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NAS CECIL FIELD, FL
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PROPOSED PLAN FOR OPERABLE UNIT 10 (OU 10) SITE 25 FORMER TRANSFORMER
STORAGE YARD NAS CECIL FIELD FL
7/1/2003
TETRA TECH NUS INC



Installation Restoration Program July 2003



Proposed Plan for Operable Unit 10, Site 25, Naval Air Station Cecil Field Jacksonville, Florida

Facility Description

Naval Air Station (NAS) Cecil Field (see Figure 1) was established in 1941 and provided facilities, services, and material support for naval operations. NAS Cecil Field was added to the **National Priorities List (NPL)** in 1989. In July 1993, the Base Realignment and Closure (BRAC) Commission recommended the closure of the Air Station. On September 30, 1999, NAS Cecil Field was closed and the majority of the flightline was transferred to the Jacksonville Airport Authority. In September 2000, most of the remainder of NAS Cecil Field was transferred to the City of Jacksonville.

Site Description

Operable Unit (OU) 10, Site 25, Former Transformer Storage Yard is located in the north-central portion of the Main Base of NAS Cecil Field (see Figure 1) in the Transportation and Fuel Management Compound/Public Works Maintenance Area, north of Building 81 and south of Building 100 (see Figure 2). The site is primarily a flat, unpaved area covering approximately 0.6 acre and included Buildings 101 and 247. The unpaved area was used until the 1990s to store several hundred electrical transformers, some of which were reported to have contained **polychlorinated biphenyls (PCBs)**. Building 101 was a Quonset hut built in 1961 and used to store plumbing and electrical supplies. Building 247 was a metal shed built in 1956 and was used to store pesticides until 1975. Site 25 also included three oil/water separators, 80-OW1, 80-OW2, and 80-OW4. Existing buildings and structures, including the oil/water separators, have been demolished or dismantled and removed for future use of the site as part of an industrial park and office complex. Current and future uses of the sites have been taken into consideration in the remedy selection process.

Site activities have resulted in contamination of soil with **total recoverable petroleum hydrocarbons (TRPH)**, PCBs, pesticides, and **polynuclear aromatic hydrocarbons (PAHs)**. Site activities have also resulted in contamination of the **surficial aquifer** groundwater with isomers of the pesticide benzene hexachloride (BHC) and low concentrations of aluminum and manganese.

Contaminated soil has previously been excavated and disposed off site as part of an **Interim Removal Action (IRA)** (Figure 2). However, groundwater contamination with BHC still needs to be addressed. The groundwater BHC plume is conservatively estimated to extend in a 50-foot radius from monitoring well CEF-P25-01S and to a depth of 15 feet below ground surface (bgs), resulting in an estimated 147,000 gallons of contaminated groundwater (see Figure 2).

*This document summarizes the cleanup plan proposed by the Navy and U.S. EPA in consultation with FDEP. For detailed information on the options evaluated for **OU 10, Site 25**, consult the documents contained within the Administrative Record, which is available for review at the Information Repository located at Building 907, 13357 Lake Newman Street, Cecil Commerce Center, Jacksonville, Florida 32252, Tel (904) 573-0336.*

The Proposed Cleanup Plan

Based on the conclusions of the **Remedial Investigation (RI)** and the results of the **IRA**, the Navy and the United States Environmental Protection Agency (U.S. EPA), in consultation with the Florida Department of Environmental Protection (FDEP), propose No Further Action (NFA) for the Site 25 soil.

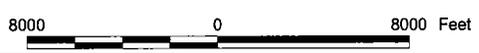
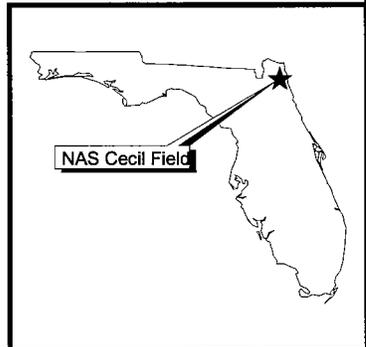
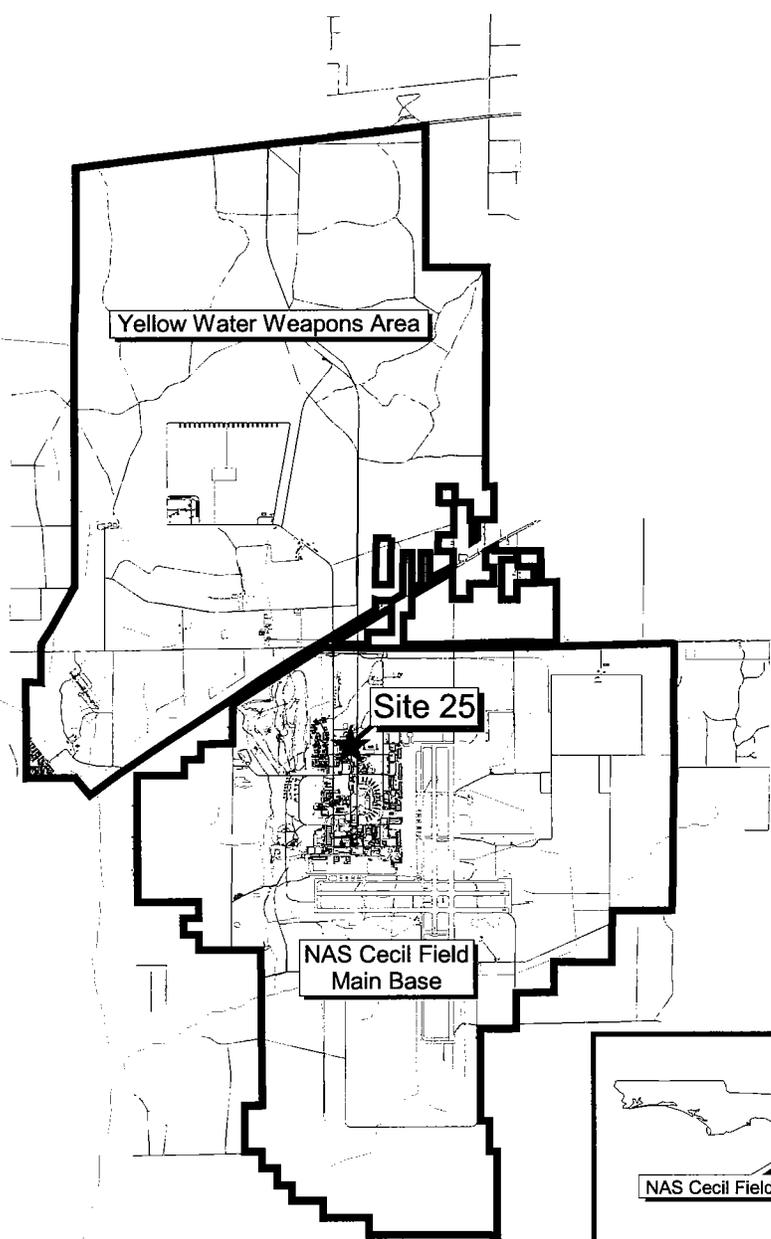
To address contaminated groundwater at Site 25, the Navy and U.S. EPA, in consultation with FDEP, propose the following:

