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U S NAVY RESPONSE TO COMMENTS ON DRAFT FEASIBILITY STUDY OPERABLE UNIT 2 (OU2) SITES 5 AND 17 WITH TRANSMITTAL NAS CECIL FIELD FL
4/21/1995
ABB ENVIRONMENTAL

4.2.3.002

ABB

April 21, 1995

Mr. Bart Reedy
Remedial Project Manager
Federal Facilities Section
Waste Management Division
USEPA Region IV
245 Courtland Street, N.E.
Atlanta, Georgia 30365

Subject: Responses to Comments on Draft Feasibility Study, Operable Unit (OU) 2, Sites 5 and 17, Naval Air Station Cecil Field, Florida

Dear Mr. Reedy,

On behalf of Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), ABB Environmental Services, Inc. is pleased to forward five copies of Responses to Comments on the Draft Feasibility Study for OU 2, Sites 5 and 17, NAS Cecil Field, Florida.

These Responses to Comments will be reviewed during the April 19, 1995 meeting at U.S. Environmental Protection Agency, Region IV, Headquarters in Atlanta, Georgia.

Sincerely,

ABB ENVIRONMENTAL SERVICES, INC.

Rao Angara
NAS Cecil Field
Installation Manager

cf: Mr. Eric Nuzie, Florida Department of Environmental Protection (4 copies)
Mr. John Dingwall, NAS Cecil Field (2 copies)
Mr. Alan Shoultz, SOUTHNAVFACENGCOM (2 copies)
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Response to Comments
Feasibility Study
Operable Unit 2
Naval Air Station Cecil Field
Jacksonville, Florida

Florida Department of Environmental Protection Comments

Michael J. Deliz, P.G.

1-1 **Page 1-6, 1st sentence. It appears from this sentence that free product is present at both Site 5 and Site 17.**

RESPONSE: Free product has been observed at Site 5 only. The sentence will be modified to clarify this.

1-2 **Page 1-7, last paragraph. The Florida following Jacksonville is redundant. Please Omit.**

RESPONSE: The Florida will be removed.

1-3 **Page 1-9, 1st paragraph. The Florida following Jacksonville and Villages of Argyle is redundant. Please Omit.**

RESPONSE: The Florida will be removed.

1-4 **Page 1-10, 3rd paragraph. It is stated that remedial response activities are currently underway at Site 4. What are these activities?**

RESPONSE: The text will be revised to indicate remedial response activities currently underway at Site 4 are investigatory. The site was included in a workplan prepared to address PSC sites for which a decision has not been made that no further action was needed or that a Remedial Investigation is necessary. The workplan, submitted March 1995 to USEPA, FDEP, and Navy, includes installation of several monitoring wells and collection of surface and subsurface soil and groundwater samples for target analyte list (TAL) and target compound list (TCL) chemical analyses.

1-5 **Page 1-10, last paragraph. It is stated that several parcels have been identified as having insufficient information to determine their status. I question the use of the word "several" when the number of parcels exceed 200 in number.**

RESPONSE: "several" will be changed to "over 200."

1-6 **Page 1-11, 1st sentence. change "...sites currently under consideration ..." to "...sites currently under evaluation...".**

RESPONSE: Change will be made as suggested.

1-7 **Page 1-12, Figure 1-3. There are too many layers on this CAD Figure and it is hard to interpret.**

RESPONSE: The figure will be modified to have a larger contour interval. Only the 74, 70, 66, and 62-foot contours will be shown.

1-8 **Page 1-13, 2nd paragraph. As stated in my Remedial Investigation (RI) comments for OU-2 dated December 21, 1994, the data gap in aerial photos from 1960 through 1969 should be further investigated. There probably are aerial photos available from this period that was not investigated.**

RESPONSE: A search for aerial photographs was conducted using the following sources:

National Archives
USDA Soil Conservation Service
Florida Department of Transportation
City of Jacksonville-Duval County Property Appraiser
NAS Cecil Field records.

Photographs from the following years are available in the 1960's: 1960, 1968, and 1969. The 1968 aerial is available as a blueline.

1-9 **Page 2-9, Figure 2-4. Why did the scale in this figure, 1"=120' change from Figure 2-2, which had a scale of 1"=100'? For comparison, scale on figures should remain constant throughout a given report, if logistically possible.**

RESPONSE: The scale of Figure 2-4 will be changed to 1 inch equals 100 feet.

1-10 **Page 2-12, Figure 2-6. See comment 9.**

RESPONSE: The scale of Figure 2-6 will be changed to 1 inch equals 100 feet.

1-11 **Page 2-14, Figure 2-8. See comment 9. In addition, a figure similar to this should have been included in the RI for OU-2.**

RESPONSE: The scale of Figure 2-8 will be changed to 1 inch equals 100 feet. See response to comment 1-12.

1-12 **Page 2-15, Figure 2-9. A figure similar to this should have been included in the RI for OU-2.**

RESPONSE: Information presented in this figure is derived from the RI and was prepared specifically for the FS. A similar figure was not included in the RI because the individual chemical distribution figures were believed to present the information in a simple and clean manner.

1-13 **Page 2-17, Figure 2-10. The surface water and sediment sample collected south of Site 5 is not numbered. Please correct.**

RESPONSE: The sample identifier will be added to the figure.

1-14 **Page 2-19, 6th bullet. Was not the estimated volume of contaminated groundwater calculated during the RI for Site 17? If so, it should be included in this discussion, if not it should be calculated.**

RESPONSE: The volume was estimated in the RI and will be added to the section. In general, Subsections 2.2.7 and 2.2.8 will be updated to be more consistent with the RI.

1-15 **Page 5-18, Table 5-5. The Florida Groundwater Concentrations issued in June 1994 should be included in this Table. The proposed Target Cleanup Levels vary significantly from those published values for Acetone, 4-Methylphenol, Naphthalene, 2,4-Dimethylphenol, 2-Methylphenol, Phenol, and Vanadium. The Florida Primary, Secondary and minimum criteria or "free from" water Quality Standards (Chapters 62-520 and 62-550, Florida Administrative Code, [F.A.C.]) are ARARs because they are promulgated rules. The updated 1994 Florida Ground Water Guidance Concentrations booklet contains the Maximum Concentration Limits (MCLs) which are numerical interpretations by Departmental toxicologists of the promulgated narrative minimum criteria standard. The Primary and Secondary Drinking Water Standards are established in Chapter 62-550, F.A.C., and promulgated as groundwater standards in Chapter 62-520, F.A.C. For those constituents in the booklet that do not have Primary or Secondary Drinking Water Standards, the Department considers them minimum criteria and trigger/screening values for assessment purposes. Furthermore, the Department would consider the cleanup levels unless alternate ones are approved by the Department. Therefore, many of the proposed Target Cleanup Levels are unacceptable.**

RESPONSE: The table will be revised to include the values issued in June 1994. Target cleanup levels will be modified accordingly.

