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NAS JACKSONVILLE  
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CONFIRMATORY SAMPLING REPORT FOR UNDERGROUND AND ABOVE GROUND  
STORAGE TANKS NAS JACKSONVILLE FL  
11/1/1997  
ABB ENVIRONMENTAL



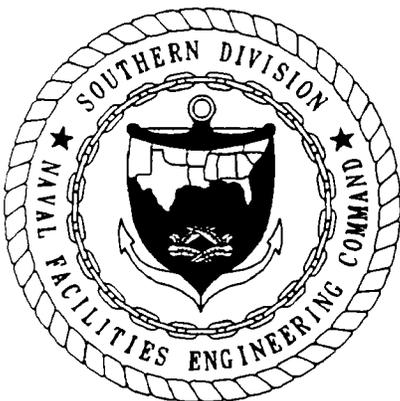
**CONFIRMATORY SAMPLING REPORTS**

**UNDERGROUND STORAGE TANK AND  
ABOVEGROUND STORAGE TANK SITES**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

**UNIT IDENTIFICATION CODE: N60200  
CONTRACT NO.: N62467-89-D-0317/131**

**NOVEMBER 1997**



**SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORTH CHARLESTON, SOUTH CAROLINA  
29419-9010**



2543-0002

November 14, 1997

Florida Department of Environmental Protection  
Twin Towers Office Building  
2600 Blainstone Road  
Tallahassee, Florida 32399-2400  
Attention: Mr. Mike Deliz

**Subject:      Confirmatory Sampling Reports  
                 UST/AST Investigation - Set I  
                 Naval Air Station Cecil Field  
                 Jacksonville, Florida  
                 Contract No. N62467-89-D-0317/131**

Dear Mike:

On behalf of Southern Division, Naval Facilities Engineering Command (SOUTHNAVFA-CENCOM), ABB Environmental Services, Inc. is pleased to forward two copies of the Confirmatory Sampling Reports (CSRs) for the following tank sites:

G9	G59	68	68A	82A	220
G289U	325-OW	367	502	G541	605
800	G829	G859	G880B	900	905

It is anticipated that CSRs for the remainder of the sites will be forwarded in December 1997.

Comments or questions you may have concerning this document should be directed to Mr. Bryan Kizer at SOUTHNAVFA-CENCOM (803-820-5896).

Very truly yours,

**ABB ENVIRONMENTAL SERVICES, INC.**

Rao Angara  
Installation Manager

cc:    Bryan Kizer, SDIV  
      Debbie Vaughn-Wright, USEPA  
      David Kruzicki, NASCF  
      Lisa Routhier, ABB-ES  
      Dale Obenauer, BEI  
      James Philcox, BRE  
      L. Shields, City of Jacksonville  
      file

ABB Environmental Services Inc.

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**CONFIRMATORY SAMPLING REPORTS**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK SITES**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**November 1997**

## GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
AST	aboveground storage tank
BRAC	Base Realignment and Closure
FDEP	Florida Department of Environmental Protection
NAS	Naval Air Station
OVA	organic vapor analyzer
TMP	Tank Management Plan
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank

## 1.0 INTRODUCTION

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ABB Environmental Services, Inc. (ABB-ES), was contracted by Southern Division, Naval Facilities Engineering Command to develop confirmatory sampling reports for 85 Base Realignment and Closure (BRAC) underground storage tank (UST) and aboveground storage tank (AST) grey sites at Naval Air Station (NAS) Cecil Field, Jacksonville, Florida. These sites were identified in the Contamination Assessment Plan, which was prepared by ABB-ES in November 1996 (ABB-ES, 1996a). A list of the 85 tanks under investigation is presented in Table 1.

The purpose of this document is to present the results, conclusions, and recommendations of the confirmatory sampling that was conducted for the BRAC grey UST and AST sites.

1.1 INSTALLATION LOCATION AND MISSION. NAS Cecil Field is located in southwestern Duval County, Florida, approximately 14 miles southwest of downtown Jacksonville, Florida (see Figure 1). NAS Cecil Field was established in 1941 and occupies more than 31,000 noncontiguous acres consisting of the following four distinct areas: the main facility, Yellow Water Weapons Area, Outlying Landing Field Whitehouse, and the Land Target Complex Detachment Astor. The official mission of NAS Cecil Field is to provide facilities, services, and materials support for the operation and maintenance of naval weapons, aircraft, and other units of the operating forces as designed by the Chief of Naval Operations.