- Implementation of **land use controls (LUCs)** to prevent the use of the groundwater from the **surficial aquifer**. Continued implementation of these **LUCs** will be verified by regular site inspections.
- Monitoring of groundwater quality to evaluate decreases in contaminant concentrations through naturally-occurring processes and to verify that contamination is not migrating past selected compliance wells.
- At the end of 5 years, a site review will be performed to verify that the proposed cleanup plan has achieved its objective as projected by modeling. If this is not the case and natural attenuation is demonstrated to be insufficient, another cleanup approach may be implemented.

About This Document

In accordance with Section 117(a) of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** and Section 300.430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), this document summarizes the Navy's proposal for site

Bolded terms throughout this Proposed Plan are explained in the Glossary of Terms presented on pages 10 and 11.



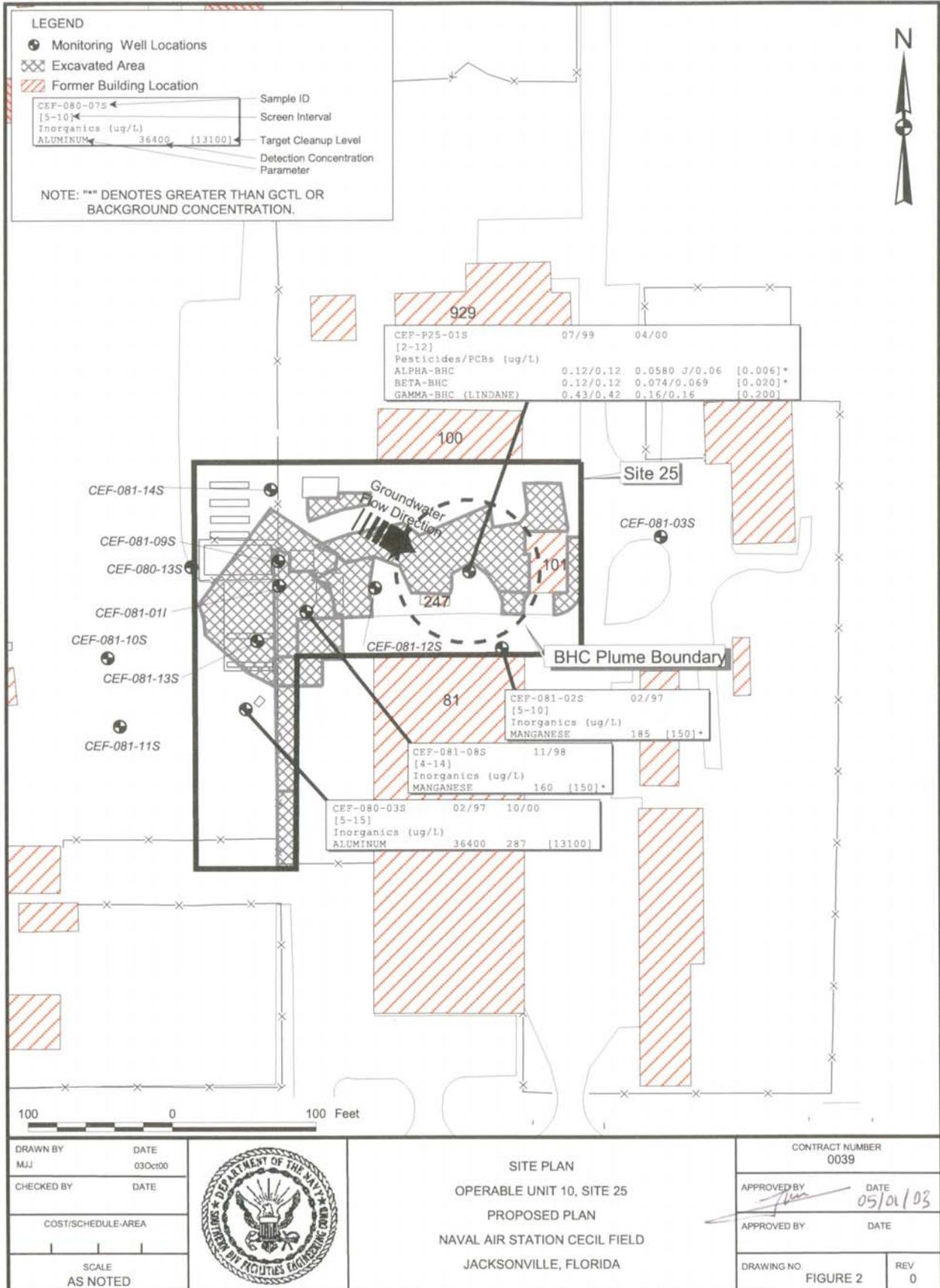
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GENERAL LOCATION MAP
 OPERABLE UNIT 10, SITE 25
 PROPOSED PLAN
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 0039	
APPROVED BY <i>[Signature]</i>	DATE 04/15/03
APPROVED BY	DATE
DRAWING NO. FIGURE 1	REV 0

