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## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30335N00204.AR.000848  
NAS PENSACOLA  
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Commanding Officer  
Attn: Mr. Bill Hill - Code 1851  
Southern Division  
NAVFACENGCOM  
P.O. Box 190010  
North Charleston, South Carolina 29419-9010

Subj: Revised Draft Final Remedial Investigation Report for  
Operable Unit 10; NAS Pensacola, Florida  
EPA Site ID No.: FL 9170024567

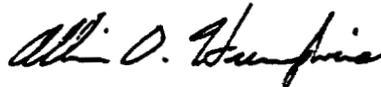
Dear Mr. Hill:

The Environmental Protection Agency (EPA) has completed its review of the revised Draft Final Remedial Investigation Report for Operable Unit 10, which was received in this office on October 17, 1994. Our comments are enclosed. Many of these comments were discussed at the Partnering Meeting held December 12-14, 1994 in Atlanta, Georgia. EPA has incorporated the decisions reached at this meeting into the enclosed comments where appropriate.

Please note that the Parties have been in informal dispute on this document since January 13, 1994. It is therefore imperative that the Parties resolve this dispute through submittal of an acceptable revision of this document as soon as possible.

please contact me at (404) 347-3016 if you have any questions or wish to discuss these issues further.

Sincerely Yours,



Allison D. Humphris  
Remedial Project Manager  
Department of Defense Remedial Section  
Federal Facilities Branch

Enclosure

cc: Ron Joyner, NAS, Pensacola  
Eric Nuzie, FDEP  
Henry Beiro, Ensaf/Allen & Hoshall  
Kevin Smith, EPA/ORC

**TECHNICAL REVIEW AND COMMENTS  
DRAFT FINAL RI REPORT: OU 10  
NAVAL AIR STATION (NAS) PENSACOLA  
PENSACOLA, FLORIDA**

**GENERAL COMMENTS**

1. The RI Report must **summarize the current site conditions** with respect to nature and extent of contamination, since it is these conditions which form the basis for the Baseline Risk Assessment and **subsequent Feasibility Study**. The present document must therefore be revised to include the **post-removal, confirmatory sampling results** for the abandoned wastewater treatment plant.

2. The validity of the groundwater reference data provided in this report is questionable. **As** currently presented, concentrations of **antimony, beryllium, cadmium, chromium, lead, mercury, nickel, and thallium** which exceed federal standards (MCLs or TUALs) would be excluded from COPC selection based on the traditional comparison with background or reference data. Based on recent discussions with the Navy, a resampling of reference wells using a Low-flow purging method yielded significantly decreased inorganic concentrations. The Parties have agreed that this most recent data set more accurately represents background conditions at the site. This most recent groundwater reference data set must therefore be used for background comparison throughout the OU 10 RI Report.

Monitoring wells must also be resampled using low-flow purging techniques in order to obtain **representative analytical results** for groundwater, particularly **inorganics**. This data need should be noted in the RI Report. EPA prefers that groundwater resampling be completed prior to finalization of the FS report. However, resampling may be delayed until the RD stage of the cleanup process.

3. The ecological risk assessment must be modified to include headings for the main components of an ecological risk assessment, including: (i) **Conceptual Model**, (ii) **Chemicals of Potential Concern (COPCs)**, (iii) **Exposure Assessment**, (iv) **Ecological Effects Assessment**, (v) **Risk Characterization** and (vi) **Uncertainty**. Following are some more specific comments regarding these individual components:

A. The "Conceptual Model" should include problem formulation. It should also present and discuss both contaminant migration pathways from the source areas and contaminant exposure pathways for the **ecological receptors**.

B. As agreed to at the December 12, 1994 Partnering Meeting, information on ecological effects will be presented as a separate section in the Ecological Risk Assessment. This section will

include the actual information obtained from literature sources, whenever feasible, in readily accessible format (e.g. summary tables, with complete copies of references provided in an appendix). If actual presentation of the literature is impractical and/or cumbersome, these sources will be referenced in the text.

C. Risk characterization must be based upon both exposure and ecological effects, As agreed to at the December 12, 1994 Partnering Meeting, a qualitative risk assessment of potential effects of contaminants on terrestrial receptors will be performed for OU 10.

4. The ecological risk assessment makes many statements and conclusions without providing supporting data or documentation. This practice is not acceptable and must be corrected. See, for example, specific comments 24, 25, 27, 28, 29, 31, 34, 36 and 37.