1.2 TANK MANAGEMENT AT NAS CECIL FIELD. NAS Cecil Field was placed on the 1993 BRAC Commission's list by a bipartisan commission appointed by the President and confirmed by the Senate in accordance with the Defense Base Closure and Realignment Act of 1990. The primary goal of the NAS Cecil Field BRAC effort is to identify areas that are immediately suitable for property transfer and to investigate and remediate areas not suitable for property transfer. To achieve this goal, an environmental baseline survey was conducted in 1994 to classify all parcels of land and associated structures at NAS Cecil Field into seven categories that describe the suitability for property transfer. The petroleum sites generally fell into the category of areas that require additional investigation before the property can be transferred.

In an effort to manage the investigation and transfer of petroleum sites, a Tank Management Plan (TMP) (ABB-ES, 1996b) was developed. The TMP is a tool for making administrative and management decisions to expedite the investigation, remediation, and transfer of petroleum sites at NAS Cecil Field.

The TMP was used during the confirmatory sampling program to

- identify the type, location, and contents of all known ASTs and USTs at NAS Cecil Field;
- identify procedures for streamlining the additional investigations and remedial actions required at petroleum storage tank sites; and
- update and track any change (e.g., removal) in status of ASTs and USTs.

**Table 1**  
**Base Realignment and Closure Underground Storage**  
**Tank and Aboveground Storage Tank Grey Sites Summary**

Confirmatory Sampling Reports  
 Underground Storage Tank and Aboveground Tank Sites  
 Naval Air Station Cecil Field  
 Jacksonville, Florida

Tank Number	Building	Facility	Location (TMP ) <sup>1</sup>	Year Installed	Tank Contents	Tank Capacity (Gallons)	UST/AST
G59	59	Standby Gen-runway lights	C-7	1981	G	500	U
68	68	Supply Warehouse	C-8	1986	M	1,000	U
68a	68a	Supply Warehouse	C-8	1986	M	1,000	U
G82	82	Air Traffic Control	C-8	1987	G	1,000	U
82A	82	Air Traffic Control	C-8	UNK	M	1,000	U
220	220	Ace's Place	C-7	1954	M	5,000	U
G289U	289	Receiver Building	C-11	1983	G	250	U
334-OW	334-OW	Test Cell Oil-Water Separator	C-7	1991	L	500	U
367	367	Physical Security	C-14	UNK	M	500	U
502	502	Aviation Ordnance Area	C-13	1957	M	1,000	U
G541	541	Standby Generator	C-10	1979	G	250	U
605	605	Marine Barracks	C-2	1959	M	3,000	U
800	800	Memorial Chapel	C-8	1966	M	1,000	U
G814	814	400 HTZ Generating Building	C-7	UNK	G	250	U
G816	816	Motor Generator Building	C-7	UNK	G	250	U
G817	817	Motor Generator	C-8	UNK	G	250	U
G829	829	Radar Equipment Building	C-9	1983	G	250	U
G859	859	Antisub Warfare OP Cntr.	C-8	1986	G	1,000	U
G880B	880	RATCC	C-8	1976	G	300	A
900	900	Bowling Alley	C-7	1968	M	2,000	U
905	905	Exchange Building	C-7	1978	M	2,000	U
G9	9	Fire Department	C-8	1976	G	250	U
11-B	11	Steam Generating Plant	C-8	1941	M	15,000	A
11-C	11	Steam Generating Plant	C-8	1941	M	15,000	A

See notes at end of table.

**Table 1 (Continued)**  
**Base Realignment and Closure Underground Storage**  
**Tank and Aboveground Storage Tank Grey Sites Summary**

Confirmatory Sampling Reports  
Underground Storage Tank and Aboveground Tank Sites  
Naval Air Station Cecil Field  
Jacksonville, Florida