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cleanup to help the public understand and comment on the proposed alternatives. This Proposed Plan has been developed by the Navy and U.S. EPA, in consultation with FDEP. These agencies, in consultation with the **Restoration Advisory Board (RAB)** will select a final remedy for **OU 10**, Site 25 after public comments have been addressed. One of the purposes of this Proposed Plan is to solicit the public's views and comments on the alternatives described. The Navy and U.S. EPA, in consultation with FDEP, may modify the Preferred Alternative that constitutes the proposed cleanup plan or select another response action presented in this Proposed Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all alternatives presented in this Proposed Plan. This Proposed Plan highlights the key information from the **RI** and **Feasibility Study (FS)** reports but is not a substitute for these documents. More complete information can be found in the **RI** and **FS** reports and other documents within the **Administrative Record** located at the Information Repository (see Page 12 for details).

What do you think?

The Navy, as the lead agency, is accepting formal public comments on this Proposed Plan from July 14, 2003 to August 13, 2003. You don't have to be a technical expert to comment. If you have a concern or preference, the Navy, U.S. EPA, and FDEP want to hear it before making a final decision on how to protect your community. To comment formally:

Offer oral comments during the comment portion of the public hearing, if such a hearing is requested (see page 12 for details).

Send written comments postmarked no later than August 13, 2003 to:

Commander
Department of the Navy
Southern Division
Naval Facilities Engineering Command
Attn: Jeffrey Meyers, P.E., CHMM (Code ES3)
2155 Eagle Drive
North Charleston, SC 29406
Tel: 843-820-5609

E-mail comments by August 13, 2003 to:

meyersjg@efdsouth.navfac.navy.mil

Site History

Following is a brief history of environmental investigations and remediation at Site 25:

- 1994 – During the BRAC investigation, Site 25 was first designated as Area of Interest (AOI) 25.
- 1997 to 1998 – Phase II Investigation of the Transportation and Fuel Management Compound/Public Works

Maintenance Contractor Area, which included AOI 25, was conducted. Soil and groundwater samples were collected and analyzed for **volatile organic compounds (VOCs)**, **semivolatile organic compounds (SVOCs)**, pesticides, **PCBs**, and inorganic chemicals. As a result of the contamination detected in soil and groundwater during these investigations, AOI 25 was re-designated as **Potential Source of Contamination (PSC) 25**.

- 1997 to 1999 – Confirmatory sampling investigations were performed for oil/water separators 80-OW1, 80-OW2, and 80-OW4. Soil borings were advanced for headspace analyses, and soil samples were collected and analyzed for Florida Used Oil and **Kerosene Analytical Group (KAG)** parameters.
- 1999 to 2000 – Investigation of **PSC 25**. Samples were collected to delineate soil and groundwater contamination. Surface and subsurface soil and groundwater samples were collected and analyzed for previously detected contaminants. As a result of this investigation, approximately 1,235 cubic yards of contaminated soil were identified as requiring excavation and off-site disposal. The groundwater investigation identified one well with elevated concentrations of BHC isomers and one well with elevated concentrations of aluminum. Because of the presence of these contaminants in groundwater, **PSC 25** was re-designated as **Installation Restoration (IR) Site 25**.
- 2000 – A bench-scale treatability study was performed to verify the effectiveness of insitu/exsitu enhanced oxidation processes for the removal of BHC from groundwater. Samples of groundwater were collected and submitted to technology vendors for the testing of two enhanced oxidation reagents (Fenton's Reagent and potassium permanganate). These tests were unsuccessful as neither reagent was capable of reducing detected concentrations of BHC to below FDEP criteria.
- 2001 – An **IRA** was performed. Approximately 5,234 tons of contaminated soil were excavated and disposed off site. The areas of excavated soil are shown on Figure 2.
- 2000 to 2001 – Site 25 **RI**. The **RI** concluded that following the **IRA** remaining soil at Site 25 did not pose an unacceptable risk to human health or the environment. Samples were collected from two existing monitoring wells to further delineate BHC and aluminum contamination in groundwater. One round of samples was collected and analyzed for pesticides and PCBs from the well where elevated BHC concentrations had previously been detected. One round of samples was collected and analyzed for aluminum from the well where elevated aluminum concentrations had previously been detected. In addition, tests were performed in these two wells and two other existing wells in order to estimate hydraulic conductivity and transmissivity in the shallow zone of the surficial aquifer.

