

**FINAL REMOVAL ACTION WORK PLAN
FOR NAVAL AIR STATION PENSACOLA
SITE 32, WETLAND 80
ABANDONED WASTEWATER TREATMENT PLANT
PENSACOLA, FLORIDA**

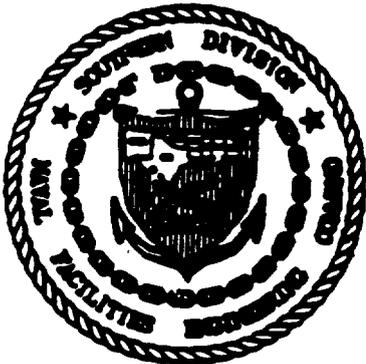
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NAS PENSACOLA
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NAVAL AIR STATION
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19. Abstract

This work plan details the removal action of the contents of the structures of the abandonad wastewater treatment plant (WTP), located in potential wetland 80 north of the present **Industrial** Wastewater Treatment Plant.

The abandoned waste water treatment plant consists of three **main** structures:

- e An Imhoff Tank (24.5 x 33 x 21.25 feet),
- e Sludge Drying Bed (60 x 45 x 6.5 feet), and
- e A Chlorine Contact Chamber (18.8 x 6.3 x 6.6 feet)

The abandoned plant is situated approximately **400** feet north of the former industrial sludga drying beds (**ISDBs**) in ths northern wooded area. Several large steel pipes connect the three **structures**.

The original scope of work involved only removing the contents of the sludge drying bed. However, close examination of the old plant and its piping system indicated similar material (therefore potential similar contamination) is present in the two other **structures**. As a result, this work plan **addresses** removal of material within all three structures.

The removal action goal is to mitigate potential risk to human health and the environment through removal of the contsnts within the structures and cleaning the inside of the structures. This work plan is based on information and documents provided by the Navy, the United States Environmental Protection Agency (**USEPA**), and information **gathered** by **E/A&H** during assessmant and reconnaissance during 1993 and early 1994. This work plan includes a detailed scope of work for removal **activities**, a detailed sampling and analysis plan (SAP), and a site-specific Health and Safety Plan (HASP).

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List of Acronyms

The following list contains many of the acronyms, **initials**, abbreviations, and units of measure used in this report.

$\mu\text{g/kg}$	Micrograms per kilogram
AR	Administrative Record
ASTM	American Society for Testing and Materials
bis	Below land surface
CHASP	Comprehensive Health and Safety Plan
CLEAN	Comprehensive, Long-Term Environmental Action Navy
CLP	Contract Laboratory Program
CSAP	Comprehensive Sampling and Analysis Plan
CTO	Contract Task Order
DOT	Department of Transportation
DQO	Data Quality Objective
E/A&H	EnSafe/Allen & Hoshall
E&E	Ecology & Environment, Inc.
FDEP	Florida Department of Environmental Protection, formerly FDER
FDER	Florida Department of Environmental Regulation
HASP	Health and Safety Plan
ISDBs	Industrial Sludge Drying Beds
IWTP	Industrial Wastewater Treatment Plant
mg/kg	milligrams per kilogram
NAS	Naval Air Station
ND	Not Detected
NEESA	Naval Energy and Environmental Support Activity
OU	Operable Unit
PAH	Polynuclear Aromatic Hydrocarbon
PID	Photoionization Detector
ppb	Parts per billion
PPE	Personal Protective Equipment
ppm	Parts per million
PWC	Public Works Center
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
SAP	Sampling and Analysis Plan
SOP/QAM	standard operating Procedure/Quality Assurance Manual
SOUTHNAVFACENGCOM	Southern Division, Naval Facilities Engineering Command
SSO	Site Safety Officer
TAL	Target Analyte List

TCE
TCL
TCLP
USEPA
v o c s
WTP
yd³

Trichloroethene
Target Compound List
Toxicity Characteristic Leaching Procedure
United States Environmental Protection Agency
Volatile Organic Compounds
Wastewater ~~Treatment~~ Plant
Cubic yards

EXECUTIVE SUMMARY

This work plan details the removal of the **contents** of the structures of **the** abandoned wastewater treatment plant (WTP), located in **potential** wetland **80 north of the present** Industrial Wastewater Treatment Plant.

The abandoned waste water treatment plant consists of **three main structures:**

- e **An Imhoff Tank (24.5 x 33 x 21.25 feet),**
- e **Sludge Drying Bed (60 x 45 x 6.5 feet), and**
- **A Chlorine Contact Chamber (18.8 x 6.3 x 6.5 feet)**

The abandoned plant is situated approximately **400 feet north of the** former industrial sludge drying beds (ISDBs) in the northern **wooded area**. Several large steel pipes connect **the** three structures.

The original scope of **work** involved **only** removing the **contents** of the sludge drying **bed**. However, close examination of the old plant and its piping **system indicated similar** material (therefore potential **similar** contamination) is present in the **two** other structures. **As** a result, **this work** plan addresses removal of material within **all** three **structures**.

The removal action goal is to mitigate **potential risk to** human health and the environment through removal of the contents within the structures and cleaning the inside of the structures. **This work plan is based** on information and documents provided by the Navy, the **United** States Environmental Protection Agency (USEPA), and information **gathered by EnSafe/Allen & Hoshall (E/A&H)** during assessment and **reconnaissance** during **1993** and early **1994**. This work plan includes a detailed **scope of work** for removal activities, a **detailed** sampling and analysis plan (**SAP**), and a site-specific Health and **Safety Plan (HASP)**. [This removal is **termed time critical to respond to recently received analytical results and funding availability.**]

1.0 INTRODUCTION

The Department of the Navy, Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) has issued a **Contract Task Order (CTO-072)** for an Removal Action Work **Plan** prepared by **EnSafe/Allen & Hoshall (E/A&H)** for Operable Unit (OU) 10 at the Naval Air Station (NAS) Pensacola in Pensacola, Escambia County, Florida. This work plan details the [time critical] removal of the contents of the structures of the abandoned wastewater treatment plant (WTP), located in potential wetland 80 north of the present Industrial Wastewater Treatment Plant (IWTP).

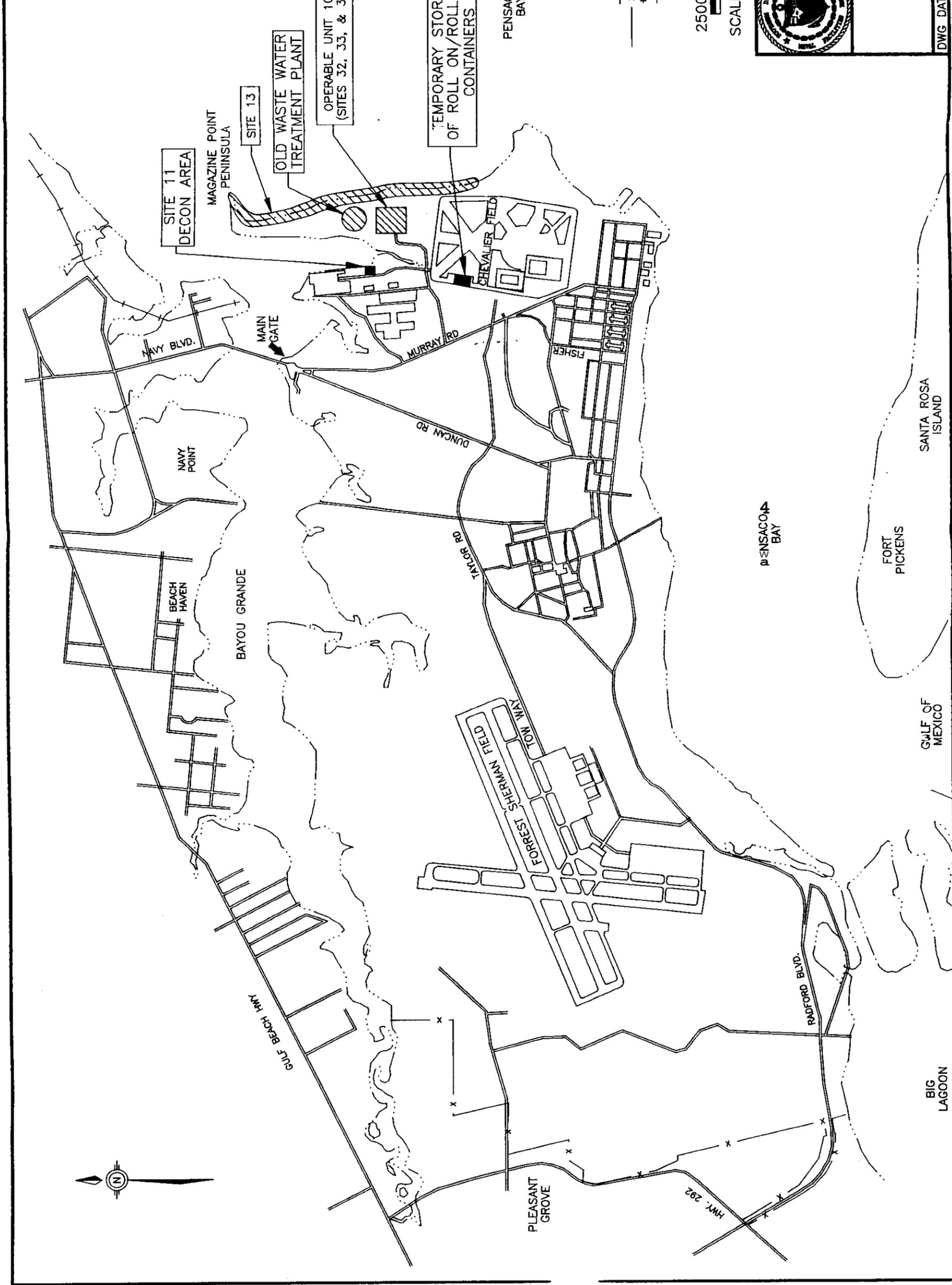
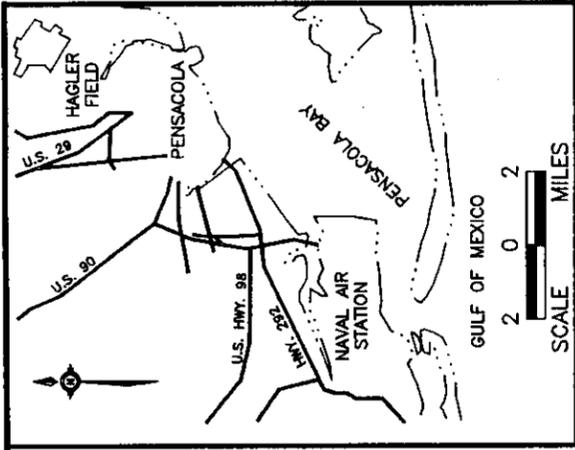
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- e A Chlorine Contact Chamber (18.8 x 6.3 x 6.5 feet)

The abandoned plant is situated approximately 400 feet north of the former industrial sludge-drying beds (ISDBs) in the northern wooded area (Figure 1-1). Several large steel pipes **connect** the three structures. The original scope of work involved only removing the contents of the sludge drying bed. However, close examination of the old plant and its piping system indicated **similar** material (therefore potential **similar** contamination) is present in the two other structures. **As** a result, this work plan addresses removal of material within **all** three structures.

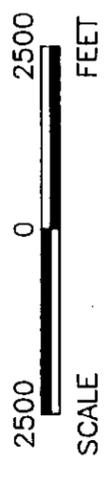
The removal action goal is to mitigate potential **risk** to human **health** and the environment through removal of the contents within the **structures** and cleaning the inside **of** the structures.

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LEGEND

- x FENCE
- ++++ RAILROAD
- SHORE LINE



IMMEDIATE REMOVAL
ACTION WORK PLAN
SITE 32
ABANDONED WASTEWATER
TREATMENT PLANT

FIGURE 1-1
SITE LOCATION MAP

This work plan is based on information and documents provided by the Navy, the United States Environmental Protection Agency (USEPA), and information gathered by E/A&H during assessment and reconnaissance during 1993 and early 1994. This work plan includes a detailed scope of work for removal activities, a detailed sampling and analysis plan (SAP), and a site-specific Health and Safety Plan (HASP).

