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LETTER AND U S NAVY RESPONSE TO U S EPA REGION IV COMMENTS ON THE DRAFT
REMEDIAL INVESTIGATION REPORT FOR SITE 73 OPERABLE UNIT 9 MCB CAMP
LEJEUNE NC
1/22/1997
U S NAVY

Response to Comments
Submitted by MCB, Camp Lejeune, Environmental Management Department to the
Draft Remedial Investigation Report for
Site 73 (Operable Unit No. 9)
MCB, Camp Lejeune, North Carolina
Comment Letter Submitted by Mr. Scott Brewer
Received by Baker Environmental, Inc., 1/22/97

General Comments

1. The Draft Feasibility Study (FS) was submitted by Baker on February 18, 1997. This comment is relevant to the Draft FS as opposed to the Draft RI which is the focus of the following responses. Nevertheless, construction and future development limitations were considered while preparing the Draft FS.
2. Text has been added to the executive summary and conclusions sections of the report to indicate what percentage of samples exceeded action levels for a particular media. However, details regarding which contaminants exceeded action levels is provided in Section 4 and summarized on Tables 4-4, 4-5, 4-6, and 4-7.
3. The conclusions and Executive Summary have been modified in an attempt to provide additional clarification and address the concerns expressed in this comment.

Specific Comments

4. There are no state standards associated with volatile organic compounds in surface and subsurface soils.
5. This information is contained in Section 4 text and tables. Baker believes that it would be redundant to discuss all groundwater contaminants exceeding State standards in the Executive Summary. Additionally, this information would add considerable bulk to a section that is designed to provide a summary of the report. However, as per General Comment No. 2, the text of the ES has been modified to provide some additional clarification as to contaminants which exceeded specific comparative criteria.
6. The text has been changed to clarify the relationship between the surficial groundwater flow and the underlying clay layer. The paragraph has been changed to read:

Shallow groundwater flow is radial from a topographical high centered near Buildings A-8 through A-11. Flow patterns in the eastern portion of the site are influenced by the absence of the underlying clay allowing the surficial groundwater to combine with the underlying groundwater zones; thus causing change in the direction of surficial groundwater flow.
7. Groundwater in the upper portion of the Castle Hayne aquifer recharges Courthouse Bay while groundwater in the mid to lower portion of the aquifer recharges the New River. Thus flow in both of these zones are controlled by two separate water bodies (i.e., Courthouse Bay and the New River). Therefore, using the term "influenced" is in error and will be changed to "controlled". Thus the sentences will read:

"Groundwater flow in the upper portion of the Castle Hayne aquifer is **controlled** by Courthouse Bay. ... Flow direction in the mid to lower portion of the Castle Hayne aquifer is controlled by the New River."
8. The soil and groundwater contamination at Site 73 was further evaluated

during the Feasibility Study for the site. Given the information provided in the RI report (e.g., background information, historical information, concentration of contaminants in soil and groundwater, and suspected source area), it was determined that evidence of natural attenuation exists at the site. Part of this evidence is the lack of soil contamination at the site given the historical documentation of surficial disposal. The Feasibility Report provides a more detailed explanation and ultimately recommends natural attenuation as the remedial alternative.

9. The typo has been corrected.
10. The misspelled word has been corrected.
11. The paragraph has been modified in order to clarify the statement and provide additional conditions that were noted in the ERA that would cause stress on the benthic community.
12. A reference is made to the terrestrial intake model discussed in the ERA. A sentence will be added to the paragraph referring the reader to this section. Section 7.9.3 discusses the contaminants that drove the QI for the terrestrial animals (antimony, aluminum, cadmium and arsenic). As per the comment, a discussion of these contaminants will be added to the paragraph.
13. The wrong version of this figure was included in the report. The correct version will be included in the next submittal.

Response to Comments
Submitted by the Navy Environmental Health Center (NEHC) to the
Draft Remedial Investigation Report for
Site 73 (Operable Unit No. 9)
MCB, Camp Lejeune, North Carolina
Comments Received by Baker Environmental, Inc., 2/6/97

Review Comments and Recommendations

1. The report date given on the title page of the Draft Remedial Investigation Report was in error and will be corrected for the final report.
- 2a. As per the comment, rather than calculating separate risks for the shallow and deep groundwater, further justification explaining the interconnection of the shallow and deep aquifers will be provided in the text.
- 2b. As per the comment, rather than evaluating the current groundwater exposure scenario, text will be added to further support the elimination of this exposure pathway.
- 2c. Phase I and Phase II groundwater data will not be combined. Instead, further justification explaining the separation of the two phases will be provided.