- 2001 – Site 25 **FS**. Based on the results of previous investigations, groundwater **chemicals of concern (COCs)** were identified and **cleanup goals** were established. Groundwater remedial technologies were screened and remedial alternatives were assembled, analyzed, and compared.

Summary of Site Risks

The **Preliminary Risk Evaluation (PRE)** performed as part of the **RI** concluded that because of the soil **IRA**, exposure to soil no longer represents a human health risk. The 95-percent **upper confidence level (UCL)** of the concentrations of the soil remaining at the site is less than FDEP Soil Cleanup Target Levels (SCTLs) for direct residential exposure.

The **PRE** also indicated that exposure to Site 25 groundwater could potentially result in adverse health effects. These adverse effects are associated with exceedances of FDEP Groundwater Cleanup Target Levels (GCTLs) for alpha- and beta-BHC. Although aluminum and manganese were detected at concentrations higher than FDEP GCTLs, these concentrations were still well below the NAS Cecil Field site-specific background values and were shown to be associated with soil particles entrained in the groundwater samples.

The ecological risk assessment performed as part of the **RI** established that Site 25 consisted primarily of buildings and parking lots that provide an ecological habitat of marginal quality and of little use to terrestrial wildlife. Therefore, the soil exposure pathway is negligible, and soil contaminants were not evaluated for an ecological risk assessment. There are no pathways for exposure of ecological receptors to the Site 25 groundwater.

Why is Cleanup Needed?

The Navy's studies of OU 10, Site 25 have resulted in the following conclusions:

- As a result of past activities, several chemicals were found in the Site 25 soil and groundwater that could potentially be harmful to human health.
- The IRA adequately addressed concerns associated with soil contamination at Site 25.

- Several contaminants remain in the groundwater of the surficial aquifer that could result in unacceptable human health risk in case of potential direct exposure to that water in the future. The main contributors to human health risks have been identified as the pesticides alpha- and beta-BHC.

It is the judgment of the Navy and U.S. EPA in consultation with FDEP that the preferred remedy identified in this Proposed Plan is necessary to protect public health and welfare from actual or threatened releases of hazardous substances into the environment.

Final **Records of Decision (RODs)** have been approved for **OU 1** through **OU 4**; **OU 5**, Site 14; **OU 6** through **OU 8**; **OU 9**, Sites 36 and 37; and **OU 12**, Sites 32, 42, 44 and Old Golf Course. An **RI**, Baseline Risk Assessment (BRA), and **FS** have also been prepared for **OU 5**, Site 15, but the **FS** is currently being re-evaluated. **RI** and **FS** reports were finalized for **OU 9**, Sites 57 and 58 in August and October 2002, respectively. The **RI** report for **OU 10**, Site 21 was finalized in October 2001. The **FS** report for Site 21 was finalized in September 2002. **RI** and **FS** reports were finalized for **OU 11**, Site 45 in August 2001. An interim action has been completed for **OU 12**, Site 32. Decision documents are forthcoming for Sites 21, 32, and 45.

What are the Groundwater Cleanup Objectives and Goals?

Using the information gathered during the site investigations and the results of the **PRE**, the Navy and U.S. EPA, in consultation with FDEP, have identified the following **Remedial Action Objective (RAO)** for the groundwater at OU 10, Site 25:

- Prevent ingestion of groundwater with concentrations of alpha- and beta-BHC greater than their respective FDEP GCTLs of 0.006 micrograms per liter (µg/L) and 0.02 µg/L.

Table 1 shows the groundwater **COCs** and target **cleanup goals**.

TABLE 1

Groundwater COCs and Cleanup Goals Operable Unit 10, Site 25 – NAS Cecil Field			
COCS	Range of Detections	Cleanup Goal ⁽¹⁾	Federal MCL
Pesticides (µg/L)			
alpha-BHC	0.05 U – 0.12	0.006	NL
beta-BHC	0.05 U – 0.12	0.02	NL

NOTE:

- (1) Groundwater Cleanup Target Level from Florida Administrative Code (FAC) 62-777
- NL Not listed
- U undetected at the indicated analytical detection limit
- µg/L Micrograms per liter

Cleanup Alternatives for OU 10, Sites 25 Groundwater

The OU 10, Site 25 **FS** report reviewed the options that the Navy and U.S. EPA, in consultation with FDEP, considered for cleanup of Site 25 groundwater. These options, referred to as “cleanup alternatives,” are different combinations of plans to restrict access, and to contain, remove, or treat contamination to protect public health and the environment. The Preferred Alternative is Alternative 2: Natural Attenuation, **LUCs**, and Monitoring.

No Action

Alternative 1: No Action

Evaluation of the No Action alternative is required by law as a basis for comparison with other alternatives. No remedial action would be conducted to reduce risks to human health and the environment, and no restrictions would be imposed to prevent access to contaminated groundwater. Concentrations of BHC in groundwater might eventually be reduced to **cleanup goals** through natural attenuation processes, but no monitoring would be performed that would quantify this reduction.

