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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

August 10, 1994

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

4WD-FFB

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

SUBJ: MCB Camp Lejeune - OU6
Draft RI/FS Project Plans

Dear Ms. Berry:

The Environmental Protection Agency (EPA) has partially completed its review of the "Draft Remedial Investigation/ Feasibility Study Project Plans, Operable Unit 6, dated June, 1994. Comments are enclosed. The remaining comments are expected to be forwarded by August 15.

If there are any questions or comments, please call me at (404) 347-3016, or 347-3555, x-6459.

Sincerely,

Gena D. Townsend
Senior Project Manager

Enclosure

cc: Mr. Neal Paul, MCB Camp Lejeune
Mr. Patrick Watters, NCDEHNR

1.0 GENERAL COMMENTS

Dynamac Corporation (Dynamac) developed the following general comments from its review of the Draft RI/FS Project Plans:

Draft RI/FS Field Sampling and Analysis Plan

1. Using only a photoionization detector (PID) for field headspace analysis or health and safety air monitoring is a concern. The PID will detect only those volatile organic compounds (VOCs) with an ionization potential (IP) at or below 10.2 electron-volts (eV) using a 10.2 eV ultraviolet lamp, which is the lamp most commonly used. However, any VOC with an IP above 10.2 eV will go undetected using the PID. The PID is also not very efficient at detecting long-chain hydrocarbons; therefore, an organic vapor analyzer (OVA), which is a flame ionization detector (FID), should be used in addition to the PID for screening vapors or performing headspace analyses.

2. Analyses for RCRA hazardous waste characteristics such as ignitability, reactivity and corrosivity, should also include the test for toxicity, the Toxicity Characteristic Leaching Procedure (TCLP). Solid and liquid waste samples should be analyzed for the full organic and inorganic TCLP parameters, especially those samples to be used in addressing land disposal restrictions.

3. Control samples should be collected and analyzed for ditch surface water and sediment at Site 54. These samples should be collected upstream from the site. This information is necessary for the risk assessment and serves to differentiate any ditch contamination which may be a result of upstream sources from contamination originating at Site 54.

2.0 SPECIFIC COMMENTS

The specific comments are listed on the following pages in the order of occurrence in the Draft RI/FS Project Plans. The comments are organized by document name as well as page number, section number, paragraph number, bullet number, appendix number or figure/table number, as appropriate.

Draft RI/FS Work Plan

1. Page 3-4, Section 3.1.2.1, Paragraph 2:
The site-specific data needs for Site 44, the Jones Street Dump, include "the horizontal and vertical extent of

potentially contaminated soil in the vicinity of well 44MW03 and the remaining site areas." Neither Figure 2-8 nor Figure 2-9 shows monitor well 44MW03 and it appears that the text is actually referring to 44GW03, which is shown on the figures. Please clarify the discrepancy.

2. Page 3-5, Section 3.1.2.1, Paragraph 2:
The site-specific data needs for Site 86, Tanks AS419 through AS421 at Marine Corps Air Station, should include "the horizontal and vertical extent of potentially contaminated shallow and deep groundwater at the site."

3. Page 3-8, Table 3-1:
The text in Table 3-1, the criteria for meeting the RI/FS objective for the category "Site 36 Surface Water," incorrectly refers to Northeast Creek. It should state, "Determine surface water quality in the east and west tributaries and Brinson Creek."

4. Page 4-3, Table 4-1:
The text in Table 4-1, Analysis for Site 36, Camp Geiger Area Dump Near Sewage Treatment Plant, incorrectly lists the analysis as "Solids: RCRA." It should list the analysis as "Solids: Toxicity Characteristic Leaching Procedure (TCLP)/RCRA."

5. Page 4-22, Section 4.7.1.2, Paragraph 1:
The text states that the upper 95 percent confidence limit on the arithmetic or geometric mean will be calculated and presented in the data summary, and that the selection of arithmetic or geometric means will depend on whether the sample data are normally or log-normally distributed. The use of the geometric mean approach is inconsistent with the Supplemental Region IV Risk Assessment Guidance, which specifies that the 95 percent upper confidence limit (UCL) for the arithmetic mean should be used in estimating exposure point concentration of a contaminant of potential concern (COPC), regardless of the data distribution. This is because the uncertainty associated with any estimate of exposure concentration warrants a conservative approach that will err on the side of health protection. The use of the arithmetic mean in the formula yields more conservative results than does the use of geometric means. It is true that the type of distribution (i.e., normal versus log-normal) determines which of the two acceptable formulas should be used in calculating the 95 percent UCL; however, in both formulas the arithmetic mean should be used.