1-16 **Page 6-19, Table 6-6. It is interesting to note that one of the disadvantages listed for the effectiveness of Onsite Biological Treatment for sediment is that the treatment may not bring all contamination levels down to action levels. However, biological treatment was the selected alternative for the surface and subsurface soil, which had much greater concentrations of contamination.**

RESPONSE: As expressed by the State in comments on previous reports, there is a possibility that action levels will not be met by biological treatment. Consequently, this disadvantage was added. The Navy does not expect this circumstance to occur for the IRA soil treatment nor does it expect it to occur for sediment treatment. Therefore, this technology was selected for retention in the OU 2 FS despite the potential disadvantage for the IRA.

1-17 **Page 6-27, Table 6-14. This treatment alternative may have been prematurely eliminated, especially since this was a proposed method that was seriously considered**

when we were planning to dewater Site 17, in order to conduct the planned soil excavation.

RESPONSE: Use of the FOTW as a long-term discharge option presents a different consideration than the short-term discharge required for dewatering. With the base scheduled for closure within the next 2-4 years the long-term operational status of the FOTW is unknown. However, the primary reason the Navy eliminated the FOTW discharge option was due to the cost of installing a pipe line to the FOTW. Because of the remote location of these two sites, the Navy believes that an onsite recharge gallery is currently the preferred discharge option. Table 6-14 will be updated to reflect this. Also, with the base closing the long term operational status of the WWTP is unknown.

1-18 **Page 7-10, paragraph below TCLP table, last sentence. Add the letter p to "...ppm; however...".**

RESPONSE: Change will be made as suggested.

1-19 **Page 7-23, Alternative GW-3 Air Sparging. Will this alternative work efficiently with a shallower groundwater table? It is stated that groundwater elevations fluctuate from approximately 8 feet below land surface (bls) to 2 feet bls, however as recently as a month ago, groundwater elevations at Site 17 were measured at 6 inches bls.**

RESPONSE: Higher groundwater elevations would not affect the injection of air into the groundwater; however, it would affect the ability to collect vapors released from the groundwater as air bubbles rise to the surface. Based on the recent information showing higher groundwater, this alternative will be modified to include construction of a cap above the site for collection of vapors. The vapor collection system would then only be affected by flood conditions.

Greg Brown, P.E.

2-A **It has not been resolved if poor monitoring well installations, poor groundwater sampling techniques, or other systematic errors are responsible for the observed non filtered concentrations of inorganic contaminants.**

RESPONSE: Inorganics data from unfiltered samples is interpreted as not being representative of true groundwater conditions. As part of the groundwater alternatives, additional groundwater samples will be included using low-flow sampling methods to minimize turbidity and verify the interpretation that filter groundwater data from the RI are representative of true groundwater conditions. The text will be modified to clarify this. If samples collected as part of the selected groundwater alternative do not verify this interpretation, the Navy understands that it may be necessary to reevaluate the selection of an alternative for groundwater remediation.

2-B **The FS provides insufficient analysis to support technology and alternatives selection relative to site and contaminant characteristics.**

RESPONSE: Site and contaminant characteristics data will be incorporated into the FS and presented in a clear and logical manner. The following data will be added: vertical gradients, subsurface cross-section locations, general soil and groundwater characteristics, and volumes of contaminated media.

2-1 **Executive Summary.**

Summarize contaminants of concern and give volume estimates for the affected media.

RESPONSE: Contaminants of concern and volume estimates of affected media will be included in the Executive Summary.

RAOs are too generic. Please request the Navy to specify the media, contaminants, exposure pathways, and specific goals.

RESPONSE: RAOs will be reevaluated to include media, contaminants, exposure pathways, and specific goals. Actual numerical values will continue to be presented after the development of RAOs in the target cleanup level section.

The proposed revised RAOs are:

RAO 1: Protect human health from ingestion of groundwater that contains concentrations of VOCs, SVOCs, pesticides, PCBs, and inorganics above drinking water based ARARs or risk assessment RGOs.

RAO 2: Protect ecological receptors from exposure to sediments that contain concentrations of PCBs above guidance concentrations and TRPH that are demonstrated to pose a toxic effect at the site.

2-2 **General/Chapters 1, 2, & 3. The FS attempts to summarize the RI and BRA in the first three chapters. Although the intent is commendable, the realization is lacking. Many unanswered questions were raised during my review of these chapters that required reviewing the RI and BRA directly.**

Since I had to refer back to the source documents to answer the questions raised in review of FS Chapters 1, 2, and 3, I recommend the following strategy to the Navy for future FS's:

Follow the guidance FS outline, Table 6-5, in EPA's "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA". This outline puts background information from the RI into a single succinct chapter and reduces repetitive, reiterative, and repeating redundancies.

Summarize contaminant and site-specific information that supports the FS analysis and leave collateral information in the source documents. Too much information that does not directly support the FS's analysis and conclusions can create questions not relevant to remedial alternatives analysis.

Report RI and BRA facts, findings, and conclusions without repeating their analyses.

It is much more difficult to provide a good, complete summary than it is to cut and paste from source documents developed for slightly different purposes. A good RI/BRA summary would show a complete understanding of the relevant facts supporting the FS and present them in a coherent manner. The result would be a document that would weather regulatory review and the scrutiny of the public. This could be very important at BRAC bases where transfers of real property may occur.

RESPONSE: Chapters 1.0, and 2.0 will be revised to reduce redundancy and to limit the RI information provided to that which is used in the FS process. In Chapter 1.0 historical information about the two sites will be condensed to the extent possible. In Chapter 2.0, information about the two sites will be presented quantitatively within a framework of our conceptual understanding of site conditions including hydrogeology, type of contamination and its distribution, and contaminant transport processes. Based on comment 2-20 Chapter 3.0 will not be revised.

2-3 **Chapter 1. "development, screening, and evaluation of potential remedial alternatives..." is repeated at least four times in this section adding no value to the narrative. This is just one example of unnecessary redundancy discussed above.**

RESPONSE: As described above in response to Comment 2-2, this redundancy will be eliminated.

2-4 **Page 1-3, paragraph 1. Report the status of the RI/BRA as of the draft FS writing. If they are not final and approved, then the FS reader should be aware of that.**

RESPONSE: The draft FS report is prepared in the context of a final report. It is assumed that the related RI and BRA will be available as final reports. In the future, the transmittal letter for the draft FS will clearly indicate the draft and approval status of the RI and BRA, as well as the FS.

2-5 **Page 1-3, Section 1.2. More boiler-plate redundancy. Paragraph 2 on page 1-1 describes the FS standards ostensibly followed by the Navy and is sufficient. If a description of the FS process is believed to be needed for the general public, place it in an appendix or issue a community relations fact sheet.**

RESPONSE: While redundancies will be eliminated, the document is written for the general public and the information provided in the text is considered important for this audience.

2-6 **Page 1-7. Suggest dropping narrative on adjacent land use and just show on site location map.**

RESPONSE: The narrative will be edited to focus on the FS; however, to accurately show land use around the base divided among forestry, agriculture, ranching, and residence would require evaluation of current aerial photographs and potentially site visits. Given the location and nature of the sites discussed in this report, that level of detail is not required. To only include those communities and details mentioned in the text would convey a false impression of the accuracy of the site location map with respect to adjacent land use.