Limited Action

Alternative 2: Natural Attenuation, LUCs, and Monitoring

Natural processes such as biological degradation, dispersion, dilution, and adsorption would reduce the concentration of BHC in groundwater to **cleanup goals**. **LUCs** would consist of preventing the use of groundwater until the **cleanup goals** have been met. Also, no intrusive activities, such as drilling, that could result in exposure to contaminated groundwater would be allowed. Monitoring would consist of regularly sampling and analyzing groundwater to evaluate decreases in BHC concentrations and to verify that the contaminant plume is not migrating past selected compliance wells. At the end of 5 years, a site review would be conducted to verify if the **cleanup goals** have been met as predicted by modeling. If it is determined that natural attenuation has failed to meet **cleanup goals**, additional remedial measures would be evaluated and might be implemented.

In-Situ Treatment

Alternative 3: In-Situ Enhanced Biodegradation, LUCs, and Monitoring

This alternative would consist of accelerating the naturally occurring biodegradation of BHC through the injection of a hydrogen release compound (HRC) such as lactic acid in the impacted groundwater. Prior to this application, a treatability study would be performed to verify the effectiveness of the HRC and determine whether application of an oxygen release

compound (ORC), such as magnesium peroxide, would be required as well to complete the biodegradation of BHC metabolites. Conceptually, the scheme would consist of an initial injection of approximately 7,500 pounds of HRC through an estimated 125 injection points. A year later, approximately 2,500 of HRC would be injected through the same estimated 125 injection points. **LUCs** and monitoring would be the same as for Alternative 2.

Removal, Ex-Situ Treatment, and Disposal

Alternative 4: Extraction, On-Site Treatment, Surface Water Discharge, LUCs, and Monitoring

This alternative would consist of removing contaminated groundwater from the **surficial aquifer** through extraction wells and treating the extracted groundwater in an on-site system prior to discharge to local drainage ditches. Conceptually, the system would have a design capacity of 15 gallons per minute (gpm) and would feature an estimated two extraction wells and an on-site treatment system utilizing liquid-phase granular activated carbon (GAC) adsorption. **LUCs** and monitoring would be similar to Alternative 2.

Use of ARARs in Evaluation Process

Applicable or Relevant and Appropriate Requirements (ARARs) are federal and State environmental requirements used to evaluate the appropriate extent of site cleanup, scope and formulate remedial alternatives, and control the implementation and operation of a selected remedial action. Chemical-, location-, and action-specific **ARARs** that apply to **OU 10, Site 25** are presented in Section 2.0 of the **FS** report. Each alternative has been evaluated to determine its compliance with **ARARs**.

Detailed Analysis of Cleanup Alternatives

In accordance with **CERCLA**, a detailed analysis of each cleanup alternative must be performed using nine evaluation criteria. These include two threshold criteria (Overall Protection of Human Health and the Environment and Compliance with **ARARs**), five balancing criteria (Long-Term Effectiveness and Permanence; Reduction of Toxicity, Mobility, and Volume Through Treatment; Short-Term Effectiveness; Implementability; and Cost) and two modifying criteria (State Acceptance and Community Acceptance). An analysis of these criteria was performed for each cleanup alternative during the **FS**, and summary comparisons of these analyses are presented on Table 2. Please consult the **OU 10, Site 25 FS** report for more detailed information.

Based on information currently available, the Preferred Alternative, Alternative 2, provides the best balance among alternatives with respect to the evaluation criteria.

State acceptance was secured during the **FS** review. As part of the community acceptance process, the Navy, U.S. EPA, and FDEP briefed the **RAB** on October 15, 2002. During the upcoming public comment period, the Navy, U.S. EPA, and

TABLE 2
SUMMARY OF COMPARATIVE EVALUATION OF ALTERNATIVES
OPERABLE UNIT 10, SITE 25
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA
PAGE 1 OF 2

