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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

4WD-FFB

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

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

RE: Marine Corps Base Camp Lejeune NPL Site
Operable Unit 7, Sites 1, 28 and 30
Jacksonville, North Carolina

Dear Ms. Berry:

EPA has partially completed its review of the documents titled "Draft Remedial Investigation/Feasibility Study Work Plan for Operable Unit No. 7, (Sites 1, 28 and 30)" dated June 1993 and "Draft Remedial Investigation/Feasibility Study Sampling and Analysis Plan for Operable Unit No. 7, dated July 1993. EPA's comments from the Athens Lab. (ESD) and Dynamac (oversight contractor) are enclosed. Comments from the Groundwater and Risk Assessment Sections will be forth coming.

If you have any questions or comments, please call me at (404) 347-3016.

Sincerely,

Gena D. Townsend
Senior Project Manager

Enclosure

cc: Patrick Waters, NCDEHNR
Neal Paul, MCB Camp Lejeune

TECHNICAL REVIEW AND COMMENTS REPORT
DRAFT REMEDIAL INVESTIGATION/FEASIBILITY STUDY WORK PLAN
SITES 1, 28 and 30 (OPERABLE UNIT NO. 7)
CAMP LEJEUNE MARINE CORPS BASE
JACKSONVILLE, NORTH CAROLINA

1.0 INTRODUCTION

This Technical Review and Comments (TRC) Report is submitted to EPA Region IV for the Draft Remedial Investigation/Feasibility Study Work Plan, Sites 1, 28 and 30 (Operable Unit No. 7) Camp Lejeune Marine Corps Base, Jacksonville, North Carolina (Draft RI/FS Work Plan). Baker Environmental, Inc., prepared the Draft RI/FS Work Plan, dated June 29, 1993, for the Department of the Navy, Atlantic Division, Naval Facilities Engineering Command.

This TRC Report evaluates the technical content, accuracy and logical interpretation of data in the Draft RI/FS Work Plan by considering the requirements of RCRA, CERCLA and SARA. The following documents were used as background and reference information during the review.

- Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA, Interim Final (RI/FS Guidance Manual), October 1989;

- Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual (Part A), 1989;

- National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300, 1990; and

- EPA Region IV Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual (ECB SOPQAM), February 1, 1991.

In addition to the Introduction, this TRC Report is divided into the following two sections:

Section 2.0 General Comments
Section 3.0 Specific Comments

2.0 GENERAL COMMENTS

The following general comments were developed from the review of the Draft RI/FS Work Plan:

1. The proposed FS tasks were presented in the Draft RI/FS Work Plan only in general and broad terms. The FS tasks

should be more specific, and should include more detailed information such as a discussion of the criteria to be used to determine the need for treatability studies. Additionally, the proposed FS should include preliminary remedial goals to be incorporated into the remedial alternative development/screening, as well as cost estimates and key assumptions.

2. In discussions of the previous sampling investigations, the Draft RI/FS Work Plan should present pertinent data such as the detected contaminant concentration and Maximum Contaminant Level (MCL) values to provide a clear understanding of the nature and extent of contamination.

3. As a stand-alone document, the Draft RI/FS Work Plan should contain a master acronym list that includes explanations for symbols (e.g., FC, SFC, GP and SGP, etc.) used for various structures depicted on the enclosed site figures. Additionally, units should be specified for the contaminant concentration values shown on these figures, and the north arrow should be drawn on the figures, not in the legend box.

3.0 SPECIFIC COMMENTS

The specific comments are listed on the following pages. The comments are listed in order of occurrence in the Draft RI/FS Work Plan and are organized by page, paragraph and/or figure and table number as appropriate.

1. Page 2-7, Paragraph 1, Section 2.1.5:
The definitions for the Castle Hayne aquifer (defined as deeper than 50 to 100 feet) and the surficial aquifer (defined as less than 50 to 100 feet) appear overlapping and lack distinction. The differentiation between the two aquifers should be further clarified.