2-7 **Page 1-10, paragraph 3. What happened to sites 6, 9, 12, 18, and 19? (These sites are probably not relevant to the FS for OU 2, but begs the question).**

RESPONSE: Sites 6, 9, 12, 18, and 19 are to be evaluated based on a preliminary sampling and analysis program to be conducted in 1995. A decision will then be made for each site as to whether no further action is needed or if an RI/FS is necessary. This information will be provided in the revised Chapter 1.0.

2-8 **Page 1-11, paragraph 2. Why was Site 3 made OU 8? (Again, it is probably not relevant to the FS for OU 2, but begs the question).**

RESPONSE: Based on the information collected at each of the three sites initially grouped as OU 2, sufficient information was available on Sites 5 and 17 to proceed with the BRA and FS. However, additional information was needed at Site 3 to describe the extent of contamination. To avoid unnecessary delay of remedial activities at Sites 5 and 17 and to proceed with additional site investigative activities at Site 3, the USEPA, FDEP, and Navy placed Site 3 into a separate OU. This information will be presented in the revised Chapter 1.0.

2-9 **Section 2.0. State briefly DQO levels achieved for data and any significant validation issues, if any, that may affect the credibility of the reported data.**

Table 2-1 for previous investigative findings is very good and illustrates the type of summary information recommended in item 2 above.

RESPONSE: A discussion of DQO levels achieved and significant validation issues will be added.

2-10 **Page 2-5, Section 2.2.1. Any vertical gradients, if they exist or not, were not reported. This would be a relevant site characteristic to consider during alternatives analysis.**

RESPONSE: A discussion of vertical gradients will be added to Chapter 2.0.

2-11 **Figure 2-1. The cross-section is not identified on any Site 17 site map in the FS. In addition, no deep wells are shown on figure 2-3 so that it is impossible to see where the cross section was made. Is this cross section typical of Site 5 too? If not, where**

is Site 5's typical cross section. Soil structure and stratigraphy are relevant site characteristics that should be summarized in an FS to support the alternatives analysis.

RESPONSE: Figures and discussion of soil structure and stratigraphy will be modified to show cross sections for each site and the plan view location of the cross sections.

2-12 **The stream is identified as a groundwater discharge point, so that one could assume that the stream surface reflected groundwater elevation at that point, assuming dry weather flow. Were the contours passing the stream gauged from surface water elevations or are they guesses? It would be easy to shoot a few water surface elevations at the same time monitoring wells are gauged to provide additional evidence of groundwater discharge to surface water, at least at the time of measurement. Seasonal variations should also be discussed to the extent possible. These are relevant site characteristics that should be summarized in an FS to support the alternatives analysis.**

RESPONSE: The text will be modified to indicate that surface water elevations were not collected or used in the depiction of the water table surface. The text will also include a discussion of seasonal effects based on the water table measurements collected over approximately 1 year. In the absence of surface water elevations, streambed elevations obtained at the surface water, sediment, and biological sampling locations were used in developing water table elevation contours.

2-13 **Page 2-11, Section 2.2.2. What are the volumes of affected surface soil? What are the characteristics of the soil that may affect remedial alternatives selection?**

RESPONSE: General soil characteristics and the volume of affected surface soil will be added to Section 2.2.2.

2-14 **Page 2-11, Section 2.2.3. What are the volumes of affected subsurface soil? What are the characteristics of the soil that may affect remedial alternatives selection?**

RESPONSE: General soil characteristics and the volume of affected subsurface soil will be added to Section 2.2.3.

2-15 **Page 2-11, Section 2.2.4. What are the volumes of affected groundwater? What are the characteristics of the groundwater that may affect remedial alternatives selection?**

RESPONSE: General groundwater characteristics and the volume of affected groundwater will be added to Section 2.2.3.

2-16 **Figure 2-8, Site 5. No monitoring wells are shown in the figure so it is impossible to assess the postulated plume horizontal extent relative to the monitoring well network. The scales between Figures 2-2 and 2-8 are different making manual transposition of monitoring well locations difficult.**

RESPONSE: Monitoring well locations will be added to Figure 2-8. Scales will be adjusted to be consistent at 1 inch equals 100 feet.

2-17 **Figure 2-9, Site 17. See comment 16. Scales are OK.**

RESPONSE: Monitoring well locations will be added to Figure 2-9.

2-18 **Page 2-19, Section 2.2.8. An achilles heel of this document is the "inorganic contamination in groundwater" question. The remedial alternatives for groundwater assumed that inorganic chemicals were not contaminants of concern. If the measured inorganic chemicals in ground-water are due to poor monitoring well construction or sampling techniques and are not representative of ground-water quality, the Navy should address this data gap soon and resolve it. Otherwise, the RI is incomplete and the FS will not be "approvable".**

RESPONSE: See response to comment 2-A.

2-19 **Page 2-20, 2nd bullet. Is there a new site at Site 17? "Because contaminant transport migration speeds are demonstrated to be too slow for these contaminants to have reached the wetland, the contaminants are interpreted to be from sources other than the disposal pit." Is the OU 2 FS addressing this new source? It's not explicit from the narrative. Again, this may be a "cut and paste" disconnect between the RI and the FS. If the Navy focused on the germane data needed to support the FS, irrelevant questions could be minimized.**

RESPONSE: The conclusions, data limitations, and recommendations from the RI will be summarized to present the information relevant to the FS.

2-20 **Section 3.0. This section, in general, is a good example of a succinct summary suggested in comment 2. Something similar for the RI would be nice, at least in future FS's.**

One question, however: Were the groundwater risks for inorganic chemicals calculated on filtered and/or unfiltered samples?

RESPONSE: Groundwater risks presented in the FS were calculated using unfiltered groundwater. This will be clearly stated in the FS. Groundwater risks based on filtered chemical analysis results were also calculated in the BRA for discussion, although unfiltered samples are the accepted values according to guidance.

2-21 **Section 5.1. More boiler-plate redundancy. Do without or put in Appendices. Keep the tables, though. Add State Groundwater Guidance Concentrations and Soil Cleanup Goals.**

RESPONSE: The document was written for the general public and the definition of the different types of ARARs is considered important for this audience. State groundwater guidance concentrations and soil cleanup levels will be added.

2-22 **Section 5.0. RAOs are too generic. See comment 1.**

RESPONSE: RAOs will be revised as indicated in response to comment 2-1.

What are the volumes of contaminated media? See comments 13, 14, and 15.

RESPONSE: Volumes of contaminated media will be added to Chapter 5.0.

Need to explicitly state that inorganic chemicals in groundwater are not considered in RAOs (at this time).

RESPONSE: Inorganic chemicals in groundwater will be considered in the revised RAOs.

