

N60508.AR.002472
NAS WHITING FIELD
5090.3a

LETTER REGARDING NAVY RESPONSES TO U S EPA REGION IV COMMENTS ON DRAFT
FINAL REMEDIAL INVESTIGATION REPORT FOR SITE 2 NORTHWEST OPEN DISPOSAL
AREA NAS WHITING FIELD FL
6/5/1998
HARDING LAWSON ASSOCIATES

Harding Lawson Associates



June 5, 1998

Commanding Officer
Attn: Linda Martin CODE 1859
Southern Division Naval Facilities Engineering Command
P. O. Box 190010
2155 Eagle Drive
North Charleston, SC 29419-9010

SUBJECT: Response to Comments for Draft Final Remedial Investigation Report Site 2, Northwest Open Disposal Area , Naval Air Station Whiting Field Milton, Florida.

Dear Linda:

Enclosed please find the Response to Comments for the Draft Final Remedial Investigation Report, Site 2 Northwest Open Disposal Area at Naval Air Station (NAS) Whiting Field in Milton, Florida. All comments have been addressed. We would like to discuss the Response to Comments at the next Partnering Team meeting (currently scheduled for June 23 and 24, 1998) and have requested an agenda item.

Additional copies of the Response to Comments have been forwarded to the NAS Whiting Field Partnering Team members below on behalf of Southern Division, Naval Facilities Engineering Command. If you have any questions or comments please contact me or Gerry Walker at (850) 656-1293.

Sincerely,

HARDING LAWSON ASSOCIATES

A handwritten signature in black ink, appearing to read "T. Hansen", written over a horizontal line.

Terry Hansen, P.G.
Project Manager

Enclosure

cc: Jim Holland, NAS Whiting Field PWD)
Pat Durbin, NAS Whiting Field PWD
Jim Cason, FDEP
Craig Benedikt, USEPA
Tom Conrad, Bechtel Environmental
Phillip Ottinger, Tetra Tech NUS

g:/users/whiting/sit2res.let



**Response to USEPA Review Comments for
Remedial Investigation Report for Site 2, Northwest Open Disposal Area
June, 1998**

GENERAL COMMENTS

In general, the RI report primarily focuses on whether State of Florida standards have been exceeded while neglecting federal standards. A comparison to federal standards should be accomplished and addressed in the text of the RI report at each occurrence where a similar comparison to State standards takes place.

Response: Agreed, the text will be amended to incorporate federal standards.

SPECIFIC COMMENTS

1. **Page iv, Bullet No. 8.** The Executive Summary presents information on the results of Central Tendency risk exposures meeting the Florida risk criteria of 1×10^{-6} . However, the USEPA Region IV does not accept Central Tendency evaluations except for information purposes for risk managers. Therefore, the results of the Central Tendency evaluations should not be considered in the RI Report when the results are used as decision criteria.

Response: The Central Tendency Risk Exposures will be deleted from the Executive Summary and Conclusions section of the report. However, the discussion of Central Tendency Risk Exposures in the body of the report will remain unchanged for FDEP's evaluation and general information purposes.

2. **Page v, Bullet No. 11.** The Executive Summary indicates that vanadium concentrations were within the range found in the eastern United States; however, a more valid comparison would be to relate vanadium concentrations to facility specific background concentrations.

Response: The Navy agrees that the use of the Shacklette (1984) soil survey data may not be appropriate due to differences in soil type. Consequently, background surface soil data collected from NAS Whiting Field will be used to qualitatively evaluate risks from vanadium.

3. **Page xii.** The abbreviation CPC should be changed to COPC to reflect the standard abbreviation for referring to chemicals of potential concern.

Response: The text of the document refers to Human Health Chemicals of Potential Concern (HHPCs) and Ecological Chemicals of Potential Concern (ECPC). These designations are used to be more specific as to the types of Chemicals of Potential Concern but also for brevity. No text revisions will be made.

4. **Page 1-4, Section 1.4, First Paragraph.** The RI report is organized into ten chapters, not nine as reported in the text.