Evaluation Criteria	Alternative 1: No Action	Alternative 2: Natural Attenuation, LUCs , and Monitoring	Alternative 4: In-Situ Enhanced Biodegradation, LUCs, and Monitoring	Alternative 3: Extraction, On-Site Treatment, Surface Discharge, LUCs, and Monitoring
Overall Protection of Human Health and Environment	Would not be protective because nothing would prevent human exposure to contaminated groundwater. Also, potential migration of BHC would remain unchecked.	Would be protective by preventing risk from exposure to contaminated groundwater through LUCs and monitoring until cleanup goals are achieved.	Would be more protective than Alternative 2 because it would provide the same protective components and also accelerate in-situ biodegradation of BHC.	Would be as protective as Alternative 3, because it would provide the same protective components as Alternative 2 and also accelerate removal of BHC through extraction and on-site treatment.
Compliance with ARARs and TBCs: Chemical-Specific Cleanup Criteria Location-Specific Action-Specific	Would not comply Not applicable (no ARARs) Not applicable (no acetone)	Would comply Not applicable (no ARARs) Would comply	Would comply Not applicable (no ARARs) Would comply	Would comply Not applicable (no ARARs) Would comply
Long-Term Effectiveness and Permanence	Would have very limited long-term effectiveness and permanence because no action would occur. BHC reduction or migration would remain undetected because no monitoring would occur.	Would be long-term effective and permanent. Natural attenuation would eventually reduce BHC concentrations to its cleanup goals . LUCs would effectively prevent unacceptable human health risk from exposure to contaminated groundwater. Monitoring would effectively evaluate the progress of remediation and detect potential migration of BHC.	Would be more long-term effective and permanent than Alternative 2 by significantly accelerating the removal of BHC through in-situ bioremediation. However, the effectiveness of HRC [®] injection would have to be verified through treatability testing. The long-term effectiveness and permanence of the LUCs and monitoring would be the same as for Alternative 2.	Would be slightly more long-term effective and permanent than Alternative 3 because it would provide the same accelerated removal of BHC through extraction and on-site-treatment, which is well-proven. The long-term effectiveness and permanence of the LUCs and monitoring would be the same as for Alternatives 2 and 3.
Reduction of Contaminant Toxicity, Mobility, or Volume through Treatment	Would not achieve reduction of toxicity, mobility, or volume of contaminants through treatment but might achieve reduction through natural processes.	Would not achieve reduction of toxicity, mobility, or volume of contaminants through treatment because no treatment would occur.	Would achieve reduction of contaminant toxicity, mobility, and volume through treatment. Approximately 0.0006 pounds of BHC would be irreversibly removed from groundwater.	Would achieve reduction of contaminant toxicity, mobility, and volume through treatment. Approximately 0.0006 pounds of BHC would be irreversibly removed from groundwater.
Short-Term Effectiveness	Would not result in short-term risks to site workers or adversely impact the surrounding community but would also not achieve RAO through treatment.	Would result in a slight possibility of exposing site workers during monitoring activities. This risk would be reduced through compliance with appropriate site-specific health and safety procedures. There would be no risk to surrounding community and environment. The RAO would be achieved immediately upon implementation of LUCs and monitoring. Cleanup goals would be attained within an estimated 16 months (β -BHC) to 32 months (α -BHC).	Would result in a possibility of exposing site workers to contaminated groundwater during bioremediation and monitoring activities. This risk would be reduced through compliance with appropriate site-specific health and safety procedures. There would be no risk to surrounding community and environment. The RAO would be achieved immediately upon implementation of LUCs and monitoring. Cleanup goals would be attained within 36 months.	Would result in a possibility of exposing site workers to contaminated groundwater during extraction and treatment and monitoring activities. This risk would be reduced through compliance with appropriate site-specific health and safety procedures. There would be minimal risk to surrounding community and environment from off-site transportation and disposal of treatment residues. The RAO would be achieved immediately upon implementation of LUCs and monitoring. Cleanup goals would be attained within 25 months.
Implementability	Technical and administrative implementation would be extremely simple because there would be no action to implement.	Technical implementation of the monitoring would be simple. Administrative implementation of the LUCs would be simple.	Technical implementation of in-situ bioremediation would be simple although it would create temporary site disruptions, and the number of qualified contractors would be limited. Technical implementation of the monitoring would be simple. Administrative implementation of the LUCs would be simple. A construction permit might be required for installation of the ORC/HRC injection points	Technical implementation of extraction and on-site treatment would be somewhat more complex than that of in-situ bioremediation. Installation and O&M of the limited number of extraction wells and small on-site treatment system would be simple and would not create significant site disruptions. Implementation of surface discharge, disposal of treatment residues, and monitoring would be simple. Administrative implementation of the LUCs would be simple. A construction permit would be required, and the substantive requirements of an NPDES permit would have to be met

TABLE 2
SUMMARY OF COMPARATIVE EVALUATION OF ALTERNATIVES
OPERABLE UNIT 10, SITE 25
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA
PAGE 2 OF 2

Evaluation Criteria	Alternative 1: No Action	Alternative 2: Natural Attenuation, LUCs, and Monitoring	Alternative 4: In-Situ Enhanced Biodegradation, LUCs, and Monitoring	Alternative 3: Extraction, On-Site Treatment, Surface Discharge, LUCs, and Monitoring
Costs:				
Capital	\$0	\$5,000	\$485,000	\$423,000
NPW of O&M	\$0	\$83,000	\$93,000	\$279,000
NPW	\$0	\$88,000	\$578,000	\$702,000
State Acceptance	FDEP concurs with the selection of Alternative 2 as the Preferred Alternative			
Public Acceptance	Public acceptance of Alternative 2 as the Preferred Alternative will be determined following the period of public comments			

NOTES:

- ARARs** Applicable or relevant and appropriate requirements
- BHC** Benzene hexachloride
- HRC** Hydrogen release compound
- LUC** Land use controls
- NPDES** National Pollutant Discharge Elimination System
- NPW** Net present worth
- O&M** Operation and maintenance
- ORC** Oxygen release compound
- RAO** Remedial Action Objective
- TBC** To-be-considered (criterion)

FDEP also welcome your comments on the proposed cleanup plan and on the other technical approaches that were evaluated.

A Closer Look at the Proposed Cleanup Plan

1. NFA for Soil

2. Natural Attenuation for Groundwater

Within the groundwater contaminant plume, naturally occurring processes such as biological degradation, dispersion, dilution, and adsorption would be relied upon to reduce BHC concentrations to **cleanup goals**.

3. LUCs

Use of groundwater would be controlled through deed restrictions. Formal notice would be given to the St. John's River Water Management District not to issue permits for the installation of wells at Site 25 that draw water from the **surficial aquifer**. Annual site inspections would be conducted to verify the continued implementation of these groundwater use controls until cleanup goals have been met.

