

N61331.AR.001343
NSA PANAMA CITY
5090.3a

U S NAVY RESPONSE TO FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
COMMENTS TO FINAL DRAFT REMEDIAL FEASIBILITY INVESTIGATION REPORT NSWC
PANAMA CITY FL
1/18/1996
CSS PANAMA CITY

Response to Comments
Final Draft RFI Report
David Clowes, Florida Department of Environmental Protection

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
<u>General Comments</u>			
1	The specific location of all SWMUs and AOCs should be identified on all figures. For example, the source of contamination at SWMU 3, is not identified.	All figures have been reviewed and revised to include specific locations of all SWMUs and AOCs.	7/7/95
2	The soil analytical data should be compared to the Florida Soil Cleanup Goals, specifically to the most updated version (FDEP Memorandum, April 5, 1995). An extra column with the Soil Cleanup Goals should be added to all relevant tables in order to allow direct comparison. Also, the groundwater analytical data should be compared to the most recent Florida Ground Water Guidance Concentrations, dated June 1994. An extra column with the groundwater MCLs should be added to all relevant tables in order to allow direct comparison.	<p>In response to this comment, surface and subsurface soil data were compared to the April 5, 1995 Florida Soil Cleanup Goals. Groundwater analytical data were also compared to the most recent Federal MCLs (May 1995), and the revised USEPA Region III Risk-Based Concentrations (RBCs). These comparisons indicate that no changes to the risk assessment or final recommendations are warranted. The comparisons are summarized in Attachments AZ-1, AZ-2, and AZ-3 to this appendix.</p> <p>Note that Appendix Q of the Draft Final RFI report summarizes the comparison of all groundwater data to the June 1994 Florida Groundwater Guidance Concentrations, the May 1995 Federal Primary MCLs, and the June 1994 Florida Primary Drinking Water Standards in Appendix Q, Tables Q-1 through Q-9.</p>	8/9/95
3	Chapter 6.0 states that if monitoring wells sampled during Phase 1 were not resampled in Phase 2, then the Phase 1 data was retained. However, the analytical data for Phase 1 wells not resampled during Phase 2 is not presented. For example, the Phase 1 wells not resampled during Phase 2 for SWMU 6 is not provided. In general, the most recent data for each sample location should be provided.	All data hits tables have been reviewed to ensure that the most recent data for all monitoring wells are presented.	7/7/95

**Response to Comments
Final Draft RFI Report
David Clowes, Florida Department of Environmental Protection**

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
4	To expedite document review, constituents above State or Federal MCLs should be plotted on relevant figures and denotations made in the tables (bold, highlight, italics, etc.) to draw attention to these constituents and the detected levels.	Data were presented on figures only when a clear area of concentration gradients was present (e.g., Figure 8-12 on page 8-93). Placing analytical data on figures other than those with concentration gradients will make them very difficult to read. Also, to denote each analyte that exceeded State and Federal MCLs for each of the hundreds of samples collected during the Phase 1 and Phase 2 investigation would be extremely cumbersome and time consuming. Although this would expedite document review, it is not feasible for the final report. This recommendation will be considered for future documents.	7/7/95
5	Elevated levels of inorganics in groundwater may be due to natural levels, base-wide contamination, or the monitoring wells are installed in area impacted by contamination. It is not recommended that groundwater samples are filtered to decrease turbidity. If inorganics are detected in unfiltered groundwater above groundwater MCLs, it is recommended that these wells be resampled using Quiescent Sampling (low flow purging using a peristaltic pump with a flow rate of about one liter per minute and waiting up to a maximum of six hours to sample at a low flow rate using a peristaltic pump) before either dismissing the constituents as suspended particles or installing additional monitoring wells. Turbidity measurements (using a turbidity meter) should be taken in conjunction with the metals sampling.	During the August 9, 1995 teleconference call between EPA, FDEP, the Navy, and ABB-ES, it was determined that sufficient data exist to support the conclusion that elevated levels of inorganics present in groundwater samples collected from some of the SWMUs/AOCs are due to inorganics sorbed to soil particles (see meeting minutes in Attachment AZ-5 for details). The only monitoring wells that will be recommended for resampling (using quiescent sampling techniques) will be monitoring wells PCY-13-02D and PCY-13-7I. Resampling can be incorporated into monitoring plans developed during the corrective measure implementation.	8/9/95
6	With the inclusion of the inhalation pathway in the calculation of Remedial Goal Options (RGOs)/Cleanup Levels, FDEP utilizes 1E-6 for carcinogenic Chemicals of Concern (COCs) and 1.0 hazard quotient for non-carcinogenic COCs as default criteria. Therefore, the cancer risks and hazard quotients of the Chemicals of Potential Concern (COPCs) above these levels should be renamed COCs, and the soil, sediment and groundwater pathways included in the Corrective Measures Study (CMS) as areas of possible remediation. However, RGOs greater than 1E-6 can be dropped from consideration if the detected levels of individual constituents are not greater than MCLs/guidance or background levels.	This issue was resolved during a meeting held on October 11, 1995. The results of the meeting are summarized in the meeting minutes (Attachment AZ-5). See action level tables in Attachment AZ-4 to this appendix. The term chemical of potential concern is used to initially identify chemicals that are suspected to be present at a SWMU. This is consistent with the definition of chemical of potential concern provided in the Guidance for Data Useability in Risk Assessment (Part A), USEPA Office of Emergency and Remedial Response, PB92-963356, April, 1992.	10/11/95