2-23 **Section 6.0, general. Although the FS is primarily a document designed to comply with the NCP, important engineering decisions should be supported by an analysis of available site and contaminant specific characteristics relative to technology requirements to the extent needed to assess feasibility.**

This FS, in general, has little engineering analysis of this type and this is an important weakness of the document. Decision makers are essentially left to accept the engineering decisions in the FS without any quantitative support.

How can technologies be screened or alternatives be developed without considering volumes of contaminated media? (Post script: volumes are reported, but are scattered throughout the report, primarily in Section 7.0. Volume estimates should be presented earlier in the report. Few calculations to support volume estimates were given.)

RESPONSE: Calculations to support volume estimations, air sparging remediation time, and groundwater extraction rates will be added to the Appendices.

More *in-situ* groundwater treatment technologies should have been considered. Pump and treat technologies are proving to be of limited effectiveness beyond hydraulic control. Possible combinations of *in-situ* treatment with hydraulic controls should have been considered.

RESPONSE: *In-situ* biological groundwater treatment is not well demonstrated for chlorinated organics however, two alternatives include *in-situ* treatment; natural attenuation and air sparging. *In-situ* air sparging was included as a representative of air stripping technologies. If warranted, during detail design, a similar *in-situ* technology that combines airlift pumping and air stripping may be substituted.

Hydraulic controls were considered; however, both plumes are believed to be in biological equilibrium. Therefore, there is no compelling reason to provide containment of the plumes given the size of the plumes 20 years or more after disposal activities.

2-24 **Table 6-2. Biological Treatment: Please explain: "Microorganisms are subject to toxic shock from high concentrations of heavy metals of certain organics."**

RESPONSE: This was a typo. The last "of" will be changed to "or".

A number of esoteric technologies with limited applicability are taking up space in the table (e.g., wet air oxidation, supercritical oxidation, cross flow pervaporation, etc.). These could be edited out without detracting from the FS.

RESPONSE: The Navy agrees that the technologies mentioned could be removed from the table without detracting from the FS. However, their inclusion in the table was intended to show the public that a range of technologies were evaluated.

2-25 **Section 6.2.1.2, Section 7.2.1. What is the final disposition of the treated soil?**

RESPONSE: Once the cleanup criteria have been met, the soil can be used as fill material for industrial applications. The descriptions will be modified to clarify this.

2-26 **Reserved**

2-27 **Section 6.2.2. Explicitly state that inorganic contaminants are not considered in the technology and alternative screening.**

RESPONSE: The RAO discussion will be modified to discuss the inorganics issue as described in response to comment 2-A. Based on that discussion, inorganic treatment will not be considered and it will not be necessary to restate in Chapter 6.0 that inorganic treatment technologies are not included.

2-28 **Section 6.2.2.6. How far is the nearest sanitary sewer connection. Considering the relatively low levels of organic contaminants likely to be in the influent and the low flows (30 gpm, again, no calculations to support this number), direct discharge to the POTW may be possible.**

RESPONSE: From Site 5 to the FOTW it is approximately 8,000 feet. From Site 17 to the FOTW it is approximately 6,000 feet.

2-29 **Table 6-3. It would be helpful to have the sites identified where the proposed alternatives may apply.**

RESPONSE: The proposed sediment alternatives apply to Site 5 only. The proposed groundwater alternatives apply to both sites. This information will be added to the media headings.

2-30 **Page 7-1, Section 7.0. The criteria are repeated in Table 7-1. Redundant.**

RESPONSE: The text lists the nine evaluation factors required by the RI/FS guidance. Table 7-1 presents the criteria for seven of the nine factors described later in Chapter 7.0. All criteria will be listed once in Table 7-1.

Cost estimates for FSs are for comparative purposes and should achieve an accuracy of minus 30-percent to plus 50-percent. The cost estimates in this FS appear excessively "conservative", that is, high.

RESPONSE: The cost estimates will be reevaluated; however, the higher than expected costs are partially due to the fact that there are two sites requiring remediation, they are separated by about 3,500 feet, and no utilities are available at the sites (e.g., approximately $300,000 is required for extending power lines to the sites).

2-31 **Page 7-2, Section 7.1.1. Sampling and analysis proposed for no action includes wide spectrum methods. Is there a rationale for not limiting the target analytes to the known contaminants of concern particularly for Site 17? How would that affect the cost estimate?**

RESPONSE: The Navy will look at limiting the analytical methods to cover only the target analytes of concern and reevaluate the cost estimate.

2-32 **Page 7-17, Table 7-4. Why is $50,000 needed for engineering and construction services for dig and haul?**

RESPONSE: The $50,000 is intended to cover all design, oversight, documentation, reporting, and administrative costs to the Navy for implementing this alternative.

2-33 **Page 7-22, Section 7.5.2. Need to estimate "time frame to reduce groundwater contamination to acceptable levels" for GW-2. If time to cleanup is not estimated, how can comparisons with other alternatives be made?**

RESPONSE: Time frame will be estimated.

2-34 **Page 7-26, Section 7.6.1. Soil vapor extraction may be difficult at Sites 5 or 17 due to the high groundwater table. Depth to groundwater is an important site characteristic that should be considered during technology and alternatives analysis.**

RESPONSE: See response to comment 1-19.

2-35 **Table 7-7. FYI: A design for an SVE/AS system at a site with similar conditions, but a larger plume with higher concentrations of VOAs and SOAs, was recently submitted to the Bureau for review. It had an estimated life cycle cost of less than $200,000.**

Does this cost estimate include Site 5 as well as Site 17?

RESPONSE: The cost estimate includes Site 5 and Site 17. The "Site 17" will be removed from the total cost line of the table. The high costs for this alternative are due to the required power line extension and the treatment time. The treatment time will be reevaluated.

2-36 **Page 7-30, Section 7.7. Experience is showing pump and treat to be very limited as a groundwater remediation strategy. I believe it is best applied when containment is needed to prevent plume migration in combination with other source control technologies. I would like to see alternatives along those lines if applicable.**

May wish to consider strategically located upgradient injection wells or infiltration galleries to enhance hydraulic controls for pump & treat.

The cost estimates should be reconsidered. They seem excessively high.

RESPONSE: The limitations of groundwater pump and treat remediation center on the ability to achieve cleanup requirements. As mentioned in the comment, pump and treat can be effective for containment. In addition, pump and treat can be effective for the removal of a significant mass of contamination. Pump and treat has been shown in some cases to be less effective at achieving cleanup concentrations because extracted groundwater concentrations frequently level off above the cleanup criteria or the criteria are reached, but ground-water concentrations rise again after the pump and treat system is shut down. The source of the groundwater remediation is being addressed as part of the IRAs for both sites, and the groundwater extraction and treatment alternatives will contain the plume. The relatively homogeneous sandy aquifer at the site presents conditions where it may be possible to achieve cleanup criteria by pump and treat; however, if this is not accomplished, source control and containment will still have been achieved.

More detailed placement of the discharge location to optimize hydraulic control of the sites is an important consideration and would be addressed in a remedial design.