Tank Number	Building	Facility	Location (TMP ) <sup>1</sup>	Year Installed	Tank Contents	Tank Capacity (Gallons)	UST/AST
11-D	11	Steam Generating Plant	C-8	1941	M	15,000	A
G15-U	15	Water Treatment Control	C-6	UNK	G	2,000	U
G16-A	16	Water Treatment Tank	C-8	1995	G	1,000	A
G30	30	Commissary	C-8	1985	G	50	A
76-F	76	North Fuel Farm	C-7	1954	F	5,000	U
80	80	Transportation	C-7	1941	M	1,000	U
80-C	80	Transportation	C-7	1989	L	500	A
80-OW1	80	Transportation	C-7	1989	L	2,000	A
80-OW2	80	Transportation	C-7	UNK	L	500	U
80-OW3	80	Transportation	C-7	UNK	L	500	U
80-OW4	80	Transportation	C-7	UNK	L	1,000	U
81	81	Transportation	C-7	1952	M	1,000	U
G83	83	Lighting Vault	C-8	1987	G	1,000	U
136	136	North Fuel Farm	C-7	1989	L	10,000	A
G141LS	141	Emergency Generator	C-6	1980	G	250	U
G190	190	Telephone Service Building	C-7	1991	G	1,500	A
200	200	Hobby Shop	C-8	1975	L	315	U
200-OW	200	Hobby Shop	C-8	1975	L	500	U
216	216	Fire Pump House for North/South Flightline	C-8	1953	M	3,000	U
G222LS	222	Lift Station	C-7	1981	G	150	A
G231LS	231	Generator for Lift Station	C-8	1981	G	250	U
271-OW	271	NEX Service Station	C-7	1985	L	500	U
285-ST	285	North Fuel Farm	C-7	1953	L	5,500	U
G289-A	289	Receiver Building	C-11	1996	G	250	A

See notes at end of table.

**Table 1 (Continued)**  
**Base Realignment and Closure Underground Storage**  
**Tank and Aboveground Storage Tank Grey Sites Summary**

Confirmatory Sampling Reports  
 Underground Storage Tank and Aboveground Tank Sites  
 Naval Air Station Cecil Field  
 Jacksonville, Florida

Tank Number	Building	Facility	Location (TMP) <sup>1</sup>	Year Installed	Tank Contents	Tank Capacity Gallons	UST/AST
G290U	290	Transmitter Building	C-12	1983	G	250	U
293AST	293AST	Return Tank for 293	C-8	1956	F	3,000	U
293RT	293-OW	Day Tank 1	C-8	1953	F	500	U
312-OW	312	Corrosion Control Hangar	C-8	UNK	L	900	U
325-OW	325	IMD	C-8	UNK	L	900	U
G327-A	327	Police Station	C-14	1975	G	200	A
334-P	334	Test Cell 1010 Oil Tank	C-7	UNK	O	1,000	A
339-P	339	Test Cell 1010 Oil Tank	C-7	UNK	O	1,000	A
339TC1	339TC1	Test Cell JP-5 Tank	C-7	1953	F	20,000	U
339TC2	339TC2	Test Cell JP-5 Tank	C-7	1953	F	20,000	U
342-ST	342	Day Tank 2	C-8	1957	F	3,000	U
342RT	342	Day Tank 2	C-8	1957	F	500	U
G360PS	G360PS	Water Pump Station	C-7	1981	G	250	A
370	370	Golf Shack Diesel Tank	C-5	UNK	D	275	A
370G	370	Golf Shack Gas Tank	C-5	UNK	B	250	A
595	595	Guided Missile Facility	C-10	1965	M	2,000	U
G543	543	TACAN	C-11	1985	G	250	U
607	607	YWWA Department Administrative Building	C-2	1959	M	1,000	U
615	615	Maintenance Building	C-1	1960	M	3,000	U
G616	616	Yellow Water Stand by Generator	C-1	1960	G	5,000	U
617	617	BDU/AWSEP Operations	C-1	1958	M	5,000	U
623	623	Utilities/QA Building	C-1	1958	M	5,000	U
G639	639	Yellow Water Stand by Generator	C-1	1977	G	3,000	U
G808	808	Dispensary/Dental Clinic	C-8	1976	G	6,000	U

See notes at end of table.