**Response to Comments
Final Draft RFI Report
David Clowes, Florida Department of Environmental Protection**

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
<u>SWMU 1/AOC 2</u>			
7	Table 8-1, Surface soils: The levels of benzo(a)pyrene, arsenic, and beryllium in soil samples should be documented to be above twice background and Florida Soil Cleanup Goals.	Table 8-2 indicates that these analytes were detected above background screening concentrations. See Attachment AZ-3 to this appendix for a comparison of soil data to the Florida Soil Cleanup Goals.	8/9/95
8	Additional soil sampling should be conducted around soil sample 14SS01 to delineate the extent of arsenic (8.3 mg/kg) and beryllium (0.24 mg/kg) contamination substantially greater than background or Florida Soil Cleanup Goals.	As discussed with FDEP on October 12, 1995, the soil at 14SS01 will be the subject of a removal action. Soil at the sampling location will be excavated by hand and one confirmatory sample will be collected and analyzed for arsenic. A recommendation for a removal action has been added to Chapter 11.	10/12/95
9	Table 8-5, Groundwater: Since lead was detected (25 to 127 ppb) above groundwater MCLs (15 ppb) in monitoring wells 01GW01, 01GW01S, and 01GW02 within SWMU 2 and 14GW06 downgradient of AOC 2, confirmatory samples should be collected using Quiescent Sampling (see comment no. 5) from these wells.	See response to comment no. 5 from David Clowes.	8/9/95
10	Due to the presence of free product in the South Dock area, copper in surface water, and PAHs in sediment above MCLs/guidance and twice background in Alligator Bayou; the investigation of the South Dock should include free product removal, identification of the free product and potential point sources of free product to Alligator Bayou, as well as assessment of surface water, sediment and groundwater. Note, the assessment cannot be conducted under the petroleum program (62-770 F.A.C.) due to the high copper levels in surface water.	The copper detected in surface water and the PAHs detected in sediment are likely from two different sources. Subsection 8.1.7.2 of the RFI report summarizes that the source of copper in surface water is likely due to heavy boat traffic in the Bayou, and subsection 8.1.8.1 (Sediment Organic Analytical Results and Interpretation) suggests that the source of PAHs in the sediment at the South Dock is likely related to heavy boat traffic and or seepage of free product from the seawall, located at the South Dock. The RFI report recommends that the free product behind the seawall be investigated. Because it is likely that the copper and other inorganics in surface water and sediment in Alligator Bayou are not likely migrating from SWMU 1 or AOC 2, it should be possible to conduct the free product investigation under the petroleum program.	7/7/95

**Response to Comments
Final Draft RFI Report
David Clowes, Florida Department of Environmental Protection**

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
11	PAHs levels as high as 3,100 ppb (Sediment Screening Level of 330 ppb) are highest downgradient of SWMU 1; therefore, this SWMU appears to be a source of sediment contamination to Alligator Bayou. The levels of PAHs downgradient of SWMU 1 (sediment sample 01SW06) have detected levels higher than samples (01SW01 and 01SW02) directly downgradient of the potential free product source (Building 9). Note, since soil samples were not collected because the area is covered by a dock, a denotation in the text should be made of possible soil contamination and exposure if the concrete is removed/damaged, and the necessary OSHA precautions should be taken for those potentially exposed.	Section 8.1.8.1 (Sediment Organic Analytical Results and Interpretation) states that the seawalls located at the South and West Docks inhibit soil erosion from SWMU 1 and AOC 2. It further states that any potential contamination migration would have to come from groundwater. Because PAHs were detected at only low concentrations in SWMU 1 and AOC 2 groundwater samples, the source of PAHs in the sediment in Alligator Bayou is most likely not associated with the SWMU or AOC. The most probable sources of these compounds are the observed seepage of petroleum through the South Dock and industrial activities along the dock. Also, two subsurface soil samples (14SB02 and 14SSD6) were collected from within the SWMU 1 boundaries. The requested notation has been made in the text.	7/7/95
<u>SWMU 2</u>			
12	With high dieldrin levels (1.5 mg/kg) in soil at location 02SS08, compared to surrounding samples (0.12 to 0.11 mg/kg), and the Florida Soil Cleanup Goal of 0.07 mg/kg, soil removal at this location should be considered. Pesticides were considered an ecological risk at this SWMU (Chapter 10).	Based on the elevated pesticide concentration, a quick removal action has been recommended for the area surrounding sample location 02SS08.	8/9/95
13	With high lead (1,900 mg/kg) and arsenic (11.4 mg/kg) levels in soil at location 02SS04, compared to surrounding samples (16 to 232 mg/kg lead) and the Florida Soil Cleanup Goal of 500 mg/kg for lead and 0.7 mg/kg for arsenic, soil removal at this location should also be considered.	Based on the elevated lead concentration, a quick removal action has been recommended for the area surrounding sample location 02SS04.	8/9/95
14	With high levels of metals in monitoring wells PCY-2-2, PCY-2-2S, PCY-2-6S, confirmatory samples should be collected using Quiescent Sampling (See comment no. 5) from these wells.	See response to comment no. 5 from David Clowes.	8/9/95

Response to Comments
Final Draft RFI Report
David Clowes, Florida Department of Environmental Protection

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
15	A monitoring well should be installed in the General Household Disposal Area, specifically in the area of the highest PAH soil contamination.	PAHS are not very mobile and are not expected to migrate to groundwater. PAHs were detected in other samples (e.g., 02SS06) at concentrations that are orders of magnitude greater than those detected in 02SS05. No PAHs were detected in groundwater samples collected downgradient of the area where the highest PAH concentrations were detected in soil. Therefore, the concentrations detected in 02SS05 are not expected to affect groundwater quality. The text has been revised to include these findings.	8/9/95
<u>SWMU 3</u>			
16	The DEP Memorandum dated August 18, 1993 request for the six upgradient monitoring wells to be resampled (because they are downgradient of SWMU 9) was not fulfilled. Additionally, the request for identification of the landfill was not fulfilled either.	All monitoring wells between SWMU 3 and SWMU 9 were resampled during the Phase 2 field investigation. Figures 8-17 and 8-25 have been revised to identify the landfill.	7/7/95
17	With high pesticide and PAH contamination in sediments, additional samples (including bioassays) should be collected before implementing the CMS, in order to better define the area of remediation.	Currently, there is sufficient data to proceed with the CMS. Additional data needs identified during the CMS may be addressed during the corrective measure implementation.	7/7/95
<u>SWMU 4</u>			
18	Before this site is appropriate for No Further Action the rubble should be removed, properly disposed of, and a soil/sediment sample collected from the "Filled Gully".	The rubble at SWMU 4 serves to inhibit erosion. Removing the rubble would increase the risk of significant erosion. Also, if there was a source of contamination from beneath the rubble, the surface water and sediment samples (which were collected right off shore) would have picked up something. All three surface water and sediment samples collected during the Phase 2 field investigation did not indicate any migration of contamination from the filled gully. At the July 7, 1995 meeting, FDEP agreed that the rubble should not be removed and soil/sediment samples do not need to be collected from beneath the rubble.	7/7/95