In addition, the text states that concentrations in the data set presented as "ND" (nondetect) will be incorporated in the calculation of the mean, but fails to specify how this

will be done. EPA recommends that the proxy values of the undetected identified COPCs be taken as one-half their detection limits and be incorporated in the arithmetic mean values for the 95 percent UCL calculations. (EPA's "Supplemental Guidance to RAGS: Calculating the Concentration Term", Publication 9285.7-081, EPA - May 1992, will clarify the above comment.)

6. Page 4-23, Section 4.7.1.4, Bullets:
For the soil and groundwater exposure pathways, the descriptions only partially specify if receptors may be affected currently or in the future. For example, the "Inhalation of dust" and "Dermal contact" categories under the soil pathway bullet, should specify under what land-use scenario (e.g., current, future) the worker and resident receptors were identified. Similarly, the land-use scenario associated with the "base personnel" identified under the groundwater pathway bullet should also be specified.

7. Page 4-23, Section 4.7.1.4, Paragraph 4:
See Specific Comment No. 5.

8. Pages 4-27 through 4-32, Tables 4-2 through 4-6:
For sediment, the preliminary remediation goal (PRG) values presented in these tables were based on National Oceanic and Atmospheric Administration Sediment Screening Values (NOAA SSVs). However, the NOAA SSVs are merely screening values for adverse biological effects, and are neither applicable or relevant and appropriate requirements (ARARs) nor health risk-based concentration values. Their inclusion as PRGs is both inappropriate and inconsistent with the PRGs presented for other environmental media. For the purpose of these tables, risk-based values for the sediment developed from human exposure should be presented.

Draft RI/FS Field Sampling and Analysis Plan

9. Page v, List of Figures:
Show the page numbers for the figures described in this portion of the table of contents.

10. Page 3-1, Section 3.1.2.1, Paragraph 1:
The text states that a "projected number of 54 soil borings/monitoring well borings will be drilled." However, Figure 3-1 on Page 3-22 only shows the proposed sampling locations for 43 borings. Please clarify this discrepancy.

11. Page 3-2, Section 3.1.2.1, Paragraph 4:
The text states that soil samples will be collected from trenches at Site 36 if "potential contamination (e.g. elevated HNu readings) is detected." The HNu, which is a photoionization detector (PID) will detect only those VOCs with an IP at or below 10.2 eV using a 10.2 eV ultraviolet lamp, which is most commonly used. However, any VOC with an IP above 10.2 eV will go undetected. The degreaser 1,1,1-trichloroethane, which may have been disposed at Site 36, is one VOC which would go undetected. In addition, the PID is not very efficient at detecting long-chain hydrocarbons which may therefore go undetected. An organic vapor analyzer, or flame ionization detector (FID) should be employed in the field in the nongas chromatograph mode, in addition to the PID, for screening of long-chain hydrocarbons and VOCs with an IP above 10.2 eV.

12. Page 3-2, Section 3.1.2.2, Paragraph 1:
To avoid confusion, the acronym for Target Compound List should be changed from TCLP to TCL.

13. Page 3-4, Section 3.1.5, Paragraph 3:
The text states that "liquid waste samples will be analyzed for full TCL organics, Target Analyte List (TAL) metals, and RCRA hazardous waste characteristics. Solid waste samples will be analyzed for full TCLP, RCRA hazardous waste characteristics and TCL PCBs [polychlorinated biphenyls]." For consistency, both solid and liquid waste samples should be analyzed for the full TCLP parameters, as well as the RCRA hazardous waste characteristics of ignitability, corrosivity and reactivity. In addition, the liquid waste samples should also be analyzed for TCL PCBs. Although PCBs tend to be immobile and will readily sorb to fine soil particles, they can migrate from soil to groundwater or surface water.

14. Page 3-5, Section 3.2.2.1, Paragraph 1:
The text states that a "projected number of 23 soil borings (not including the monitoring well borings) will be

drilled." However, Figure 3-4 on page 3-25 only shows the proposed sampling locations for 22 borings. Please clarify this discrepancy.