**Table 1 (Continued)**  
**Base Realignment and Closure Underground Storage**  
**Tank and Aboveground Storage Tank Grey Sites Summary**

Confirmatory Sampling Reports  
 Underground Storage Tank and Aboveground Tank Sites  
 Naval Air Station Cecil Field  
 Jacksonville, Florida

Tank Number	Building	Facility	Location (TMP) <sup>1</sup>	Year Installed	Tank Contents	Tank Capacity (Gallons)	UST/AST
810	810	High Speed Turn Up, AIMD Test Cell	C-10	1989	F	5,000	A
G823LS	823	Lift Station NFF	C-7	UNK	G	200	U
G825LS	825	Lift Station	C-8	UNK	G	250	U
G842A	842	Radar Facility	C-11	1969	G	275	A
G842B	842	Radar Facility	C-11	1985	G	550	U
G855	855	Water Pump House	C-9	UNK	G	4,400	U
860-OW	860-OW	Hangar 860 Oil-Water Separator	C-8	1981	L	9,000	U
860C	860	Maintenance Hangar	C-8	1987	M	1,000	U
G863	863	Electrical Distribution Building	C-9	1986	G	250	U
G872LS	872	Lift Station	C-7	1985	G	250	U
G880A	880	RATCC	C-8	1976	G	275	A
G1826A	1826	Fire Pump House	C-8	1986	G	275	A
G1826B	1826	Fire Pump House	C-8	1986	G	275	A
G1826C	1826	Fire Pump House	C-8	1986	G	275	A
G1847A	1847	Fire Pump House	C-7	1986	G	200	A
G1847B	1847	Fire Pump House	C-7	1986	G	200	A
G1847C	1847	Fire Pump House	C-7	1986	G	200	A
G3043	3043	YW Housing WTP	C-3	UNK	G	500	U

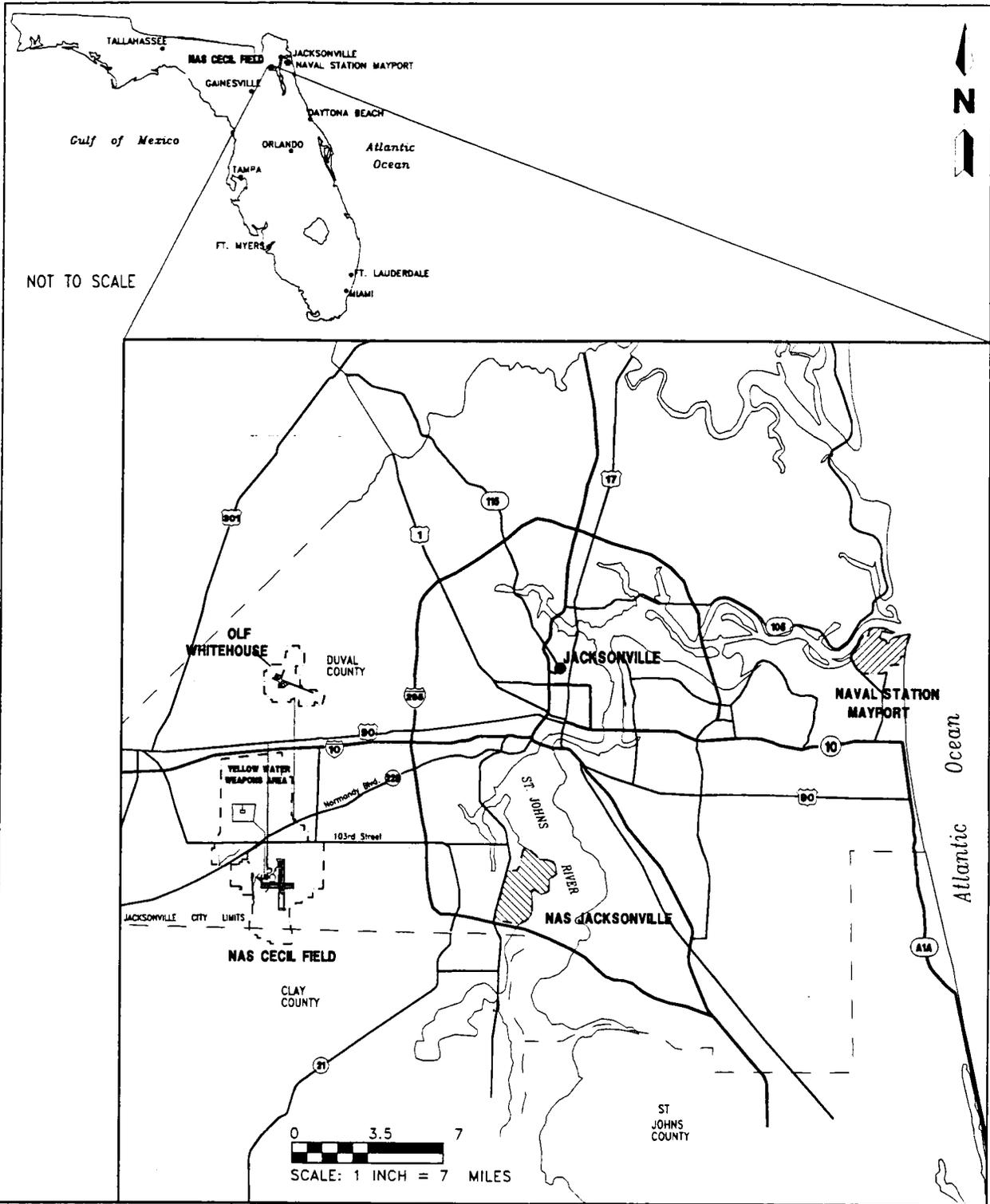
See notes at end of table.