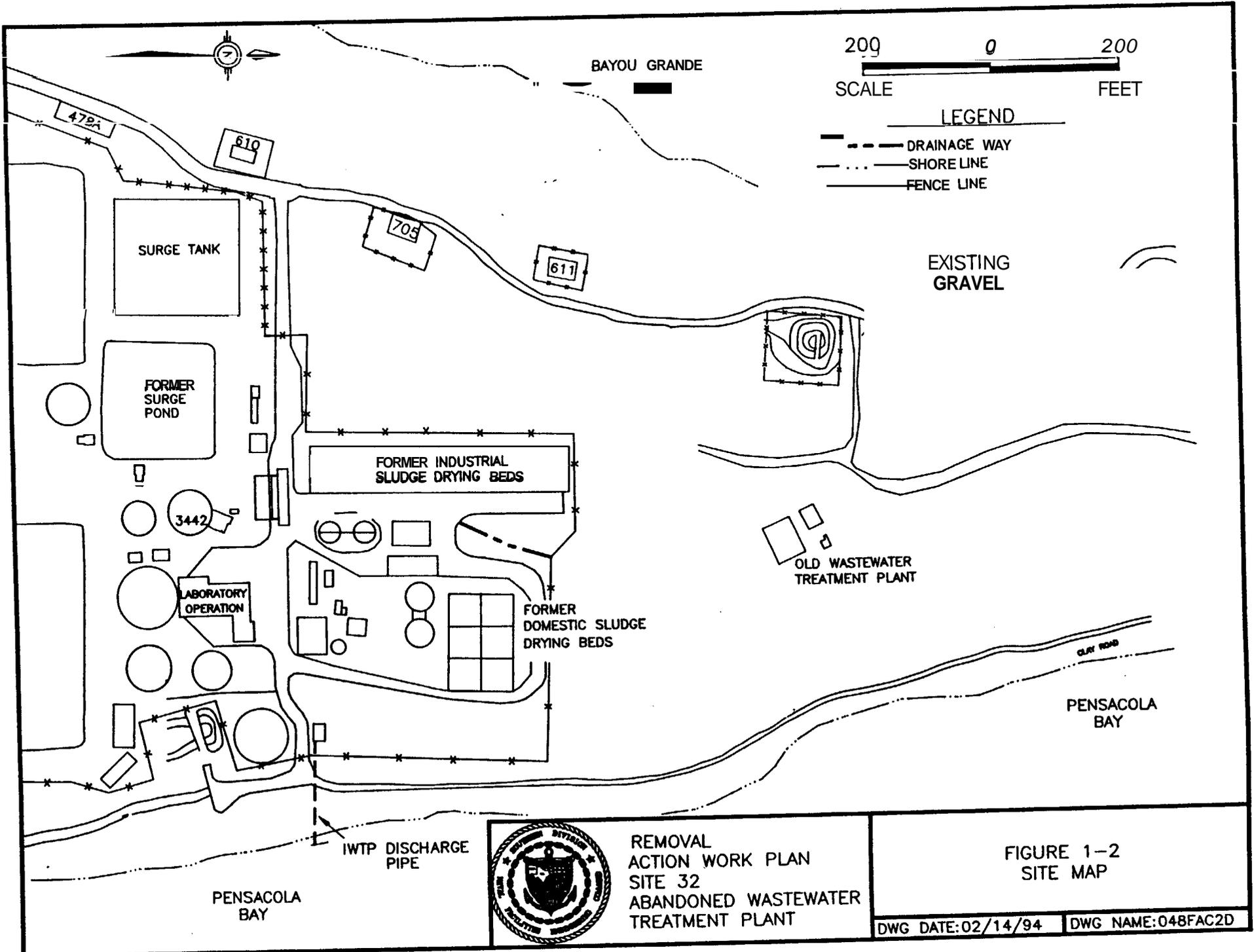
E/A&H anticipates the NAS Pensacola Public Works Center (PWC) will provide the personnel, equipment, and materials necessary for road and staging area construction, removal of the contents (liquid, sludge, and soil) of the structures, disposal of contents, cleaning of remaining structures, and backfill if necessary. E/A&H will assist the PWC as necessary in scheduling and implementing field activities, obtaining equipment and supplies, and attending to health and safety concerns. E/A&H will administer the HASP to onsite field personnel, provide field monitoring equipment, monitor air, photograph the removal action, collect soil samples, waste characterization samples, and assist PWC personnel with coordinating the disposal of liquid, sludge, soil, and construction debris generated during field activities.

1.1 Site Description

NAS Pensacola is located in the Gulf Coast lowlands on a peninsula bounded by Pensacola Bay to the south and east and Bayou Grande to the north. The abandoned waste water plant, which is located on the Magazine Point Peninsula north of Chevalier Field (Figure 1-2) was investigated as part of OU 10. OU 10 consists of:

- Site 32 (The Industrial Sludge ~~Drying~~ Beds),
- e Site 33 (The Wastewater Treatment Plant Ponds),
- e Site 35 (The Solid Waste Management Units), and
- e Site 13 (Magazine Point Rubble Area).

[Bold items enclosed in brackets denote changes to the first draft of document.]



200 0 200
SCALE FEET

LEGEND
 - - - DRAINAGE WAY
 ···· SHORE LINE
 ——— FENCE LINE



REMOVAL ACTION WORK PLAN
 SITE 32
 ABANDONED WASTEWATER TREATMENT PLANT

FIGURE 1-2
 SITE MAP

DWG DATE: 02/14/94 DWG NAME: 048FAC2D

Magazine Point Peninsula is a low-lying partly wooded and developed **area**. Natural elevations do not exceed **5** feet above mean sea level (msl). Artificially filled areas rise as high as approximately **14** feet above mean sea level. **Areas within the IWTP compound are highly disturbed** and developed due to site operations. Rubble and construction debris **are** mounded along the eastern shoreline at Site 13 due to years of dumping. The peninsula is surrounded by Bayou **Grande** to the west and north and Pensacola Bay to the east.

The abandoned **WTP** is located within potential wetland 80. This **area** is not confirmed as a wetland until it *can* be evaluated according to protocol presented **in** the 1987 Corps of Engineers *Wetlands Delineation Manual*. Potential wetland 80 is a large forested/scrub-scrub **area** surrounding the western and northern portions of the present IWTP complex. There is no permanent standing water in any part of **this** area; however, water up to a foot deep was observed for temporary periods after a heavy **rain**.

At OU 10, boring logs indicate the surficial zone is composed of white **to** light brown, fine to medium **quartz** sand, extending to a depth of approximately 38 to **48** feet below land surface (bls). Depth to groundwater is approximately **4** feet bls, **depending** on **tidal** influence and ground surface elevation. A low permeability zone has been encountered in **all** borings extended to the anticipated depth of interception. Thickness has varied from approximately **8 to** 18 feet. Boring logs indicated the stratum is composed of gray to **dark** blue/green clays and silty clays with shell and wood fragments. The **main** producing zone **has been** encountered at approximately **55** feet **to** 60 feet bls beneath OU 10. Boring logs **indicate** the **upper** portion **of** the zone is composed of fine- to medium-grained sand.

The coastal waters of Bayou Grande and Pensacola Bay have **been** classified by the Florida Department of Environmental Protection (**FDEP**) as **Class III** waters, indicating their **use** for

recreation and **maintaining** a well-balanced **fish and** wildlife population (**Florida** Department of Environmental Regulation [**FDER**, now **FDEP**] **1992**).

1.2 Site Background and Previous Studies

The following sections provide a history of the site and outlines the previous work conducted in the vicinity of the abandoned WTP.

1.2.1 Operational History

Waste processing began at Magazine Point in **1941** when an Imhoff tank, sludge **drying** bed, and chlorine contact chamber were installed on Magazine Point Peninsula, north of the present **IWTP**. The plant treated only sewage from the Magazine Point **area** [(Naval Energy and Environmental Support Activity)] [**NEESA**] **1983**). Sewage from the remainder of the base was discharged directly to Pensacola Bay via sub-aqueous outfalls located along the south side of the station.

In **1942** the sanitary sewer **line** was extended to connect the Building **649** complex (Site **30**) to the system. According to historical **data**, a tin-cadmium plating operation was **performed** there during the **1940s**. Fifteen tanks, ranging in capacity from **200** to **500** gallons, were **used** for the storage of solutions containing tin, cadmium, and cyanide near Building **649**. It is not known if any of the plating wastes were disposed of in the sanitary sewer; however, the **disposal** of industrial wastes in **this** manner is a distinct **possibility**, and could account for the metals detected in sludge at the abandoned WTP. The plans for the abandoned WTP **indicate** the influent entered the Imhoff tank from the west side where it is believed it was subjected to some treatment such as pH adjustment or lime. The solids then settled out **to** the bottom of the **tank** while the effluent flowed into the chlorine contact chamber. In the chlorine contact chamber, chlorine was added to the wastewater and allowed to **mix** with the wastewater. The effluent from

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this structure flowed into a pipe which discharged to Pensacola Bay. The sludge which settled to the bottom of the Imhoff tank was pumped into the sludge drying bed where it was allowed to dry; the liquid resulting from the sludge dewatering was captured by perforated pipes in the bottom of the sludge drying bed. These pipes then discharged effluent into the chlorine contact chamber.

In 1948 a primary treatment sewage plant was constructed at the location of the present IWTP. Direct discharge of raw sanitary sewage from the south side of the base into Pensacola Bay was rerouted to the treatment plant, and the WTP was abandoned (NEESA 1983). No information regarding the specifics of operations cessation was available during the writing of this work plan.

1.2.2 E/A&H Assessment Activities and Site Reconnaissance

Previous investigations at OU 10 have been driven by Resource Conservation and Recovery Act (RCRA) requirements. Initial investigations centered around the former surge pond, which became part of Site 33 after it was declared a RCRA surface impoundment. The investigation was later expanded to study the impact of the former ISDBs (now Site 32), and the former stabilization and polishing ponds which are now considered part of Site 33.

Site 13, along the eastern side of Magazine Peninsula, was used for the disposal of clean fill materials for an unknown period of time (NEESA 1983, Ecology & Environment, Inc. [E&E] 1990). A clay-based road, with a point of access from the northeast corner of Chevalier Field, extends north along the entire length of the site, and was presumably the avenue of access for dumping activities.

Investigations before E/A&H's 1993 remedial investigation (RI) had not considered the abandoned WTP an area of concern. However during RI fieldwork conducted for OU 10,

E/A&H investigated the abandoned **WTP** for the presence of contamination (E/A&H, 1993a). E/A&H noted "visible signs of staining or contamination were not apparent" in the area surrounding the WTP (E/A&H 1993a). During Phase II activities of E/A&H's 1993 RI, two soil borings were advanced at the abandoned wastewater treatment plant. One (33S57001) was advanced with a hand auger through the material within the sludge-drying bed, but terminated at 1 foot in depth due to refusal of the hand auger at a gravel layer. The second boring (33S57B) was advanced immediately outside of the sludge-drying bed with a hand auger, and sampled at the 0- to 2-foot depth (33S57B02) and 2- to 4-foot depth (33S57B04). The analytical results are for the soil samples collected from both borings are presented in Table 1-1.

