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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3104

March 13,1997

4WD-FFB

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

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

SUBJ: MCB Camp Lejeune
Draft Remedial Investigation
Operable Unit No. 9 - Site 73

Dear Ms. Landman:

The Environmental Protection Agency has completed its review of the above subject document. Comments are enclosed.

If you have any questions or comments, please call me at (404) 562-8538

Sincerely,

Gena D Townsend

Gena D. Townsend
Senior Project Manager

Enclosure

cc: David Lown, NCDEHNR
Neal Paul, MCB Camp Lejeune

1.0 GENERAL COMMENTS

1. Figure 2-2 is a typical shallow TYPE II well construction diagram. However, the well is incorrectly screened. The top of the screen should be 2-3 feet above water table level. The figure should be revised accordingly and the sampling data obtained from these wells should be re-evaluated to determine whether the incorrect screening of the wells had any effect on sampling results.

2. Section 4.0 figures show positive detection of contaminants at Site 73. However, the migration of the plume is difficult to see on the figures. Isoconcentration maps contouring the horizontal distribution of contamination and the most widely distributed contaminant should be included for clarity.

3. Section 4.2.2.1, Page 4-3, Paragraph 4, indicates that both site background and base background concentrations for inorganics in solids are presented to give the background ranges for comparisons. However, the text does not indicate which background concentrations are actually used for the comparison since both values are presented (see Tables 4-2 and 4-3). Later in Table 4-4, the base background is listed as the comparison criteria, but no reason for using the base background instead of site background is given. The text should be revised to address the above issues accordingly.

4. Section 4.2.2.1, Page 4-3, Paragraph 4, Sentence 4, states that Appendix A contains the summary of the base soil background data for inorganics. However, the table does not show 2x average background values for the different sampling distances below ground surface. This is important because the analytical results of samples collected during the RI should be compared to background values that match the distance below ground surface at which it was collected. The table should be revised accordingly.

5. Sections 4.2.2.2 and 4.2.2.3 discuss groundwater and sediment/surface water at Site 73. However, the text does not present the rationale for not having groundwater and sediment/surface water background. The text should be revised accordingly.

6. Section 4.3, Page 4-5, Paragraph 7, discusses MCLs as federal criteria and standards for comparison with detected concentrations. However, the text does not give a rationale for the use of MCLs in the comparison. If the comparison is a screening process for the selection of COPCs, the Region 3 RBC values instead of the MCLs should be used. In fact, the screening process presented in Section 6 uses the Region 3 RBC values. Thus, the purpose of having a comparison in Section 4 (see Tables 4-4 through 4-7) is unclear. The text should be revised to discuss the purpose of the comparison, or present a clear comparison in Section 6.

7. Section 4.4.1.1, Page 4-7, Paragraph 3, Sentence 4 states that concentrations of di-n-butyl phthalate are not considered to be related to laboratory contamination and will be evaluated further. However, in Section 8.0 (Summary and Conclusions) the aforementioned evaluation is not addressed. Section 8.0 should include a discussion on the evaluation of di-n-bytly phthalate.

8. Section 8, Page 8-6, Bullet 1, states that the vertical extent of contamination is defined; however, based on the location of detected positive analytical results, the horizontal extent of contamination is not clearly defined. The distance between monitoring wells may range from 200 to 350 feet. The text has only defined the vertical extent, but there may be a further need to define the horizontal extent of contamination where positive detection was detected.

2.0 SPECIFIC COMMENTS

1. <u>Section 1.4.3, Page 1-5, Paragraph 2, Sentence 2, Bullet 1</u>.
The text states that Building A-3 is the primary building at the site as seen on Figures 1-16 and 1-17. However, this building is not identified on the figures. The building should be identified on the aerial photographs, Figures 1-16 and 1-17.

2. <u>Figure 1-2</u>.
Figure 1-2 shows the site map. However, the boundaries of Site 73 are not clearly defined. The site map should be revised accordingly.
This comment applies to all the Site 73 figures and maps.

3. <u>Figure 1-15</u>.
Figure 1-15 shows the total BTEX concentrations in water. However, the contour lines on the figure are not included in the legend. The legend should be revised accordingly.

4. <u>Section 3.1</u>.
Section 3.1 discusses the topography and surface features of Site 73. However, a topographic map is not included with the discussion. A topographic map should be referenced and addressed in this section.

5. <u>Section 3.8.5, Page 3-20, Paragraph 1, Sentence 2</u>.
The text states that this species requires a specific habitat in "mature". However, the sentence contains a typographical error. The text should be corrected accordingly.