Response: Agreed, corrections will be made to the text.

5. **Page 3-1, Section 3.1, Second Paragraph.** The reference to the "Phase I" soil sample (2-SB01) in the first sentence needs to be changed to "Phase II." The Phase I investigation was completed in 1992 and consisted of one groundwater sample.

Response: Agreed, corrections will be made to the text.

6. **Page 3-1, Section 3.1, Second Paragraph.** The text states that soil sample 2-SB01 "was biased based on the observation of the surface conditions at the site." There is no further discussion to explain this observation. Therefore, a more detailed explanation for selecting the sample location should be provide in order to support this statement.

Response: The sample was collected from the center of the site and was not located based on observed contamination on site. The sentence will be removed from the text.

7. **Page 5-8, Eighth Paragraph.** Reference is made to the "sand and gravel aquifer" but a geologic cross-section of the area has not been included. A proper assessment of the hydrogeology for the aquifer system should include a geologic cross-section and a topographic map of the area.

Response: Geologic cross sections and a topographic map of the facility area are provided in the NAS Whiting Field General Information Report (GIR; ABB-ES, 1998). The GIR was developed to stream line the remedial investigation and risk assessment review process. The information will not be repeated in the individual Remedial Investigation reports.

8. **Page 5-15, Section 5.3, Seventh Paragraph.** The text states that arsenic concentrations in surface soil samples exceed Federal and State industrial soil clean up goals. According to the data presented in Table 5.8, the arsenic concentrations also exceed the Federal and State residential soil cleanup goals. The RI Report needs to be corrected.

Response: Agreed, corrections will be made to the text.

9. **Page 5-27, Section 5.5.2, Forth Paragraph.** The reference to Table 5-11 needs to be changed to Table 5-12.

Response: Agreed, corrections will be made to the text.

10. **Page 5-32, Table 5-13.** The title for Table 5-13 should be changed to indicate that the analytical data evaluates only data collected from Phase IIB.

Response: Agreed, corrections will be made to the text.

11. **Page 5-31, Second Paragraph.** The reference to Table 5-7 needs to be changed to 5-13.

Response: Agreed, corrections will be made to the text.

12. **Page 5-31, Second Paragraph.** The text states that the 1993 Phase IIA groundwater samples are not considered to be representative of groundwater conditions due to sample turbidity and, therefore, are not presented in the RI Report. The only groundwater data evaluated is

a single round of samples collected from three monitor wells in 1996 during the Phase IIB investigation. Since only the 1996 Phase IIB groundwater data is evaluated, it may be insufficient to make a decision on the quality of the groundwater for Site 2. Typically, four quarters of groundwater samples are collected to evaluate the variability of groundwater conditions. To adequately assess the groundwater conditions at Site 2, additional groundwater samples are recommended to support the results of the 1996 Phase IIB groundwater data and to address potential variations in groundwater contaminant concentrations that may occur over time. The need for additional groundwater samples can be addressed during future sampling events for the groundwater operable unit.

Response: Comment noted. As indicated in the comment, groundwater facility wide has been identified as a separate site and will be independently investigated in the future.

13. **Page 5-34, Second Paragraph.** The RI Report compares groundwater contaminant concentrations at Site 2 with upgradient groundwater analytical data from Site 1, the Northwest Disposal Area. The upgradient groundwater data is not presented in the RI Report, but is referenced in an earlier report for Site 1. The RI Report should be a stand-alone document with all pertinent data provided. Therefore, the upgradient groundwater sample data from the Site 1 report should be included in the RI Report for comparison.

Response: Agreed, a table including analytes detected in the Site 1 groundwater samples will be included in the report.

14. **Page 5-34, Forth Paragraph.** The text states that groundwater sample 02G00101F is a filtered sample. To assist in the review of the analytical data, Table 5-12 (Page 5-29), presented earlier in the RI Report, should also identify groundwater sample data for 02G00101F as being obtained from a filtered sample.

Response: Agreed, the suggested revisions will be made to Table 5-12.