Table 1-1 Phase II Sampling Summary April 1993			
Parameter	Sample ID		
	33S57001	33S57B02	33S57B04
Cadmium	241.0 ppm	ND	ND
Chromium	41 10.0 ppm	9.9 ppm	2.6 ppm
Lead	756.0 ppm	35 ppm	2.7 ppm
Cyanide	52.1 ppm	1.3 ppm	ND
Total PAH	2510 ppb	ND	ND
Total Pesticides	1184.2 ppb	107.7 ppb	14.1 ppb
TCE	3.0 ppb	ND	ND

Notes:

- PAH = Polynuclear Aromatic Hydrocarbons
- ppb = Parts per billion or micrograms per kilogram ($\mu\text{g}/\text{kg}$)
- ppm = Parts per million or milligrams per kilogram (mg/kg)
- TCE = Trichloroethene
- ND = Not Detected

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From January 11 to 13, 1994, E/A&H [reconnoitred] the abandoned WTP for the specific purpose of developing the [removal action] work plan. During this reconnaissance, E/A&H noted the sludge drying bed received sludge from the Imhoff tank and the chlorine contact chamber received influent from both the Imhoff tank and the sludge drying bed. Although no analytical results confirmed the similarity of material within each of the structures, a decision was made to include both the Imhoff tank and the chlorine contact chambers in this [removal action] (see foreword to this work plan). During the site reconnaissance, E/A&H personnel noted the amount of water and solid material within each structure. The route of approach to the site and likely staging areas were also determined.

During a records search at PWC, plans for the WTP and an extension of the sewer line dated October 14, 1942 were located. These plans were used to estimate the amount of material contained within the structures and confirmed the WTP had serviced the Building 649 complex between 1941 and 1948. Estimates are listed below.

- Imhoff Tank — 50,000 gallons liquid and 250 cubic yards (yd³) of solids.
- Chlorine Contact Chamber — 2,000 gallons liquid and 8 yd³ of solids.
- Sludge Drying Bed — 550 yd³ of solids.

2.0 SCOPE OF WORK

The following sections detail the activities anticipated during the removal action.

- Plan field activities, review historical data, and schedule personnel and equipment.
- Collect [discrete] samples from the structures for waste characterization testing.
- Review the applicable portions of the following with field personnel: Comprehensive Health and Safety Plan (CHASP [E/A&H 1993b]), the Comprehensive Sampling and Analysis Plan (CSAP [E/A&H 1993c]), the site-specific HASP, and the site-specific SAP.

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- e Construct a mad, a staging platform, a **temporary** sludge dewatering **station**, and [a silt fence as necessary].
- Collect one **composite soil** sample from the **backfill material** (if required) for analytical testing.
- Remove the water **from** the Imhoff **tank** and the chlorine **contact** chamber.
- Demolish the end wall of the Imhoff **tank** and the sludge drying bed to provide **access** for equipment **to** remove solid contents of the structures.
- Remove and containerize the liquid and sludge within the structures for subsequent disposal by the PWC.
- e Steam clean the inside of the structures to remove any contamination from interior surfaces.
- e Collect **soil** samples **from** the excavated **area** of the sludge drying bed for analytical testing to verify cleanup **status**.
- Collect wipe samples from the structures' surfaces to verify cleanup.
- e Backfill the structures as needed with sand and/or concrete.
- Remove the road and staging **area**.
- e Assist PWC in coordinating the disposal of **wastes** (i.e., **soil**, sludge, water, decontamination fluids, etc.) generated during the field activities.
- e Prepare [the] Removal Action **Report** summarizing the field activities and the results of analytical testing.

E/A&H anticipates the material and personnel for road construction, **removal** of **waste**, and disposal of investigation-derived waste will **be provided by** PWC. E/A&H will assist PWC as **necessary**, collect **soil** samples, collect wipe samples, collect waste characterization samples, and **prepare a report** transmitting the results of the removal action.

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2.1 Pre-Removal Activities

Several activities will **be** conducted before the removal of the contents of the structures. Specific tasks include an orientation meeting, waste characterization samples, and roadway construction.

2.1.1 Orientation Meeting

Before performing any field activities at NAS Pensacola, E/A&H personnel will attend an orientation meeting which will summarize general requirements **as well as** site-specific requirements for sampling and documentation. General topics to be discussed will include the location of the Naval Air Station in Pensacola, the locations of the site **office** trailer, subject site, abandoned WTP, designated decontamination **areas**, and the location of the temporary road and staging area to be constructed. Sampling requirements **to be** discussed will include general sampling protocol, the sample numbering system, quality assurance/quality control (**QNQC**) sampling requirements, and sample packaging. Documentation requirements to be discussed will include the use of field forms, field logbooks, and documentation of photographs. A checklist of requirements and an acceptance form indicating the above items have been reviewed by E/A&H personnel will **be** maintained. **A** copy of the **checklist/acceptance** form is contained in Appendix A. Before any field activities, the Site Safety Officer (**SSO**) will review the CHASP and **HASP** (Appendix B) with the personnel who will be conducting field activities. In addition, each day the **SSO** will conduct a "tailgate safety meeting" to convey the anticipated hazards potentially encountered. **All** E/A&H employees and Navy personnel who will be working at the site will be required to sign a Compliance Agreement Form. By signing this form, each individual is acknowledging that he/she is **familiar** with the plan and agrees **to** abide by the plan's guidelines. A copy of the compliance agreement form **is** contained in the **HASP** provided in Appendix **B**.

2.1.2 Waste Characterization Sampling

Before the removal action **E/A&H** will collect [discrete] samples for waste characterization **analyses**. [It is anticipated five samples **will** be required from **the sludge-drying bed**, four samples from the Imhoff **tank**, and one sample from the chlorine **contact** chamber. It may not be possible to **collect samples** from the Imhoff tank **during** the ~~pre-removal~~ stage because of limited access to its contents. Samples may be **collected** after partial demolition.] It is anticipated one composite sample will be **required** for the solid within each structure. The liquid in these structures is primarily ponded rainwater; thus, it is anticipated the liquids will be transported by PWC to the present ~~IWTP~~ for disposal. The composite samples will be analyzed for full Toxicity Characteristics Leaching **Procedures (TCLP)** parameters in preparation for offsite landfill disposal.

2.1.3 Roadway Construction

Due to the layout of the wetland and surrounding forested **area**, a **temporary** road to the abandoned wastewater plant and adjacent staging **area** will be constructed by **PWC** personnel. **E/A&H** will clearly mark the location of the road with stakes **and flagging** before construction. During the January **11** to **13**, 1994 site visit, **E/A&H** selected the best route for transporting equipment and personnel to the vicinity of the abandoned wastewater plant. The proposed temporary road follows an existing road past ammunition bunkers and recovery wells, [~~so as~~ to minimize disturbance to the potential wetland.] It exits an existing gravel ~~mad~~ in a southeasterly direction and proceeds directly to the north of the abandoned wastewater plant (Figure 2-1). A **staging area** will be constructed north of the plant. [**A silt fence, or other engineering controls as necessary, will** be implemented to protect potential Wetland **80** and minimize disturbance there.]

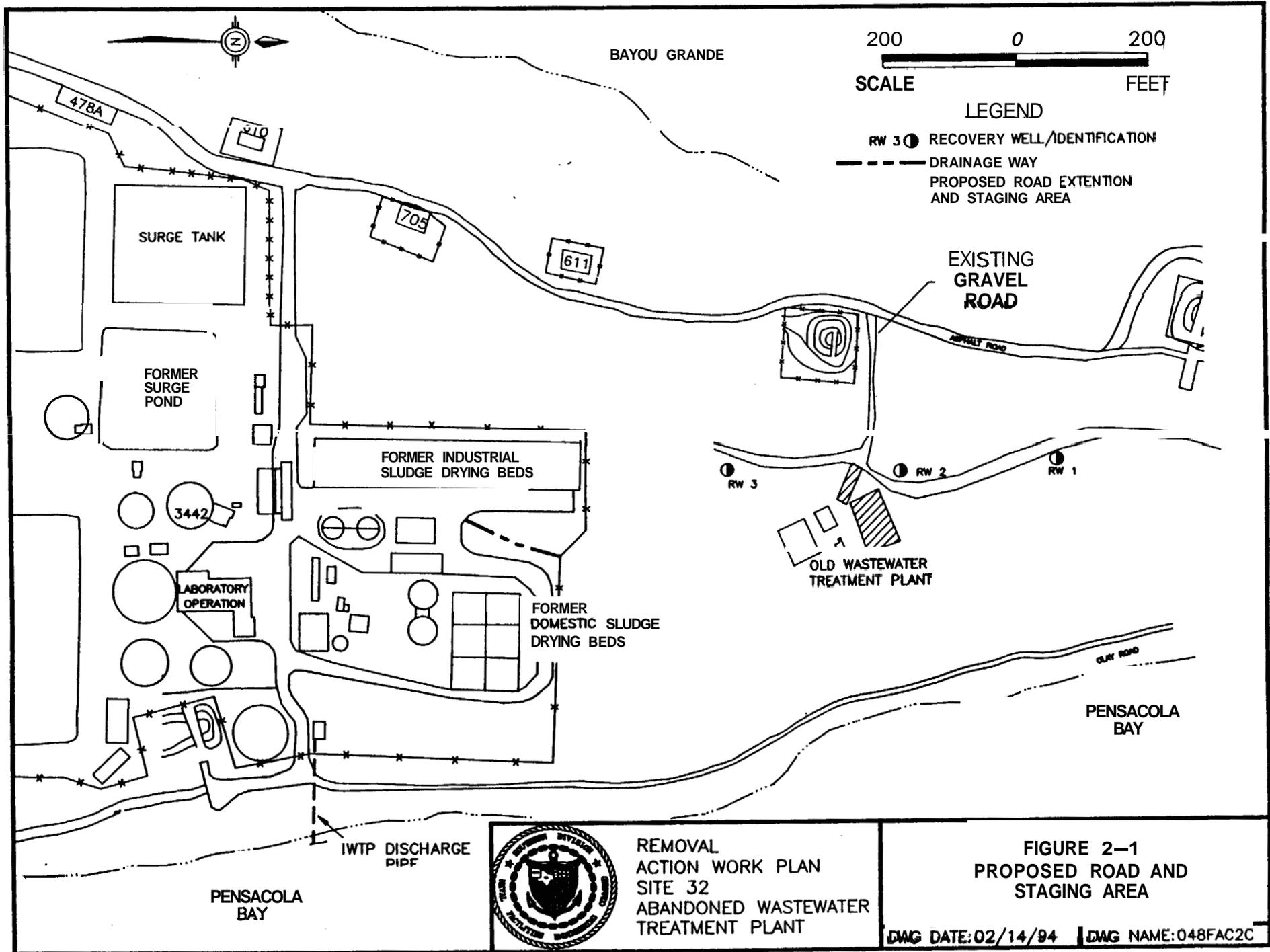
The activities to be conducted from this staging area include storage of construction materials and equipment, the temporary dewatering/decontamination area location and the temporary storage of soil, sludge, and water removed from the structures. The established decontamination area for larger equipment is located at Site 11 north of Chevalier Field (Figure 1-1). Following dewatering of the sludge, the material will be loaded into roll-on/roll-off containers for transport. Should initial TCLP analyses for waste characterization not be completed at that time, the temporary staging area for the roll-on/roll-off containers will be adjacent to the PWC Environmental Warehouse (Figure 1-1).

2.2 Removal Activities

Several activities will be conducted during the removal of the contents of the structures. Specific tasks include air monitoring and evacuation of the Imhoff tank, chlorine contact chamber, and sludge drying bed.

2.2.1 Air Monitoring

E/A&H will conduct air particulate monitoring during excavation and removal activities. It will be determined at this time if a dust suppression technique such as wetting the material with water needs be applied. Given the unknown nature of the waste received by the WTP, the SSO will also monitor the breathing zone of onsite personnel with a photoionization detector (PID) to check for the presence and concentration of organic vapors. The readings and locations of all air sampling will be recorded in the field logbook. Specific air monitoring procedures are discussed in Section 6.2 of the HASP (Appendix B).