6. <u>Table 3-8</u>.
Table 3-8 lists the names of protected species within Site 73. However, "SR" is not defined. The definition of "SR" should be included in the table's legend.

7. <u>Section 4.0</u>.
Section 4.0 includes maps that depict groundwater flow at Site 73. However, this section does not contain a map showing the surface water flow. A map showing the surface water flow should be included in the document.

8. <u>Section 4.4.2.1, Page 4-11, Paragraph 5, Sentence 4.</u>
The text states that well A47/3-08 contains the highest concentration of benzene (18 μg/L) detected in the surficial aquifer. However, the text does not mention that the concentration of benzene is above MCL and NCWQS. The text should indicate that the benzene concentration is above MCL and NCWQS.

9. <u>Section 4.4.2.1, Page 4-12, Paragraph 2, Sentence 4.</u>
The text indicates that the maximum concentration of vinyl chloride was detected in monitoring well A47/3-08 at a much higher concentration than in Phase I (320 vs. 110 μg/L). However, according to the groundwater results in Table 4-5, the Phase II and Phase I results of vinyl chloride detected in well A47/3-08 are 43 μg/L and 23 μg/L (maximum), respectively. The discrepancy with Table 4-5 and the text should be resolved accordingly

10. <u>Section 4.4.2.3, Page 4-14, Paragraph 2, Sentence 3</u>.
The text indicates that concentrations of chloroform in four groundwater samples are below 10x the maximum blank concentration, so chloroform is considered laboratory related. However, this conclusion is invalid. According to EPA guidance, chloroform can be considered laboratory related, only when the maximum detected concentration of chloroform is below 10x times its blank concentration. The text should be revised accordingly.

11. <u>Section 4.4.3.1, Page 4-16, Paragraph 3, Sentence 2 and 3</u>.
The text indicates that relatively low levels of methylene chloride and toluene, which were not detected in blank samples, may not be related to site conditions but the result of laboratory-introduced contamination. However, this conclusion does not follow the rule for determination of laboratory contamination by 10x blank concentration. Since the 10x rule is used for other common laboratory contaminants such as acetone and 2-butanone, methylene chloride and toluene should also follow the same rule although their concentrations are low. Therefore, these two contaminants should be identified as positive detections for further evaluation. The text should be revised accordingly.

12. <u>Section 4.4.4.2, Page 4-18, Paragraph 9, Sentence 3</u>.
The text concludes that the reason for high concentrations of acetone in the whole body sample appears to be laboratory related. However, this conclusion is not supported by any references. The text should provide references accordingly.

13. <u>Section 4.6, Page 4-19, Paragraph 8, Sentence 4</u>.
The text states that the low concentration of contaminants in trip blanks would tend to indicate that they originated

from the laboratory. However, the contaminants could have theoretically been introduced during shipping. The text should be revised to address the fact that the contaminants could have been introduced during shipping.

14 <u>Section 4.6, Page 4-20 and 4-21, Paragraph 6</u>.
The text indicates that detected chlorinated organics in blank samples are suspected to exist within the potable water supply if the potable water is chlorinated during its treatment. However, this conclusion is inappropriate because a chlorination of the potable water supply cannot result in formation of chlorinated organics. Therefore, these chlorinated organics may come from sources other than the potable water. The text should be revised to address the sources of the chlorinated organics.

15. <u>Table 4-1</u>.
Table 4-1 presents a summary of blank contaminant results. However, the organization of the table is unclear. The table should clearly show to which phases the VOCs belong . In addition, a typographical error shows Phase II as "Phase 11". The table should be revised accordingly.

16. <u>Table 4-4</u>.
The table presents the Region 3 soil screening levels for protection of groundwater for both surface and subsurface soil. However, according to the Region 4 guidance for the surface soil COPC screening, the Region 3 RBC soil ingestion values should be used. If Table 4-4 is a summary of the COPC screening, the Region 4 guidance should be followed. The text should be revised or clarified accordingly.

17. <u>Table 4-23</u>.
Table 4-23 shows detected semivolatiles in the lower portion of the surficial aquifer. Sample locations 73-DWO2-01 shows detection of naphthalene at 2 μg/L. However, location 73-DWO2-01 is not identified on Figure 4-8 (SVOCs in the lower portion of the surficial aquifer). Figure 4-8 should be revised accordingly.

18. <u>Section 8.1.1.1, Page 8-1, Paragraph 4, Bullet 5</u>.
The text states that high concentrations of SVOCs were detected in surface soil sample 73-AC2-MW07-00 and in subsurface soil samples collected from location 73-MW15B. However, Section 4, which discusses surface and subsurface sample results, does not discuss the aforementioned soil sample as having high SVOC concentrations. This discrepancy should be resolved.