- 2d. The Draft Feasibility Study Report will recommend a remedy for the contamination at Site 73 which will probably include long-term monitoring. However, it is not appropriate for the Remedial Investigation Report to include recommendations for remediating or monitoring the progress of contamination at the site. The Feasibility Study uses a set of criteria that allows comparison of different active and passive remedial technologies to determine which remedy is the most appropriate for the site and concludes by recommending one or a combination of technologies best suited for site remediation.
- 2e. A modification to the Base Master Plan to include restrictions on the future use of the surficial aquifer at the site will be considered during the Feasibility Study.
- 3a. The justification for the removal of SVOCs detected in the soil and groundwater samples collected at the site is that most of the compounds did not exceed the USEPA Region III Soil Screening Levels for Protection of Groundwater or the federal Maximum Contaminant Levels for Groundwater (MCLs) as reported in Tables 4-3, 4-4 and 4-5 of the Draft RI. The compounds that do exceed this criteria are 2,4-Dinitrophenol, Benzo(a)anthracene and Bis(2-ethylhexyl)phthalate. Page 6-8, Section 6.2.4.1, paragraph 2 provides an explanation for the dismissal of SVOCs as contaminants of potential concern as follows:

"2,4-Dinitrophenol,, benzo(a)anthracene, . . . ,bis(2-ethylhexyl)phthalate, . . . , and pyrene were detected at maximum concentrations less than their respective residential soil COC screening values. These compounds were not retained as surface soil COPCS."

The paragraph continues to state that if a semivolatile was detected at a low frequency of detection, it was not retained as a COPC. Historical data may be incorrect or the relatively low concentrations may indicate that natural attenuation is occurring at the site with biological activity accounting for the reduction in SVOCs.

- 3b. A discussion of SVOC analysis is contained in Section 4.4.1.1 (page 4-7) and 4.4.1.2 (page 4-8). The detections are summarized on tables 4-4, 4-9, and 4-13.
- 3c. Discussion of analytical results obtained from the seep sample was not included in the draft version of the RI. An insert (Section 4.4.3.3) has been added into text and Table 4-6 discussing in detail the contamination observed in the sample.
- 4a. The use of both 601/602 and TCL volatiles during the two phases of the RI was to confirm the contamination detected in the first phase of work and provide a more precise measure of contaminant concentration. The information concerning the method detection limits, the advantages and disadvantages of the methods, the method suitability for the detection of various chemicals, and the level of data quality used for each method were included in the work plan for the investigation, more specifically the QAPP.
- 4b. The laboratory analyzed the sample as per the method requirements and standard operating procedures.
- 4c. As explained in Section 4.4.2, page 4-10, the only known possibility of false negatives are compounds whose concentration is below the method detection limit of 10 ppb. Others may exist, however without multiple rounds of groundwater results or splitting samples, they are not evident.
5. The inherent variability of the analysis would account for the

differences in concentration between the dissolved and total metal analysis. The indication is that dissolved metals do exist in the samples due to the fact that they were detected and not removed by the filter during filtering.

- 6a. The comment is incorrect. The comment states the compound 2,4-dinitrophenol routinely was detected in both surface and subsurface soil samples at greater than two times the base-wide background concentrations reported. As noted in Tables 4-3 and 4-4, there were only four detections of this compound in the surface and two in the subsurface samples collected across the site. A total of 52 surface and 30 subsurface soil samples were collected during both phases of the RI. Of the six detections, only four (two surface and two subsurface) soil samples had concentrations that were at levels exceeding the EPA Region III's Soil Screening Levels Protective of Groundwater. Since so few detections of this compound were encountered, Baker does not believe that further evaluation of this compound is relevant to the overall site risk.
- 6b. The analytes commonly found in waste oil is dependant upon the origin of the oil, what the oil was used for and the years in which the oil was used. Each petroleum manufacturer has information concerning the specific elements and compounds that make up the oil that they are refining. In addition, if the oil is a motor oil used in a vehicle that may have used leaded gasoline for combustion then one can expect that lead would be a possible contaminant associated with the oil. So, the types of metals commonly found in waste oils is highly dependant upon the oils original purpose and history of use.
- 6c. A sentence has been added to Section 4.4.1.3, page 4-10, paragraph 2 that states "Historical information did not indicate pesticide storage and presently pesticides are not stored at the site, thus indicating the contamination observed is most likely the result of pest control."
7. Toxicological properties are discussed in the Risk Assessment section of the report. Carbon disulfide was not discussed because it was not retained as a COPC and therefore, was not evaluated as to its impact.
8. A sentence has been added to the text indicating the PCBs may be the result of used oil disposal. A risk assessment was conducted at the site and PCBs were not excluded from this assessment. Therefore, the present risk assessment does indicate the risk to human health as a result of the levels of PCBs detected at the site.
9. Most of the compounds detected within the blank samples are common laboratory contaminants. Baker does not believe that the reliability and accuracy of the data obtained during the investigation has been comprised in any manner.