REMOVAL
ACTION WORK PLAN
SITE 32
ABANDONED WASTEWATER
TREATMENT PLANT

FIGURE 2-1
PROPOSED ROAD AND
STAGING AREA

DWG DATE:02/14/94 | DWG NAME:048FAC2C

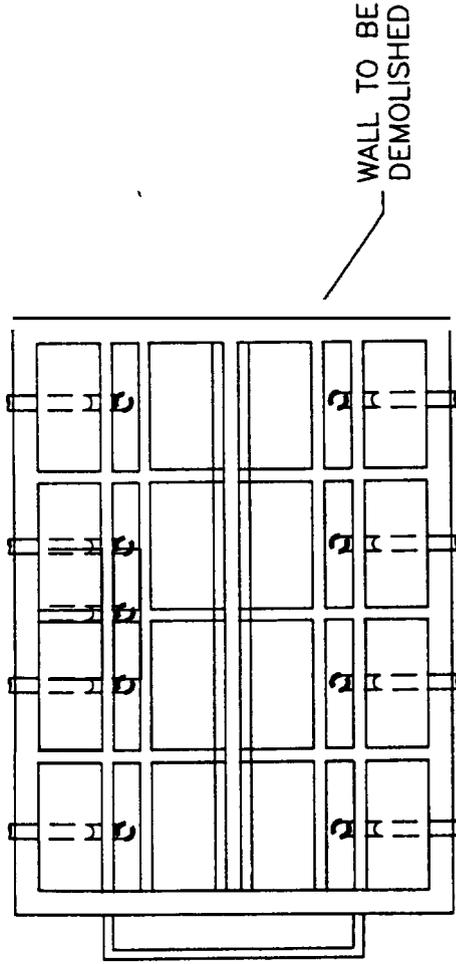
2.2.2 Evacuation of the Imhoff Tank

The first step will be to pump out the **standing** water **from** the structure (approximately 50,000 gallons). It is anticipated PWC will use **a** truck-mounted tank to **transport the** water to the present TWTP for disposal.

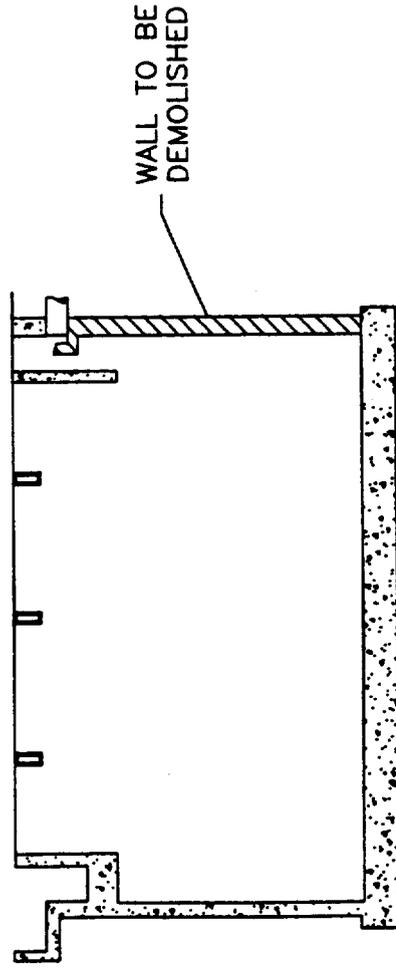
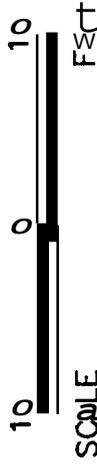
The second step will be to demolish the east wall of the tank to grade to provide access to the inside of the tank for removal of contents (see Figure 2-2). The tank wall is **8** inches of concrete reinforced with steel rebar. E/A&H anticipates the bulk of the demolition **can** be performed with the trackhoe but an **air** hammer and gas-powered saw should be **[available]** to help break up the concrete and cut the steel rods.

Some demolition of the interior of the tank will be **necessary** to gain access to all points. The bulk of the removal can be done with a large backhoe or trackhoe, but the **final** cleaning may require manual removal of contents. **As** the contents of the tank (approximately **250** yd³ of solids) **are** removed, they will be loaded directly into 20 yd³ roll-on/roll-off containers. If the removed contents **are** very wet, they will be dewatered by placing them **on** the dewatering structure (see Figure 2-3) and containerized when dry. **Excess** water will be **captured** via a graded runoff chute at the end of the dewatering pad and properly **disposed** of.

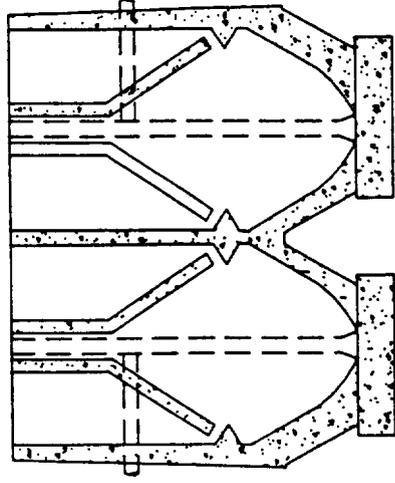
The last step will be to steam clean the surfaces of the remaining **structure** to ensure no contamination remains. **Any** wastewater generated by the cleaning process will be **captured** and properly drummed and disposed of by **PWC** by the use of a Visquene-lined drainage trench and **pump**.



PLAN VIEW



SIDE VIEW

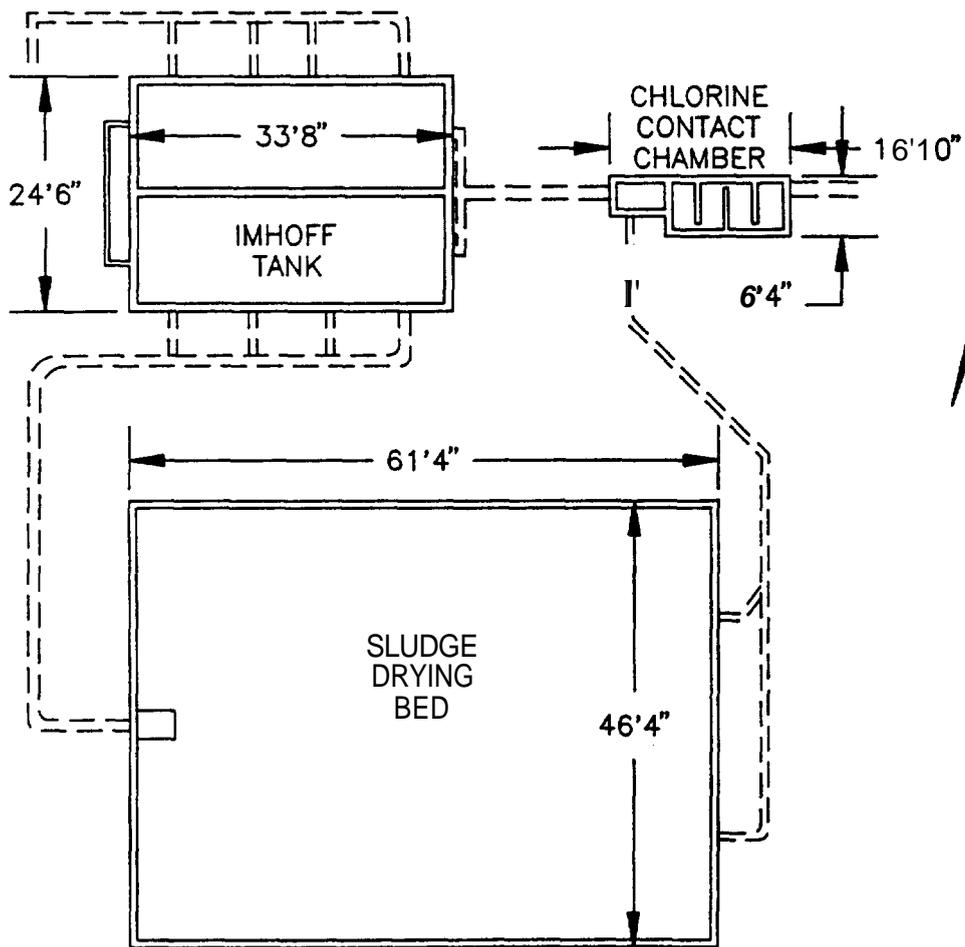
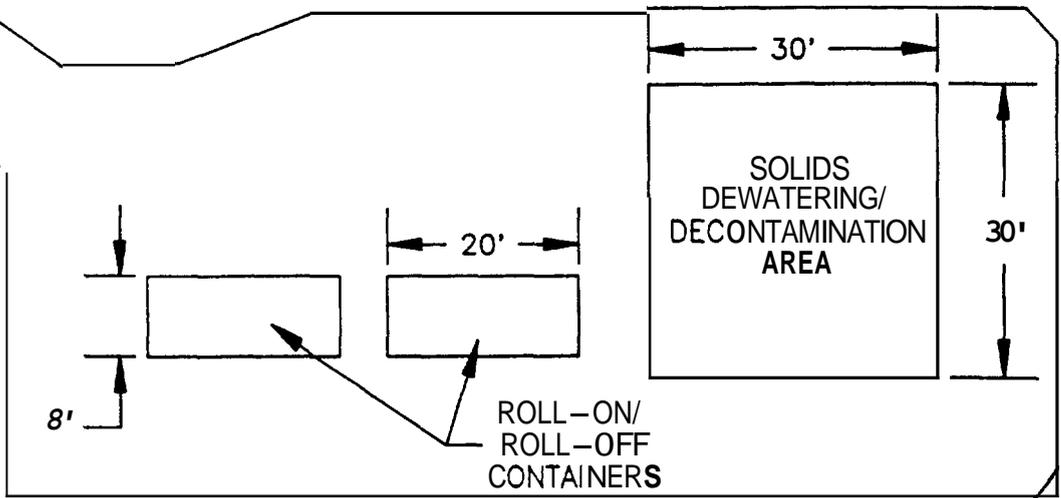


END VIEW



REMOVAL
ACTION WORK PLAN
SITE 32
ABANDONED WASTEWATER
TREATMENT PLANT

FIGURE 2-2
IMHOFF TANK



LEGEND
 - - - - - CONNECTING PIPING



REMOVAL
 ACTION WORK PLAN
 SITE 32
 ABANDONED WASTEWATER
 TREATMENT PLANT

FIGURE 2-3
 DETAILED SITE MAP

DWG DATE: 02/03/94 DWG NAME: 48DTLSD1

2.2.3 Evacuation of the Chlorine Contact Chamber

The first step will be to pump the standing water from the structure, (approximately 2,000 gallons). It is anticipated **PWC** will **use** a truck-mounted **tank** to **transport** the water to the **TWTP** for disposal. The next step is to remove the solid contents of the chamber (structure contains approximately 8 yd³ of solids). **Because** the chamber **size** is **small**, it is anticipated the majority of the contents will be manually removed. If the removed contents are wet, they **will** be dewatered by placing them on the dewatering structure (Figure 2-3) and, when they have sufficiently dried, they will be containerized. **Excess** water will be captured and properly disposed of. The last step will be to steam clean the surfaces of the remaining structure to ensure no contamination remains. Any wastewater generated by the cleaning process will **be** captured and properly drummed and disposed of by **PWC**.

2.2.4 Evacuation of the Sludge Drying Bed

The first step will be to demolish the east wall of the drying bed to grade to provide access (Figure 2-4). The wall is 8 inches of concrete reinforced by steel rebar. E/A&H anticipates the majority of the demolition **can** be carried out with the trackhoe but an **air** hammer and gas-powered saw should be [**available**] to help break up the concrete and cut through the steel **rods**. The bulk of the contents will **be** removed using either a large backhoe or trackhoe, but final cleanup may **require** manual removal of contents (structure contains approximately 550 yd³ of solids). If the removed contents **are** wet, they will be dewatered by placing them on the dewatering structure and then containerized when **dry**. **Excess** water will be captured and properly disposed of.

The last **step** will be to steam clean the **surfaces** of the remaining structure **to** ensure no contamination remains. Any wastewater generated by the cleaning process **will** be captured and properly drummed and disposed of by PWC.

[Bold items enclosed in brackets denote changes to the first draft of document.]

2.3 Post-Removal Activities

Several activities will be conducted after the removal of the contents of the structures. Specific tasks include backfilling and capping the structures, removing construction materials, disposing of used PPE and disposable sampling equipment, and preparation of [a removal action] report.