SWMU 5

**Response to Comments
Final Draft RFI Report
David Clowes, Florida Department of Environmental Protection**

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
19	Figure 8-19: Different sample locations should not have the same sample number. For example, there are two sample numbers with 05SS02 and two with 05SS03.	<p>There are several occasions where sample numbers were duplicated in Phases 1 and 2. Unfortunately, these sample numbers can not be changed because the new numbers could not be traced back to field logs, lab reports, and other documentation.</p> <p>Figure 8-19 uses different symbols to distinguish between the Phase 1 subsurface soil samples and the Phase 2 surface soil samples that have the same sample number. The figure has been edited to make the difference more distinct.</p>	7/7/95
20	Monitoring well PCY-5-2 should be resampled using Quiescent sampling techniques to confirm the high levels of lead and manganese in groundwater (See comment no. 5).	See response to comment no. 5 from David Clowes.	8/9/95
<u>SWMU 8</u>			
21	A figure should be provided to illustrate the location of the one ash sample, tested for TCLP.	The sample was collected from inside the new incinerator. The approximate location of the incinerator is shown on Figure 1-2.	7/7/95
22	Before a No Further Action Proposal can be considered for this site, soil samples should be collected around the perimeter of the former/present incinerator and analyzed for total metals.	This SWMU was approved for NFA after submittal of the Draft RFI Phase 1 report. During the August 9, 1995 teleconference call, FDEP agreed that no further sampling is required.	8/9/95
<u>SWMU 9</u>			
23	As requested in the August 18, 1993 DEP Memorandum, additional soil samples should be collected outside of the pit to delineate the horizontal and vertical extent of antimony, arsenic and beryllium soil contamination before proposing the extent of soil removal in the CMS.	Surface soil and subsurface soil samples were collected from outside the fire-fighting training pit (see figures 8-21 and 8-22). The data are sufficient to evaluate the distribution of contaminants at SWMU 9 and proceed with the CMS. Additional delineation of surface and/or subsurface contamination at SWMU 9 can be completed during the corrective measure implementation. EPA and FDEP will be provided an opportunity to comment on additional sampling and field activities recommended for SWMU 9.	7/7/95

**Response to Comments
Final Draft RFI Report
David Clowes, Florida Department of Environmental Protection**

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
24	During the free product investigation, one water table and one intermediate depth monitoring well should be installed so as to be clustered at the source area, depicted on Figure 8-23 as the area of the highest PAH soil contamination.	The free product investigation will be incorporated into alternatives for the corrective measure for soil. Additional groundwater sampling will be incorporated into groundwater monitoring plans developed for the corrective measure implementation. EPA and FDEP will be provided an opportunity to comment on additional sampling and field activities recommended for SWMU 9.	7/7/95
25	Unless the oil-water separator and AST are being separately addressed under 6 2-770, soil samples should be collected and monitoring wells installed surrounding these structures.	The oil-water separator and the AST are not considered part of SWMU 9. -	7/7/95
<u>SWMU 10</u>			
26	Free product recovery from monitoring well PCY-363-MW-1 should be implemented as an Interim removal/remedial action as soon as possible. Recovery should not be delayed to the CMS. Adjacent and downgradient monitoring wells should also be checked for free product.	The Navy and the remedial action contractor are evaluating the feasibility of pumping free product from this well.	8/9/95
27	The decision to install additional monitoring wells was decided at the conference call on January 18, 1994 to be postponed until the Phase 2 results. Based on the Phase 2 results, in order to delineate the horizontal and vertical extent of groundwater contamination downgradient of contaminated well PC-363-MW-4, one intermediate depth monitoring well should be installed so as to be clustered with PC-363-MW-4, one shallow monitoring well should be installed downgradient of PC-363-4, and PC-363-MW-8 should be reinstalled.	The need for additional deeper monitoring wells will be considered during the CMS. It was agreed during the July 7, 1995 meeting that additional downgradient monitoring wells are not necessary.	7/7/95
28	Monitoring well PC-363-MW-5D should be resampled using Quiescent sampling to confirm the presence of metals and Benzo(a)pyrene in this deep well. If resampling confirms the presence of significant levels of these constituents, then a deeper monitoring well should be installed so as to be clustered with PC-363-MW-5D.	For inorganics, see response to comment no. 5 from David Clowes. Sampling for organic compounds (e.g., benzo(a)pyrene) in monitoring well PCY-363-MW-5D will be considered when developing groundwater monitoring plans for the corrective measure implementation at SWMU 10.	8/9/95
29	Concurrent with the sampling of the additional monitoring wells mentioned above, groundwater elevation measurements should be collected from all monitoring wells.	Groundwater elevation measurements can be incorporated into groundwater monitoring plans developed for the corrective measure implementation.	8/9/95

