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State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

April 29, 1996

Commander, Atlantic Division
Naval Facilities Command
Code 1823
Attention: MCB Camp Lejeune, RPM
Ms. Katherine Landman
Norfolk, Virginia 23511-6287

Commanding General
Attention: AC/S, EMD/IRD
PSC Box 20004
Marine Corps Base
Camp Lejeune, NC 28542-0004

RE: Draft Remedial Investigation Report for Operable Unit 6, Sites 36, 54, 44, 43, and 86, MCB Camp Lejeune, Jacksonville, NC

Dear Ms. Landman:

The NC Superfund Section has completed its review of the above referenced document. Our comments are attached. Comments on the Risk Assessments for sites 36 and 43 are attached as memos from Mr. David Lilley, our Industrial Hygienist to myself. Comments on the remaining Risk Assessments for OU 6 will be submitted under separate cover. Please call me at (919) 733-2801 x282 if you have any questions about this.

Sincerely,

Patrick Watters

Patrick Watters
Environmental Engineer
NC Superfund Section

cc: Neal Paul, MCB Camp Lejeune
Gena Townsend, US EPA Region IV
Grover Nicholson, NC Superfund

North Carolina Superfund Section Comments
Remedial Investigation Report
Operable Unit 6 (Sites 36, 54, 44, 43, and 86)

General

1. The Remedial Investigation Report for OU 6 should include the following additional information relevant to the status of water supply wells within a mile radius of each site.
   - If a supply well is out of service, indicate the reason why it was taken out of service (i.e. low production, contamination, etc.)
   - If a supply well is out of service due to contamination, state what the contaminants were and whether or not they are associated with the sites in the RI report.
   - If there is recent analytical data for the supply wells, this should be included in the RI report

Site 86 Remedial Investigation Report

2. Page 4-5, Section 4.3.1.1
   Based on this section and Figure 4-1, it appears that there may be soil contamination beyond the area where the tanks were located. Sample number 86-AST-SB11-00 shows some mildly elevated SVOCs and there are no sampling locations to the south and east of this point to show where the levels taper off.

Site 44 Remedial Investigation Report

3. Page 4-10, Section 4.3.3.1
   This section compares some of the surface water analytical results with NOAA screening values. From a State regulatory compliance perspective, all surface water analyticals must be compared to the limits established by the NC Surface Water Standards (15A NCAC 2B). Edwards Creek is classified as an SC-HQW-NSW stream, therefore the appropriate contamination limits are given in parts .0208, .0220, .0233, and.0224 of the 2B regulations.

4. Table 4-2 Surface Water Analytical Results
   Note the following corrections to the surface water standard values listed in this Table.

Contaminant	Limit	Reference
1,1-Dichloroethene	3.2 ug/L	EPA 304(a) table
1,2-Dichloroethene	7.0 ug/L	NCWQ Section Calculation
1,1,2-Trichloroethane	42 ug/L	EPA 304(a) table
Phenol	300 ug/L	NCWQ Section Calculation
Lead	25 ug/L	NCWQ Stds. Section .0220
Zinc	86 ug/L	NCWQ Stds. Section .0220

5. Page 4-13, Section 4.4.2.1
This section indicates that the volatile compounds seen in the analytical results from well 44-TW01 were probably caused by surface water to groundwater migration via seasonal flooding from Edwards Creek. Other site groundwater data and the Edwards Creek surface water analytical values do appear to support this however there needs to be more information provided to support this conclusion. Specific areas that need to be clarified are:
- Figure 4-3 does not show well 44-TW01 in any marshy area of the site.
- Figure 2-7 does not show well 44-TW01 in the "palustrine temporarily flooded, partially drained area" of the site.
- A topographic map was not provided to show the elevation of well 44-TW01 relative to Edwards Creek.

6. Page 8-1, Section 8.0
The issue of the contamination seen in well 44-TW01 is a very important one in terms of which contaminated media needs to be addressed. As noted in the previous comment, there are some areas that need to be clarified. Also, because this is such an important issue, it should be adequately noted and discussed in the conclusions section of the RI Report.

Site 43 Remedial Investigation Report

7. Page 3-3, Section 3.2.2
This section indicates that the soil sampling focused on known or suspected disposal areas which is evidenced by the "clustered" sampling locations shown on Figure 3-1. The RI Report is clear on why samples are clustered around the GW01 area but not on the other areas. Because there are considerable areas within the "approximate site boundary" that were not sampled, it would be helpful to elaborate more on why the sampled areas (other than GW01) are considered to be known or suspected disposal areas.

8. Pages 4-9 and 4-10, Section 4.3.3
From the State's perspective, the only meaningful standard to use in evaluating surface water results are the NC Water Quality Standards (15A NCAC 2B). The NOAA values may provide some insights but the standards for compliance are the NC State Surface Water Regulations. Both Strawhorn and Edwards Creek are both classified as SC, HQW, and NSW, therefore the appropriate contamination limits are given in parts .0208, .0220, .0233, and.0224 of the 2B regulations. Note the following surface water limits for the contaminants detected in surface water.

