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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

APR 14 1993

4WD-FFB

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Byron Brant
Department of the Navy - Atlantic Division
Naval Facilities Engineering Command
Code 1822
Norfolk, Virginia 23511-6287

RE: Marine Corps Base Camp Lejeune NPL Site
Operable Unit 3, Site 48
Jacksonville, North Carolina

Dear Mr. Brant:

EPA has reviewed the document titled "Draft Remedial Investigation Report for Operable Unit No. 3 (Site 48)" dated March 1993. EPA comments on the draft document are enclosed.

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

Sincerely,

A handwritten signature in cursive script that reads "Michelle M. Glenn".

Michelle M. Glenn
Senior Project Manager

Enclosure

cc: Peter Burger, NCDEHNR
Neal Paul, MCB Camp Lejeune

COMMENTS
DRAFT REMEDIAL INVESTIGATION REPORT
Operable Unit Three
(Site 48)

GENERAL COMMENTS

1. Section 6 of this Draft Remedial Investigation (RI), entitled Baseline Risk Assessment (BRA), does not meet EPA's current definition of a quantitative BRA as mentioned in the NCP and described in detail in the EPA Risk Assessment Guidance for Superfund, Vol. I, Part A (December 1989) (RAGS). Rather than using EPA verified toxicity values (Reference Doses, Slope Factors) to calculate risks from site-specific exposure levels, this document simply compares concentrations in site environmental media to federal/state standards or criteria. This document does refer to itself as being qualitative (as opposed to quantitative) in nature; however, as it is now written, it is inappropriate to be entitled a "Baseline Risk Assessment". Many of the specific comments below reflect these general comments. This document must be revised to become a true BRA (quantitative).

SPECIFIC COMMENTS

1. Page 2-9, Section 2.4.1, Paragraph 6 - The drilling procedures state that ten soil borings were drilled, but the Final SAP stipulated that 19 borings were to be drilled. Explain this deviation from the Final SAP.
2. Page 2-12, Section 2.4.1, Paragraph 1 - Based on a comparison of the text description and Figure 2-3, the suspected disposal area identified from aerial photographs is apparently not southeast of Building 804 as stated, but southwest. The text should be corrected.
3. Page 2-29, Section 2.6.2.1 - The text states that four sediment sampling locations are in the marsh area. This apparently is an error since both Table 2-6 and Figure 2-5 indicate that only two marsh sediment samples were taken. Neither of these sediment samples were obtained from the bordering marsh that lies adjacent to Site 48.
4. Page 4-1, Section 4.1, Paragraph 4 - The text states that the occurrences of acetone in soil samples are "most likely due to the use of pesticide-grade isopropanol during decontamination." However, the decontamination procedure described in the SAP indicates that the isopropanol rinse was followed by air drying. This final step should have eliminated residual isopropanol on sampling equipment. Unless there is reason to believe the air drying procedure was not followed, acetone should still be considered a

possible site contaminant.

5. Page 4-6, Section 4.1, Paragraph 2 - The text refers to the existence of base-specific background levels of inorganic constituents. An explanation of how these background values were derived should be presented.
6. Page 4-11, Section 4.2 and Page 6-3, Section 6.2.1 -The detections of Methylene Chloride and Bis(2-ethylhexyl)phthalate in the groundwater are attributed to laboratory contamination. While EPA recognizes these two chemicals as common laboratory contaminants, the levels in the site samples still need to be compared to levels in the blanks which were analyzed for this investigation. Detections of these particular chemicals should be considered positive if the concentration in a site sample exceeds ten times the maximum amount detected in any blank. (RAGS, section 5.5)
7. Page 4-15, Section 4.2 - The case presented to eliminate the groundwater manganese levels from concern (site related) is inadequate. The manganese levels said to be detected across other parts of the Base of 50-120 ppb ("background"?) are significantly less than the levels shown for this Operable Unit (Table 4-8, maximum manganese concentration 585 ppb).
8. Page 4-19, Section 4.3.1.3, Paragraph 3 - The text states that mercury levels slightly exceeded state and Federal water quality standards in surface water samples collected from the intermittent tributary. The values for these water quality standards should be referenced and included in the Draft RI Report.
9. Page 4-27, Section 4.3.3.2, Paragraph 6 - The text states that concentrations of inorganic constituents in sediment samples collected from the New River did not exceed the "NOAA sediment quality criteria." Include the values for these criteria and the references from which they were obtained.
10. Section 6 should not be called "Baseline Risk Assessment" unless it is modified to actually quantify current and potential risks to human health. For specific guidance, consult the EPA Risk Assessment Guidance for Superfund, Vol. I, Part A (December 1989) (RAGS). RAGS completely replaces the Superfund Public Health Evaluation Manual (USEPA, 1986).
11. Page 6-1, Section 6.1, Paragraph 3 - The last sentence in this paragraph is incorrect and should be deleted. The risk assessment methodology used at this site is not in accordance with current EPA risk assessment guidance, which requires both the evaluation of hypothetical risks associated with alternate land uses and quantification of risks (EPA, 1989a).

