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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

February 28, 1994

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

4WD-FFB

Ms. Linda Berry
Department of the Navy - Atlantic Division
Naval Facilities Engineering Command
Code 1823
Norfolk, Virginia 23511-6287

SUBJ: MCB Camp Lejeune - OU1
Draft Remedial Investigation Report

Dear Ms. Berry:

The Environmental Protection Agency (EPA) has completed its review of the above listed document. Comments are enclosed.

As in the draft Remedial Investigation prepared for OU #5, the risks from dermal exposure have been calculated incorrectly, resulting in overestimation of risks from the dermal exposure to all media (see specific comment #14 below).

If there are any questions or comments, please call me at (404) 347-3016.

Sincerely,

Gena D. Townsend
Senior Project Manager

Enclosure

cc: Mr. Neal Paul, MCB Camp Lejeune
Mr. Patrick Watters, NCDEHNR

Comments

1. Section 6.2.1.8, page 6-8; Soil Data Summary Tables.
For selection of Chemicals of Potential Concern (COPCs), the maximum site concentration should be compared to two times the average background concentration.

2. Section 6.2.2.1, page 6-9, paragraphs 1 & 2.
For elimination of chemicals from the COPC list, the criterion of "infrequent detection" is not satisfied when the frequency of detection is 1/9. 1/9 is greater than 5% detection rate. Comparison of the maximum concentration with a screening value based on 10^{-6} risk/0.1 HQ in a residential scenario may allow some of these detected chemicals to be eliminated.

3. Section 6.2.2.1, page 6-10, paragraph 1.
The maximum concentration of acetone in soil (780 ppb) exceeds ten times the blank concentration listed on page 6-7. Therefore, this reason cannot be used to eliminate acetone from the COPC list.

4. Section 6.2.2.1, page 6-10, paragraph 4; Table 6-4.
Site concentrations of mercury and nickel appear to exceed the background concentration shown in Table 6-4.

5. Section 6.2.2.1, page 6-10, paragraph 6.
Identification of soil samples from Site 78 as "biased" does not justify omitting them from considerations of risks. Detected concentrations should be evaluated as for other sites in this operable unit.

6. Section 6.2.2.3, page 6-14; Table 6-11.
Naphthalene (frequency: 6/51, range: 2-260 ppb) should be retained as a COPC in groundwater.

7. Section 6.3.2.6, page 6-22.
No justification is provided for the assumption that "ingestion of fish by....future fisher persons....is unlikely". Please include this exposure scenario or add adequate rationale.

8. Section 6.3.4.1, page 6-25; Table 6-20.
The exposure frequency for military personnel is assumed to be 350 days per year. This frequency implies 7 days per week exposure. How, then, is the "military personnel" scenario different from the "adult resident" scenario? The exposure duration for military personnel is stated in the text as 9 years, but in the table as 4 years. Please address this discrepancy.

9. Sections 6.3.4.7 (page 6-34), 6.3.4.8 (page 6-35); Table 6-26.

Section 6.3.4.8 states that "surface water bodies associated with OU No. 1 are not sufficient in size to allow for swimming". However section 6.3.4.7 and Table 6-26 state assumptions based on swimming exposure. If the water in question is truly not swimmable, the assumption of ingestion of the water should be eliminated from the scenario.

10. Table 6-11, Groundwater Data Summary
·Bis(2-ethylhexyl)phthalate- The MCL is 6 ug/L.
·Butyl Benzyl Phthalate, Benzo(b)fluoranthene- An MCL has not been promulgated for either of these chemicals.
·Selenium and Thallium are mentioned in Section 6.2.2.3 as being in the groundwater, but these constituents are not listed in Table 6-11. Please address.

11. Tables 6-12, 6-13.
AWQC values appear to be for effects on saltwater organisms (although this is not explained in the table). It would be more logical to have AWQC values based on human health protection in this section of this document and to have any values based on aquatic organism protection in the ecological risk assessment section of this document. The "C" in AWQC means criteria, not standards (footnote #2).

12. Table 6-30, Toxicity Factors.
·Toluene- IRIS is the source of both the RfD and RfC.
·Trichloroethene- EPA has a provisional RfD of 6E-3 mg/kg-d.
·Phenanthrene - use pyrene as a surrogate (RfD of 3E-2 mg/kg-d).
·Phenol- IRIS is the source of the value.
·Chlordane- inhalation slope factor is 1.3 $(mg/kg-d)^{-1}$.
·Cadmium- 5E-4 mg/kg-d (water RfD) should be used for evaluation of cadmium in water; 1E-3 mg/kg-d (dietary RfD) should be used for evaluation of cadmium in soil/sediment.
·Manganese- 5E-3 mg/kg-d (water RfD) should be used for evaluation of manganese in water; 1.4E-1 mg/kg-d (dietary RfD) should be used for evaluation of manganese in soil/sediment. The RfC for manganese is 5E-5 mg/cu m (IRIS).

13. Appendix L.8.
In the tables showing the data statistical summary for volatiles, the log-normal upper 95% confidence intervals are lower than the arithmetic means. This is inconsistent with the meaning of the upper confidence interval. Please address this discrepancy.

14. Appendix M (no page numbers).
The noncarcinogen exposure point concentrations for construction worker exposure to Site 21 subsurface soil do not agree with the carcinogen exposure point concentrations

for the same scenario. Please correct.

On the spreadsheets for soil dermal exposure and risks, the calculated doses are all 100-fold too high. It appears that the "Fraction Absorbed" term is incorrectly applied. Please change all affected spreadsheets in App. M and Section 6 tables.

On the spreadsheets for inhalation exposure and noncarcinogenic risks, the RfC must be converted to internal dose (mg/kg-d), since the exposure has been calculated as internal dose.

For calculation of all risks from dermal exposure, the toxicity values (RfDs, SFs) must first be converted to an absorbed dose value before the risk can determined (RAGS-Vol.I, Part A, Appendix A).