15. Page 3-6, Section 3.2.3, Paragraph 2:
The proposed temporary monitoring well, 43TW02, should be installed as a permanent monitoring well in order to assess downgradient groundwater conditions over time and for potential use during implementation of the selected remedial alternative.

16. Page 3-8, Section 3.3.2.1, Paragraph 1:
The text states that a "projected number of 13 soil borings will be drilled." However, Figure 3-7 on Page 3-28 only shows the proposed sampling locations for 11 borings. Please clarify this discrepancy.

17. Page 3-8, Section 3.3.2.1, Paragraph 5:
With regard to selecting soil samples based on HNu readings, see Specific Comment No. 11.

18. Page 3-9, Section 3.3.3, Paragraph 1:
The proposed temporary monitoring well, 44TW01, should be installed as a permanent monitoring well to assess downgradient groundwater conditions northeast of Site 44 over time, and for potential use during implementation of the selected remedial alternative.

19. Page 3-10, Section 3.4.2.1, Paragraph 1:
The text states that a "projected number of 18 soil borings will be drilled." However, Figure 3-10 on page 3-31 shows the proposed sampling locations for a total of 20 borings. Please clarify this discrepancy.

20. Page 3-12, Section 3.4.4, Paragraph 2:
The text states that one water and two soil/sediment samples will be collected from each sampling station in the Site 54 ditches; however, there is no discussion of control samples. See General Comment No. 3.

21. Page 3-12, Section 3.5.2, Paragraph 1:
The text states that "the investigation will focus on the areas where former aboveground storage tanks (AST) AS420 and AS421 were located." The investigation should also include AS419 since the site history for Site 86 indicated that AST AS419 was also used to store waste oil.

22. Page 3-20, Section 3.7.4, Paragraph 1:
The text states that waste personal protective equipment (PPE) will be managed as solid waste. Waste PPE such as spent respirator cartridges, tyvek, gloves and boot covers

should be bagged, labeled and disposed of as hazardous waste.

23. Page 3-21 through 3-34, Figures 3-1 through 3-14:
Paginate Figures 3-1 through 3-14.

24. Pages 3-21 through 3-34, Figures 3-1, 3-4, 3-7, 3-10 and 3-13:
Remove the symbols and labels for all monitoring wells since Figures 3-1, 3-4, 3-10 and 3-13 show proposed sample locations for soil investigations and the extra symbols and labels are confusing.

25. Page 3-31, Figure 3-11:
Figure 3-11 shows two monitoring well locations to the north and one monitoring well location to the south of the Site 54 burn pit; however, the approximate groundwater flow direction shown on Figure 3-11 is from north to south. Based on this flow direction, two monitoring wells should be installed south of the Site 54 burn pit and only one is necessary on the north side of the burn pit.

26. Page 3-32, Figure 3-12:
Show the locations of control soil/sediment and water samples to be collected from the Site 54 ditches. See Specific Comment No. 20.

27. Page 3-33, Figure 3-13:
Soil borings should be added approximately 100 feet east of ASTs AS419, AS420 and AS421 to better define the extent of contamination. Additionally, soil borings should be placed east and west of AS419, similar to the boring locations shown in Figure 3-13 for AS420 and AS421.

28. Page 5-3, Section 5.1.3, Paragraph 1, Bullet 5:
The text states that "test pit excavation will continue to a depth of 10 feet or to the water table." Discuss how the test pit will be protected from cave-in since excavation wells at a depth of 10 feet below ground surface may be unstable due to the loading of construction equipment and soil characteristics.

29. Page 5-7, Section 5.2, Paragraph 1, Bullet 2:
The text states that procedures for the installation and construction of Type III deep wells include hollow-stem augers with a "nominal 3/4-inch inside diameter." The inside diameter of 3/4 inch is insufficient to permit split spoon sampling and the insertion of well construction materials through the auger, procedures which are proposed in the Draft RI/FS Field Sampling and Analysis Plan. Please clarify this discrepancy.

30. Page 5-7, Section 5.2, Paragraph 1, Bullet 4:
The text in bullet 4 discusses the possibility of encountering a confining clay layer. If the clay unit is encountered, the use of an outer casing above the confining unit may be required.