Contaminant	Limit	Reference
Arsenic	50 ug/L	NCWQ Stds. Section .0220
Copper	3 ug/L	NCWQ Stds. Section .0220
4,4 DDD	.00084 ug/L	EPA 304(a) Table
4,4 DDE	.00059 ug/L	EPA 304(a) Table

1,2 Dichloroethene	7.0 ug/L	NCWQ Section Calculation
Lead	25 ug/L	NCWQ Stds. Section .0220

9. Page 4-13, Section 4.4.1.2
This section noted that some partially buried metal containers were found at two areas on Site 43. Please provide more information as to where these containers are located, the nature of the containers, what they contained and what was done with them.

10. Pages 4-14 through 4-16, Section 4.4.3
See comment number 7 regarding the use of the NC State Surface Water Regulations.

11. Page 4-17, Section 4.4.4.3
The maximum values of 4,4 DDD (37,000 ug/Kg) and 4,4 DDE (8,900 ug/Kg) seen in the Strawhorn Creek samples should be indicated in the text as was done for Edwards Creek. Also, please provide data to support the statement that the pesticide levels seen in Strawhorn Creek are typical of those seen in sediments throughout Camp Lejeune. Also, these elevated values warrant some additional sampling to determine the extent of contamination

Site 54 Remedial Investigation Report

12. General
Samples taken from the shallow aquifer show that there is VOC contamination in the groundwater. It therefore appears that we will need to have some deep wells installed to determine the vertical extent of contamination at Site 54.

Site 36 Remedial Investigation Report

13. Page 4-6, Section 4.3.1.1
Some of the surface soil sample results show a potential need for some additional samples in order to fully define the extent of contamination. The locations of concern are as follows:

Sample Location	Contaminant	Analytical Result
36-OF-SB03-00	Dieldrin	16,000 ug/Kg
36-OA-SB01I-00	PCB	24,000 ug/Kg
36-OA-SB01A-00	4,4 DDT	12,000 ug/Kg
36-OF-SB04-00	PAHs	11,000 ug/Kg (max value)

14. Page 4-13, Section 4.3.4.1
The supplemental sediment samples taken to confirm the presence of lead at 36-SD06 do not appear to be conclusive. Based on the scale given on Figure 4-8, the supplemental samples 36-SD08 and 09 are shown to be about 50 feet away from 36-SD06 which does not provide any conclusive information about the lead contamination at SD06. If the sample spacing shown on Figure 4-8 is accurate, then additional sediment samples immediately adjacent to 36-SD06

will need to be taken to provide conclusive confirmatory data.

15. Table 4-2
The North Carolina groundwater standard for trichloroethene (a.k.a. trichloroethylene) is 2.8ug/L and should be included in table 4-2.

16. Table 4-2
The following NC surface water contaminant limits should be included in this table:

Contaminant	Limit	Reference
1,2-Dichloroethene	7.0 ug/L	NCWQ Section Calculation
Copper	3.0 ug/L	NCWQ Stds. Section .0220
Nickel	8.3 ug/L	NCWQ Stds. Section .0220

April 11, 1996

TO: Patrick Watters

FROM: David Lilley DBL

RE: Comments prepared on the Baseline Human Health Risk Assessment, OU 6, Site 43, Camp Lejeune, NC

After reviewing the above mentioned document, I offer the following comments:

1. Page 6-8, Section 6.2.4.1, second paragraph: It is claimed benzo(g,h,i)perylene's maximum concentration was below the Region III RBC value, and therefore eliminated as a COPC. Region III does not list a value for benzo(g,h,i)perylene. Please explain.

2. Appendix R, Surface Soil Particulate Inhalation Exposure Assessment, Current Military Personnel: The data for iron is missing from this spreadsheet.

3. Appendix R, Surface Water: The surface water concentration for DDE is given as 0.000 mg/l for the Current Child Trespasser, 0.0001 mg/l for the Future Child Resident, and 9.7E-05 mg/l for the Future Adult Resident. Please revise these concentrations to be consistent.

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February 20, 1996

TO: Patrick Watters

FROM: David Lilley DBL

RE: Comments prepared on the Baseline Human Health Risk Assessment, OU 6, Site 36, Camp Lejeune, NC

After reviewing the above mentioned document, I offer the following comments:

1. Page 6-8, Section 6.2.4.1, first paragraph, last line: The last line refers to "these organic and inorganic results," however, the inorganic results were not included in the paragraph. Please explain.

2. Page 6-11, Section 6.2.4.5, first paragraph: Mercury needs to be added to the list of COPCs.

3. Appendix S, Table 1, Fish: It is recommended that an ingestion rate of 54 g/day over 350 days/year be used as recommended in the USEPA Region IV Human Health Risk Assessment Bulletin No. 3, Exposure Assessment, November, 1995, page 3-4.

4. Page 6-15, Section 6.3.2.1, and Table 6-10: It is unclear to the reader why future residents were not evaluated for exposure to surface soil. Please explain.

5. Table 6-9, surface water: It is unclear to the reader why the exposed skin surface area for the trespasser child and residential child differ. The same is also true for the trespasser adult and residential adult. Please explain.

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