15. **Page 6-2, Section 6-2, First Paragraph.** In the first paragraph the text states that human health chemicals of potential concern (HHCCPs) were selected using methods described in the GIR. However, the second paragraph states HHCCPs were selected using USEPA Region IV criteria. This discrepancy should be corrected.

Response: The methods described in the GIR are from USEPA Region IV guidance. The first sentence in the second paragraph will be deleted for clarity.

16. **Page 9-1, Section 9.1.** The text should state that risk was within EPA's range of 1×10^{-4} to 1×10^{-6} as well as FDEP's target level of 1×10^{-6} .

Response: Agreed, the suggested revisions will be made to the text.

17. **Page 9-2, First Bullet.** The reference to Central Tendency should be removed. See specific Comment No. 1.

Response: The suggested correction to the text will be made. See response to specific comment No. 1.

The following comments were generated during the risk review of the Site 2 RI Report:

GENERAL COMMENTS

1. **In general, the ERA conclusions are consistent with what would be anticipated based on the nature and extent of contamination presented in the ERA. However, the ERA needs to be strengthened in order to sufficiently justify the recommendation for no further action. Specific items for revision are discussed in the specific comments.**

Response: Comment noted. The language of the ERA will be strengthened per the revisions discussed in the specific comments below.

SPECIFIC COMMENTS

1. **Figure 6-1, Page 6-11. This figure presents the complete exposure pathways for human receptors at Site 2. Surface soil and subsurface soil are not distinguished from each other. The receptors identified in the figure are not assessed for exposure to both subsurface and surface soil in this RI Report. To distinguish which receptors are assessed for which media, subsurface and surface soil should be shown separately on the diagram.**

Response: Figure 6-1 will be revised to distinguish between surface soil and subsurface soil receptors.

2. **Section 6.3.4, Page 6-14. This section discusses the derivation of exposure point concentrations. The methodology behind the derivation of exposure point concentrations is not provided in this section, or elsewhere in the RI Report. Instead, the General Information Report (GIR) is provided as a reference for this information. The RI Report should be a stand-alone document. Therefore, the methodology behind the derivation of exposure point concentrations should be briefly summarized in this section.**

Response: The General Information Report (ABB-ES, 1998) was developed to streamline the risk assessment process. The exposure point concentrations will not be presented in the RI. No text revisions will be made.

3. **Section 6.4, Page 6-14. This section discusses the toxicity assessment. The methodology behind the toxicity assessment is not provided in this section, or elsewhere in the RI Report. Instead, the GIR is provided as a reference for this information. The RI Report should be a stand-alone document. Therefore, the methodology behind the toxicity assessment should be summarized in this section.**

Response: The General Information Report (ABB-ES, 1997) was developed to streamline the risk assessment process. The toxicity assessment will not be presented in the RI. No text revisions will be made.

4. **Section 6-4, Page 6-17. The text states, "Appendix C to this report contains brief toxicity summaries for HHCPCs (human health contaminants of potential concern) identified in surface soil, subsurface soil, and groundwater." However, no HHCPCs were identified in subsurface soils. The text should be amended accordingly. Secondly, the toxicity summaries provided in Appendix C do not include the metal thallium, which was identified**

as a HHCP in groundwater. Thallium is one of the more toxic metals, and toxicity information should be provided in the Appendix C toxicity summaries.

Response: The text will be revised to state that "Appendix C to this report contain brief toxicity summaries for HHCPs (human health contaminants of potential concern) identified in surface soil and groundwater". In addition, the toxicity summaries will be revised to include thallium.

5. **Figure 6-2, Page 6-22.** The figure presents a graphical representation of the current land use carcinogenic risks for adult and child residents. However, the current residential land use scenario was not evaluated as part of the human health risk assessment. The values represented in the graph do not appear to relate to the future residential scenario risk values. Therefore, it appears that the figure may have been inadvertently carried over from another investigation, or the figure was erroneously labeled. The figure should be revised to include correct information, or the figure should be deleted if it was included in error.

Response: Figure 6-2 will be revised to present a graphical representation of current land use carcinogenic risk for adult and adolescent trespassers.