2.3.1 Waste Disposal

As previously described, a limited dewatering process will be performed on the excavated solids associated with the abandoned WTP. The dewatering process will consist of placing the excavated solids on a bermed area lined with heavy-duty plastic sheeting (multiple layers). The dewatering area will be inclined, so fluids trapped in the solids will flow downhill to a runoff chute. There fluids will pass through a screen of geotextile fabric to filter out particulates, and then caught and containerized. E/A&H anticipates the water can be disposed of in the NAS IWTP, however samples of the fluid will be collected and submitted for TCLP analysis. The solids will be containerized in 20 yd³ containers which will be labeled with site number, structure, contents, and date. If necessary, the containers will be moved to a staging area where they will be stored until the waste characterization test results are obtained. The waste will be disposed of by PWC in accordance with applicable guidelines for that waste category.

E/A&H anticipates from preliminary test results that landfilling may be the most cost effective disposal method. Some treatment, such as stabilization, of the removed material may be required before landfilling.

2.3.2 Soil Sampling and Field Screening

To verify a clean status of the structures and soil beneath the sludge drying beds, post-removal sampling will be performed by E/A&H. A random sampling approach will be used to ensure clean closure with 80 percent accuracy (an estimated four samples collected randomly from the

base of the structure). Additionally, four wipe samples will be collected from each structure. Sampling procedures to be followed are presented in Section 4 of this plan.

2.3.3 Backfilling and Capping Structures

E/A&H anticipates the Navy may backfill the structures with sand or other material for safety reasons. Additionally, the connecting piping may be capped with concrete to prevent the flow of water between the structures. E/A&H proposes sampling each media used to verify clean status of the material. Large concrete rubble created during demolition will be steam cleaned and left inside the structures; smaller concrete debris will be contained with the excavated waste and properly disposed of.

2.3.4 Removing Construction Materials

After all activities are completed, the dewatering station will be disassembled and the plastic sheeting, geotextile fabric, used PPE and other waste will be containerized. Any debris or trash associated with the field activities will be removed and the area will be left as close as possible to its natural state.

2.3.5 Disposal of PPE and Disposable Sampling Equipment

Used personal protective equipment (PPE) and used disposable sampling equipment (such as plastic sheeting) will be placed in 55-gallon U.S. Department of Transportation (DOT)-approved drums for disposal by the Navy. Each drum will be labeled with the site number, waste category, and date of collection. Navy personnel will transport the drums to the PWC waste storage facility until the wastes can be disposed of properly. Information pertaining to these drums will be entered on a drum tracking log.

2.3.6 Preparation of the Removal Action Report

After field activities **are** complete and analytical results have been received, E/A&H will prepare a **[Removal Action]** Report. **This report** will include the following:

- Background information.
- e **A** detailed description of the field activities and a photographic **record** of activities.
- e Location maps and analytical test results for **soil**, surface, and waste characterization samples.
- e Analytical results for any material **used** as backfill and/or pipe plugging.
- e A site diagram showing the features of the site during removal action. **This** will include the structures, the temporary road, staging **area**, and dewatering/decontamination **area**.
- Disposal manifests (if available at the time of **report**) for solids **disposal**, and a description of the fate of water generated during the removal action.

3.0 HEALTH AND SAFETY PLAN

A site-specific Health and Safety Plan for the **[removal action]** field operations is included as Appendix **B**. **This** site-specific plan is to **be used in** conjunction with the approved **NAS** Pensacola CHASP. Copies of both plans will be onsite during all field operations.

4.0 SAMPLING AND **ANALYSIS** PLAN

The following **SAP** outlines the specific protocols to **be** followed in completing the removal, **as** well as quality goals for each field screening and **analytical** method to be employed. Descriptions of sample collection, handling, preparation, and **shipping** methods to be followed **are** also discussed.

4.1 Project Description

The removal action is intended to remove **all** contents of three structures (sludge drying bed, Imhoff tank, and chlorine contact chamber) associated with **the** abandoned WTP. **Initially**, waste characterization sampling will provide the analytical **data** required by **PWC** for the **disposal** of solid wastes. **Soil** sampling will be conducted after excavation of the sludge drying **beds** to determine contaminant concentrations present after the removal action. Additionally, wipe samples will be taken of the structures after cleaning to verify their clean **status** or indicate more cleaning is necessary.

4.2 Field Sampling Plan

This section describes the sampling and field measurement procedures to be used during removal. The sampling and quality assurance procedures **used will** be in accordance with the CSAP for Naval Air Station Pensacola (E/A&H 1993c) and the USEPA Region IV *Standard Operating Procedures and Quality Assurance Manual* (SOP/QAM) (USEPA, 1991).

For planning, the number and **type** of samples are provided in the Table 4-1. The number of samples collected may be modified based on field screening **reading** and observations. The Navy will be apprised of any changes in the number of samples collected, and the USEPA and FDEP will be notified.

4.2.1 Waste Characterization Samples

Waste characterization samples **shall** be **collected** before the removal action [**if possible. Imhoff tank sampling may not be possible during the pre-removal stage due to limited access to its contents. Four discrete samples will be taken based on the condition of the tank's contents after partial demolition enables a better inspection. Five discrete samples will be**

[Bold items enclosed in brackets denote changes to the first draft of document.]

Table 4-1 Abandoned Wastewater Plant Sampling Analytical Requirements			
Medium	No. of Samples	Analytical Parameters	DQO
Waste Characterization	3	TCLP	N/A
Soil Samples	4	TAL/TCL	IV
Concrete Surface (wipe)	4	TAL Metals and Cyanide	IV
Backfill	1	TAL/TCL	IV

Notes:

- DQO — Data Quality Objective
- TAL — Target Analyte List
- TCL — Target Compound List
- N/A — Not Applicable

taken from the **sludge-drying** beds; the exact location of these samples will be determined according to **SW 846** method, which prescribes a random sampling scheme for large areas with no evident stratification. These samples will be taken at discrete locations, but **will** be composited vertically from 0 to 4 feet as they are only for waste characterization, not assessment. One sample **is** to be **collected** from the chlorine contact chamber.]

The sludge-drying bed **will** be sampled using a hand auger. Because of the standing water in the Imhoff **tank** and the chlorine contact chamber, they will be sampled with a **petite Ponar grab** sampler designed to collect **dredge** samples [underwater]. The **petite Ponar** sampler is a stainless- steel clamshell-type **scoop** activated by a [cantilever] system. **Procedures** for operating the sampler **are** provided below.

1. Don **personal** protective clothing and equipment **as required** in the site-specific **HASP** (Appendix B).

[Bold items enclosed in brackets denote changes to the first draft of document.]

2. Lock open the jaws of the decontaminated sampler.
3. Lower the sampler into the sediment/sludge.
4. Release the tension on the rope and close the **jaws** of the sampler.
5. Retrieve the sampler and open the jaws to **collect** the sediment sample.
6. Collect the volatile organic compound (VOC) sample immediately from the petite Ponar sampler or hand auger and place in the appropriate sample container. **Fill** the container to capacity to achieve **zero** headspace.
7. Place any remaining sample into a stainless-steel bowl.
8. Repeat the process of sample collection until enough sample volume **has** been collected to make the necessary composite samples. **Homogenize** the samples and place in the appropriate sample containers using stainless-steel implements.
9. Describe sample collected, the depth, and locations from which the sample was collected in the field logbook.
10. Upon completion of the sampling, decontaminate **all** equipment in accordance with Section 4.6.

[Other sampling devices, such as a hand auger, will be available if the dredge sampler proves unreliable.]

4.2.2 Soil Samples

After the removal of the contents of the sludge-drying bed, E/A&H will collect **an** estimated four soil samples at selected locations for TAL/TCL parameter **analyses**. The soil samples will be collected to a depth of 1 foot beneath the excavated level of the sludge **drying bed**. The sample will be collected using a stainless-steel hand auger. **Procedures** for collecting the sample are **as** follows.

1. Don personal protective clothing and equipment **as required** in the site-specific HASP (Appendix B).

[Bold items enclosed in brackets denote changes to the first draft of document.]

2. Place clean plastic sheeting on the ground surface **near** the sample collection point to contain decontaminated sampling equipment.
3. Begin augering to the depth **required** for sampling.
4. Note in detail the geologic features of the **soil** on a field boring log.
5. Stop augering at the top of the specified or selected depth.
6. Place material into a decontaminated stainless-steel bowl.
7. Collect sample.
 - Without homogenizing, immediately place the **VOC** sample into the appropriate container. Fill the container **so** there is **zero** headspace.
 - **Mix** the remaining volume **until** thoroughly homogenized and place into the appropriate containers. Label the samples and preserve to **4** degrees Centigrade ($^{\circ}$ C).
 - **Record** the sample identification number, depth from which sample was collected, and analyses **required** in the field logbook and on **the** appropriate field forms.
8. **Upon** completion of the sampling, decontaminate **all** equipment in accordance with Section 4.6.

4.2.3 Wipe Samples

Wipe samples will be collected on the internal surfaces of the structures after thorough cleaning to verify their clean **status**. The samples will be analyzed for metals and cyanide. American Society for Testing and Materials (ASTM) *Type III* water will be **used as** the solvent to **collect** these samples. Each sample will be prepared **in** the following manner.

1. **Mark** the exact sample site with a template or ruler. The template or ruler must be thoroughly cleaned between samples to prevent cross-contamination.
2. Write a detailed description of the **area** sampled and include a sketch of the sample **area** (**as** close to scale **as** possible).

3. **Prepare all** sampling equipment for the sampling event.
4. Remove the cap from the sampling vial with gloved hands.
5. Remove the solvent-soaked **gauze** or **swab** ~~from the sampling vial with forceps, tongs, or gloves.~~
6. Immediately begin wiping the entire marked **area** twice, from left to right and then from top to **bottom**.
7. Return the gauze or swab to the sample vial. (If **using gauze**, fold the sample side in.)
8. Cap the sample vial to prevent evaporation of the solvent.
9. Label the vial and record the sampling details in the field logbook.

4.3 Sample Identification, Containers, and Preservatives

The following sections detail the sample identification system, sample containers, and sample preservation.

4.3.1 Sample Identification

Sample designation will follow the guidelines established **in** Section 12 of the **CSAP**. **Soil** sample collection points **will** be labelled according to site, media sampled, and unique number. Each sample designation will be five to eight characters. The first two characters represent the site identification number at **NAS** Pensacola (for **this** project, the first two **characters** will be "32," representing Site 32. The third character represents the sample matrix. The letter "S" will represent a **soil** sample. The fourth and **fifth** numbers represent the matrix **serial** identification number, which is a unique location number assigned to the sample. The **sixth**, **seventh**, and **eighth** characters represent the sample-specific identification number, which will be the deepest sample depth rounded to the nearest foot. For example, a **soil** sample collected from the 0 to 1 foot interval below grade at location **06** at Site 32 would be labeled as **32S06001**. The **sixth**, **seventh**, and **eighth** characters **will** also designate **quality** assurance

*a

samples (QA) with the sixth digit designating the type of **quality** assurance sample or material blank (such as "E" for equipment rinsate blank), and the seventh and eighth digit differentiating between **quality assurance samples**.

Waste characterization sample designations will be eight characters. The ~~first~~ two will represent the site number (32) and the third will represent the media sampled ("**S**" for **soil**, "**W**" for water). The fourth and fifth characters, however, differ from the CSAP **because** they will designate the sample as a waste characterization sample ("**WC**" for waste characterization). The next three characters will be the waste characterization sample identification number, which will be sequentially numbered. For example, a waste characterization composite soil sample collected from the Imhoff tank could be designated as 32SWC001, assuming it is the first **soil** sample collected at Site 32 for waste characterization.

4.3.2 Sample Containers and Preservatives

The appropriate number of pre-cleaned sample containers, preservatives, and trip **blank** samples will be obtained from a NEESA-approved Contract Laboratory Program (CLP) laboratory before sampling. All glass containers will have Teflon-lined caps.