**Response to Comments
Final Draft RFI Report
David Clowes, Florida Department of Environmental Protection**

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
30	If contamination is detected downgradient of PC-363-MW-4, then surface water and sediment samples should be collected immediately downgradient of the contaminated monitoring well.	During the August 9, 1995 teleconference call, FDEP agreed that additional surface water and sediment samples are not necessary for this SWMU. Data from the two surface water and sediment samples collected during the Phase 2 investigation provide sufficient information on the condition of surface water and sediment at the SWMU. Contaminants present in groundwater are likely to have been detected in these surface water or sediment samples due to the lateral diffusion and dispersion typically associated with groundwater contaminant migration.	8/9/95
31	The levels of detected constituents in monitoring well adjacent to surface water bodies should be compared to Surface Water Quality Standards (62-302, F.A.C.).	This was completed in the Draft RFI report and can be found in Chapter 10 tables entitled "Comparison of SWMU 10 Groundwater ECPC Exposure Concentrations in Alligator Bayou or St. Andrew Bay with Toxicity Benchmarks".	8/9/95
<u>AOC 1</u>			
32	I recommended that free product recovery commence as soon as possible (DEP Memorandum, August 18, 1993) when it was identified in the Phase 2 Work Plan. A Performance Criteria Package for free product recovery was then submitted in September 1994, which we provided comments on October 28, 1994. To date the comments have not been addressed. This topic needs to be addressed without further postponement.	The Performance Criteria Package will be finalized by the end of 1995. The remedial action contractor has begun the design of the recovery system.	8/9/95
33	Figure 8-26 illustrates the AOC without any soil samples taken inside the AOC. Thus, soil samples should be collected inside of the AOC.	Based on the results of subsurface soil samples and from the free product investigation, the area of LNAPL contamination has been defined. Additional subsurface soil samples from within the SWMU boundaries are not needed for the CMS. Additional data needs identified during the CMS will be addressed during the the corrective measure implementation.	8/9/95
34	When free product removal is completed, then additional monitoring wells may be needed to delineate the extent of groundwater contamination.	Groundwater monitoring requirements will be identified during the CMS and addressed during the corrective measure implementation.	8/9/95

Response to Comments
Final Draft RFI Report
David Clowes, Florida Department of Environmental Protection

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
35	Figure 8-28: All monitoring wells should be illustrated on this figure.	This figure shows the results of the free product investigation. Monitoring well PCY-03-03S is shown because free product was measured in the well. The only other wells within the area covered by the figure are PCY-13-3D and PCY-13-3, which are deeper wells clustered with PCY-13-3S. Free product was not observed in these wells so they were not shown on the figure.	8/9/95
36	Surface water and sediment samples should be collected downgradient of monitoring wells PCY-13-6S/6I.	Additional surface water and sediment samples will be recommended for the area north of SWMU 3. Samples will be collected during the corrective measures implementation. These samples will be used to evaluate whether contamination detected in groundwater at AOC 1 is migrating to surface water and sediment downgradient of AOC 1. These samples may also provide information on migration of contamination from SWMU 3.	8/9/95
<u>Building 455</u>			
37	Additional soil samples surrounding sample 15SS05 (4.5 mg/kg arsenic) should be collected, in order to delineate the extent of arsenic contamination.	A removal action has been recommended that will include confirmatory sampling for arsenic.	7/7/95
<u>AOC 1</u>			
38	Monitoring well PCY-13-2D and PCY-13-7I should be resampled using Quiescent sampling to confirm the presence of lead and arsenic in these wells above MCLs and background levels (See comment no. 5).	The Final RFI report will recommend that these two monitoring wells be resampled using low-flow sampling techniques (for metals only). Resampling can be incorporated into monitoring plans developed for the corrective measure implementation.	8/9/95

**Response to Comments
Final Draft RFI Report
John Mitchell, Florida Department of Environmental Protection)**

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
1	<u>Table 6-8 (Summary of Analytical Data Screening for the RFI), p. 6-17</u> , indicates ecological assessment for screening of sediment will only be based on the USEPA Region IV sediment screening values (SSVs). In addition, any constituent which does not have an SSV should be screened based on twice the reference (background) value as is done for soil.	Table 6-8 states that inorganics were screened against twice reference (background) concentrations in the ecological risk assessment.	7/7/95
2	<u>Table 7-4 (Analytes Detected in Surface Soil Background Samples), p.7-25</u> , indicates relatively high values for the pesticides 4,4-DDD,4,4-DDT and Dieldrin. The soil guidance cleanup goals were exceeded for the maximum concentration detected for 4,4-DDT and Dieldrin. We agree that these detections are likely due to overall base wide use pesticides. However, these values would be of extreme concern if soils were near or adjacent to a surface water body. The lowest sediment effects values are 3800 times lower for 4,4-DDT and 425,000 times lower for dieldrin based on the maximum detected concentration for these pesticides. These reference values should not be considered when a site is near or adjacent to a surface water body or woodland due to the likely migration of soil from storm water runoff.	Although reference values for pesticides in sediment were not used for screening of surface soil ECPCs when sites were located adjacent to a surface water body or wetland, it was agreed that no changes to the report were needed. During the RFI, migration of pesticides from surface soil to sediment was evaluated by analyzing sediment samples for pesticides. At every SWMU, all pesticides detected in sediment samples were selected as ECPCs.	7/17/95
3	To enhance review time, all analytical tables and summary tables in the document related to each medium should include the promulgated standards or any guidance values (e.g., soil guidance values; groundwater standards and guidance values; surface water standards; sediment SSVs).	See response to comment no. 2 from David Clowes for comparison to groundwater and soil guidance values and standards. Although standards and guidance values were not included in the Chapter 8 tables, contaminant concentrations were compared to the appropriate standards in Chapters 9 and 10 and Attachments AZ-1 through AZ-3. The incorporation of these criteria into the nature and distribution summary tables will be considered for future documents.	7/7/95
4	<u>Sections 8.1.7.2 (Surface Water Inorganic Analytical Results - SWMU 1), p. 8-47</u> , should be evaluated based on Florida Surface Water Quality Standards (FSWQS) as well as surface water background concentrations. The FSWQS for copper (2.9 ug/L) was exceeded at all sampling stations except SW04, SW07, and SW08 lead (5.6 ug/L) was exceeded at SW01, SW02, and SW05; and mercury (0.025 ug/L) was exceeded at SW07.	See response to comment no. 3.	7/7/95