The cost estimates will be reevaluated as discussed in response to comment No. 2-30.

2-37 **Section 8.0. Boiler plate in the front. Redundant.**

RESPONSE: This boiler plate is necessary to present the relevance of the categorization of the criteria into three groups. Although comparative analysis process information in the front of Chapter 8.0 may not be necessary for the Navy, the regulators, and other parties familiar with the RI/FS process, the information is expected to be useful to the public for understanding the process. Without this information the question would be raised as to why "threshold criteria" and "primary balancing criteria" are discussed later in this chapter.

John Mitchell, Natural Resource Trustee

3-1 **Section 3.2.1 As stated in our previous comment No. 7 for the Remedial Investigation for OU 2, we disagree that future groundwater discharge to the drainage ditch does not pose any ecological risk. Certain areas of the ditch sediment were shown to be toxic to benthic organisms. If the sediment was remediated, continued discharge of contaminated groundwater through the sediment into the ditch would continue to contaminate the sediment via absorption. As the groundwater poses a risk for continued contamination of the sediment, it therefore poses a risk to the benthic community. It is also possible that the pore water of the sediment provides ecological risk.**

RESPONSE: The ecological assessment identified a risk to ecological receptors exposed to detected concentrations of PCB, 4,4'-DDT, and TRPH in sediment of the Site 5 drainage ditch. Of these compounds, only TRPH is detected in groundwater migrating from the disposal pit (maximum TRPH of 21 mg/ℓ, or an average of detected TRPH of 9 mg/ℓ). Evaluation of the extent to which the migrating TRPH will partition and concentrate onto the sediment of the drainage ditch indicates that sediment concentrations would be less than the level considered to be of ecological concern. For this reason, and the fact that other ecological risk contaminants were not detected in groundwater, long-term discharge of groundwater from the disposal pit to the drainage ditch is not expected to pose an ecological risk. The text will be modified to include the above evaluation and calculations will be appended to the RI report.

3-2 **Section 8.2 In Table 8-1, under the Short-term effectiveness criterion for environmental effects from Alternative SD-1 (No Action), it states "no adverse environmental effects would be caused." This is true in that active remedial action would cause environmental impacts. However, no action leaves on-going environmental effects to the benthic community. This should be noted under this portion of the Table.**

Also, we disagree that Alternative GW-2 (Natural Attenuation) is totally protective of the environment based upon our reasoning in comment No. 1.

RESPONSE: The short-term effectiveness evaluation criterion is intended to assess the effects as a result of remedial activities. For alternatives such as excavation and disposal, this can include potential air emissions, traffic disruption, or other effects that are a direct result of implementation of the alternative. Longterm effectiveness addresses the evaluation of remaining human or ecological risk after the alternative has been implemented. Consequently the effects to the benthic community are evaluated under the longterm effectiveness criterion.

Based upon the response to comment 3-1, we believe alternative GW-2 is protective of the environment.

NAS Cecil Field Comments

4-1 **Page 1-9, Section 1.4.2, Facility History, 5th bullet, change to: "...a master jet base; three runways are expanded to 8,000 feet in length and the fourth runway is expanded to a length of 12,500 feet."**

RESPONSE: Changes will be made as suggested.

4-2 **Page 5-8, first paragraph, last sentence, Appendix A does not refer to ARARs.**

RESPONSE: The appendix will be added and the reference corrected.

4-3 **Page 7-6, Table 7-2, if annual O&M costs are $10,000, present worth of annual O&M costs for 30 years would be greater than $300,000.**

RESPONSE: Present worth O&M costs are calculated assuming that the annual cost will remain constant at $10,000 per year over the 30-year period. Inflation is not typically accounted for in present-worth cost calculations; therefore, the annual O&M cost in year 30 is still $10,000. The present worth calculations predict how much money is required in today's dollars to cover annual O&M over the 30-year period. Given interest payments on today's dollars (assumed 5 percent), less than $10,000 is required today to have $10,000 in year 30. Therefore, the present worth of annual O&M costs should be less than $300,000. The limitations of this type of analysis are that it does not account for inflation; however, this is consistent with the industry standard methods for construction cost estimating.

4-4 **Page 7-20, Table 7-5, if annual O&M costs are $10,000, present worth of annual O&M costs for 30 years would be greater than $300,000.**

RESPONSE: See response to comment 4-3.

4-5 **Page 7-24, Table 7-6, if annual O&M costs are $19,000, present worth of annual O&M costs for 30 years would be greater than $570,000.**

RESPONSE: See response to comment 4-3.

4-6 **Page 7-29, Table 7-7, if annual O&M costs are $145,000, present worth of annual O&M costs for 5 years would be greater than $725,000.**

RESPONSE: See response to comment 4-3

4-7 **Page 7-33, 2nd paragraph, if iron might cause problems with air stripping, why not place the iron filter ahead of the air stripper?**

RESPONSE: Iron causes problems because, when it oxidizes, it precipitates and causes potential clogging of air strippers. With packed-tower air strippers this typically necessitates the removal of iron prior to the air stripper. With low-profile tray air strippers some iron precipitation can be handled by the stripper; however, iron must still

be removed to allow discharge to an infiltration basin. The advantage of placing the iron removal filter after the stripper is that it takes advantage of the oxidation of iron by air added to the stripper. If iron removal is placed before the air stripper, it becomes necessary to have an additional oxidation step by air or chemical addition prior to the filter. The system presented in the FS represents a cost savings by eliminating the extra oxidation step. This cost savings can be achieved as long as iron concentrations are not high enough to cause clogging of the low-profile tray air stripper.

4-8 **Page 7-36, Table 7-8, if annual O&M costs are $279,000, present worth of annual O&M costs for 6 years would be greater than $1,674,000.**

RESPONSE: See response to comment 4-3

4-9 **Page 7-40, Table 7-9, if annual O&M costs are $243,000, present worth of annual O&M costs for 6 years would be greater than $1,358,000.**

RESPONSE: See response to comment 4-3

U.S. Environmental Protection Agency Comments
Bart Reedy, SRPM

5-1 **Recalculation of RGOs. Table 5-5, the Summary of the Target Cleanup Levels for groundwater is incomplete. EPA comments on the BRA indicated that lead should be included as a COC. In addition, the EPA had reservations about the calculation of inhalation exposure to VOCs during showering. Finally, RGOs in the risk assessment were calculated for each chemical rather than for each use scenario.**

The reviewer anticipated that the RGOs will be recalculated when the risk assessment is rewritten. These new RGOs should be used to formulate the Remedial Action Objectives.

RESPONSE: Recalculated RGOs from the BRA will be incorporated into the FS and used to formulate RAOs.