4. Groundwater Monitoring

Groundwater would be regularly sampled and analyzed to monitor the decrease of BHC concentrations and to verify that BHC contamination is not migrating.

5. Five-Year Review

At the end of 5 years, a site review would be performed to verify that the groundwater **cleanup goals** have been met through natural attenuation as predicted by the modeling performed during the **FS**.

6. Contingency Remedy

If the results of the Five-Year Review show that natural attenuation has failed to meet the groundwater **cleanup goals** as predicted, additional remedial measures would be evaluated and might be implemented. One such potential remedial measure would be to accelerate the in-situ biodegradation of BHC through injection of proprietary chemical(s).

Based on the information currently available, the Navy, U.S. EPA, and FDEP believe that the above proposed cleanup plan meets the threshold criteria and provides the best balance of tradeoffs with respect to the balancing and modifying criteria. The Navy, U.S. EPA, and FDEP expect the proposed cleanup plan to satisfy the following statutory requirements of **CERCLA** §121(b): (1) be protective of human health and the environment; (2) comply with **ARARs**, specifically the Safe Drinking Water Act and the Florida Administrative Code Chapter 62-520; (3) be cost effective; (4) utilize permanent solutions to the maximum extent practical; and (5) satisfy the preference for treatment as a principal element.

What Impacts Would the Cleanup Have on the Local Community?

- Alternatives that involve the treatment and handling of groundwater during construction and/or operation (Alternatives 3 and 4) could pose a limited risk to construction workers or operating personnel. However, measures would be taken to minimize and control these risks.
- Alternatives that involve the transportation of groundwater treatment residue for off-site disposal (Alternative 4) would pose a risk to nearby communities. However, measures would be taken to minimize and control these risks.
- Alternatives that do not immediately achieve the groundwater **cleanup goals** (Alternatives 2, 3, and 4) include administrative action to limit the use of the groundwater from the **surficial aquifer** until these **cleanup goals** have been reached.
- Alternatives that involve on-site groundwater treatment and/or site construction activities (Alternatives 2, 3, and 4) would occupy the site. This would limit use and/or development of the site for the duration of the cleanup.
- The No-Action Alternative (Alternative 1) would not prevent exposure to groundwater **COCs**, resulting in unacceptable human health risks if groundwater from the **surficial aquifer** is used.

Why Do the Navy and U.S. EPA in Consultation with FDEP Recommend this Cleanup Plan?

This remedy is recommended for the following reasons:

- As a result of the **IRA**, the 95-percent **UCL** of the concentrations of contaminants remaining in soil is lower than the FDEP **SCTLs** for residential exposure.
- Although the detected concentrations of BHC are in excess of the FDEP **GCTLs**, they are still relatively low and do not present an unacceptable threat to human health or the environment under the current and foreseeable future site use scenarios.
- The size of the BHC contaminant plume is relatively small, and there is no evidence of ongoing contaminant migration.
- Groundwater modeling predicts that BHC concentrations will be reduced to **cleanup goals** through natural attenuation within approximately the same timeframe as would be required to achieve the same cleanup goals through more active and costly remedial approaches.

- This cleanup plan will achieve risk reduction by using natural attenuation for groundwater and by imposing restrictions on access to contaminated groundwater until **cleanup goals** are met.

Next Steps?

By September 2003, the Navy and U.S. EPA expect to have reviewed comments in consultation with FDEP and signed the **ROD** describing the chosen cleanup plan. The **ROD**, which includes a summary of responses to public comments, will then be made available to the public at the Information Repository at Building 907, 13357 Lake Newman Street, Cecil Commerce Center, Jacksonville, Florida. The Navy and U.S. EPA, in consultation with FDEP, will also announce its decision through the local news media and the community mailing list.

Glossary of Terms

This glossary defines the bolded terms used in this Proposed Plan. The definitions in this glossary apply specifically to this Proposed Plan and may have other meanings when used in different circumstances.

Administrative Record: The complete body of documents pertaining to the investigation and restoration of an environmental site. This body of documents is kept at a location where it can be accessed by the general public.

Applicable or Relevant and Appropriate Requirements (ARARs): The federal, State, and local environmental rules, regulations, and criteria that must be met by the selected remedy under **CERCLA**.

Chemical of concern (COC): A substance detected at a concentration and/or in a location where it could have an adverse effect on human health and the environment.

Cleanup goal: A numerical concentration agreed upon by the Navy and U.S. EPA, in consultation with FDEP, as having to be reached for a certain **COC** in order to meet one or more of the **RAOs**. A **cleanup goal** may be a regulatory-based criterion, a risk-based concentration, or even a background value.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law also known as "Superfund". This law was passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). This law created a special tax that goes into a trust fund to investigate and cleanup abandoned or uncontrolled hazardous waste sites.

Feasibility Study (FS): A report that presents the development, analysis, and comparison of cleanup alternatives.

Installation Restoration (IR): A program established by the Navy for the investigation and cleanup of Superfund sites at their facilities.

Interim Removal Action (IRA): An interim action performed to address immediate environmental threats.

Kerosene Analytical Group (KAG): A group of petroleum products defined under the State of Florida environmental regulations. This group consists of diesel, Jet-A, Jet-B, JP-4, JP-5, and kerosene, or equivalent fuels.

Land use controls (LUCs): Administrative measures taken to restrict site access, current land use or future development, or groundwater use. Typical **LUCs** consist of deed restrictions.