**Response to Comments
Final Draft RFI Report
John Mitchell, Florida Department of Environmental Protection)**

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
5	<p><u>Section 8.1.8.2 (Sediment Inorganic Analytical Results and Interpretation - SWMU 1), p. 8-58</u>, compared the analytical results to groundwater background concentrations. Comparison should be made to SSVs or sediment background. Constituents which exceeded their SSV at more than one sampling station were: benzo(a)anthracene, chrysene, dibenzo(a,h)anthracene, fluoranthene, Aroclor 1254, and copper. Several other PAHs and inorganics exceeded more than twice background concentrations.</p>	<p>The comparison of surface water and sediment concentrations to groundwater background is incorrect. The sentence has been changed to read "However, it is not likely that groundwater is the source of the inorganics because groundwater does not contain high concentrations of inorganics (most inorganics detected in groundwater were present at concentrations below two times background)." The purpose of this statement is to emphasize that there is no migration pathway for these analytes (i.e., if not found in groundwater then its not coming from groundwater). Groundwater is the only potential pathway for detected contamination because the seawall and the West Dock at this SWMU prohibit transportation of soils via erosion or surface runoff.</p> <p>Sediment and surface water data were compared to background in Tables 8-8 and 8-10 and sediment was compared to SSVs in Chapter 10.</p>	7/7/95
6	<p><u>Section 8.1.9 (Site Assessment Summary - SWMU 1), p. 8-59</u>, discusses the high PAH Levels detected in subsurface soil at the south dock as likely related to the free product area. This section should also indicate that the extremely high PAH values detected in sediment at sampling stations SW01, SW02, and SW03 are likely due to the seeping of free product from the bulkhead at the South Dock.</p>	<p>A discussion of PAHs in sediment samples has been added to Section 8.1.9.</p>	7/7/95
7	<p><u>Section 8.9.6.2 (Groundwater Inorganic Analytical Results and Interpretation - AOC 1), p. 8-310</u>, discusses high inorganic concentrations in monitoring wells PCY-13-2D and PCY-13-7I which are upgradient of the source area. The source of these inorganic constituents needs to be determined.</p>	<p>See response to comment no. 38 from David Clowes.</p>	8/9/95
8	<p><u>Section 10.2.1.1 (Surface Water - SWMU 1), p. 10-28</u>, reference the "State of Florida Surface Water Quality Screening Values." These are not screening values, but promulgated standards. The words "Screening Values" should be changed to Standards.</p>	<p>With reference to the State of Florida Surface Water Quality Screening Values, the words "Screening Values" has been changed to "Standards" throughout the document.</p>	7/7/95

**Response to Comments
Final Draft RFI Report
John Mitchell, Florida Department of Environmental Protection)**

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
9	<u>Section 10.2.4.1 (Surface Water Risk Characterization - SWMU 1 and AOC 2), p. 10-65,</u> uses surface water standards for simple linear regressions related to the benthic community metrics. We are unsure of the purpose of this exercise. Effects to the benthic community is related to contamination in the sediment which is affected by the water quality and vice versa. However, FSWQS are based upon likely effects to organisms within the surface water, not the sediment. The FSWQS should be the basis for risk characterization.	The simple linear regressions compared concentrations of each of the surface water ECPCs (not surface water standards) to the benthic community metrics. The purpose of this exercise was to determine if a relationship exists between the concentration of contaminants in surface water and impairment of the benthic macroinvertebrate community. Linear regressions were also completed for the sediment ECPCs vs. benthic community metrics. Risks to aquatic receptors were also characterized based on comparison of the exposure concentrations of ECPCs in surface water to toxicity benchmarks or standards including the Florida Surface Water Quality Standards (Table 10-13).	7/17/95
10	<u>Section 10.2.4.2 (Sediment Risk Characterization - SWMU 1 and AOC 2), p. 10-63,</u> risks were associated with contaminated sediment, specifically at sampling station SD01, SD02, SD03, and SD06, based primarily on PAH values, but that these impacts are not likely related to SWMU 1 or AOC 2. However, Stations SD01, SD02, and SD03 are likely affected by the release of PAH constituents detected in the free product area at the South Dock. Free product has been observed seeping through the bulkhead into the bayou at this location. This should be indicated in the risk characterization.	The risk characterization has been revised to discuss the seepage of free product from the South Dock and its potential relationship to PAH contamination in the surrounding sediment (sampling locations SD01, SD02, and SD03).	7/7/95
11	<u>Section 10.3.4.2 (Surface Water Risk Characterization - SWMU 2), p. 10-110,</u> indicates aquatic receptors may be at risk from inorganic contamination. Further sampling may be needed downgradient to adequately determine the extent of contaminant migration. This section further states (p. 10-114) that cadmium, mercury, silver, and nickel are likely not related to SWMU 2 as they were not detected in the sediment. Very few of the ecological chemicals of potential concern (ECPC) in surface water were not detected in sediment, and those which were detected rarely exceeded their SSV. The low pH of the water likely makes any inorganics in the sediment soluble or causing the metals to leach from the sediment.	During the October 11, 1995 meeting, it was agreed that no further action is necessary because the samples were collected in drainage ditches that contain water on an intermittent basis and do not provide a typical aquatic habitat. It was noted that the surface water samples collected from the drainage swales were very turbid and had low pH (4.2 to 5.6). The inorganics detected in the surface water samples may be attributed to both of these conditions. The text in Subsection 10.3.4.2 and Chapter 8 has been revised so that they are consistent.	10/11/95