5. Please check to ensure that all discussions of the IWTP and the area north of the IWTP reference the appropriate figures from Section 5.0 showing the sampling locations for these areas.

6. For regional consistency the youth trespasser should be aged 7 to 16 with a weight of 45 kg rather than 7 to 18 with a weight of 43 kg. The present RI Report need not be revised to incorporate this information, but it should be used in future baseline risk assessments performed for NAS Pensacola.

7. The Navy's response to EPA comment 75 states that the remediation system will be oversized to induce drawdown in the area of 33615 and 33G20. Given the erratic nature of contaminant distribution in ground water, it is difficult to estimate the extent of ground water contamination north of these wells and therefore difficult to estimate the area that should be included in the capture zone. Care should be taken not to over design the remediation system because the potential exists for dewatering surrounding wetlands and/or causing saltwater intrusion. To ensure that the entire ground water plume is captured without adversely impacting system flow, additional monitoring wells should be installed to delineate the extent of contamination as discussed in Specific Comment #9.

#### SPECIFIC COMMENTS

1. Page 2-20, Paragraph 2:

If possible, please provide further description of the "episodic high contamination" which was detected in wells at OU 10.

2. Page 4-22, Potential Wetland Habitat:

If any of the "potential" wetlands currently identified at OU 10 are not confirmed as wetlands during Phase 1 of the RI for OU 41

(and therefore dropped from the OU 41 RI) it may be necessary to investigate these areas by revisiting OU 10.

3. Pages 4-30 through 4-42:

The references to Figures 4-8 and 4-9 on these pages appear to be reversed. Please make the necessary corrections.

4. Page 5-1, Paragraph 2:

The field effort performed by EPA in March 1994 should be included and described as "Phase III" of the OU 10 RI, since the data obtained during that field effort comprises an essential component of the RI.

5. Page 6-4, Section 6.2:

A better description (including figures) of these surface water drainage pathways is needed. See also Specific Comment #22.B.

6. Page 6-40, Bullets #8 & #9:

As stated in this paragraph and in the Navy's response to EPA comment 70, there may be several reasons for the significantly lower hydraulic conductivity values calculated in the deeper portion of the surficial aquifer (e.g. screen corrosion, lithologic changes, and/or aquifer matrix corrosion induced by biofouling and/or contamination). The Navy states that these types of uncertainties will be resolved upon completion of the long-term aquifer test. Plans for resolving these issues must therefore be included with the aquifer test plans. (e.g. Will borings be completed or wells installed in the area where the hydraulic conductivity is lower and cementation of the aquifer matrix is suspected? Will borings be continuously logged to determine if clay/silt content increases in the basal portion of the aquifer? How will the integrity of well screens be inspected?).

7. Pages 7-4 through 7-45, Section 7:

The figures illustrating the concentrations of chemicals in soils should include a description of soil sampling depth. In particular, indicate whether the sample is a surface (0-1' BGS) or subsurface soil sample.

8. Page 7-82:

There appears to be some missing text at the beginning of this page. Please check and revise as needed.

9. Pages 7-92 through 7-99, Interpretation and Conclusionsr

The RI Report concludes that the sources for contaminated ground water at wells 33615 (190 ppb PCE, 5 ppb TCE) and 33620 (1200 ppb 1,2 DCB, 670 ppb 1,4 DCB) are the ISDBs and the swale area. However, based on the following observations, the chlorinated aliphatic source for ground water is not apparent based on sampling results, and it is possible that other source areas exist at OU10:

- The ISDBs and the swale area may be the sources for the chlorinated aromatic compounds in 33G20, but chlorinated aliphatics were not detected in soils near the ISDBs or the swale area nor in shallow ground water.
- TCE was detected at 3 ppb in soil near the abandoned wastewater treatment plant (adjacent to 33G15).
- Chlorinated aliphatics were not detected in soil near well GM66 which contained 4600 ppb TCE.
- Chlorinated aliphatics occur in ground water sporadically as evidenced by concentrations detected in wells (4600 ppb TCE in GM66 and 190 ppb in 33G15, but nondetects between these wells),.

Because the potential exists for additional sources, it is important that the extent of ground water contamination be defined. Additional monitoring wells should be installed northwest of 33G15 and north of 33G20. These wells should be installed at the time the aquifer test is conducted.

10. Page 7-102, Section 7.6:

A. The surface soil results presented here appear out of context. These need to be integrated into the overall presentation of soil sampling results provided earlier in Section 7, since these results comprise a critical component of the soil data base for OU 10.

B. Please provide a figure showing the surface soil and ground water sampling locations.

11. Page 7-111, Table 7-21:

The missing column heading should apparently be "Cadmium." Please check and revise as needed.

12. Pages 10-1 through 10-2, Section 10.1:

Since this section is a general introduction to the **Baseline Risk Assessment**, it should also mention ecological receptors in the first paragraph, and then state that the ecological assessment is presented separately (Section 10.9).

13. Page 10-20, Table 10-6:

Clarify what the "Average Reference Concentration" represents. The footnote indicates that sample 01GS59 was not included in the calculation of the average reference concentration. The only other sample location included in the table is 01GS67.

14. Pages 10-23 through 10-25 and 10-38 through 10-39, Tables 10-7 and 10-14:

Essential nutrients (iron, calcium, magnesium, sodium and potassium) should not be included in the COPC list.

15. Pages 10-23 through 10-39, Tables 10-7 & 10-14:  
In accordance with the EPA "Supplemental Region IV Risk Assessment Guidance" (March 1991), the initial data summary tables should include the average of detected concentrations.

16. Page 10-58 through 10-59, Table 10-22:  
Please reformat this table to eliminate presentation of % the exposure point concentrations for 1,2-dichloroethene and dieldrin as "0".

17. Page 10-60, Section 10.3.4:  
Clarify which of the values presented are adjusted for the PAH TEF and which are not.

18. Page 10-61 through 10-89, Section 10.3.5:  
It is not necessary to present the calculation of CDI in the two stage process included in this section. Please present the equation in its entirety, as is done in the text, rather than as two separate equations, as is done in the associated figures.

19. Page 10-108, Section 10.5.1:  
Please correct the typographical error "USUSEPA".

20. Page 10-112 through 10-129, Tables 10-36 through 10-46:  
These tables should be reformatted to include one significant figure for each entry. All "0.0" and "0" entries should be replaced with an entry including one significant figure.

21. Page 10-141, Table:  
Please correct the format error in this table.

22. Pages 10-164 through 10-179, Section 10.9:  
A. For the selection of COPCs in the ecological risk assessment, tables similar to those prepared for the human health risk assessment (Section 10.2.4) must be included for each medium showing the chemicals detected, the frequency of detection, concentration range, and (for inorganics in soils) comparison to two times the mean background concentration. Since the IWTP (Industrial Wastewater Treatment Plant) and the area north of the IWTP are evaluated separately, separate sets of tables should be included for these two areas.

B. As discussed and agreed to during the December 12, 1994 Partnering Meeting, the ecological risk assessment should be revised to include a more complete preliminary ecological assessment of (i) the E-W Drainage Ditch and (ii) the fill/"wetland" area north of the swale area. Using existing data, this assessment should include such tasks as: (i) comparison of available data to appropriate standards and/or screening values, (ii) a more complete description of the potential sources and migration pathways impacting these areas, and (iii) justification and general plans for performing additional data collection efforts

during the RD stage of the cleanup process. Finally, the "wetland" status of wetland 80 (and all other wetlands identified in Figure 4-6) should be clarified as soon as possible, and preferably no later than the FS (see Specific Comment 12). Completion of these tasks will facilitate effective clarification and division of goals and objectives for OUs 10 and 41/42.

23. Page 10-167, Section 10.9:

Please combine the first and second paragraphs, since they are somewhat redundant.

24. Page 10-168, Paragraph 2:

This paragraph appears incomplete. Statements about potential effects from surface water, sediment, and ground water should also be provided.

25. Page 10-168, Paragraph 3:

A. The text states that [analytical] concentrations of metals in sediments were compared to FDEP regression equations, yet this comparison is not shown in the document. As agreed to in the December 12, 1994 Partnering Meeting, the FDEP regression equations will be included/documentated in the text. This comparison may prove helpful in determining whether the metals concentrations detected are attributable to naturally occurring or anthropogenic sources.

