samples. The scope of work outlined in the Report does not indicate that air was sampled during the investigation. Revise the table as appropriate.

41. Section I-5.3.5, SWMU 46-006(g), page I-20:

NMED Comment: The text states that the hazard indices (HIs) were greater than 1.0 for the robin and deer mouse at SWMU 46-006(g). However, according to Table I-5.3-9, the plant (24) and montane shrew (6) receptors also had HIs greater than one. Revise the text to state that the plant and montane shrew receptors also had HIs greater than one.

42. Section I-5.4.4, Comparison with Background Concentrations, pages I-21 and I-22:

NMED Comment: This part of the Report presents a discussion of comparing exposure point concentrations (EPCs) (i.e., upper confidence limits) to background datasets, concluding that site concentrations are not substantially different from background concentrations. As a result, several inorganic constituents of potential ecological concern (COPECs) were eliminated from further analysis in the ecological risk assessment. It is incorrect to eliminate COPECs from further consideration based on comparing upper confidence limits (UCLs) with background comparison values. Comparisons of site concentrations with background values were already conducted and discussed previously in the Report, and resulted in the identification of COPECs. Furthermore, background values are used for point-to-point comparisons and because the UCL is not a point estimate, it cannot be used as an estimate of an individual site observation for comparison to background threshold values. Delete the discussion in Section I-5.4.4 and delete corresponding Tables I-5.4-1, I-5.4-2, I-5.4-3, and I-5.4-4. Include the inorganics that were eliminated as COPECs in the refined ecological risk assessment.

43. Table I-2.2-4, EPCs for SWMU 46-004(m) for the Industrial Scenario, page I-44:

NMED Comment: The EPC for tetrachloroethene (0.0141 mg/kg) for the industrial scenario at SWMU 46-004(m) is based on the maximum detected concentration and is inconsistent with the maximum detected concentration of 0.000432 mg/kg presented in Table 7.21-3. It is noted that the greater value was used as the EPC and does not affect the results of the risk assessment. Clarify this inconsistency and update any subsequent calculations that would be affected.

44. Table I-2.2-4, EPCs for SWMU 46-004(m) for the Industrial Scenario, page I-44:

NMED Comment: The EPC for xylene[1,3-]+xylene[1,4-] (0.00259 mg/kg) for the industrial scenario at SWMU 46-004(m) is based on the maximum detected concentration and is inconsistent with the maximum detected concentration of 0.000358 mg/kg presented on Table 7.21-3. It is noted that the greater value was used as the EPC and does not affect the results of the risk assessment. Clarify this inconsistency and update any subsequent calculations that would be affected.

45. Table I-2.2-9, EPCs for SWMU 46-006(b) for the Construction Worker and Residential Scenarios, page I-54:

NMED Comment: The EPC of 0.00545 mg/kg for butylbenzene[n-] is based on a maximum detected concentration and is inconsistent with the maximum detected concentration of 0.000545 mg/kg on Table 7.35-3. Although the EPC that was used is more conservative than the maximum detected concentration and would not affect the results of the risk assessment, revise Table I-2.2-9 to include the correct maximum detected concentration for butylbenzene[n-].

46. Table I-4.2-14, Construction Worker Noncarcinogenic Screening Evaluation for SWMU 46-004(m), page I-69:

NMED Comment: The listed SSL for copper (20,600 mg/kg) is incorrect. The correct NMED Construction Worker SSL is 12,400 mg/kg. Revise Table I-4.2-14 to include the correct SSL for copper.

47. Table I-4.2-16, Residential Carcinogenic Screening Evaluation for SWMU 46-004(m), page I-70:

NMED Comment: Trichloroethene was not included for residential screening at SWMU 46-004(m). It was detected in surface soil at a concentration of 0.00378 mg/kg and must be included in the carcinogenic risk screening for the residential scenario. Revise Table I-4.2-16 to include a risk estimate for trichloroethene, and revise the total excess cancer risk accordingly.