2. Page 2-14, Paragraph 4, Section 2.2.5.3:
The correct figure showing the six shallow monitoring well locations should be Figure 2-4, not Figure 5-3 as described in the paragraph. Figure 5-3 is titled "Soil Investigation, Site 28 - Hadnot Point Burn Dump."

3. Page 2-16, Figure 2-4 and Appendix D:
It appears that the groundwater data presented on Figure 2-4 is incomplete. The groundwater data summary table in Appendix D indicates that a broader spectrum of contaminants (e.g., beryllium and mercury) than those shown in Figure 2-4 were also detected in the groundwater at levels exceeding their respective MCLs. Additionally, acetone, a volatile organic compound, was detected in

wells 1GW4 and 1GW6. Please resolve these discrepancies.

The north arrow and the groundwater flow direction should be depicted on the figure.

4. Page 2-17, Paragraph 2, Section 2.2.5.3:
The relevant Federal and State MCLs for the contaminants discussed in the paragraph should be provided for easy reference. As stated in the paragraph, zinc was detected in well 1GW4 at a level exceeding the State MCL; therefore, it should be listed on Figure 2-4.

5. Page 2-17, Paragraph 3, Section 2.2.5.4:
The date of surface water and sediment sampling pertaining to the discussion presented in the paragraph should be clarified.

6. Page 2-18, Paragraph 1, Section 2.2.5.4:
Regarding the May 1993 surface water and sediment investigation, please indicate how the results of the investigation will be incorporated into the proposed RI sampling program.

7. Page 2-18, Paragraph 2, Section 2.2.5.5:
Contrary to what is stated in the paragraph, Appendix A does not contain the analytical results of the July 1991 soil sampling event. Please clarify. The concentrations at which the contaminants were detected in the soil samples should also be specified.

8. Page 2-21, Paragraph 1, Section 2.3.5, and Page 2-22, Figure 2-6:
Even though it is located north of Site 28, well 28GW4 may not be appropriate as the background well. As the sampling data indicate, contaminant levels detected in groundwater samples collected from this well were often higher than levels from other onsite wells. Therefore, it is inappropriate to use this well as "background". Either a detailed discussion should be provided to justify the use of well 28GW4 as the background well or the selection/installation of a new background well should be proposed.

The sewage plant and its outfall near well 28GW1 should be depicted on Figure 2-6.

9. Page 2-21, Paragraph 2, Section 2.3.5:
The correct appendices to refer to regarding the three rounds of analytical data are appendices B and E, not appendices C and D as stated in the text. Please revise accordingly.

10. Page 2-21, Paragraph 3, Section 2.3.5:
The detected concentration values and the corresponding MCLs for the contaminants are pertinent supporting information for a clear understanding of the extent of site contamination and should therefore be presented in the discussion of previous investigations and findings.

11. Page 2-22, Figure 2-6, and Page 2-23, Paragraph 2, Section 2.3.5:
The landfill area discussed in the paragraph with respect to surface water/sediment sampling locations should be depicted on Figure 2-6.

12. Page 2-23, Paragraph 3, Section 2.3.5:
It is unclear how the contractor arrived at the conclusion that surface water contamination may not be site-related based solely on the fact that certain contaminants detected in the surface water samples were not detected in the groundwater samples collected during the same period. Please clarify.

13. Page 2-25, Paragraphs 1 and 2, Section 2.3.5:
The acute toxicity levels for polychlorinated biphenyls (PCBs) and benzene hexachloride, A should be specified.

14. Page 2-26, Figure 2-7:
A symbol for well 30GWS is not included on the legend. Please clarify.

15. Page 2-28, Paragraph 4, Section 2.4.5.1:
The text states that the detected level of chloroform is attributable to laboratory contamination. Supporting data and rationale must be provided to justify such a statement.

16. Pages 3-1 and 3-2, Bullets, Section 3.1.2:
Inhalation of airborne fugitive particulates released from contaminated surface soil should be evaluated as a potential exposure pathway. The word "incidental" should be deleted from the first bullet.