**Response to Comments
Final Draft RFI Report
John Mitchell, Florida Department of Environmental Protection)**

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
12	<u>Table 10-37 (Selection of Ecological Contaminants of Potential Concern - SWMU 3), p. 1-123</u> , uses the USEPA Region IV SSVs for comparison. We recommend also using threatened effects level from FDEP's Sediment Quality Assessment Guidelines (SQAGs) (MacDonald, 1994) for any sediment within a marine environment. All the SQAGs were determined based on research data in a marine environment. The Region IV SSVs defaulted to the Contract Lab Protocols - Practical Quantitation Limits (CLP-PQL). However, when there are exceedances or detections at or above these levels, the screening value should be based on the SQAGs. In a freshwater environment, the Effects Range Low (ER-L) value established by NOAA should be used for screening.	<p>The TELs were released after the risk assessment was completed. TELs have been added to the risk characterization tables (see response to comment no. 14).</p> <p>In response to this comment, concentrations of contaminants in sediment less than the USEPA Region IV sediment screening values and not selected as ECPCs for aquatic receptors were compared to the lowest NOAAER-L or FDEP NOEL. In all cases, the maximum concentrations of these analytes do not exceed either of the NOAA or Florida values; therefore, the results of the risk characterization remain unchanged.</p> <p>The process outlined in this comment will be used in future risk assessments.</p>	7/7/95
13	<u>Section 10.4.4.1 (Surface Water Risk Characterization - SWMU 3), P. 10-141</u> , discusses the simple linear regressions related to surface water ECPC. Refer to comment #9.	See response to comment no. 9.	7/17/95
14	<u>Section 10.4.4.2 (Sediment Risk Characterization - SWMU 3), p. 10-141</u> , indicates using the states PEL values as reference. The reference should be to the TELs which is similar to the NOAAER-L value.	The Florida (tolerable exposure levels) TELs has been added to all tables that compare sediment exposure concentrations to aquatic toxicity benchmarks.	7/7/95

Response to Comments
Final Draft RFI Report
Gary L. Mahon, United States Geological Services, Florida

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
1	<p><u>Section 4.13.2, p4-32</u> : How was the free product thickness computed/determined? What was the free product and, consequently, why was 0.85 chosen for the density of the free product?</p>	<p>a) Free-product thickness was measured with an oil-water interface probe in January 1994 (Section 4.14, page 39).</p> <p>b) Free product samples from AOC 1 and SWMU 10 were fingerprinted. The product from AOC 1 has a signature similar to waste oil or heavy oil. Free product from SWMU 10 has a signature similar to diesel fuel (Section 8.8.5, page 8-242; Section 8.9.5, page 8-284; and Appendix I).</p> <p>c) The value 0.85 was an estimate used to correct water level measurements taken from wells PCY-13-3S and PCY-363-1 where free product was encountered. Unfortunately, there are no specific gravity measurements for free product from AOC 1 or SWMU 10. However, the product at both sites is floating; therefore, it's specific gravity must be less than one.</p> <p>The specific gravity for diesel fuel is approximately 0.83. Therefore, the 0.85 value is likely an accurate estimate for SWMU 10, based on the fingerprint analysis.</p> <p>Based on the fingerprint analysis, the specific gravity of the product at AOC 1 is probably higher than 0.85. However, this value was only used to estimate the water level in PCY-13-3S and increasing it will have no affect on the interpretation of overall groundwater flow. For example, if the value 0.95 is used for the correction instead of 0.85, it would raise the estimated water level by less than 0.1 foot. This would create less of a deflection in the interpretation of the 7-foot contour (Figure 8-25).</p>	7/7/95

**Response to Comments
Final Draft RFI Report
Gary L. Mahon, United States Geological Services, Florida**

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
2	<p><u>Section 7.2.1, p7-4</u>: I think it should state that water table contours "generally follow/parallel contours of the land surface." I think the text kind of implies that only in the area that the contours are "v" or "u" shaped is where there is recharge (near SWMU2 is the only recharge area); in reality, recharge is occurring where there is not pavement/buildings (because of the predominantly sandy soils/sediments in the area), with the exception of near the coastline and the surface water features north of Alligator Bayou.</p>	<p>Text has been revised to indicate that the water table contours "generally follow/parallel contours of the land surface, and that recharge is occurring everywhere that buildings and pavement are not located.</p>	7/7/95
3	<p><u>Figure 7-3</u>: I did not see well PCY-10-04, only the label for the well</p>	<p>Figure 7-3 has been revised to show the well location.</p>	7/7/95
4	<p><u>Section 7.2.1, p7-11</u>: Data are limited to make the statement that flow from the south end of SWMU 2 ultimately flows to Alligator Bayou; some flow could go more southwestward and discharge to St Andrew Bay or the small inlet off of the Bay (fig 1-1). Also, data does not support the statement that ground-water flows westward from SWMU 5 to the West Dock.</p>	<p>Text has been revised to indicate that recharge from these areas may flow south or southeast and may discharge to either Alligator Bayou or St. Andrew Bay.</p>	7/7/95
5	<p><u>Section 7.2.1, p7-11, paragraph 3</u>: Text states that there is little "seasonal" variation in the water levels; this should be "temporal" variations because the 3 measurements periods were all during the same type of annual climatic conditions; there may be more of change/variation when compared to water levels collected during the rainy season, for example.</p>	<p>Text has been revised to indicate that there is little "temporal" variation in the water levels, not "seasonal".</p>	7/7/95
6	<p><u>Section 7.2.2, p7-15</u>: According to Fetter (Applied Hydrogeology, 1988) the value of porosity is on the upper end of the range of porosity for fine- to medium-grained sands; I think the text should be modified to say that the range in velocity is the result of spatial hydraulic conductivity and porosity variations.</p>	<p>Text has been revised to indicate that the range in velocity is the result of spatial hydraulic conductivity and porosity variations.</p>	7/7/95
7	<p><u>Section 7.2.2, p7-15, paragraph 3</u>: Should read "The calculated horizontal groundwater flow velocities"; what about the vertical velocities? In the area of SWMU2 the vertical velocities are 2 times the horizontal velocities; I think in assessing contaminant movement it is very important to address vertical velocities; also should comment about flow through the unsaturated zone.</p>	<p>Text has been revised to include a discussion of vertical velocities at SWMU 2 and flow through the unsaturated zone.</p>	7/7/95
8	<p><u>Section 7.2.3, p7-15</u>: Should comment on the increase in dispersion/diffusion in the area of tidal influence as a result of the potential change in magnitude and direction of the ground-water flow.</p>	<p>Text has been revised to include a discussion pertaining to the general effects of the tidal influence on groundwater (i.e., oscillation) with respect to dispersion of contamination.</p>	7/7/95