48. Table I-4.2-20, Industrial Noncarcinogenic Screening Evaluation for SWMU 46-006(b), page I-73:

NMED Comment: The EPC for butylbenzene[n-] (0.00545 mg/kg) is inconsistent with the EPC of 0.000545 mg/kg presented on Table I-2.2-8. The EPC that was used is the more conservative of the two values, and therefore would not affect the results of the risk assessment. Revise Table I-4.2-20 to include the correct maximum detected concentration for butylbenzene[n-].

49. Table I-5.3-1, ESLs for Terrestrial Receptors, pages I-81 and I-82

NMED Comment: The ecological screening levels (ESLs) for the following constituents and receptors are inconsistent with the values presented in the Ecorisk (Version 2.5) database:

a. Cyanide (American kestrel [intermediate carnivore], American kestrel [top carnivore], and red fox);
b. Selenium (American kestrel [intermediate carnivore], American kestrel [top carnivore], American robin [herbivore], American robin [insectivore], American robin [omnivore], deer mouse, desert cottontail, earthworm, plant, montane shrew, and red fox);
c. Silver (American kestrel [intermediate carnivore], American kestrel [top carnivore], American robin [herbivore], American robin [insectivore], American robin [omnivore], deer mouse, desert cottontail, plant, montane shrew, and red fox);
d. Zinc (American kestrel [intermediate carnivore], American kestrel [top carnivore], American robin [herbivore], American robin [insectivore], American robin [omnivore], deer mouse, desert cottontail, earthworm, plant, montane shrew, and red fox);
e. Anthracene (plant);
f. Benzo(a)anthracene (American kestrel [intermediate carnivore], American kestrel [top carnivore], American robin [herbivore], American robin [insectivore], American robin [omnivore], plant, and red fox);
g. Benzo(a)pyrene (American kestrel [intermediate carnivore], American kestrel [top carnivore], American robin [herbivore], American robin [insectivore], American robin [omnivore], deer mouse, desert cottontail, montane shrew, and red fox);
h. Benzo(b)fluoranthene (plant);
i. Chrysene (red fox);
j. Fluoranthene (earthworm);
k. Fluorene (earthworm);

l. Naphthalene (American kestrel [intermediate carnivore], American kestrel [top carnivore], American robin [herbivore], American robin [insectivore], American robin [omnivore], deer mouse, desert cottontail, Montane shrew, and red fox);
m. Phenanthrene (earthworm); and
n. Pyrene (earthworm).

It is noted that these errors do not affect the calculations, and the correct ESLs were used throughout the remainder of the ecological risk assessment. However, explain these inconsistencies, and revise Table I-5.3-1 to include ESLs that are consistent with those listed in Ecorisk (Version 2.5).

50. Table I-5.4-15, Adjusted HI Analysis for [lowest observed adverse effect level] LOAEL-Based ESLs for SWMU 46-002, page I-97

The EPCs listed for SWMU 46-002 for mercury (0.138 mg/kg) and bis(2-ethylhexyl)phthalate (0.119 mg/kg) on Table I-5.4-15 are inconsistent with the EPCs presented on Table I-2.2-2 (1.283 mg/kg and 1.43 mg/kg, respectively). It is noted that this inconsistency does not affect the calculation of the adjusted HI for the American robin (insectivore) at SWMU 46-002. However, revise Table I-5.4-15 accordingly.

The Permittees must address all comments and submit a revised Report by **April 8, 2011**. As part of the response letter that accompanies the revised Report, the Permittees must include a table that details where all revisions have been made to the Report and that cross-references NMED's numbered comments. All submittals (including maps) must be in the form of two paper copies and one electronic copy in accordance with Section XI.A of the Order. The Permittees must also submit a redline-strikeout version that includes all changes and edits to the Report (electronic copy) with the response to this NOD.

Please contact Daniel Comeau at (505) 476-6043, if you have any questions.

Sincerely,

James P. Bearzi
Chief
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