It is unclear whether bullet Nos. 5 and 6 describe the same exposure pathways. Please clarify.

17. Page 3-3, Paragraph 5, Section 3.1.5.2:
Please clarify the first sentence which states, "the presence of benzo(a)pyrene and inorganics, and various inorganics."

18. Page 3-4, Paragraph 2, Section 3.1.5.3:
This paragraph contains numerous typographical and

grammatical errors and should be rewritten since the technical content of the paragraph cannot be fully assessed in its present form.

19. Page 3-5, Paragraph 3, Section 3.1.6.2:
The meaning of the first sentence is totally unclear. Please rewrite since the technical content of the sentence cannot be evaluated in its present form.

20. Page 3-6, Bullets, Section 3.2.2:
See Specific Comment No. 16.

21. Page 3-8, Paragraph 3, Section 3.2.5:
The last sentence, "some potential action-specific ARARs," should be deleted from the paragraph.

22. Page 3-9, Paragraph 2, Section 3.2.5.2:
See Specific Comment No. 18.

23. Page 3-10, Paragraph 1, Section 3.2.6.3:
Please clarify the first sentence which states, "seven previous surface water/sediment sampling locations have been collected."

24. Page 3-10, Bullets, Section 3.3.2:
Inhalation of airborne fugitive particulates released from contaminated surface soil should be evaluated as a potential exposure pathway.

25. Page 5-3, Paragraph 4, Section 5.4.1.2 and Figure 5-1:
Specify the rationale for selecting the soil background sample locations. The proposed locations east, south and north of the site outside the areas of concern appear more appropriate for collection of control samples, not background samples. This is especially true for the proposed "background" sample locations adjacent to H. M. Smith Boulevard and the wash racks.

26. Pages 5-3 through 5-14, Section 5.4.1.2:
The three subsections, "Acid and POL Disposal Area 1-S," "POL Disposal Area 1-N" and "Acid and POL Disposal Area 1-N," contain similar and related information regarding soil investigation and should therefore be consolidated to avoid repetitive discussions.

27. Page 5-7, Table 5-1:
The number of surface water/sediment samples to be collected should be specified.

28. Page 5-13, Paragraph 2, Section 5.4.1.2:
See Specific Comment No. 18.

29. Page 5-15, Figure 5-2:
The groundwater flow direction should be shown on the figure.

30. Page 5-16, Paragraph 2, Section 5.4.1.3:
The text states that all monitor wells will be constructed of polyvinyl chloride (PVC). The ECB SOPQAM discourages the use of PVC in monitor well construction materials where groundwater may be contaminated with organic constituents because of PVC's sorption and leaching properties. Provide justification for the use of PVC well construction materials.

31. Page 5-24, Paragraphs 3 and 4, Section 5.4.1.3:
See Specific Comment No. 30. The correct number for this section should be 5.4.2.3, not 5.4.1.3.

32. Page 5-25, Figure 5-4:
The groundwater flow direction should be shown on the figure.

33. Page 5-30, Figure 5-5, and Page 5-31, Paragraph 4, Section 5.4.1.3:
It is unclear where the two surface water/sediment sampling stations described in the paragraph are shown on the figure.

34. Page 5-34, Figure 5-6, and Page 5-35, Paragraph 3, Section 5.4.3.2:
Explain the rationale for selecting background soil sampling locations adjacent to the Sneads Ferry Road and less than 400 feet away from the suspected disposal area. Because the exact location of the suspected disposal area is still unknown, it should be indicated that the soil boring locations depicted on Figure 5-6 are preliminary.

35. Page 5-37, Paragraphs 1 and 2, Section 5.4.1.3:
Specify the screen depths of the two existing monitoring wells, and whether the vertical extent of groundwater contamination is expected to be sufficiently characterized by data collected from the proposed well.

Also see Specific Comment No. 30 for concerns regarding well construction materials. The correct number for this section should be 5.4.3.3, not 5.4.1.3.