Response to Comments
Final Draft RFI Report
Gary L. Mahon, United States Geological Services, Florida

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
9	<u>Section 7.2.3, p7-16</u> : Why would tides be subdued in Alligator Bayou? It is open to St Andrew Bay and the fluctuation should be synchronous with those in St Andrew Bay.	The reference to subdued tides in Alligator Bayou has been deleted.	7/7/95
10	<u>Section 8.2.2.1, p8-61</u> : See section 7.2.1, p7-11.	See response to comment no. 4.	7/7/95
11	<u>Section 8.3.2.1, p8-142, paragraph 2</u> : On last sentence add "and because the surficial aquifer is discharging groundwater to the bay".	Text has been revised to add the words "and because the surficial aquifer discharges groundwater to the bay".	7/7/95
12	<u>Section 8.9.2.1, p8-263, paragraph 3</u> : Subhorizontal flow is terminology that is not used anywhere that I have ever seen; I realize that you are acknowledging the fact that there is a vertical component to the velocity vector due to recharge/discharge effects, but I don't think the term is appropriate -- state explicitly the effects observed/interpreted; these conditions are occurring elsewhere on the base (other SWMUs), but it is not described as above.	Text has been revised to indicate that flow is "horizontal", not "subhorizontal".	7/7/95
13	<u>Section 8.9.2.3, page 8-265</u> : See comment above concerning tidal influences on p7-15.	See response to comment no. 8.	7/7/95

Response to Comments
Final Draft RFI Report
Craig Benedikt, United States Environmental Protection Agency

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
1	<p><u>Background Levels of Inorganics in Groundwater:</u> The background levels of these chemicals in groundwater were high, most probably due to improper sampling. The background wells will, in all likelihood, need to be resampled with low flow methods and analyzed for metals in order to provide a more representative background screen for COPC selection. The EPA RPM should be consulted in this regard.</p>	<p>During the August 9, 1995 teleconference call between EPA, FDEP, the Navy, and ABB-ES, it was determined that sufficient data exists to support the conclusion that elevated levels of inorganics present in groundwater samples collected from some of the SWMUs/AOCs and background are inorganics sorbed to soil particles. The only monitoring wells recommended for resampling (using quiescent sampling techniques) are monitoring wells PCY-13-02D and PCY-13-7I. The Final RFI report will recommend that these two monitoring wells be resampled using low-flow sampling techniques (for metals only). Resampling can be incorporated into monitoring plans developed for the corrective measure implementation.</p>	8/9/95
2	<p><u>Page 9-24, Toxic Equivalence Factors for PAHs, Table 9.8:</u> These values were incorrect. Attached is a table of the correct values. Note that the TEF for Chrysene is now 0.001 and the TEF for benzo(k)fluoranthene is 0.01.</p>	<p>The toxicity equivalency factors (TEFs) used in the risk assessment were current at the time the report was written. Because TEFs are applied to the exposure point concentrations, the revised TEFs for chrysene and benzo(k)fluoranthene (0.001 and 0.01, respectively) are less conservative than the TEFs used in the calculation of risk in this document (0.01 for chrysene and 0.1 for benzo(k)fluoranthene). Therefore, risks calculated using the revised TEFs would be less than the risks calculated in the CSS Panama City RFI. Because a risk of concern was not identified for chrysene and benzo(k)fluoranthene in the risk assessment, the revised values will not change the final outcome of the risk assessment.</p>	8/9/95
3	<p><u>Page 9-35, Oral CSF for Arsenic:</u> This number has been changed to 1.5 (mg/Kg-day)⁻¹ and appears in IRIS.</p>	<p>The revised oral cancer slope factor (CSF) for arsenic [1.5 (mg/kg-day)⁻¹] is less conservative than the CSF used in the human health risk assessment [1.75 (mg/kgday)⁻¹]. Risks calculated using the revised CSF for arsenic would be less than risks calculated in the CSS Panama City RFI. However, the reduction in risk is not significant and will not change the final outcome of the risk assessment. Therefore, risks have not been recalculated using the revised CSF of 1.5 (mg/kg-day)⁻¹.</p>	8/9/95