5-2 **Discussion of Timing. The reviewer feels that the FS and subsequent documents need an explicit statement of the time period for which the risk assessment and its various aspects are applicable. Because of the IRAs, the soil risks will be reduced, presumably to levels considered protective, before the completion of the groundwater and sediment remediation. For this reason, surface soil is not considered in the BRA or the FS. Both the risk assessment and the FS are applicable to the time when the IRAs are completed. A statement of this is needed. Probably the clearest way to present the expected timecourse of the site remediation and the pertinence of the BRA is with a timeline chart.**

RESPONSE: A discussion on the timing of the BRA and the FS in relation to the implementation of the IRAs will be provide in Chapter 1.0 of the FS. A discussion of why no RAOs were developed for soil will be included in Chapter 5.0.

5-3 **1. The discussion under the Compliance with ARARs portion of Section 7.6.2 on page 7-27 states that the remedial action objectives may be met before all target cleanup levels have been reached; therefore chemicals-specific ARARs may not be attained. This language is confusing, or erroneous, because chemical-specific ARARs are either based on concerns about human health, or if not solely based on human health concerns, should be attained before an exclusively human-health based concentration would be attained.**

RESPONSE: The text will be changed to state that ARARs will be attained before RAOs are met.

5-4 **In Section 7.7.1 Location of Treatment System on page 7-33, the text states that combined treatment of water from both OU2 sites would not affect the discharge criteria. The discussion of discharge criteria in the previous paragraph presents an estimated area for an infiltration basin which is apparently based on the volume of water which would be extracted at each site. If treatment of water from both sites is combined, it would be reasonable that discharge of water from both sites would be combined, and thus the dimensions of the infiltration basin would change. The discussion of discharge in the preceding paragraph should be revised to define the approximate discharge specifications if treatment from both sites is combined.**

RESPONSE: The infiltration basin will be resized to accept flow from both sites and the appropriate changes to the text will be made.

5-5 **Section 7 does not present a detailed analyses of the selected ground water discharge alternative. Other potential discharge alternatives were screened out in Section 6 because of concerns about their implementability. However, the feasibility of utilizing an infiltration basin discharge option in the hydrogeologic setting of the site has not been evaluated in the FS Report. There should be some assurance in the FS Report that the infiltration basin discharge option is implementable, and the basis for the approximate sizing of such an infiltration basin, or basins, should be presented.**

RESPONSE: Infiltration basin design calculation will be included as an Appendix to the FS.

5-6 **In Table 8.2, page 8-8, for Alternative GW-2, the discussion of reliability of controls states that no controls are implemented, whereas the discussion of adequacy of controls indicates that there would be controls on the use of ground water for this alternative.**

RESPONSE: The table will be changed to indicate controls are implemented.

4.2.3 (002)

May 27, 1994

Mr. Bart Reedy
Remedial Project Manager
Federal Facilities Section
Waste Management Division
USEPA Region IV
245 Courtland St. NE
Atlanta, GA 30365

Subject: **Response to Comments, Draft Focused Feasibility Study, Site 17, Operable Unit (OU) 2, Source Control Remedial Alternatives, NAS Cecil Field, Jacksonville, Florida**

Dear Mr. Reedy:

On behalf of Southern Division Naval Facilities Engineering Command, ABB Environmental Services, Inc. is pleased to forward four copies of the Response to Comments on the Draft Focused Feasibility Study, Site 17, OU 2, Source Control Remedial Alternatives (FFS) recently prepared for the RI/FS Program at NAS Cecil Field, Jacksonville, Fl. These responses are presented in table format and include responses to comments received from USEPA, FDEP, the City of Jacksonville, and NAS Cecil Field.

In order to maintain the project schedule these responses will be incorporated into the Final FFS by June 10, 1994 at which time the Final FFS will be distributed. If you have any additional comments on these responses please contact Mr. Allan Shoultz no later than June 10, 1994.

Questions or comments should be directed to Mr. Allan Shoultz at (803) 743-0669.

Sincerely,

ABB ENVIRONMENTAL SERVICES, INC.

Robert C Lunardini Jr

Robert C. Lunardini, Jr., P.E.
Senior Engineer

Jack Pittman
Task Order Manager

attachments

cc: Mr. Alan Shoultz, SOUTHDIV (2 copies)
Mr. John Dingwall, NAS Cecil Field (1 copy)
Mr. Eric Nuzie, FDEP (3 copies)
Mr. Gerry Young, City of Jacksonville (1 copy)
file

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Response to Comments
of
NAS Cecil Field

Site 17, Focused Feasibility Study

Section/Page	Comment No.	Comment	Response
Table 3-4, page 3-10		For Alternatives C and D (RA-2 and RA-3), what residuals would go to an off-site landfill? I would state here that treated soils are used for backfill.	For Alternative C the primary treatment residual would be ash from the combustion of off-gases. For Alternative D residuals would include treatment pad materials. Treated soils would be backfilled into the excavation. Table 3-4 will be modified to describe treatment residuals in more detail.
Section 4.0, page 4-1, Second bullet		The nine criteria are listed in the National Contingency Plan, 40 CFR 300.430 (d)(9)(iii); therefore, this may be a better reference than CERCLA Section 121 (b). Some items on this list must be interpolated from CERCLA.	The reference will be changed as suggested.
Section 4.2, pages 4-12 through 4-18		This detailed description makes no mention of off-site landfill disposal of residuals mentioned in Table 3-4.	Text will be added to describe offgas residual ash disposal at an offsite landfill.
Section 4.3, pages 4-18 through 4-23		This detailed description makes no mention of off-site landfill disposal of residuals mentioned in Table 3-4.	Text will be added to describe residuals as treatment pad debris which is disposed at an offsite landfill.
Section 5.0, page 5-1, paragraph 4		How would RA-2 pose more risks through volatilization than RA-1? I would think it would be vice versa.	Volatilization is increased by soil handling. Alternative RA-2 involves increased handling of soils onsite associated with the excavation, stockpiling, and loading into the thermal treatment unit. Alternative RA-1 involved only excavation and loading directly into trucks for transport offsite. Therefore, less soil handling occurs onsite for Alternative RA-1. Considering both onsite and offsite activities, the amount of volatilization for the two alternatives is probably very similar. The text will be revised to reflect that the comparison being made is for onsite volatilization.

Response to Comments
of
USEPA Region IV

Site 17, Focused Feasibility Study

Section/Page	Comment No.	Comment	Response
	1	Surface soil samples were taken from the interval 0 to 2 feet. This interval is not appropriate for risk assessment purposes. Risk assessment for surface soils evaluates the upper 1 foot of soil only. Additionally, remedial action objectives based on direct contact should be applied to surface soil samples collected between 0 and 1 foot below land surface.	The surface soil sample results presented in the FFS are screening samples that were analyzed onsite. These samples were taken from the 0 to 2-foot interval. A risk assessment is not being conducted as part of this interim action and interim remedial action objectives for direct contact are qualitative only. The baseline risk assessment will be completed as part of the overall RI/FS for OU 2. The baseline risk assessment will be conducted using the confirmatory surface soil samples not the screening samples. Confirmatory surface soil sampling was described in the FFS; however, sample results were not available at the time the FFS report was prepared. Confirmatory surface soil samples were collected from the 0- to 6-inch interval below land surface.
	2	The comparison of background concentration to site concentrations (page 1-21) is not consistent with Region IV guidance. In the instance of inorganics, if the maximum onsite concentration is less than twice the average background concentration the compound is considered to be at background levels. Comparison of the average onsite concentration with the average background plus one standard deviation or consideration of TCLP regulatory levels is not consistent with Region IV guidance. It is quite likely that the method employed in this document will yield a removal volume that is greater than would be calculated using Region IV procedures.	The comparison of background concentrations to site concentrations for inorganics will be revised to compare the maximum onsite concentration to twice the average background concentration. TCLP regulatory levels are used in the FFS for evaluation of potential classification of soils as hazardous under RCRA, not evaluation of background. The text will be modified to clarify this. Inorganic concentrations were not used to develop remedial limits (they were based on TRPH); therefore, changing the background inorganic comparison to be consistent with Region IV guidance will not affect the volume of soil under consideration.