Samples ~~will~~ be chemically preserved in accordance with the guidelines presented in Section 4.2.7 of the USEPA SOP/QAM manual and Section 12.2 of the CSAP. **All samples requiring** chemical preservation shall be preserved immediately upon collection **in** the field.

4.4 Field and Laboratory Quality Control (QC) Checks

QC checks to be followed during this project are **contained in the** Quality Assurance **Plan** in Section 15 of the CSAP. Field QC checks will include the following:

[**Bold items enclosed in brackets denote changes to the first draft of document.**]

- e Submit one trip blank (provided by the testing laboratory) with each shipment of samples submitted for volatile organic analysis.
- e Submit one field blank **per** week during the removal action. The field **blank** will consist of the ASTM Type III water transferred to sample containers at the field location.
- e Submit one equipment rinsate blank **per day**.
- e Submit one temperature blank per cooler.
- e Submit one duplicate **soil** sample from beneath the sludge-drying beds following the excavation.
- e Submit a sufficient volume of **soil** for matrix spike analyses.

4.5 Sample Packaging, labeling, and Chain-of-Custody Forms

Sample packaging, labeling, and custody documentation will proceed **as** outlined in Section 12 of the **CSAP**.

4.6 Decontamination Procedures

Decontamination procedures for sampling equipment will **be** performed **in** accordance with Appendix B, Section B-8 of the USEPA SOP/QAM **manual** and **Section 11** of the **CSAP** with the following exceptions. The detergent for use on this project **will** be Liquinox, which contains powerful chelating agents to bind and remove trace metals from sampling equipment. When available, hot water will be used for field decontamination. A stainless-steel bowl or bucket, sink, or glass bowl will be used to contain the clean water wash solution. Field reagent grade water will meet the specifications of **ASTM Type III** water (D 1193-77 re-approved 1983, federal test method number: 7916), which provides deionized, filtered, and organic-free water for field **use**. The steam cleaner and/or high pressure hot water washer will **be** capable of generating adequate pressure and producing hot water and/or steam.

**[Bold items enclosed in brackets denote
changes to the first draft of document.]**

Decontamination of large equipment will occur at the established decontamination pad located at Site 11, north of Chevalier Field. Cleaning and decontamination of small tools and sampling equipment will be conducted at the E/A&H field trailer or at a temporary decontamination pad adjacent to the site. All equipment cleaning will be performed **on** saw horses or racks above the plastic sheeting. Decontamination fluids will be pumped from the catch basin or poured into labeled 55-gallon DOT-approved storage drums. The Navy will be responsible for the transportation and disposal of the drummed decontamination fluids generated during this project. E/A&H anticipates the decontamination fluids *can* be processed through the **NAS Pensacola IWTP**.

The following procedures will be followed to reduce the **risk** of cross-contamination during decontamination. **A** new pair of disposable outer gloves will be donned before handling sampling equipment during decontamination. Only Teflon, glass, or stainless-steel spray bottles/pressurized containers will be used to apply decontamination rinsates.

Non-sampling equipment such as the trackhoe will be decontaminated with high-pressure steam. If necessary, the equipment will be scrubbed with **a** laboratory-grade detergent and clean water wash solution. The equipment will then be rinsed with clean water **as necessary**.

Sampling equipment to be decontaminated will include the hand auger, petite Ponar sampler and stainless-steel bowls and utensils used for sample homogenization. The following methods will be used to decontaminate sampling equipment:

1. Don protective gloves **before** decontaminating the equipment.
2. Wash and scrub with a laboratory-grade detergent and clean water wash solution or decontaminate with high pressure steam.
3. Rinse with clean water.

4. Rinse with **ASTM Type III** water.
5. Rinse twice with pesticide-grade isopropyl alcohol.
6. Rinse with **ASTM Type III** water.
- 7: **Air dry.**
8. Wrap in aluminum foil or plastic sheeting for storage if the sampling equipment is to be stored or transported.

Personal decontamination procedures **are** outlined in the site-specific **HASP** contained in Appendix B.

4.7 Calibration Procedures and Frequency

The instruments used for field parameter measurements will be calibrated at least twice **daily**, (before and after use). Calibration **and** standardizing procedures **are listed** in Section 10 of the **CSAP**.

5.0 QUALITY ASSURANCE PLAN

The **Quality** Assurance Plan presented in Section 15 of the **CSAP** will be used during this **removal** action.

6.0 DATA MANAGEMENT PLAN

Data management includes documenting field activities, validating analytical data, report preparation, and other data related **to** this project such **as** meeting summaries, telephone conversation logs, illustrations, computations, and engineering data. Section 14 of the **CSAP** contains the **data** management guidelines to be followed during **this** project.

7.0 COMMUNITY RELATIONS PLAN

The Navy shall comply with the community relations aspects of *this* removal action as applicable. The designated spokesperson shall **be** the Public **Affairs** Officer for **NAS** Pensacola. **SOUTHNAVFACENGCOM**, with the assistance of and in coordination with **NAS** Pensacola, shall develop and generate **an** Administrative **Record (AR)**, publish a notice of availability of the AR within 60 days of the **start** of this removal action. After providing a 45-day comment period, a written response to significant comments for inclusion in the record will **be** generated.

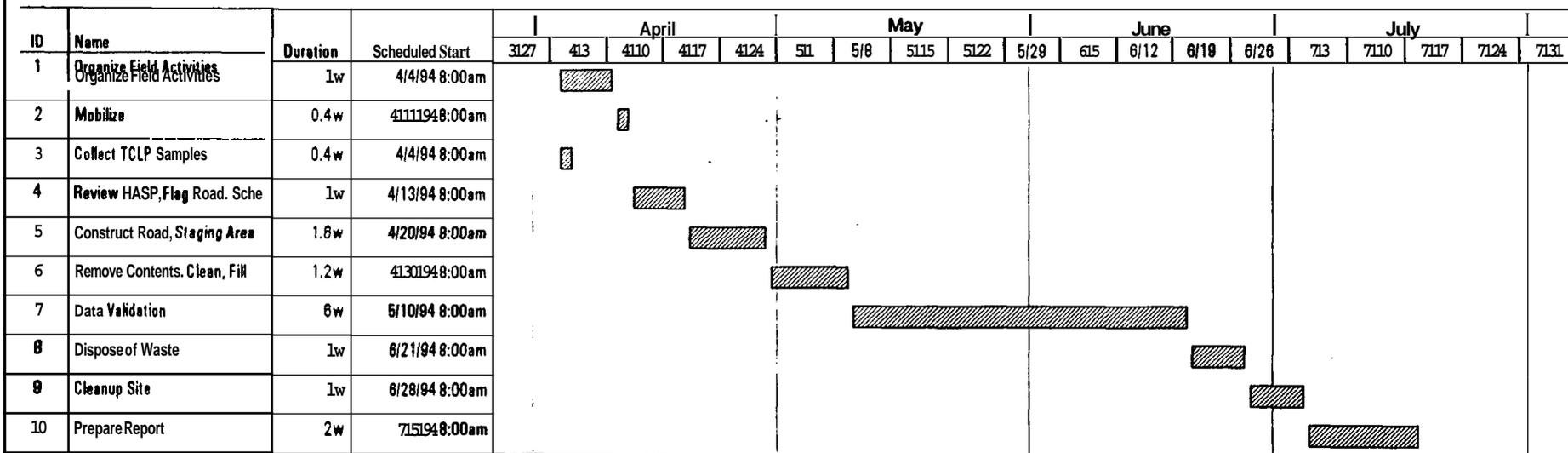
8.0 SCHEDULE

E/A&H estimates the proposed removal action activities outlined in this document, including submission of the **[Removal Action] Report**, can be performed in approximately fifteen weeks from authorization to completion. **An** itemized time schedule is presented in Figure 8-1. **[The time schedule presented is an estimate of the duration of field activities. The April 4, 1994 start date may vary depending on the availability of PWC.]**

[Bold items enclosed in brackets denote changes to the first draft of document.]

Figure 8-1

Removal Action Plan Site 32 NAS Pensacola



Project:
Date: 3/2/94

Critical		Progress		Summary	
Noncritical		Milestone		Rolled Up	

9.0 REFERENCES

- Ecology & Environment, Inc. (1990). *Remedial Investigation/Feasibility Study Work Plan — Group C, Naval Air Station, Pensacola, Florida*, Ecology & Environment, Inc.: Pensacola, Florida.
- EnSafe/Allen & Hoshall (1993a). *Draft Final Remedial Investigation Report, Operable Unit 10 and Site 13, Naval Air Station Pensacola, Pensacola, Florida*. EnSafe/Allen & Hoshall: Memphis, Tennessee.
- EnSafe/Allen & Hoshall (1993b). *Comprehensive Health and Safety Plan for Naval Air Station Pensacola, Pensacola, Florida — Final*. EnSafe/Allen & Hoshall: Memphis, Tennessee.
- EnSafe/Allen & Hoshall (1993c). *Comprehensive Sampling and Analysis Plan for Naval Air Station Pensacola, Pensacola, Florida — Draft Final*. EnSafe/Allen & Hoshall: Memphis, Tennessee.
- Florida Department of Environmental Regulation. (1988). *Water Quality Standards, Classification of Groundwater, Usage, Reclassification*, Chapter 17-3.403, Florida Administrative Code.
- Naval Energy and Environmental Support Activity (NEESA). (1983). *Initial Assessment Study of Naval Air Station, Pensacola, Florida*. NEESA 13-015.
- U.S. Army Corp of Engineers. (1987). *Corps of Engineers Wetlands Delineation Manual*. Environmental Laboratory, Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi.

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U.S. Environmental Protection Agency. (1991). *Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual*. U.S. Environmental Protection Agency, Region IV: Athens, Georgia.

U.S. Environmental Protection Agency. (1986). *Test Methods for Evaluating Solid Waste, Volume 1A: Laboratory Manual, Physical/Chemical Methods, SW-846*.

10.0 FLORIDA PROFESSIONAL GEOLOGIST SEAL

I have read and approve of the Removal Action Work Plan for the abandoned wastewater treatment plant in Wetland 80 of Site 32 and ~~seal~~ it in accordance with Chapter **492** of the Florida **Statutes**. In sealing this document, I certify that the geological information contained in it is true to the best of my knowledge and that the geological methods and procedures included in this plan ~~are~~ consistent with currently accepted geological practices.

Name: Brian E. Caldwell
License Number: 1330
State: Florida
Expiration Date: July 31, 1996

B E Caldwell

Brian E. Caldwell

9-16-94

Date

Appendix A
Orientation Meeting Checklist/Acceptance Form

Appendix B
Site-Specific Health and Safety Plan

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Attachment A **Directions to Emergency ~~Medical~~ Facilities**
Attachment B **Health and Safety ~~Plan~~ Forms**

List of Acronyms

The following list contains many of the acronyms, initials, abbreviations, and units of measure **used in this** report.

ACGM	American Conference of Governmental Industrial Hygienists
CGI	Combustible Gas Indicator
CHASP	Comprehensive Health and Safety Plan
CSAP	Comprehensive Sampling and Analysis Plan
DOD	Department of Defense
E/A&H	EnSafe/Allen & Hoshall
FDEP	Florida Department of Environmental Protection
HASP	Health and Safety Plan
IDLH	Immediately Dangerous to Life and Health
IWTP	Industrial Wastewater Treatment Plant
LEL	Lower Explosive Limit
mg/m ³	milligrams per cubic meter
MINIRAM	Respirable dust monitor
MSDS	Material Safety Data Sheets
NAS	Naval Air Station
NEESA	Naval Energy and Environmental Support Activity
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
OU 10	Operable Unit 10
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PPE	Personal Protective Equipment
ppm	parts per million
PWC	Public Works Center
REL	Recommended Exposure Limit
SAP	Sampling and Analysis Plan
SPF	Sun Protection Factor
STEL	Short Term Exposure Limits
TCE	Trichloroethylene
TLV	Threshold Limit Value
vocs	Volatile Organic Compounds

1.0 INTRODUCTION

This Health and Safety Plan (HASP) is written for the removal action field operations to be conducted at Wetland No. 80 (Site 32) located at the Naval Air Station (NAS) Pensacola, Florida. This plan is to be used with the approved NAS Pensacola Comprehensive Health and Safety Plan (CHASP). Copies of both plans should be onsite during all field operations. The Navy project contract number with EnSafe/Allen & Hoshall (E/A&H) is N62467-89-D-0318 CTO-072.