**Table 1 (Continued)**  
**Base Realignment and Closure Underground Storage**  
**Tank and Aboveground Storage Tank Grey Sites Summary**

Confirmatory Sampling Reports  
Underground Storage Tank and Aboveground Tank Sites  
Naval Air Station Cecil Field  
Jacksonville, Florida

<sup>1</sup> Location of ASTs and USTs can be found in the NAS Cecil Field Tank Management Plan (ABB Environmental Services, Inc., 1996b).

Notes: TMP = Tank Management Plan.  
UST = underground storage tank.  
AST = aboveground storage tank.  
G = diesel.  
U = UST.  
M = fuel/oil.  
UNK = unknown.  
L = waste oil.  
HTZ = hertz.  
OP = Operations.  
RATCC = Radar Air Traffic Control Center.  
A = AST.  
F = jet fuel.  
NEX = Navy Exchange.  
IMD = Intermediate Maintenance Department.  
O = new/lube oil.  
JP-5 = jet propellant 5.  
D = vehicular gasoline.  
B = unleaded gasoline.  
TACAN = Tactical Aid to Navigation.  
YWWA = Yellow Water Weapons Area.  
BDU/AWSEP = Bomb Dummy Unit/Aviation Weapons Support Equipment.  
QA = Quality Assurance.  
AIMD = Aircraft Intermediate Maintenance Department.  
NFF = North Fuel Farm.  
YW = Yellow Water.  
WTP = Wastewater Treatment Plant.  
U = UST  
A = AST



**FIGURE 1  
SITE LOCATION MAP**



**BASE REALIGNMENT AND CLOSURE  
CONFIRMATORY SAMPLING REPORT**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

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**1.3 PARTNERING AGREEMENT.** The petroleum-contamination program at NAS Cecil Field is currently managed under a cooperative U.S. Environmental Protection Agency (USEPA), Florida Department of Environmental Protection (FDEP), and Department of Defense partnering process. The partnering team, consisting of regulatory, activity, contractor, and Navy personnel, developed the scope of the investigations conducted during the confirmatory sampling program.

**1.4 TANK ASSESSMENT PROCEDURES.** This section describes the tank assessment procedures used during the confirmatory sampling program for regulated and unregulated USTs and ASTs.

**1.4.1 Field Methodology** Similar field sampling procedures, including soil sampling and screening, monitoring well installation, and groundwater sampling, were implemented at tank locations regardless of whether or not the tanks were regulated or unregulated USTs and ASTs.

**1.4.1.1 Soil Borings and Sampling** Soil samples were collected from soil borings at 1 foot below land surface and every 2 feet thereafter until the water table was reached or until 5 feet of clean soil is verified (organic vapor analyzer [OVA] great than 50 parts per million), whichever occurs first. Soil samples were screened using an OVA equipped with a flame ionization detector in accordance with procedures described in Chapter 62-770.200(2), Florida Administrative Code.

**1.4.1.2 Monitoring Well Installation and Sampling** Monitoring well installation was conducted in accordance with procedures identified in the FDEP- and USEPA-approved NAS Cecil Field Tank Management Plan (ABB-ES, 1996b). Prior to well installation, soil borings were advanced on each side (within 2 feet of the tank) of the tank and soil samples were collected and screened with an OVA. Monitoring well locations were selected using the rationale listed below.