Response to Comments
of
USEPA Region IV

Site 17, Focused Feasibility Study

Section/Page	Comment No.	Comment	Response
	3	Section 2.2, Discussion of Remedial Action Objectives, states that remedial action objectives are typically based on contaminants of concern (COCs), exposure routes (s), and receptors (s) present or available at the site. It is unclear if the remedial action objectives are based on these or not. Logically, they could not be based on these since the baseline risk assessment has not been completed. There should be a clear discussion on remedial action objectives. It is inadequate to state only that they were developed to ensure compliance with ARARs.	A baseline risk assessment has not been completed for the site; however, a qualitative evaluation of site risks as described in Chapter 9 of the USEPA *Interim Final Guidance on Preparing Superfund Decision Documents* (OSWER Directive 9355.3-02) can be used to evaluate a site for an interim action. The USEPA *Guide to Developing Superfund No Action, Interim Action, and Contingency Remedy RODs* gives the following reasons for taking an interim action: · to take quick action to protect human health and the environment from an imminent threat in the short term, while a final remedial solution is being developed; or · to institute temporary measures to stabilize the site or operable unit and/or prevent further migration or degradation. The second of these reasons was the primary factor in establishing response action objectives to prevent further contamination of groundwater. A response action objective to reduce risk associated with direct contact was also developed; however, because no baseline risk assessment has been completed, evaluation of this remains qualitative. The text in Section 2.2 will be modified to more accurately describe the issues discussed above.

Response to Comments
of
USEPA Region IV

Site 17, Focused Feasibility Study

Section/Page	Comment No.	Comment	Response
	4	Section 2.2 states that groundwater contamination was not addressed in this report. However, protection of groundwater is the basis for this source removal. Therefore, justification and some discussion of groundwater contamination should be presented in this report. It is inappropriate to develop soil action levels for protection of groundwater based on a relationship from the TCLP.	Section 2.2 should state more correctly that groundwater contamination will not be directly addressed by the interim action. Protection of groundwater is the basis for the interim action. Some discussion of groundwater contamination is presented in Chapter 1.0 of the report. Section 2.2 will be modified to refer back to groundwater data in Chapter 1.0 and will discuss the justification for an interim action to address the source of groundwater contamination. Soil action levels selected were based on State TRPH requirements for thermal treatment of petroleum contaminated soils as it is the predominant contaminant present. The TCLP was developed to evaluate the potential for leaching of contaminants in a landfill situation from the wastes to the landfill leachate. The relationship from the TCLP was used at this site as a conservative indicator showing the potential leaching of contamination from soils to groundwater. Because this is an interim action with limited data available, the use of a more complex leaching and transport model was not believed to be warranted or cost effective. Leaching of contaminants from soils to groundwater is one approach considered for developing action levels. The actual soil action levels selected for remediation were not based on the TCLP relationship but are taken from the Florida regulations for Thermal Treatment of Petroleum Contaminated Soil. Any contamination remaining after the interim action will be addressed in the final ROD.

Response to Comments
of
USEPA Region IV

Site 17, Focused Feasibility Study

Section/Page	Comment No.	Comment	Response
	5	Appendix B contains two sets of background surface soil data; it is unclear which of these data sets was used for comparison. The average background concentrations should be used for comparison with maximum onsite concentrations. Also, no groundwater background data is included.	Appendix B contains one set of background surface soil data and one set of background subsurface soil data. At the time the FFS was prepared, limited inorganic surface soil data were available and a comparison with background was not conducted. The subsurface data were compared with background in the FFS report. To avoid confusion, the background surface soil data table will be removed from Appendix B. Groundwater background data was not included in the FFS because no evaluation of groundwater concentrations compared to background was conducted. Comparisons of groundwater, surface soils, and subsurface soils to background will be included in the overall RI/FS for OU 2.
	6	The two alternatives that specify excavation and thermal treatment are the most appropriate, and either of these is acceptable to Region IV.	The Navy will consider this comment in selecting the preferred alternative.

Response to Comments
of
USEPA Region IV

Site 17, Focused Feasibility Study

Section/Page	Comment No.	Comment	Response
	7	One aspect of the proposed remedies that is not addressed is the eventual fate of the backfilled material. If the excavated area is simply backfilled, will not the clean fill become contaminated from the fluctuating contaminated groundwater?	The maximum TRPH concentrations found at the site are 25,000 mg/kg in soils and 1.3 mg/ℓ in groundwater. The State of Florida maximum contaminated level for TRPH in groundwater is 5.0 mg/ℓ. From 0 to 10 feet bls the calculated mass of TRPH is 5,785 kg in soils and 15.2 kg in groundwater. This data indicates that the majority of the contamination is associated with the soils. The fluctuating groundwater table presents two options for remediation of vadose zone soils: (1) remediation of soils above the seasonal high groundwater only; or (2) remediation of soils above the seasonal low groundwater. Analytical results for TRPH in soils between the seasonal low and high groundwater suggests that a significant additional mass of contamination can be addressed by choosing the second option. As noted in the comment, one drawback is the potential for recontaminating the backfilled soils by the fluctuating groundwater; however, an evaluation of groundwater concentrations and the behavior of petroleum-related compounds indicates that the mass of TRPH in the shallow groundwater at the site is a small fraction (<1%) of the TRPH in the soils that would be removed and treated (see calculations attached). The amount of recontamination possible with conservative assumptions would be on the order of 2 to 3 mg/kg (see calculations attached). This assessment, along with the possibility of addressing the recontamination as part of groundwater remedial alternatives in the final FS, led to the selection of the second option. As part of the final FS for OU 2, an evaluation of groundwater treatment alternatives, including pumping from an open excavation, will be completed. Text will be added to each of the alternatives that includes backfilling to discuss concerns regarding recontamination of backfilled soils.

