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CERTIFIED MAIL RETURN RECEIPT REQUESTED

United States Environmental Protection Agency, Region IV
Attn: Ms. Gena Townsend
Waste Management Division
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: MCB Camp Lejeune
Response to EPA Region IV Comments
Draft Interim FS Report
Operable Unit No. 10 (Site 35)

Dear Ms. Townsend:

Attached are Navy/Marine Corps responses to EPA Region IV comments on the above-referenced document. These responses address comments dated February 9, 1995 and February 28, 1995. The Draft Final version of the document (issued 4/3/95) incorporates these comments.

Please direct any questions to Ms. Katherine Landman at (804) 322-4818.

Sincerely,

L. G. SAKSVIG, P.E.
Acting Head
Installation Restoration Section
(South)
Environmental Programs Branch
Environmental Quality Division
By direction of the Commander

Attachments

Copy to:
NC DEHNR (Mr. Patrick Watters)
MCB Camp Lejeune (Mr. Neal Paul)
Baker Environmental, Inc. (Mr. Ray Wattras, Mr. Dan Bonk)
Activity Admin Record File

**Response to Comments Submitted by EPA Region IV on the
Draft Interim FS for Operable Unit No. 10, Site 35, MCB Camp Lejeune
Comment Letter Dated February 9, 1995.**

Response to General Comments

1. Comment has been noted and the cited statement has been removed. In the future, passive treatment systems will be more closely considered for applicability in treating contaminated media, particularly groundwater. Soon after the publication of the Draft Interim FS for OU No.10, Baker obtained additional information regarding the passive treatment technology that is mentioned in this comment, namely an In Situ Permeable Treatment Wall for halogenated organics. This technology has proven effective in degrading halogenated organic contaminants, but according to the developers (Envirometal Technologies, Inc. of Guelph, Ontario, Canada) it is not capable of treating BTEX contaminated groundwater (see additional information provided in the Draft Final Interim FS Appendices). This passive treatment system is therefore only partially applicable to Site 35.

The reference to this process option in Table 3-2 has been modified to reflect the applicability of this option to halogenated organic COCs, but is later eliminated in Table 3-3 primarily due to its inability to treat BTEX.

2. The Draft Interim FS states that the wells at OU No.10 will be re-sampled for inorganics under an additional field investigation using a low-flow sampling technique. This sampling is not intended to determine whether or not the inorganic constituents in the groundwater are the results of previous site activities, but rather it is to more accurately determine the concentration of these inorganics in the groundwater by significantly reducing the particle disturbance within the wells. The additional analytical data may indicate that concentrations for some inorganic COCs are in fact below remediation levels. The results of this sampling will be included in a data base for the comprehensive site FS to be prepared following the additional RI studies.

A sentence has been added to the text to further clarify the purpose of re-sampling for inorganics using this low-flow sampling technique.

Response to Specific Comments

1. The noted 1992 EPA reference has been included.
2. On p.4-5 and p.5-12, the text indicates that the radius of influence for an in well aeration well under Site 35 conditions has been estimated by the technology's developers to be over 100 feet. This radius of influence, which delineates the capture zone, is based upon site specific geological and hydrogeological parameters. For the FS, Baker has chosen to space six in well aeration wells approximately 180 feet apart, thus slightly overlapping radii of influence. Using this well configuration, a remediation and containment wall is effectively created along approximately 1,000 feet of the highway's eastern right-of-way, downgradient from the Fuel Farm area. The text has been modified to explain how this set up was determined.

**Response to Comments Submitted by EPA Region IV on the
Draft Interim FS for Operable Unit No. 10, Site 35, MCB Camp Lejeune
Comment Letter Dated February 28, 1995.**

3. Response to General Comments

Risk-based remedial goal options (RGOs) in this Interim FS were calculated using a single target carcinogenic risk of 1×10^{-4} and a hazard index (HI) of 1.0. The exposure scenario is based on adult and child ingestion of chemicals in a future residential setting. Since this site is in an industrial area on a military installation the carcinogenic risk value is considered highly conservative. This is especially true due to the fact that NCDOT is planning on constructing a 6-lane divided highway over a large portion of Site 35. The highway will considerably limit the possible routes for adult and child ingestion of contaminated groundwater in the future. Due to the above mentioned site specific factors, the generation of risk-based RGOs using the single target carcinogenic risk is assumed to be adequate for this Interim FS.

Prior to this comment, Region IV never indicated to Baker its desire to see RGOs calculated over a range of HIs. There is no toxicological basis for calculating a systematic toxicity over a range of HIs. Using a range does not give a quantifiable range of toxic effects. An RGO for a noncarcinogen that is calculated based on an HI of 1.0 may be focusing on a different target organ than for the RGO for the same chemical based on an HI of 10.0.

Based on the chosen target carcinogenic risk and HI, risk-based RGOs for both adult and child exposure were calculated. The risk manager opted to use the most conservative of the two remedial goals for each COC.

As per comment, the text has been modified to note that the RGO concentrations for arsenic, beryllium, and barium, calculated for a carcinogenic risk of 1×10^{-4} , are lower than the remediation levels (RLs) as defined by Federal MCLs and NC standards.

Information regarding the toxicity of the three groundwater constituents for which there are currently no Federal MCLs; naphthalene, cobalt, and vanadium; is not available. Target organs for these chemicals are not defined in the literature. It is therefore not possible to address the additivity of chemical toxicities for these constituents.

Regarding the presence of contaminated fish in Brinson Creek, the state of North Carolina has been informed of Baker's analytical findings through review of the Interim FS. It is the responsibility of the State's toxicologist to determine if any specific action needs to be taken to protect individuals who may be currently catching and eating fish from this area.

4. Response to Specific Comments

1. As per comment regarding the use of low-flow pumps to sample for organics in groundwater, the word "organic" has been corrected to properly read "inorganic". This same change was made in Section 2.7.
2. Baker's additional investigation of sediments in Brinson Creek will address the areas where

contaminated fish were sampled during the previous RI. It should be noted that these fish are migratory and potentially travel up and down Brinson Creek, adding variability to both the potential source(s) of fish contamination and the potentially exposed individuals. As per the comment regarding the any potential interim action addressing contaminated fish, refer to response to General Comments, paragraph six.

3. As per comment, the units of RGO denoted by the equation to calibrate C_w , contaminant concentration in groundwater, have been changed to be consistent with the tables which note all ROG values in $\mu\text{g/L}$ (ppb).
4. Refer to response to General Comments, paragraph five.
5. The Federal MCL concentration for trans-1,2-Dichloroethene has been corrected to $100\mu\text{g/L}$ in Table 2-2. The superscripts (3) and (4) have been identified in the table notes as: Action Level for Copper and Secondary Maximum Contaminant Level (SMCL), respectively, as per comment.
6. The slope factors and reference doses are included in Appendix A, Risk-Based Action Level Calculations. However, it should be noted that the exposure factors used to calculate the RGOs are site-specific and may differ from the default values published in EPA guidance documents. The inclusion of slope factors and reference doses in Tables 2-6 and 2-7 would, therefore, not necessarily enable the reader to reproduce the RGOs.
7. As per comment, Table 2-8 now lists the Federal MCL concentration for trans-1,2-Dichloroethene as $100\mu\text{g/L}$ and "ND" has been removed from the table notes.