The purpose of the removal action is to remove the contents of the structures of the abandoned wastewater treatment plant in potential wetland number 80. The abandoned wastewater treatment plant consists of three main structures: an Imhoff Tank (24.5 x 33 x 21.25 feet), Sludge Drying Bed (60 x 45 x 6.5 feet), and a Chlorine Contact Chamber (18.8 x 6.3 x 6.5 feet). Several large steel pipes connect the three structures. The site location map can be found in Section 1 of the Removal Action Work Plan.

The goal of the removal action is to mitigate potential risk to human health and the environment through removal of the contents within the structures and cleaning the inside of the structures.

Applicability

The provisions of this plan are mandatory for all E/A&H personnel, personnel under contract to E/A&H, Department of Defense (DOD) personnel, and DOD contractors and subcontractors engaged in the removal action who will be exposed or have the potential to be exposed to onsite hazardous substances. All personnel will operate in accordance with the most current requirements of 29 Code of Federal Register (CFR) 1910.120, *Standards for Hazardous Waste Workers and Emergency Responders*. These regulations include the following provisions for employees exposed to hazardous substances, health hazards or safety hazards: training as described in 120(e), medical surveillance as described in 120(f), and personal protective equipment described in 120(g). All field personnel assigned to field activities for the project

must read **this** plan and sign the plan acceptance form before the **start** of site activities. At a minimum, **all** provisions of the E/A&H corporate health and safety plan will be followed.

E/A&H will suspend site work and will instruct personnel to evacuate the **area** under the following conditions: If inadequate **safety** precautions **are** taken by the subcontractor, visitors, or NAS Pensacola Public Works Commission (PWC) personnel and contractors/subcontractors, **or** if it is believed that the subcontractor, visitors, or PWC oversight personnel **are** or may be exposed to an immediate health hazard.

Health and safety training certificates for all E/A&H employees who visit the site will be on file and available for review in the field trailer. Current Occupational Safety and Health Administration (**OSHA**) refresher **training** certificates will be available onsite for **all** employees involved in field activities whose refresher **course** requirements come up for renewal before the project begins. All subcontractors, Navy personnel, and any other site visitors must provide health and safety certification with appropriate refresher course documentation before site entry and comply with the health and safety requirements of this HASP.

At least one E/A&H employee certified in **CPR** and first aid will be onsite during **all** site activities.

2.0 SITE CHARACTERIZATION

2.1 Work Areas

See CHASP page 2-1.

2.2 Work Area Access

See CHASP page 2-2.

23 Site Map and Work Zones

A vicinity map (Figure 1-1) and site map (Figure 1-2) showing the location of the base area and subject site, respectively, can be found in Section 1 of the work plan. The exclusion area, decontamination corridor, and support area location will be based on existing physical conditions such as location of utilities, roads, and site security assets.

2.4 Site Description

The abandoned wastewater plant is located on the Magazine Point Peninsula north of Chevalier Field, as shown on Figure 1-2, and was investigated as part of Operable Unit 10 (OU 10). OU 10 consists of Site 32 (Industrial Sludge Drying Beds), Site 33 (Wastewater Treatment Plant Ponds), Site 35 (Solid Waste Management Units), Site 13 (Magazine Point Rubble Area).

Magazine Point Peninsula is a low-lying, partly wooded and developed area. Natural elevations do not exceed 5 feet above sea level. Artificially filled areas may rise as high as 14 feet above sea level. Areas within the Industrial Wastewater Treatment Plant (IWTP) compound are highly disturbed and developed due to site operations. Rubble and construction debris are mounded along the eastern shoreline at Site 13 due to years of dumping. The peninsula is surrounded by Bayou Grande to the west and north and Pensacola Bay to the east. These coastal waters have been classified by the Florida Department of Environmental Protection (FDEP) as Class III waters, indicating their use for recreation and maintenance of a well-balanced fish and wildlife population (FDER 1992a).

Waste processing began at Magazine Point when an Imhoff tank, sludge drying bed, and chlorine contact chamber were installed north of the present IWTP. The plant treated only sewage from the Magazine Point area (Naval Energy and Environmental Support Activity [NEESA], 1983). In 1942, the sewer line was extended to connect Building 649 complex (Site 30) to the system. According to historical data, Building 649 was used for tin-cadmium plating during the 1940s. Fifteen tanks, ranging in capacity from 200 to 500 gallons, were used to store solutions

containing **tin**, cadmium, and cyanide in the vicinity of Building **649**. It is not known if any of the plating wastes were disposed of in the sewer.

In **1948** a primary treatment sewage plant was constructed at the present IWTP. ~~Direct~~ discharge of raw **sanitary** sewage from the south side of the base into Pensacola Bay was rerouted to the treatment plant. The wastewater treatment facility to the **north** was abandoned (**NEESA 1983**).

Note: Before **1971**, industrial waste was received **via** the sanitary sewer line and processed with domestic sewage (**NEESA 1983**).

3.0 **SITE ACTIVITIES**

The following sections detail the anticipated activities that will occur during the removal action.

- e Plan field activities, review historical data, and schedule personnel and equipment.
- e Review the applicable portions of the CHASP, **this HASP**, the Comprehensive Sampling and Analysis Plan (CSAP), and the site-specific Sampling and Analysis Plan (**SAP**) with field personnel.
- Construct a road, staging platform, and a temporary sludge de-watering station.
- Remove water from the Imhoff **tank** and the chlorine contact chamber.
- Demolish the end wall of the Imhoff **tank** and the sludge drying **bed** to provide access for equipment to remove solid contents of the structures.
- Remove and containerize the liquid and sludge **within** the structures for subsequent **disposal** by the PWC.
- e **Steam** clean or sand blast the inside of the structures to remove any contamination from the surface.
- e Collect composite samples from the removed material for waste **characterization**;

- Collect composite **soil** samples from the excavated area of the sludge drying bed for analytical testing to verify cleanup status;
- Collect a composite **soil** sample **from the back-fill material** for analytical **testing**;
- Back **fill** the structures **as** needed with sand and/or concrete;
- Remove the road and staging **area**;
- Assist PWC in coordinating the **disposal** of wastes (i.e., **soil**, sludge, water, decontamination fluids, etc.) generated during the field activities; and
- **Prepare** a Removal Action Report including a summary of the field activities and the results of analytical testing.

4.0 CHEMICAL HAZARDS

Previous sampling operations have shown potential for exposure **to** numerous chemicals. Table **4-1** lists exposure guidelines for expected site chemicals. Material Safety Data Sheets (MSDS) for these materials **are** available in Appendix **A**.

Table 4-1 Exposure Guidelines For Expected Site Chemical Hazards						
Chemical Name	Odor ^(a) Threshold (ppm)	OSHA PEL ^(b)	ACGIH TLV ^(c)	NIOSH REL ^(d)	Auto- ignition Temp. (°F)	Flammable range (% by volume)
Cyanide	N.A.	5 mg/m ³	5 mg/m ³ Skin	4.7 ppm Ceiling	N.A.	N.A.
Cadmium	N.A.	5 mg/m ³	0.05 mg/m ³	Potential Occupational Carc.	N.A.	N.A.
Lead	N.A.	0.05 mg/m ³	0.05 mg/m ³	0.1 mg/m ³	N.A.	N.A.
Chromium	N.A.	0.5 mg/m ³	0.5 mg/m ³	0.5 mg/m ³	N.A.	N.A.
1,1,1-TCE	0.5 to 167	50 ppm 200 STEL	50 ppm 200 STEL	25 ppm	770	11 to 41%

Notes:

- ^a - Odor Thresholds for Chemicals with Established Occupational Health Standards, American Industrial Hygiene Association, 1989, Range of All Reference Values
- ^b - 29 CFR 1910.1000, Table Z-1-A. Limits For Air Contaminants, as amended through 1/15/91.
- ^c - 1990-1991 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, ACGIH
- ^d = NIOSH Pocket Guide to Chemical Hazards, June 1990.
- N.A. = Substance information not available, or substance unlisted.
- TCE = Trichloroethylene

5.0 OPERATIONS AND PHYSICAL HAZARDS

Heavy equipment operations (i.e., backhoe, bulldozer) will be conducted in accordance with the procedures outlined in the NAS Pensacola CHASP Appendix B, *Drilling Safety Guide*. Operators of the heavy equipment will be responsible for the tank wall demolition. All E/A&H personnel and subcontractors will be removed from the exclusion zone during these operations.

When working in areas that support habitat for poisonous snakes, personnel must wear protective chaps made of heavy material designed to prevent snake bites. Additional care should be taken to avoid fire ants. Benadryl will be provided in each first-aid kit for fire ant bites.

Confined Space Entry Procedures

See Attachment C.

6.0 EMPLOYEE PROTECTION

See CHASP page 6-1.

6.1 Personal Protective Equipment (PPE)

Field activities associated with the removal of the contents of the abandoned waste water treatment plant structures or demolition of the Imhoff tank walls **will** be conducted in Level **C** protection. Level C protection is detailed in Table 6-1. **This** level of protection was chosen because excessive dust concentrations may be generated during demolition and removal of contents from the abandoned wastewater treatment plant structures. Appropriate engineering controls (i.e., wetting the area with water) will be used to lessen dust.

Operations such as land clearing, road construction, and site mobilization will be performed in Modified Level D. Modified Level D consists of work coveralls (**full** length sleeves and pants) hard hat, appropriate chemical-resistant latex inner and nitrile outer gloves, eye protection, ear protection (where applicable), snake chaps (where applicable), hip or chest waders, and chemical-resistant, steel-toe and shank boots. **This** level of protection was chosen because the levels of contamination identified by previous studies were **generally** low and free product **has** not been identified.

Table 6-1 lists the **specific** criteria for each protection level.

Table 6-1 Level Of Protection And Criteria		
Level of Protection	Criteria for Use	Equipment
Level A	<ul style="list-style-type: none"> • When atmospheres are "immediately dangerous to life and health" (IDLH in the NIOSH/OSHA Pocket Guide to Chemical Hazards or other guides.) • When known atmospheres or potential situations would effect the skin or eyes or be absorbed into the body through these surfaces. Consult standard references to obtain concentrations hazardous to skin, eyes or mucous membranes. • Potential situations include those where immersion may occur, vapors may be generated or splashing may occur through site activities. • Where atmospheres are oxygen deficient with the conditions above. • When the type(s) and or potential concentration of toxic substances are not known. 	<ul style="list-style-type: none"> • Positive pressure-demand full-facepiece, self-contained breathing apparatus or positive-promure supplied air respirator with escape SCBA • Totally-encapsulating chemical protective suit • Chemical-resistant inner and outer gloves • Steel-toe-and-shank chemical resistant boots • Hard hat (under suit) • Two-way radios worn inside suit • Coveralls, long cotton underwear, disposable protective suit, gloves and boots, work over fully encapsulating suit
Level B	<ul style="list-style-type: none"> • When work areas contain less than 19.5 percent oxygen • When vinyl chloride is present in the breathing zone 	<ul style="list-style-type: none"> • Chemical resistant clothes, long sleeves, hooded, one or two pieces • Full-faced positive-pressure supplied air breathing apparatus or airline system with a 30-minute escape bottle • Hard hat • Inner glover and chemical resistant glover • Steel-toe-and-shank boots with disposable outer boot covers
Level C	<ul style="list-style-type: none"> • When airborne dust particles warrant respiratory protection • When work arees contain at least 19.6 percent oxygen 	<ul style="list-style-type: none"> • Chemical resistant clothes, long sleeves, hood optional, one or two pieces • Full-facepiece, air purifying respirator equipped with cartridges suitable for the hazard • Hard hat • Inner gloves and chemical resistant gloves • Steel-toe-and-shank boots • Coveralls and disposable outer boots

Table 6-1 Level Of Protection And Criteria		
Level of Protection	Criteria for Use	Equipment
Level D	<ul style="list-style-type: none"> • When level B or C is not indicated • When airborne particles do not warrant respiratory protection ◦ When work areas contain at least 19.5 percent oxygen 	<ul style="list-style-type: none"> • Inner glover and chemical-resistant gloves needed to handle soil or water samples • Steel-toe-and-shank boots • Hard hat (ANSI Z89.1-1969 standard) • Eye protection (ANSI Z87.1-19681 standard) • Sunscreen (SPF 16 or greater) • Optional: coveralls and disposable outer boots

Notes:

Level A = Protection will be selected when the greatest level of respiratory, skin, and eye protection is needed. Level A protection will be required in Area A of the exclusion zone.