B. As agreed to in a January 1994 Partnering meeting, the sediment analytical data were to be compared to the EPA Region IV sediment screening values (SSVs) as an indication of the potential for adverse ecological effects. If the Navy desires to compare the "sediment values" (sediment concentrations or sediment screening values?) to the 1989 NOM National Status and Trends (NS&T) sediment values as well, the purpose of this comparison should be specified in the text, particularly since NOAA NS&T sediment values were incorporated in the development of the SSVs. The document must also be revised to show the NOM NS&T data which were used in the comparison. However, it is EPA's understanding that during the December 12, 1994 Partnering Meeting the Parties agreed to omit the comparison with the NOM NS&T data from the OU 10 RI Report. The Parties further agreed that comparisons with a subset of the NOAA NS&T data base and/or FDEP sediment results which are now becoming available may be included in future RI Reports for other OUs.

26. Page 10-169 through 10-170, Section 10.9.1:

A. Although Section 4 includes a detailed description of the habitats and biota in this area, a summary description (similar to the one provided in the first two paragraphs of Section 10.9.2 for the "ITWP Proper") should be included in this section. This section should also refer to the wetland/habitat map (Figure 4-6).

B. The text should include a brief description of the area north of the ITWP, including the dredge spoils area. Also, as agreed to during the December 12, 1994 Partnering Meeting, the ecological

risk assessment should be revised to include a qualitative assessment of the dredge spoil area at the northern end of the peninsula (e.g. compare contaminant concentrations to sediment screening values, discuss wetland characteristics, exposure potential, etc.). The text should also mention the source of these dredge spoils.

27. Page 10-169, Paragraph 1:

If ground water samples were collected from the area north of the IWTP, this paragraph should mention that an initial evaluation of ground water, with respect to potential ecological effects, is included in Section 10.9.3, page 10-178, for both the IWTP and the area north of the IWTP.

28. Page 10-169, Paragraph 2:

The tendency for pesticides to biomagnify along food chains should be mentioned. More information (e.g., the soil data summary tables, reference to figures showing pesticide distribution in soils, a statement about the potential for terrestrial exposure in relation to the "sporadic" spatial distribution) must be included to support the determination of no ecological risk.

29. Page 10-169, Paragraph 3:

A. The text should mention that the bioavailability of inorganics in soil is dependent upon their form.

B. The data comparisons for aluminum to metal ratios in site soils should be presented in a table to support the statement about fluctuating metals concentrations in relation to silt or clay content. Comparison to the background/reference soils data in selecting the COPCs should have addressed this issue.

30. Page 10-170, Paragraph 1:

Mention whether confirmatory surface soil samples were collected after soil removal and, if so, summarize the analytical data. See General Comment #1.

31. Page 10-170, Paragraph 4:

"...relatively higher soil organic material... and/or clay-silt matrices in this area were partially responsible for these higher concentrations". Quantitative and/or qualitative data (e.g., reference to lithological descriptions of the soil borings) must be provided to support this statement.

32. Page 10-171, Paragraph 2:

The Preliminary Remediation Goals established for NAS Pensacola were based upon the protection of human health. Please delete or modify the final sentence of this paragraph accordingly.

33. Pages 10-171 through 10-172, Drainage Ditch:

A. This section would be clearer if the surface water and sediment analytical results were discussed separately (as was done in the

November 1993 draft of this document).

B. Include a reference to support the **last** statement in paragraph 1 (e.g., personal communication with \_\_\_\_\_).

34. Page 10-172, Paragraph 1:

To support the statement **that** "no acute levels were exceeded-, the acute water quality criteria/standards should be included in Table 10-60.

35. Page 10-172, Paragraphs 2 and 3:

See Specific Comment #25.B.

36. Pages 10-178 through 10-179, Section 10.9.3:

A. Include a **brief** statement about ground water flow direction in relation to the potential for ground water **contaminant** discharge into the wetlands, Pensacola Bay, and Bayou Grande.

B. To support the statements in this section, include a table or tables comparing the ground water analytical concentrations to the surface water screening "value"

37. Page 10-178, Shallow Ground Water:

"Many of the **metals** occur **naturally** at concentrations exceeding both MCLs and Florida and USEPA water **quality standards**." A comparison to **background** or upgradient groundwater analytical data is needed to support this statement.

38. Page 11-8, Paragraph 3:

EPA concurs with the Navy's plans to conduct a long term constant rate aquifer test as soon as possible. If possible, the results of this test should be provided in the Draft Final FS Report for OU 10.

39. Pages 11-11 through 11-15, Section 11.2.2:

Revise this section as needed, **based** upon the preceding comments.