31. Page 5-11, Section 5.3.1, Paragraph 1:
The text states that "groundwater samples will be collected from existing and newly installed monitoring wells on site," and that some of the wells may have been vandalized. Existing monitoring wells that have been, or are suspected to have been, vandalized must be abandoned and samples may not be collected from them.

32. Page 5-14, Section 5.6, Paragraph 3:
The discussion of drum and container waste sample collection and eventual disposal focuses on incompatibility and "RCRA hazardous waste characteristics (ignitability, corrosivity and reactivity)"; however, TCLP is a test for the RCRA hazardous waste characteristic of toxicity and must be included. The TCLP is also the analytical method required for the land disposal restrictions set forth in 40 CFR 268 and should be added to this list of parameters for waste samples.

33. Page 5-19, Section 5.9, Paragraph 3:
With regard to using only a PID for health and safety monitoring, see Specific Comment No. 11.

34. Page 6-2, Table 6-1:
The baseline number of samples for Site 36 soil at the formerly cleared area is shown in Table 6-1 as "14 borings/2 samples per boring." This number of borings does not seem to correspond to Figure 3-1, which shows only 2 boring locations in the Site 36 Formerly Cleared Area. Please clarify.

35. Page 6 of 10, Section 5.1, Appendix D:
The text states that "a sodium bentonite seal at least two- to three-foot thick shall be placed above the sand pack" and allowed "to hydrate for at least 20 minutes before completion of the well." According to the ECB SOPQAM, Appendix E, Section E.3, this is unacceptable. Hydration of the pure bentonite powder or pellets is a minimum of 8 hours or the manufacturer's recommended hydration time, whichever is greater.

In addition, the text does not specify the curing time for the cement-bentonite grout to be placed above the bentonite seal. The ECB SOPQAM requires that the grout cure for a minimum of 24 hours.

36. Page 8 of 10, Section 5.4, Appendix D:
The text states that during monitoring well development, it may be possible that the water in some wells may not become clear of fine-grained materials even with continued development. If adequate clarity cannot be achieved, the text should state subsequent purifying and sampling will be conducted using a low velocity, low flow pump to minimize sediment resuspension. This procedure is particularly important when sampling groundwater that will be analyzed for metals.

37. Attachment A, Appendix D:
Attachment A is a monitoring well construction detail. The bentonite pellet seal located a minimum of 2 feet above the well screen is shown as being 1 foot thick; however, it must be at least 2 feet thick. Please clarify this discrepancy.

38. Page 6 of 13, Section 5.2, Appendix E:
The area portion of the equation shown for calculating the volume of water in the well casing is incorrect. The formula presented in Appendix E includes the term D^2 where D is the diameter of the well casing. The correct formula should either include $\frac{D^2}{4}$ or r^2 where r is the radius of the well casing. Please clarify this discrepancy.

39. Page 7 of 16, Section 8.2, Appendix G:
The text states that drum monitoring will be conducted using an "organic vapor analyzer (OVA) or HNu." See General Comment No. 1.

40. Page 11 of 16, Section 8.3, Appendix G, Bullet 2:
Section 4.12.4.3 of the ECB SOPQAM states that drums should be grounded prior to opening either the bung or the lid. The grounding of unopened drums should be added to the discussion of drum opening.

41. Page 14 of 16, Section 8.4, Appendix G, Bullet 2:
With regard to monitoring headspace gases for organic compounds after a drum is opened with only an OVA or an HNu, see Specific Comment No. 11.

42. Page 4 of 6, Section 5.1, Appendix N:
The text states that the decontamination procedure for "Region IV is similar to that for Regions II and III." However, the eight specific steps described in the Region IV ECB SOPQAM in Appendix B, Section B.3 should be listed for clarification.

43. Page 5 of 6, Section 5.2, Appendix N:
List the specific steps for field analytical equipment decontamination as described in the ECB SOPQAM, Appendix B, Section B.4.

Draft RI/FS Quality Assurance Project Plan

44. Page 8-1, Section 8.1, Paragraph 1:
The text states that an oxygen/lower explosion limit meter and an HNu will be used to analyze ambient air for health and safety monitoring. With regard to using only an HNu for air monitoring of organic compounds, see Specific Comment No. 11.