1. The monitoring well was installed in the boring with the highest OVA reading. All borings were located within 2 feet of the tank.
2. If no contamination was detected in the borings or if the OVA readings were equal in all borings, the monitoring well was installed on the downgradient side of the tank. The downgradient side of the tank was selected using the potentiometric surface maps developed during the groundwater modeling efforts by the U.S. Geological Survey. Site-specific groundwater flow direction was not previously established because monitoring well networks were not present at the tank sites.

Monitoring wells were constructed of 2-inch (inside diameter), Schedule 40, flush-threaded, polyvinyl chloride screen and casing. The screen length is 10 feet with slot size openings of 0.010 inch. At least 2 feet of screen was placed above the water table, which was identified during the soil boring program, to allow free-floating petroleum product to enter the well. The screen was surrounded with a quartz sand filter pack of 20/30 gradational size (or an acceptable equivalent) to at least 2 feet above the top of the screen. A 1-foot fine sand (30/65 grade) seal was placed above the filter pack. The remaining annulus was grouted to the ground surface with Portland Type 1 cement. A locking, watertight cap was installed on each well. The monitoring wells were

finished below grade in a subsurface vault and protected with a metal manhole assembly and traffic bearing cover.

The well was developed by pumping until the purged water was clear and relatively free of sediment to ensure a good hydraulic connection with the surrounding aquifer.

## REFERENCES

ABB Environmental Services, Inc. (ABB-ES). 1996a. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).

ABB-ES. 1996b. *Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina.

13929-1

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 9, TANK G9**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

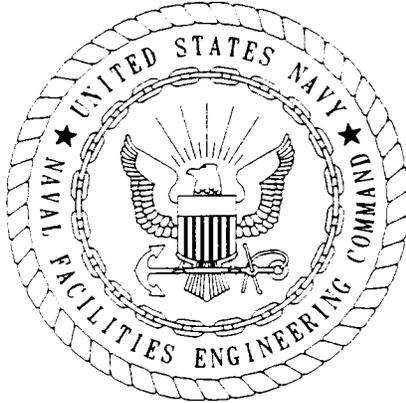
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**Prepared for:**

**Department of the Navy, Southern Division  
Naval Facilities Engineering Command  
2155 Eagle Drive  
North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**November 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: November 11, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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Naval Air Station Cecil Field  
Jacksonville, Florida

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Naval Air Station Cecil Field  
Jacksonville, Florida

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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
BEI	Bechtel Environmental, Inc.
bls	below land surface
FAC	Florida Administrative Code
OVA	organic vapor analyzer
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank G9 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank G9 was an underground storage tank (UST) located east of the northeastern corner of Building 9, the main fire station at Cecil Field (Figure 1). The UST, which was installed in 1976, had a 250-gallon capacity and was used to store diesel fuel for an emergency generator at this facility (ABB-ES, 1997; ABB-ES, 1994). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank G9 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank G9 was removed by Bechtel Environmental, Inc. (BEI), on April 15, 1997. No soil was removed from the site at that time. A Closure Report was prepared for Tank G9 and submitted to the Florida Department of Environmental Protection (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling at Tank G9 was initiated in January 1997 (before the UST was removed) and included

- the advancement of four soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