**Response to Comments
Final Draft RFI Report
Craig Benedikt, United States Environmental Protection Agency**

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
4	<u>Page 9-37, Remedial Goal Options:</u> The text indicates that media that present cancer risks greater than 1E-04 or HIs greater than 1 are evaluated for RGOs. This should be use scenarios that present cancer risks or HIs greater than these trigger levels. Guidance in this regard is attached.	The text has been revised to indicate that "use scenarios" for media that present cancer risks greater than 1E-04 or HIs greater than 1 are evaluated for RGOs.	8/9/95
5	<u>Table 9-10, Lead Screening Level:</u> In July, 1994, the residential screening level for lead was changed to 400 mg/Kg in soil. This value should be used, not 500 mg/Kg.	Using the revised screening value of 400 mg/kg for lead in residential soil results in the selection of lead as a chemical of potential concern (CPC) in surface soil at SWMU 3. The risk attributable to exposure to lead in surface soil at SWMU 3 could not be calculated because neither a cancer slope factor nor a reference dose is available for lead. However, the mean concentration of lead at SWMU 3 (273.3 mg/kg) is less than the residential surface soil screening value for lead, and therefore would not warrant further study.	8/9/95
6	<u>Page 11-8:</u> The last sentence discusses the toxicity of the dissolved phase of metals and suggest that the metals sorbed onto particulates are not toxic to aquatic organisms. The filter feeders in this marine system, such as clams, oysters and barnacles will ingest particles and may experience metal toxicity. Please review this discussion.	The sentence should be reworded to state that "metals sorbed onto particulates are not <u>bioavailable</u> to aquatic organisms." While it is true that mollusks are filter feeders, the primary method for toxicity is adsorption of contaminants at the gill (or ctenidia as they are referred to in mollusks) surface. Only metals in the dissolved phase are adsorbed at the gills, while the fraction of metals bound to particulates (i.e., total metals) is filtered out. An October 1, 1993 USEPA memo (Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria) specifies the use of dissolved or filtered metals because dissolved metal more closely approximates the bioavailable fraction of metal in the water column than does total metal.	8/9/95
7	If groundwater sampling is performed at this facility in the future, turbidity must be monitored during purging.	Turbidity measurements will be collected during purging for future groundwater samples.	7/7/95
8	If groundwater monitoring wells are installed at this facility in the future, the HSA must be a minimum diameter of 6.25".	If additional monitoring wells are installed at CSS Panama City, the HSA will be a minimum diameter of 6.25 inches.	7/7/95

Response to Comments
Final Draft RFI Report
Craig Benedikt, United States Environmental Protection Agency

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
9	If groundwater sampling is performed at this facility in the future, it should be performed with low impact equipment such as peristaltic pumps. Bailers are not recommended.	Low impact sampling techniques will be used for future groundwater sampling.	7/7/95
10	"Beta bottles" are not acceptable devices for surface water sampling for analysis of organic parameters.	We discussed with EPA the reasons why they consider beta bottles not acceptable for collecting surface water samples analyzed for organics. EPA stated that some beta bottles are constructed of aluminum with rubber stoppers at both ends which could contribute to inorganic and organic contamination. The beta bottle used for collecting surface water samples at CSS Panama City was constructed of PVC with amber laytex closing tubing. These materials are more appropriate for sampling metals and organics. In addition, laboratory analyses show that the surface water samples collected at CSS Panama City were not contaminated with organics were not detected in equipment rinseate blanks. In the future, surface water sample collection equipment will be specified in the site work plan.	8/9/95
11	If more groundwater monitoring wells are to be constructed at this facility, materials blanks must be collected.	If new monitoring wells are installed at CSS Panama City, materials blanks will be collected.	7/7/95
12	As a general comment, the Hazardous Waste Section is in agreement with the conclusions and recommendations of the report.	The Navy is pleased that USEPA is in agreement with the conclusions and recommendations of the report.	7/7/95
13	<u>Page 4-7, Section 4.2.1:</u> This section discusses three background monitoring wells; however, only the locations of two of the wells are given.	The location of the third well has been added to the text.	7/7/95
14	<u>Page 4-14, Section 4.2.4:</u> Need to mention whether, or not, background subsurface soil samples were collected during the Phase 2 field investigation. If not, why? Was it determined that the soil characterization was adequately defined during the Phase 1 investigation?	The text has been revised to indicate that because sufficient background subsurface soil data was collected during the Phase 1 investigation, background subsurface soil samples were not collected during the Phase 2 investigation.	7/7/95
15	<u>Page 4-16, Section 4.4, Paragraph 3:</u> This paragraph mentions that imaging depth was generally less than 5 to 10 feet. This statement is confusing and should be revised.	The text has been revised to state that "imaging depth was generally less than 10 feet".	7/7/95

Response to Comments
Final Draft RFI Report
Craig Benedikt, United States Environmental Protection Agency

CSS Panama City, Florida

Comment Number	Comment	Response	Date Resolved
16	<u>Page 4-23, Section 4.12, Paragraph 3:</u> This paragraph states that sampling intervals were defined in the RFI Phase 3 workplan. Phase 3 workplan? Should this be Phase 2 workplan?	The text has been revised to indicate that "sampling intervals were defined in the RFI Phase 2 workplan".	7/7/95
17	<u>Page 4-31, Section 4.13.1, Paragraph 1:</u> Paragraph states that Portland cement blended with bentonite was <u>tremie size placed</u> in remaining annular space..... Is tremie size placed the correct terminology in this case?	The text has been revised to state that "Portland cement blended with bentonite was tremmied in the remaining annular space".	7/7/95
18	<u>Page 4-39, Section 4.13.5, Paragraph 2:</u> The way this paragraph is written suggests that samples collected for inorganic analysis were only filtered. Need to clarify that groundwater samples collected for inorganic analysis were both filtered and unfiltered.	This paragraph has been revised to indicate that both filtered and unfiltered samples were collected for metals analysis.	7/7/95
19	<u>Page 8-32, Section 8.1.6.1:</u> The first paragraph should be revised to read SWMU 1/AOC 2. The second paragraph states that the Phase 2 sample collected from well 14MW02A were not analyzed for VOCs and SVOCs. A rationale for not analyzing for these compounds needs to be included.	The first paragraph in this subsection has been revised to read SWMU 1/AOC 2. Phase 1 organic results were considered adequate; therefore, the well was only sampled for total and dissolved metals in Phase 2. The last sentence of the paragraph has been deleted.	7/7/95
20	<u>Figure 8-19:</u> Different sample locations should not utilize the same sample control number (e.g., two samples have the number 05SS04 and two have the number 05SS01).	See response to comment no. 19 from David Clowes.	7/7/95
21	<u>GENERAL COMMENT:</u> Given the large amount of data reported in the tables, it would be helpful to highlight those values which exceed either background, regulatory standards or screening values.	See response to comment no. 4 from David Clowes.	7/7/95