36. Page 5-42, Bullets, Section 5.7:
Please include Supplemental Region IV Risk Assessment Guidance (EPA 1991) in the guidance documents to be followed in preparing the baseline risks assessments.

37. Page 5-43, Paragraph 4, and Page 5-44, Paragraph 1, Section 5.7.1.2:
Please indicate that data summary tables will also include the average background concentrations.

The described method of calculating the mean concentrations is incorrect per EPA's Supplemental Region IV Risk Assessment Guidance (EPA 1991). Unlike the calculation of 95 percent upper confidence limits, the nondetects should not be incorporated into the average concentrations.

It is unclear whether comparison to background levels and blank comparison will be the only two elimination criteria to be used in the selection of chemicals of potential concern. Please specify.

38. Page 5-46, Bullets, Section 5.7.1.4:
The air pathway should also be included and evaluated in the exposure assessment.

39. Page 5-47, Bullets, Section 5.7.1.5:
The references to both the Integrated Risk Information System (IRIS) and Health Effects Assessment Summary Tables (HEAST) should be updated to reflect the current development in deriving chemical toxicity values. In cases where toxicity values are not available for certain chemicals from either IRIS or HEAST, EPA should be consulted prior to attempting to derive these toxicity values and incorporating them into the risk assessments.

40. Page 5-52, Paragraph 2, Section 5.7.2.3:
Please indicate that in addition to literature search, actual site survey and reconnaissance will be conducted when feasible to locate ecological reference areas.

41. The Hadnot Point Burn Disposal area (HBDP); is described in the site history as having a current recreational use, including a stock pond. The submitted figures show several round structures (tanks?) and an aerated equalization lagoon and grit chamber on the site. No stock pond or picnic facilities are depicted. This must be reconciled in the next submittal.

42. Section 5.4.1.3, p. 5-14. The proposed groundwater investigation will not determine the extent of groundwater contamination. It is recommended that groundwater screening be performed using an on-site laboratory. I would recommend using a piezocone and hydrocone (direct push), to map the clay lenses and collect discrete samples for VOC analysis based upon

specific lithology. Once the shape and extent of the plume(s) is defined, permanent wells should be installed and sampled for confirmation.

43. Section 5.4.2.3, p. 5-24. Same comment as for Section 5.4.1.3, p. 5-14.

44. Section 5.4.3.3, p. 5-36. Same comment as for Section 5.4.1.3, p. 5-14.

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45. Section 3.4, p. 3-32. Ambient condition blanks would serve no purpose at this site. The Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual, (ECBSOPQAM), February 1, 1991, requires preservative blanks, blanks of filter pack material, grout, bentonite, drilling fluid, etc.

46. Section 5.2, p. 5-5. As stated in the comments for the work plan, installation of permanent wells should be based upon the results of a groundwater screening program. At that time decisions can be made about well location, depth, screened interval, etc.

47. Stainless steel is the recommended material for well construction. If PVC is selected, it must not be solvent rinsed or steam cleaned. It is recommended that the grout be a pure bentonite material. The bentonite pellet seal should be allowed to hydrate for at least 8 hours. Grout density must be as specified in the ECBSOPQAM, and it must be measured. Well construction must be as specified in the ECBSOPQAM.

48. Section 5.3.1, p. 5-15. It is recommended that monitoring wells be purged with a low flow pump. The well must be sampled as soon as possible after purging. Do not wait. Three consistent, consecutive measurements of pH, conductivity, and temperature are necessary to ensure stabilization.

49. Section 5.3.2, p. 5-16. Potable wells must be sampled in accordance with the ECBSOPQAM.

50. Section 5.5, p. 5-18. The coring device is not clearly described. It must be constructed of either glass, teflon, stainless steel, or steel, as specified in the ECBSOPQAM.

51. Section 5.7.1, p. 5-26. The selected decontamination procedures are incorrect. The correct procedures may be found in Section B.7 and B.8 of the ECBSOPQAM. ESD may be consulted directly if confusion persists.