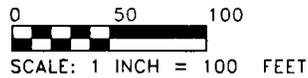
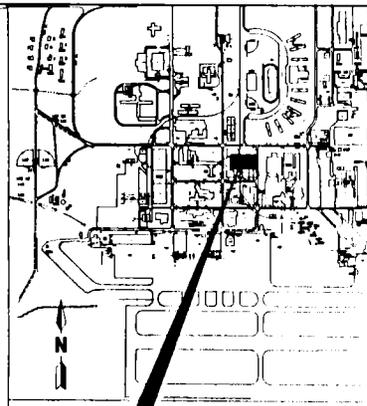
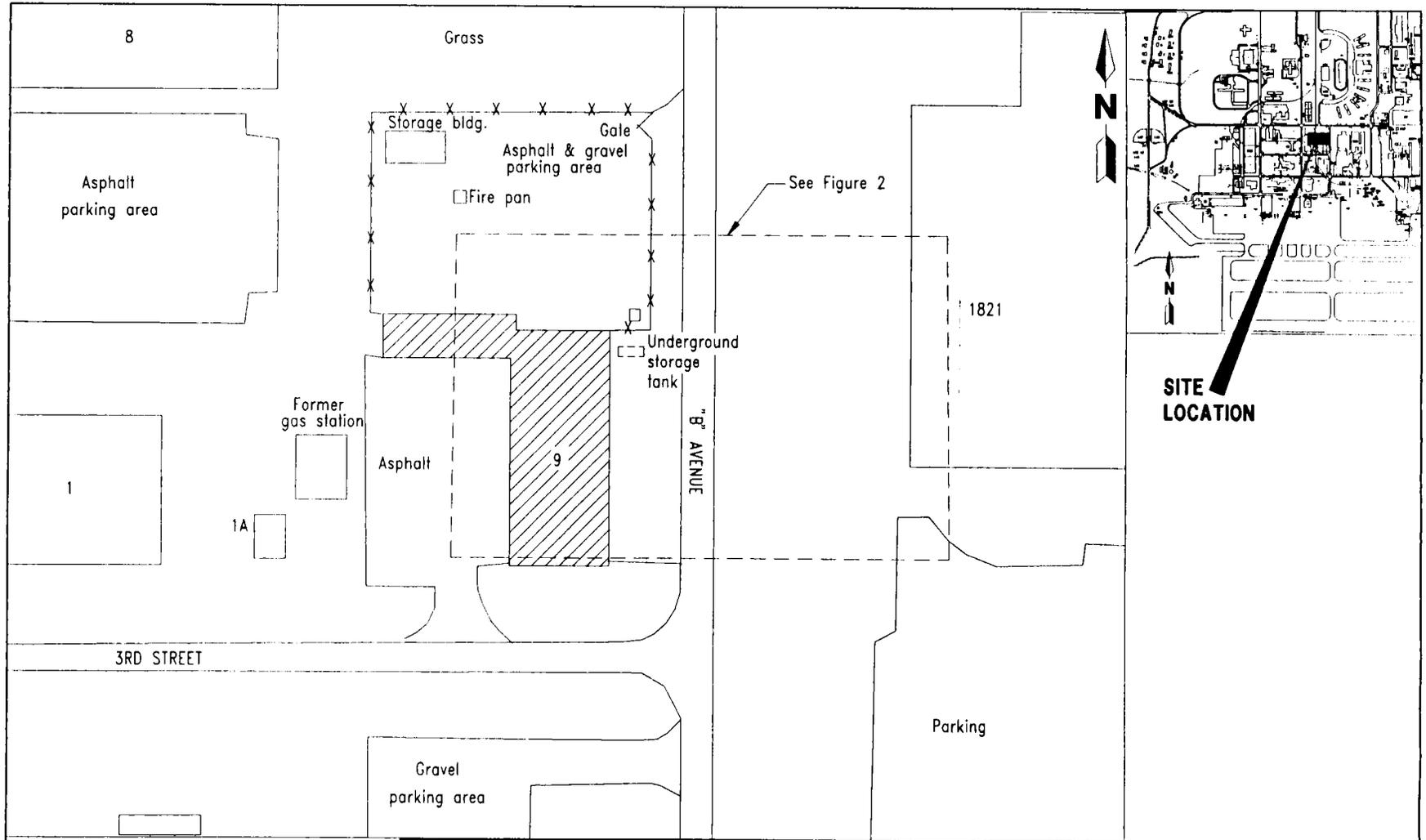
Soil samples were collected at depth intervals of 1 foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

One monitoring well, CEF-9-1S, was installed east of the UST near the location of soil boring CEF-9-SB1 to a depth of 14 feet bls. One groundwater sample was collected on March 28, 1997, and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and monitoring well CEF-9-1S is presented on Figure 2. The monitoring well installation detail is included in Appendix A.

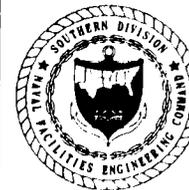
## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil was not detected in soil samples collected from the unsaturated zone during the confirmatory sampling and tank removal (BEI, 1997). The soil OVA data are summarized in Table 2 and presented on Figure 2.

Contaminant concentrations in groundwater were below the regulatory standards for Class G-II groundwater as specified in Chapter 62-770 of the Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.