Contradictions for use of Level A:

- Environmental measures contiguous to the site indicate that air contaminants do not represent a serious dermal hazard.
- Reliable, accurate historical data do not indicate the presence of severe dermal hazards.
- Open, unconfined areas.
- Minimal probability of vapors or liquids (splash hazards) present which could affect or be absorbed through the skin.
- Total vapor readings indicate 500 ppm to 1,000 ppm.

Level B = Protection will be selected when the highest level of respiratory protection is needed, but cutaneous exposure to the small unprotected areas of the body, (neck and back of head) is unlikely, or where concentrations are not known to be within acceptable standards. Additionally, the permissible limit for exposure to mixtures of all site gases will be checked using the requirements of 1910.1000(d)(2)(i) to ensure that PEL is not exceeded. If the value calculated using this method exceeds 10, Level B PPE is required.

Level C = Protection will be selected when the types and concentrations of inseparable material are known, or reasonably assumed to be no greater than the protection factors associated with air-purifying respirators, and exposure to the unprotected areas of the body is unlikely to cause harm. Dust concentrations require Level C PPE, where the respirable fractions exceed the PEL of 5 mg/m³ or the total concentrations exceed the PEL of 15 mg/m³.

Level D = Protection will be chosen when measurements of atmospheric concentrations are at background levels and work functions preclude splashes, immersion, or the potential for unexpected inhalation or contact with hazardous levels of any chemicals.

During sampling, air will be monitored for volatile organic compounds (VOCs) and dust particle concentrations using continuous-reading instruments. Based on previous history, the most

contaminated **areas** will be identified before field activities **begin**. The initial screening for **VOCs** of the abandoned wastewater treatment plant structures and structure contents will be **performed** using an photoionization detector (PID).

Selection of **Personal** Protective Equipment

See CHASP page 6-6.

6.2 Air Monitoring

A **PID**, combustible gas indicator (**CGI**), and respirable dust monitor (**MINIRAM**) will be used to monitor **air** during demolition and contents removal. The **PID** will be field calibrated to measure **VOCs** relative to a 100 ppm isobutylene **standard**. The **CGI** will be field calibrated to **standard**.

Background (ambient) **PID** and dust particle concentration readings in the breathing zone will be collected before each day's field activities **begin** (see **Section 6-1** above for specific monitoring protocols). **PID**, **CGI**, and dust particle concentration readings will be read continuously during the Imhoff tank **wall** demolition, removal of **structure** contents, and cleaning. These values will be recorded in the field logbook. The **air** monitoring measurements will be posted at the office trailer for personnel review.

Field **technicians** will be **instructed** to **report any** unusual **odors** or soil discolorations. Each instrument will be calibrated daily before site activities **begin** and checked for proper operation throughout the day. Before calibration at the end of each work day, each instrument will be checked to ensure that it is free from surface contamination.

6.3 Procedures and Equipment for Extreme Weather Conditions

See CHASP page 6-8.

Severe Weather Conditions

All field work shall immediately cease at the first sign of thunder or lightning. Field personnel shall perform emergency personal and equipment decontamination (see Section 6.4) and seek immediate shelter.

6.4 Personal Decontamination

See CHASP page 6-11.

6.5 Work Limitations

See CHASP page 6-12.

6.6 Exposure Evaluation

See CHASP page 6-13.

7.0 MEDICAL MONITORING PROGRAM

See CHASP page 7-1.

8.0 AUTHORIZED PERSONNEL

See CHASP page 8-1.

9.0 EMERGENCY INFORMATION

See CHASP page 9-1.

9.1 Site Resources

Cellular telephones will be used for emergency use and **communication/coordination** with NAS Pensacola. A first-aid kit, eye-wash equipment, and copies of **this Health and Safety Plan** will be available at each work **area**.

9.2 Emergency Procedures

See CHASP page 9-2.

Additional information on appropriate chemical exposure treatment ~~methods~~ will be available at the work site through the MSDSs. Directions to the nearest medical facility capable of providing general emergency medical assistance and treat chemical burns ~~are~~ provided in Attachment A of this **HASP**.

10.0 FORMS

The following forms will be used to implement this ~~Health~~ and **Safety Plan**:

- ~~Plan~~ Acceptance Form
- ~~Plan~~ Feedback **Form**
- **Exposure** History Form

The ~~Plan~~ Acceptance Form will be filled out by all employees working on the site ~~before~~ site activities ~~begin~~. The ~~Plan~~ Feedback Form will be filled out by the Site ~~Health~~ and **Safety** Officer and any other on-site employee who wishes to **fill** one out. The ~~Exposure~~ History Form will be completed by both the Field Project Manager and the individual(s) for whom the form is intended. Examples of each form are provided in Attachment **B**. All completed **forms must be returned to the ~~Task~~ Order Manager at EnSafe/Allen & Hoshall, Memphis, Tennessee.**

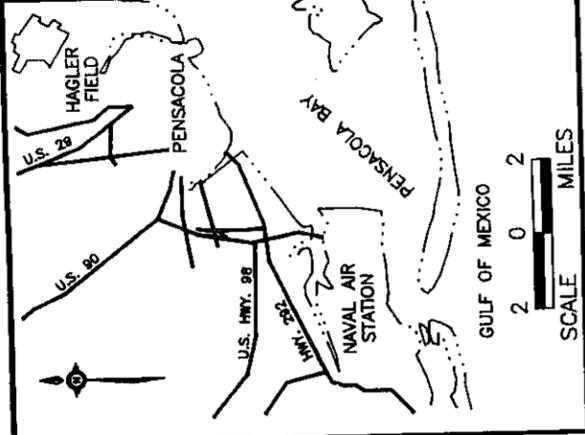
ATTACHMENT A

DIRECTIONS TO EMERGENCY MEDICAL FACILITIES

DIRECTIONS TO THE NEAREST MEDICAL FACILITIES

The nearest hospital and the nearest facility capable of **treating** chemical **burns** are located in the **NAS Pensamla Dispensary Building**.

Nearest Hospital
NAS Pensamla Dispensary Building
3600 Turner Street
NAS Pensamla, Florida
Emergency Number: (904) 452-3333



OPERABLE UNIT 10
(SITES 32, 33, & 35)

DE BACO 4
BAY

LEGEND

- x FENCE
- RAILROAD
- SHORE LINE

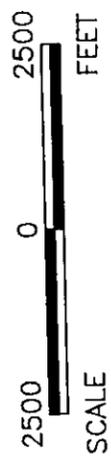
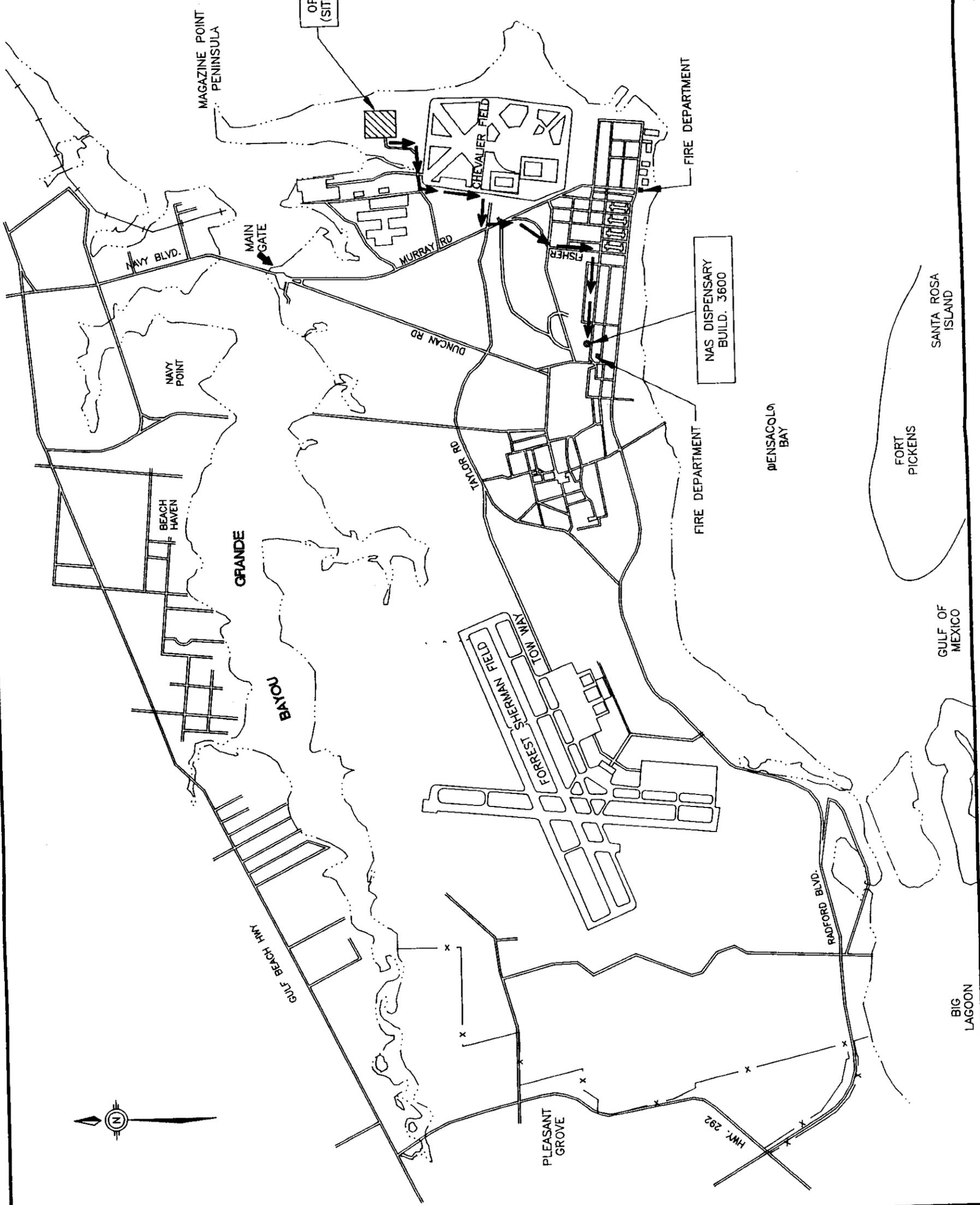


FIGURE B-1
HOSPITAL ROUTE
MAP
PENSACOLA, FL.

DWG DATE: 02/28/94 DWG NAME: 072PSCL1



ATTACHMENT B
HEALTH AND SAFETY PLAN FORMS

PLAN ACCEPTANCE FORM

PROJXCT HEALTH AND SAFETY PLAN

INSTRUCTIONS: This form is to be completed by each person working on the project site and returned to: EnSafe/Allen & Hoshall, Memphis, Tennessee.

Job No: 00580020

Contract No: N62467-89-D-0318

Project: Removal Action — Site 32

I have read and understand the contents of the above plan and agree to perform my work in accordance with it.

Signed

Print Name

Company

Date

PLAN FEEDBACK FORM

Problems with plan requirements:

Unexpected situations encountered:

Recommendations for revisions:
