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

November 24, 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 Action Work Plan Phase 1, Interim Air Sparging
Operable Unit 10 - Site 35

Dear Ms. Landman:

The Environmental Protection Agency (EPA) 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
Senior Project Manager

Enclosure

cc: Dave Lown, NCDENR
Neal Paul, MCB Camp Lejeune

1.0 GENERAL COMMENTS

1. Erosion and sediment are addressed in this document. However, the section is missing an excessive amount of important information such as the following:

- •Location
- •General Site Features
- •Site Drainage Features
- •Vegetation Stabilization
- •Erosion Control Measures

The aforementioned information should be included or referenced per North Carolina Department of Environment, Health, and Natural Resources guidance (NC DEHNR, 1997).

2. Section 1.1, Page 1-1, Paragraph 3, Sentence 4 states that data obtained from this full-scale IAS system will allow evaluation of the IAS technology and assessment of its effectiveness in remediation of shallow groundwater contamination. However, the IAS technology should not be evaluated from the operation of this full-scale system. A Treatability Study should have been done initially to assess the effectiveness of the technology in remediating shallow groundwater contamination. The text should give the rationale for not conducting a Treatability Study before deciding to build a full-scale system.

3. Section 3.4.1, Page 3-4, Paragraph 2 states that the air sparging could provide air flow in excess of standard cubic feet per minute (scfm). However, the text does not discuss pulsing of air flow into the sparge point. Due to potential mass transfer limitations, pulsing may provide an energy-efficient and cost-effective approach to the remediation process. The idea of using pulsing during the remediation process should be considered.

4. Section 3.4.3, Page 3-4 discusses air sparge well distribution piping. High-density Polyethylene (HDPE) will be used for the well distribution piping. However, the text does not specify whether the pipes would have expansion loops to accommodate thermal expansion. The text should be revised accordingly.

5. Figure 3 depicts proposed monitoring wells downgradient of the sparging trench to monitor the efficiency of the sparging system. However, two to three monitoring wells should be placed before the water enters the trench. These wells will be used to monitor contaminants before entering the trench.

6. Section 4.7, Page 4-6, Paragraphs 1 and 2 state that 15 piezometers will be utilized for monitoring the performance of the Phase I air sparging system, and Section 7, Bullet 2 states that contaminant concentration will be monitored using piezometers. However, piezometer wells are used to monitor water levels and not for having analytical samples collected from the piezometer wells. If these piezometer wells are used to collect analytical samples, then there must be some type of security to protect the wells from tampering. This statement should be revised accordingly.

7. Section 7.0, Page 7-1, Paragraph 1 discusses system monitoring components which are planned during the remediation process. However, the text omits monitoring of CO_2 and O_2 levels in the soil vapor. These would indicate biological activity and should be done before, during and after the air sparging process for petroleum contamination sites, under static as well as pumping conditions. The text should give the rationale for omitting the monitoring of CO_2 and O_2 during the remedial process.

8. The SAP in Appendix C, Section 2.4, Page 2-8, Paragraph 1 indicates that project-specific quality objectives are listed in Table A-2. However, the text does not discuss the application of project action limits which are shown in Table A-2. In addition, the term "project action limits" used in Table A-2 is confusing. The text should be revised to present a discussion regarding the use of project action limits for the project quality control objectives.

2.0 SPECIFIC COMMENTS

1. This document is missing an acronym list. A list of acronyms used in the document should be included to enhance the review process.

2. Section 1.3, Page 1-3, Paragraph 1, Sentence 1.
The text states that the air injection trench will be installed north of Fourth Street as illustrated in Figure 2. However, Figure 2 does not show Fourth Street. Fourth Street should be clearly depicted on the figure.

3. Section 1.3, Page 1-3, Paragraph 1, Sentence 3.
The text states that the surficial aquifer extends from the ground surface to a semi-confining layer located approximately 40 to 44 feet bls. However, since groundwater is 6 to 8 feet below land surface, the range of the surficial aquifer extent is incorrect. It should extend from 6 to 8 feet bls to 40 to 44 feet bls. The text should be corrected accordingly.

4. CQCP, Section 2.2, Page 2-1, Paragraph 2, Sentence 1.
The text states that the manager's resume is included herein as Exhibit 2.2. However, Exhibit 2.2 is missing from the document. This exhibit should be included in the document.

5. SAP, Appendix C, Section 2.4, Page 2-8, Paragraph 3, Sentence 2.
The text states that a copy of Qp-650 is included in Appendix D. However Qp-650 is missing from this Appendix D. A copy of Qp-650 should be included in the document.

6. SAP, Appendix C, Section 3.10, Page 3-15, Paragraph 4.
The text discusses chain-of-custody procedures. However, this section does not include the discussion of final evidence files which include all original lab reports maintained under documented control in a secure area (EPA, 1988). This section should be revised accordingly.

7. SAP, Appendix C, Section 7.0, Page 7-1.
The text discusses performance and system audits. However, the section does not have a schedule for conducting performance audits for each management parameter. A schedule should be provided accordingly.