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NAS CECIL FIELD, FL
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LETTER REGARDING U S EPA REGION IV COMMENTS ON DRAFT GROUNDWATER REMEDIAL DESIGN REPORT FOR OPERABLE UNIT 8 (OU 8) SITE 3 NAS CECIL FIELD FL
8/19/1998
U S EPA REGION IV

NAS Cecil Field Administrative Record
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW
ATLANTA, GEORGIA 30303-8909

August 19, 1998

4WD-FFB

Mr. Mark Davidson
Dept. of Navy
SOUTHNAVFACENGCOM
Mail Code 1879
P.O. Box 190010
North Charleston, South Carolina 29419-9010

SUBJECT: NAS Cecil Field, Jacksonville, Florida

Dear Mr. Davidson:

The U.S. Environmental Protection Agency has completed the review of the **Site 3 Draft Groundwater Remedial Design Report, NAS Cecil Field**. For your convenience, comments are referenced to specific sections or pages of the report, as applicable.

1. The Figure 2-3 legend has some contaminant identifiers which do not correctly correspond to the adjacent contaminant.

2. At the bottom of page 3-1, the document references Chapter 62-770, FAC. This regulation concerns petroleum site cleanup criteria. While there is petroleum product-related contamination at Site 3, the ground-water quality data of report Figure 2-3 clearly show the majority of volatile organic compound contamination at this site is by chlorinated compounds. Thus, the reference to the state's petroleum cleanup criteria is meaningless. The discussion at the bottom of page 3-1 requires qualification, and, if there are applicable state criteria for air emissions of chlorinated solvents, these criteria also need to be referenced here.

3. The calculations of remedial cleanup time (discussion in report Section 4.3; modeling analysis summary in Appendix B) bases the projected remedial time period on an assumed receptor, or "compliance point" at Rowell Creek, yet the summary of the baseline risk assessment in Section 2.2 indicates the remedial action objective is to protect human health from exposure to surficial aquifer ground water in a potential future use exposure scenario. The Appendix B modeling provides insufficient documentation or site-specificity of various model input variables, including the contaminant half life which is a non-specific, literature value; the infiltration rate, which is specified without

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any documentation to support the value; dispersivity values; and the significance of model sublayers and a rationale for the number of sublayers in the model, among other factors. Please contact Mr. Bill O'Steen if there are any questions regarding this comment.

4. Section 5.3 needs to cite the EPA Region 4 Science and Ecosystem Support Division, Enforcement and Investigations Branch Standard Operating Procedures and Quality Assurance Manual. This publication is Internet-accessible at www.epa.gov/region4/sesd/sesdpub.html.

5. Section 5.5 needs to cite a reference, or references, for the evaluation criteria listed in this section of the report.

6. **Page 2-9, Section 2.4, Last Paragraph**. Temperature and pH are omitted from intrinsic remediation parameters, yet are included in Table 5.1 on Page 5.5. This discrepancy should be addressed.

7. **Page 2-11, Table 2.2**. The table needs to include the dimensions to the analysis and define the numbers in parentheses.

8. **Page 3-1, Section 3.1, 2nd Paragraph**. The text states that the monitor well screens are 26 to 29 feet below land surface. The Draft RD should discuss if yearly high and low water tables at the site will exceed the screened intervals and affect the groundwater sampling and analysis.

9. **Page 3-3, Figure 3-1**. The direction of groundwater flow appears to be significantly different from that shown on Figure 2-8 in Appendix B. Flow paths are very important when attempting to demonstrate that natural attenuation is occurring. This discrepancy should be addressed.

10. **Page 5-1, Section 5.2, Last Paragraph and Figure 5-1**. The Draft RD has not provided sufficient information on how monitor well screens are located with respect to the source or common flow lines. Seasonal and other groundwater level fluctuations should be considered in terms of the direction of groundwater flow in evaluating natural attenuation.

11. **Page 5-5, Table 5-1**. The text states that dissolved oxygen (DO) content below 1 mg/L indicates anaerobic conditions. However, a statement on Page 5-8 indicates that this value might be 0.5 mg/L. Still other places in the literature suggest that this figure might be as low as 0.25 mg/l before reductive dechlorination can take place. It is agreed that reductive dechlorination can occur under less reducing conditions when dichloroethylene is degrading to vinyl chloride than when perchloroethylene is degrading to trichloroethylene. Also, it is noted that oxygen is toxic to microorganisms that carry out reductive dechlorination. Thus, it is not the same to say that reducing conditions exist in the presence of oxygen nor that a negative oxidation/reduction potential (ORP) exists in

the presence of oxygen. It should be pointed out in the "Data Use" column of Table 5-1 that while fewer chlorinated compounds can be reduced even at positive ORPs, an ORP of -400 mV will be required to reduce the more highly chlorinated compounds.

12. **Page 5-8, 1st Paragraph**. The sampling frequency appears to be adequate with respect to those parameters selected to demonstrate natural attenuation and also to better define seasonal variations in the hydrogeology. The sampling frequency beyond the first year should be dictated by the data collected through that time. The number of samples required for evaluating natural attenuation are intrinsically a function of a preselected confidence error and the variance of the data. If the reduction of contaminant mass is to be determined by temporal trends (least squares analysis), for example, the statistical confidence is based on the variance of the data and the square root of the number of samples. The point is that the Draft RD should consider the sample frequency over a protracted period of time in order to obtain a statistically meaningful correlation between the reduction of contaminant mass and time.

13. A quality assurance/quality control (QA/QC) plan should be included with the Draft RD Work Plan or referenced. Statistical error is drawn from a number of events during an investigation of this nature. Errors can occur from location, design, construction and completion of monitoring wells; sampling; and analytical laboratories. To reduce all sources of error, a QA/QC plan should be made an integral and continuing part of the Draft RD.

If you have any questions concerning these comments please contact me at 404/562-8539.

Sincerely,

Deborah A. Vaughn-Wright

Deborah A. Vaughn-Wright
Remedial project Manager

cc: Mike Deliz, FDEP
Mark Speranza, TTNUS
David Porter, SOUTHDIV