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August 8, 1991

Commanding Officer
Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511-6287

Attn: Ms. Laurie Boucher, P.E.
Code 1822

Re: Contract N62470-89-D-4814
CTO-0017 - HPIA, Review of ESE Documents
Risk Assessment Evaluation

Dear Ms. Boucher:

This letter report consists of technical review comments pertaining to the Preliminary Draft Hadnot Point Industrial Area (HPIA) Baseline Risk Assessment (dated July 1991) prepared by Environmental Science & Engineering, Inc. (ESE).

This letter evaluation report is being submitted in accordance with Task 9 of the CTO-0017 Final Implementation Plan (June 26, 1991). However, based on our discussion of July 18, 1991, the project schedule for this CTO has been modified as follows. The submittal date for this Evaluation Report has been changed to August 8, 1991 (the original schedule indicated an August 30 submittal date).

INTRODUCTION

The referenced evaluation was performed by an environmental scientist with a background in performing human health and environmental risk assessments. The technical review focused on reviewing the assumptions (fate and transport, exposure, etc.), equations for calculating risks, and the general format and presentation of data and technical discussions.

The remainder of this letter report documents Baker's technical comments. Each comment is referenced to the section or page of the referenced report.

GENERAL COMMENTS

1. The equations used to calculate risks are acceptable.

2. The assumptions presented in Appendix B of the report are acceptable with the exception of the exposed surface area of an adult worker. The assumption states

that workers would wear long sleeve shirts and gloves. This needs to be confirmed by the Camp Lejeune Environmental Management Division.

3. The report appears to be missing information. For example, maps showing the locations of deep groundwater and water supply wells are not included. In addition, tables presenting risk values for groundwater are not included. This results in some difficulty with understanding (and confirming) the results of the report.

4. The report needs to be edited. There are misspelled words, incorrect section numbers, missing references, missing units on tables, and redundancy throughout the report.

SPECIFIC COMMENTS

1. (Executive Summary) The Executive Summary (ES) should provide a discussion pertaining to the results of the risk assessment.

2. (Section 1.2) Page 1-6 indicates that there are four areas of concern; page 1-9 states that there are five areas of concern; and page 1-12 states that there are three areas of concern. This needs to be clarified.

3. (Table 1-2 and Table 1-3) Tables 1-2 and 1-3 summarize groundwater analyses from the Confirmation Study investigations. Clarify why lead is not shown on Table 1-3 (Table 1-3 summarizes inorganics).

4. (Table 2-1) Table 2-1 depicts a column for soil background levels. However, the column is blank. If no background levels exist, then it should be deleted from the table.

5. (Table 2-1) Page 2-3 indicates that there were 30 sample stations. The frequency of detection on Table 2-1 identifies a total of 32. Explain the difference (It does not appear that the difference is due to duplicate samples).

6. (Table 2-5 and 2-7) Tables 2-5 and 2-7 should list the references for the various sources of information (e.g., RFDs, Slope Factors, etc.).

7. (Table 2-5 and 2-9) The slope factor (oral) for arsenic is shown on Table 2-9, but is listed as "NA" on Table 2-5. Also, the slope factor values on Table 2-9 are not consistent with the slope factor values on Table 2-5 due to inconsistencies in rounding.

8. (Table 2-9) The data for all of the areas of concern were combined. It may have been more practical to present the data separately for all the areas of concern in order to assess them individually (risks calculations were presented for each area of concern).

9. (Section 2.2) The discussion of the final list of the chemicals of concern (COC) needs some clarification. As stated on Page 2-27, the primary criteria for selecting COCs were toxicity and measured concentrations at the site. In some cases (e.g., Aroclors 1254 and 1260), the concentration-toxicity (CT) ranking scores were often ignored to dismiss certain compounds from inclusion in the risk calculations. For example, the CT score for Aroclors 1254 and 1260 contributed approximately 67% to the total CT value calculated for soil (as presented in Table 2-9). Neither Aroclor 1254 nor 1260 was included in the risk assessment due to low frequency of detection and no past history of disposal. There is, however, a transformer area to the north and east of Area 1202. This area may or may not have contributed to the presence of Aroclors in the area, but the risk assessment needs to better address this before dismissing these contaminants.

10. (Section 2.2) In some cases, compounds with the same frequency of detection were not assessed in the same manner. Consistency in the determination of the chemicals of concern should be followed, or provide an explanation of why these compounds were dismissed.

11. (Page 3-12) The first sentence of the first paragraph in not clear in its meaning ("future uses include improvements upon the arrangement of existing uses").

12. (Figure 3-4) This figure is illegible. However, this has little impact on the technical evaluation of the risk assessment.

13. (Page 3-24) The abbreviation "VOCs" does not normally include semi-volatiles.

14. (Table 3-4) Define "corrected worker".

15. (Page 3-26) Provide the rationale for limiting the exposure to on-site workers only. Indicate that on-base residents could not be exposed (if this is the case).

16. (Section 3.3.2.1) The last sentence of this section states "concentrations of analytes in the deep groundwater were estimated quantities, meaning there is limited confidence in the data value". Please expand this discussion so that the reader understands what is meant by limited confidence.

17. (Page 4-2) The term carcinogenic potency factor is no longer used and should be removed (as noted by the abbreviation CSF).

18. (Page 4-4) Define "WoE".

19. (Page 5-1) Clarify what is meant by an off-site receptor location. Page 5-5 suggests that off-site areas were not evaluated.

20. (Page 5-6) Explain how lead could be quantitatively assessed if there is no quantitative toxicity value for this constituent.

21. (Page 5-14) Explain why there are no groundwater health-based target concentration tables. Health-based target soil concentration tables were provided (Tables 5-2 through 5-4).

22. (Tables 5-2 through 5-4) Remove the footnote referencing water ingestion rates for children since this table presents soil information.

23. (Page 5-14) No surface water samples were collected. This should probably read "surface soil".

24. (Section 5.2) Clarify what is meant by "usually are not fully probable".

25. (Page 5-20) Worker exposure is stated as 240 days. Appendix B states 250 days. This needs to be clarified.

26. (Section 6) The information pertaining to action (clean up) levels is usually presented in the feasibility study and not in the risk assessment report. A summary of risks for each of the areas of concern should be discussed (as to their meaning) in this section.

27. (Section 6.2) This section does not seem appropriate considering that contaminants other than PAHs are present at HPIA.

Baker would be happy to discussed the comments and concerns of this evaluation letter report. Overall, there are no significant problems in the risk assessment. However, there are a number of clarifications that are needed, in addition to a significant amount of editing.

If you have any questions regarding our technical comments, please do not hesitate to contact me at (412) 269-2016, or Ms. Lynne T. Srinivasan at (412) 269-2010.

Very truly yours,

BAKER ENVIRONMENTAL, INC.

Raymond P. Wattras

Raymond P. Wattras
Project Manager

RPW/lmn

cc: Mr. Marc Lambert, P.E.
Mr. Steven Chambliss, P.E.