Response to Comments
of
State of Florida

Site 17, Focused Feasibility Study

Section/Page	Comment No.	Comment	Response
	1	On the basis of the data presented a detailed analysis of the costs was difficult, a better breakdown would be required.	Detailed information on costs for each alternative is included in Appendix E.
	2	The thermal treatment technologies (RA-1 and RA-2, off and onsite, respectively) and biological treatment (RA-3 and RA-4, ex-situ and in-situ, respectively) all have the potential for successful treatment of the contaminants, but thermal treatment is likely the more reliable. Thermal treatment would probably be the most expeditious and have the best chance to eliminate future liability, biological treatment especially ex-situ has a difficult time of achieving the clean soil criteria defined in FAC 17-775.	The Navy will consider this comment in selecting the preferred alternative.
	3	The risks to the public from handling the petroleum contaminated soils seems to be exaggerated, handling soils like this is done on a routine basis in the EDI program.	The risk to the public is not quantitatively described. The FFS emphasizes instead that as the soil is handled to a greater extent, there is an increased possibility of volatilization and associated odors, dust generation, and spills. The routine handling of soils like those at Site 17, as mentioned in the comment, suggests that the magnitude of these risks is still within acceptable limits.
	4	Since the overall costs are so close and the chance for success is greater, thermal treatment would seem to be the best choice. The requirements of FAC 17-775 should be followed if either onsite or off-site thermal treatment is implemented.	The Navy will consider this comment in selecting the preferred alternative.

Response to Comments
of
State of Florida

Site 17, Focused Feasibility Study

Section/Page	Comment No.	Comment	Response
	5	Expeditious cleanup of sites is imperative in that NAS Cecil Field is due to close in 1999. [The biological] technologies may not fully achieve clean soil criteria as defined by 17-775, F.A.C.. Therefore, I strongly recommend either RA-1 or RA-2.	The Navy will consider this comment in selecting the preferred alternative.

Response to Comments
of
City of Jacksonville

Site 17, Focused Feasibility Study

Section/Page	Comment No.	Comment	Response
	1	The Water Quality Division (WQD) review of this document causes the City of Jacksonville to be concerned with the early development of Remedial Alternatives. The Regulatory and Environmental Services Department (RESD) believes that defining missing and unanalyzed data should take place before remedial alternatives can be developed. This data may also affect the Applicable or Relevant and Appropriate Requirements (ARARs).	This is a source control interim action. The nature of an interim action is to provide a rapid response to imminent risks or ongoing sources of contamination. To achieve this rapid response, it is sometimes necessary to proceed prior to having complete data available to undertake a comprehensive RI/FS. However, sufficient data are available to identify and evaluate interim remedial alternatives. During implementation, testing of contaminated media will be conducted to assure compliance with State and Federal requirements. Complete data and evaluation will be incorporated into the final FS for Operable Unit 2. The final FS will identify any contamination that requires further remediation beyond the interim action and will develop alternatives for these additional measures.

Response to Comments
of
City of Jacksonville

Site 17, Focused Feasibility Study

Section/Page	Comment No.	Comment	Response
	2	The City of Jacksonville notices that key pieces of data are missing which may influence the ARARs and the selection of a Remedial Alternative. The missing data involved is documented on pages 1-7, 1-21 and Appendix A. In each case there is a trial of no groundwater analysis of the areas under highest soil contamination. There is a need for these test results no matter what the reason for delay. The City of Jacksonville will not concur on any remedial alternative until the ground water analysis results from the following monitoring wells are made public: Well ID numbers: CEF-17-24S CEF-17-25SI CEF-17-26I CEF-17-27D CEF-17-28DD	This is a source control interim action. The missing groundwater data were not available at the time of the preparation of the draft FFS. As discussed in the previous response, for interim actions it is sometimes necessary to proceed prior to having complete data and interpretation. The groundwater data are not essential for determining the extent of remediation for the soils in the interim action. The data for the wells indicated have been obtained since issuing the draft final FFS and will be added to Appendix A; however, the text of the FFS will not be changed to evaluate this new data. Complete evaluations of groundwater data will be included in the RI/FS for OU 2 scheduled for completion by the end of 1994.

Response to Comments
of
City of Jacksonville

Site 17, Focused Feasibility Study

Section/Page	Comment No.	Comment	Response
	3	There is a statement in Table 5-1 on page 5-5 which needs to be changed or made understandable. The matrix section under Remedial Alternative (RA-2) column and the "coordination with other environmental agencies" line reads in part, "coordination limited to jurisdictions at NAS Cecil Field". If this means city, county or local environmental agency, the statement is simply vague. If it implies that no official written notification of these organizations is needed, the statement must be changed because Florida Administrative Code 17-775.700 specifically states, "any mobile treatment facility which intends to treat contaminated soil, shall notify the following entities by registered mail at least three days prior to initiating operation at a contamination site..."	The statement in the table is not intended to imply that the City and other environmental agencies will not be notified of remedial actions. Although CERCLA allows onsite remedial actions to occur without obtaining permits, remedial actions are still required to meet the substantive requirements of the ARARs identified. As such, the remedial action would have to comply with the regulation cited in the comment. The table will be changed to clarify this.
	4	Since the City of Jacksonville is the next potential owner of this site, the cleanup should be completed as soon as possible. The WQD believes that using a proven technology and completing the job expeditiously as in RA-1 or RA-2 is more desirable than waiting 2 years to find out if an undetermined technology is going to be successful.	The Navy will consider this comment in selecting the preferred alternative.

PROJECT	COMP. BY	JOB NO.
Site 17 FFS Response to Comments	SCP	8520-36
	CHK. BY DWM	DATE 5/19/94

Purpose: Estimate the potential for recontamination of soil backfilled after treatment caused by the fluctuating groundwater table.

Inputs: Analytical data, volume calcs etc from FFS Report

Estimated TRPH mass in soils being treated by interim action alternatives:

5,785 kg (from FFS report)

Highest detected TRPH concentration in the groundwater at Site 17:

1.3 mg/l

Assume a volume of groundwater that is 10 ft deep and 400 ft in diameter around the center of the Site 17 pit contains 1.3 mg/l TRPH. Assume a porosity of 0.33 in this volume. The mass of TRPH in this water is then:

$$\pi(200)^2 \cdot 10\,ft \cdot 7.48\,\frac{gal}{ft^3} \cdot \frac{3.7854\,L}{gal} \cdot 1.3 \cdot \frac{1\,kg}{10^6\,mg} \cdot 0.33 = 15.2\,kg$$

Volume of soil being backfilled: 9,900 yd^3

Assume all of TRPH in groundwater recontaminates half of the backfilled soil. Assume a density of 1.5 tons/yd^3 for the backfilled soil DWM

$$9{,}900\,yd^3 \cdot 0.5 \cdot 1.5 \cdot 2{,}000 \cdot 454\,g/lb \cdot \frac{kg}{1000\,g} \cdot \frac{million\,kg}{10^6\,kg} = 6.74\ million\ kg\ of\ soil$$

$15.2\,kg / 6.74$ DWM $= 2.25$ DWM ppm maximum increase in soil TRPH as a result of recontamination of backfill.

This is based on very conservative assumptions.

Also note the mass of TRPH in groundwater is

$$\frac{15.2}{5785} \times 100 = 0.26\%$$ of TRPH in soils being removed.