6. **Figure 7-1, Page 7-4.** The contaminant pathway model inappropriately references Site 18 on the figure and in one of the footnotes. The contaminant pathway model figure should specify Site 2.

Response: The contaminant pathway model in Figure 7-1 will be revised to specify Site 2 rather than Site 18.

7. **Table 7-1, Page 7-6.** Table 7-1 presents very specific assessment endpoints. Several problems exist with the assessment endpoints as stated in this table. First, the terrestrial plant and invertebrate assessment endpoints presented in Table 7-1 are not adequately measured by the measurement endpoints also presented in Table 7-1. In order to assess a "25% decline in biomass of forage materials," one would need to do a series of quantitative vegetative surveys. No quantitative vegetative surveys were performed as part of the ERA. The invertebrate assessment endpoint, a "25% decline in abundance of earthworms," is difficult to measure, and would require field measurements of earthworm populations. However, no attempt to quantify earthworm abundance was made in the ERA. Secondly, the assessment endpoints presented in Table 7-1 are too narrow to fully address the testable hypotheses provided on page 7-5 in Section 7.2.3. The ERA assessment presented in this RI is consistent with the testable hypotheses presented on page 7-5. Therefore, to improve the correspondence between the measurement endpoints and the assessment endpoints and to address the testable hypotheses presented on page 7-5, the terrestrial plant and invertebrate assessment endpoints should be revised to clearly reflect these hypotheses. At a minimum, the "25% decline" needs to be deleted from these assessment endpoints.

The ERA would be strengthened if the wildlife assessment endpoint, presented in Table 7-1, of "survival and maintenance of wildlife populations" was revised to specifically correspond to the two measurement endpoints for wildlife applied in this ERA. If the assessment endpoint was divided into the following two example assessment endpoints there would be better correlation with the testable hypotheses and the method of evaluation used in this ERA: 1) protection of small mammals and birds that forage on soil invertebrates, 2) protection of predators that prey on small mammals. The wildlife assessment endpoint should be revised to better reflect the testable hypotheses.

Response: The terrestrial plant and invertebrate assessment endpoints listed in Table 7-1 will be revised to clearly reflect the hypotheses provided on page 7-5 in Section 7.2.3.

The terrestrial wildlife assessment endpoint in Table 7-1 will be revised into the following two example assessment endpoints to better correlate the testable hypotheses with the method of evaluation used in the ERA: 1) protection of small mammals and birds that forage on soil invertebrates and terrestrial plants; and 2) protection of top predators that prey on small mammals and birds.

8. **Table 7-1, Page 7-6.** The examples of measurement endpoints for the wildlife species receptors provided in this table are based on LD50 values. The Toxicity Reference Values (TRVs) used in this ERA are based on NOAELs. Therefore, it would be more appropriate to provide examples of NOAEL studies as opposed to LD50 studies in the wildlife measurement endpoint.

Response: The measurement endpoint for terrestrial wildlife will be revised as follows: "Oral chemical doses (mg/kg-BW/day) based on measured adverse effects on growth, reproduction, or survival (i.e., NOAEL, LOAEL, or LD₅₀ studies) of mammalian and avian laboratory test populations."

9. **Table 7-3, Page 7-13.** This Table provides the equations used to calculate potential chemical exposures for wildlife species. The variable entitled "secondary prey item concentration" needs to be better defined. The equation to derive secondary prey item concentrations is not standard. It is unclear whether the "tissue concentrations of prey items" used in the equation to derive the "secondary prey item concentration" is meant to be the "primary prey item concentration" or another concentration. This point should be clarified

Response: The "tissue concentrations of prey items" term used in the equation to derive the "secondary prey item concentration" will be revised to "tissue concentrations of primary prey items."

10. **Section 9.1, Page 9-2, third bullet.** The conclusion that "symptoms consistent with vanadium toxicity were not apparent in plants at the site" is not supported in the ERA. A discussion of phytotoxic symptoms related to vanadium toxicity is not provided in the ERA. At a minimum a summary of field observations related to screening for vegetative stress and a summary of vanadium phytotoxic effects are needed to support the conclusion as stated.