12. Page 6-2, Section 6.1 - This discussion of what is included in the toxicity assessment section does not agree with current EPA guidance (RAGS). The toxicity assessment section in a BRA should include toxic effects of concern as well as EPA-verified quantitative toxicity values rather than ARARs (MCLs, AWQC).

Likewise, the description of the risk characterization is not consistent with RAGS.

13. Pages 6-2 and 6-3, Section 6.2 - The bullets listed on pg 6-2 -criteria for selection of contaminants- are only part of the list in RAGS, section 5.8. The additional items listed at the top of pg 6-3 are appropriate criteria for retaining contaminants in the BRA, but not for eliminating them.

Pages 6-3 to 6-5, Sections 6.2.1 through 6.2.5 - EPA has published guidance clearly outlining the procedures to be followed in selecting COCs. The procedures followed in Section 6.0 are not consistent with EPA guidance (EPA, 1989a). To identify COCs, the following may be used to identify contaminants of most concern:

Eliminate chemicals not detected in at least one Contract Laboratory Program (CLP) sample in a given medium;

Eliminate inorganics present at concentrations below background levels;

Eliminate chemicals of low toxicity (nutrients such as sodium, calcium, potassium);

Compare the maximum detected concentration to Applicable or Relevant and Appropriate Requirements (ARARs) such as Maximum Contaminant Levels (MCLs), risk-based concentrations, and Ambient Water Quality Criteria (AWQCs); and

Perform a toxicity screen to determine contaminants that contribute the majority of non-carcinogenic and carcinogenic risks (see EPA, 1989a page 5-23).

All contaminants that cannot be excluded on the basis of these procedures should be quantitatively evaluated.

Chemicals in the present data set cannot be eliminated from the contaminants of concern (COCs) list based upon infrequency of detection. The generally accepted detection frequency for inclusion of a contaminant on the COC list is greater than five percent of the total number of samples (EPA, 1989a). Therefore, contaminants found in media represented by less than 20 samples cannot be eliminated as COCs on the basis of infrequency of detection.

14. Page 6-3, Section 6.2.2, Contaminants of Concern - The organics detected in surface soil (DDT/DDE/DDD) are said to be eliminated from concern based on their "persistence in their environment" and on "infrequent detection". These reasons do not seem valid. Environmental persistence would be a reason to retain a chemical as a potential chemical of concern (to be carried through the BRA). One detection does not qualify as infrequent, since only four surface soil samples were analyzed.
15. Page 6-3, Section 6.2.2, Paragraph 5 and Page 6-4, Section 6.2.2, Paragraph 1 - The four soil samples listed in these paragraphs do not correspond to the number of soil samples recorded in Table 2-1. This should be corrected.
16. Pages 6-6 to 6-19, Sections 6.3 and 6.4 - The media of greatest concern for human exposure at the site are the soils and sediments from the area between Building 804 and the New River. These media have been insufficiently characterized to date. If sufficient data are collected in the future and if contamination is discovered, then any resubmitted human health risk assessment for Site 48 should follow the EPA guidance found in EPA, 1991a and EPA, 1989a.
17. Page 6-7, Section 6.3.1.2 - Inconsistent reasoning is used to eliminate this exposure medium from risk consideration. The text first states that "base personnel working in this area could get contaminated soil on their skin", and later in the same paragraph states that soil "exposure scenarios will not be quantified due to...no exposure contact at this site". Current and future land use scenarios should be considered, as appropriate for this site. Future land use scenarios should not assume institutional controls for any exposure medium in the BRA.
18. Page 6-7, Section 6.3.1.3 - An attempt is made to minimize any groundwater contamination because no one is currently using the groundwater in this area. EPA does not accept this reasoning. For groundwater that is considered drinkable (class I or II), contaminant levels should be compared to MCLs and/or health-based levels (residential exposure). Future land use scenarios should not assume institutional controls for any exposure medium in the BRA.
19. Sections 6.3.1.4 (Surface Water), 6.3.1.5 (Sediment) - Surface water and sediment are said to be retained only for qualitative evaluation. If human exposure pathways (current or potential) are judged to be complete (as discussed in these sections), risks should be evaluated quantitatively.

20. Section 6.4.2 - The toxicity assessment is not the appropriate section to discuss ARARs. Chapter 7 of RAGS details what should be in the toxicity assessment section of the BRA.
21. Table 6-1 - This table shows the range of detected concentrations of manganese in groundwater as 38.1 - 58.5 ppb. Table 4-8 lists manganese concentrations (70.6J, 272, 585 ppb) above this range. Address this discrepancy.
22. Section 6.5 - The discussion here argues against doing a quantitative risk assessment on exposure to the groundwater manganese concentrations, claiming that manganese is "relatively nontoxic to animals and humans". Recently, EPA verified a reference dose (RfD) specifically for manganese in drinking water (IRIS, January 1993). This drinking water RfD is 20 times lower than the previous RfD for manganese (which did not differentiate between exposure media). In light of this lower drinking water RfD for manganese, the conclusions reached in this report should be reassessed.