Net Present Worth (NPW): A costing technique that expresses the total of initial capital expenditure and long-term operation and maintenance (O&M) costs in terms of present day dollars.

National Priorities List (NPL): The list of national Superfund sites.

Operable Unit (OU): A discrete entity that comprises an incremental step toward the comprehensive cleanup of one or more environmental sites. An **OU** may address a specific medium within a site (e.g., soil or groundwater), a geographical portion of the site, a specific site environmental concern, or the initial phases of an action. At NAS Cecil Field, **OUs** have often been organized to group multiple sites with similar characteristics and environmental concerns.

Polychlorinated biphenyls (PCBs): High molecular weight, moderately mobile, and moderately to highly toxic liquid organic chemicals that feature multiple benzenic rings and chlorine atoms in their chemical formula. In the past, these were commonly used as cooling fluid in electric transformers and, as a result, PCB contamination is relatively widespread.

Polynuclear aromatic hydrocarbons (PAHs): High molecular weight, relatively immobile, and moderately toxic solid organic chemicals that feature multiple benzenic (aromatic) rings in their chemical formula. **PAHs** are typically formed during the incomplete combustion of coal, oil, gas, garbage, or other organic substances. Typical (**PAHs**) include anthracene, phenanthrene, and benzopyrene.

Preliminary Risk Evaluation (PRE): A streamlined evaluation of current and future potential for adverse human health or environmental effects from exposure to site contaminants. This evaluation typically uses standard conservative criteria rather than site-specific evaluation parameters.

Record of Decision (ROD): An official document that describes the selected Superfund remedy for a specific site. The **ROD** documents the remedy selection process and is issued by the Navy and U.S. EPA, in consultation with FDEP, following the public comment period.

Remedial Action Objective (RAO): A cleanup objective agreed-upon by the Navy and U.S. EPA in consultation with FDEP. One or more **RAOs** are typically formulated for each environmental site.

Remedial Investigation (RI): A report that describes the site, documents the type and distribution of environmental

contaminants detected, and present the results of the risk assessment or **PRE**.

Restoration Advisory Board (RAB): A body of representatives from the general public that meets on a regular basis to be briefed by the Navy and their contractors on the progress of environmental investigations and cleanup activities for a given facility. The **RAB** provides the opportunity for the community to give input into the cleanup program before final decisions are made.

Semivolatile organic compounds (SVOCs): Organic compounds that do not readily evaporate at normal ambient temperatures but still have a relatively low boiling point. Such compounds are typically found in asphalt, fuel, paints, plastics, and tars.

Surficial aquifer: A layer of groundwater that is separated from deeper groundwater by a confining formation. At NAS Cecil Field, the **surficial aquifer** typically extends from approximately 5 feet below ground surface to approximately 90 feet below ground surface.

Total recoverable petroleum hydrocarbons (TRPH): A measurement of petroleum contamination in soil and water as defined by the State of Florida environmental regulations. This method measures the amount of petroleum compounds that have 8 to 40 carbon atoms.

Upper confidence level (UCL): Statistical term used to define a numerical value that is greater than a certain percentage of the numerical values of a given data set. For example, the 95-percent **UCL** of a data set of concentrations expresses the concentration value that is greater than 95 percent of the individual concentration values in the data set.

Volatile organic compounds (VOCs): Organic compounds that evaporate readily at normal ambient temperature. Typical **VOCs** include the light fraction of gasoline (benzene, toluene, xylenes) and low molecular weight solvents such as trichloroethylene (TCE).



What's a Formal Comment?

Formal comments are used to improve the cleanup proposal. During the 30-day formal comment period, the Navy and U.S. EPA, in consultation with FDEP, will accept formal written comments and hold a hearing, if requested, to accept formal verbal comments.

To make a formal comment, you need to present your views during the public hearing or submit a written comment during the comment period. A request for a public hearing to present your formal comments must be made in writing. The request must be postmarked no later than August 13, 2003. Written comments and requests for a public hearing should be sent to

Commander
Department of the Navy
Southern Division
Naval Facilities Engineering Command
Attn: Mr. Jeffrey Meyers, P.E., CHMM (Code ES3)
2155 Eagle Drive
North Charleston, SC 29406



Federal regulations require the Navy and U.S. EPA to distinguish between "formal" and "informal" comments. Although the Navy and U.S. EPA, in consultation with FDEP, use both your comments and **RAB** comments throughout site investigation and cleanup activities, they are only required to respond in writing to formal comments on the Proposed Plan. If a public hearing is requested, there will be no verbal response to your comments during the formal hearing portion of the meeting. After the formal hearing portion of the public meeting is closed, the Navy and U.S. EPA may respond to informal questions, in consultation with FDEP .

The Navy and U.S. EPA will review, in consultation with FDEP, the transcript of all formal comments received at the hearing and all written comments received during the formal comment period before making a final cleanup decision. They will then prepare a written response to all formal comments. The transcript of formal comments and the written responses of the Navy and U.S. EPA will then be issued in a Responsiveness Summary included in the **ROD**.

For More Detailed Information

To help the public understand and comment on the proposal for the site, this publication summarizes a number of reports and studies. All the technical and public information publications prepared to date for the site are available at the following Information Repository:

Building 907
13357 Lake Newman Street
Cecil Commerce Center
Jacksonville, Florida 32252
904-573-0336