Response: The conclusion will be revised as follows: "The maximum EPC for vanadium exceeded its phytotoxicity benchmark; however, vanadium concentrations detected in surface soil were completely within the range found in background surface soil collected from NAS Whiting Field. Additionally, stressed vegetation was not apparent at the site; therefore, risks to terrestrial plants are not predicted."

11. **Section 9.1, Page 9-2, fourth bullet.** This bullet discusses the interaction of four COPCs in sediment. The site characterization in Section 7.1 states that there are no areas of standing water or hydrophytic vegetation at Site 2. The ERA does not evaluate aquatic ecological receptors nor does it provide data on contaminants detected in sediment or surface waters. Therefore, it is unclear why the conclusions in Section 9.1 state that the COPCs listed "... adsorb readily to sediments..." and that "sediment transport is not likely to occur from Site 2 due to site topography." The statements relating to the interaction of COPCs in sediment, a medium absent from this site, should be deleted.

Response: The fourth bullet will be deleted as requested.

**Florida Department of Environmental Protection - Review Comments for
Remedial Investigation Report for Site 2, Northwest Open Disposal Area
June 1998**

SPECIFIC COMMENTS

1. **Based on the data presented in the report, significant risks are predicted for future residents, trespassers, and occupational workers due to arsenic and beryllium in surface soils. The Navy has recently evaluated surface soil at Site 1, which is similar to the conditions at Site 2, and has proposed an elevated level of soil screening for arsenic and land use restriction which excludes residential use. These actions have direct bearing on Site 2 and this action should be evaluated for possible application at Site 2.**

Response: The site report will be rewritten to reflect the FDEP approved site-specific Soil Cleanup Goal for arsenic at Covered Landfill sites, NAS Whiting Field. The approach will be similar to the Site 1 report.

2. **I suggest that the recommendations in Section 9.2 be withheld until the excess cancer risks (primarily Arsenic in surface soils) are adequately addressed, either through remediation or by application of an acceptable alternative SCG, as previously conducted at Site 1. It may be that a land use restriction is the most suitable recommendation if cleanup to residential SCGs is not pursued.**

Response: The comment is noted. Revisions to the recommendations section that reflect the decisions at Site 1 will be incorporated into the final edition of the report.

**SOUTHDIV - Review Comments for
Remedial Investigation Report for Site 2, Northwest Open Disposal Area
June 1998**

1. **Comment:** The document should be written in a more positive and conclusive tone not in a non-conclusive tone. In most case in the executive summary, chapters 6, 7, & 9 phrases like “thought to be, easily, primarily ect,” should be taken out. Another example of this is the whole paragraph on 8-8 stating “It is important.....an actual transport route. Also do a word search for “that’ and “which” and delete them from your sentences.

Response: The document is written in a tone that expresses the inconclusive nature of any and all Remedial Investigations. Phrases such as “thought to be, easily, primarily ect,” express the fact that although the site conditions indicated are believed to be accurate other conditions may be present and contributing to interpretations. Without unlimited funds and time all conditions can not be fully explored nor should be explored.

The referenced paragraph on page 8-8 (actual page 8-9) will be deleted. ABB-ES editors will perform a word search for the occurrence of “that” and “which” and evaluate the appropriate usage of each occurrence. If the appropriateness of the occurrence is questionable, the word will be deleted and the sentence will be reworded.

2. **Comment:** Change section 7.1: Site Characterization to reflect the information in the Nature Conservancy Report 1997.

Response: Section 7.1 will be revised as follows: “Observations made during an ecological survey of NAS Whiting Field indicate that no State or federally listed rare, threatened, or endangered species or species of concern are known to inhabit Site 2 (Nature Conservancy, 1997).”

3. **Comment:** The 1993 groundwater data should not be used in any data set including risk assessment. In some places in the document you say the data is not used and in other places you say it is used.

Response: Agreed. The 1993 groundwater data was not used in the risk assessment and any references to such in the text will be deleted.