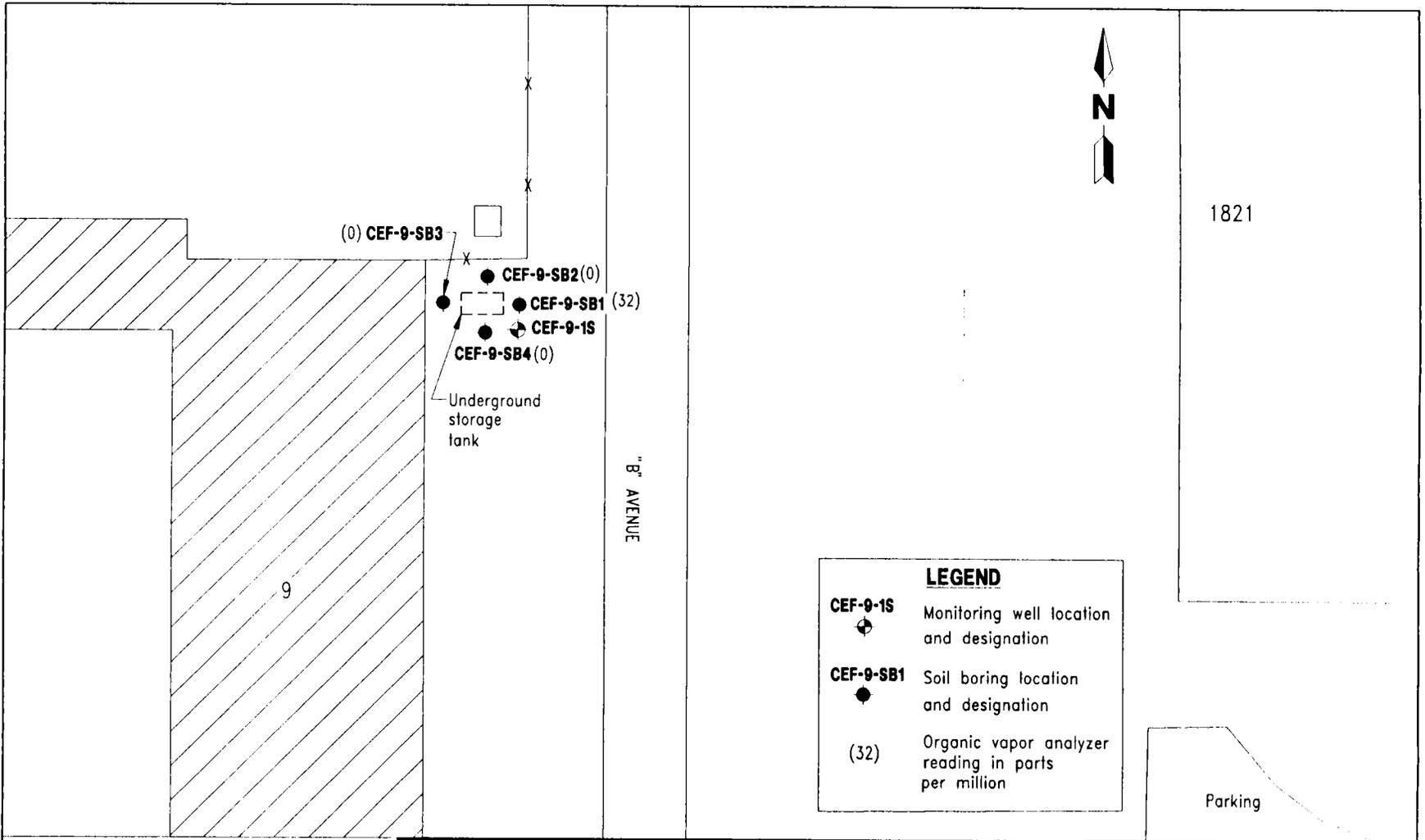


**FIGURE 1  
TANK G9  
MAIN FIRE STATION**



**CONFIRMATORY SAMPLING REPORT  
BUILDING 9, TANK G9**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**



**LEGEND**

- 
**CEF-9-1S** Monitoring well location and designation
- 
**CEF-9-SB1** Soil boring location and designation
- (32)** Organic vapor analyzer reading in parts per million

0 20 40  
SCALE: 1 INCH = 40 FEET

**FIGURE 2  
TANK G9  
SOIL BORING AND MONITORING WELL LOCATIONS**



**CONFIRMATORY SAMPLING REPORT  
BUILDING 9, TANK G9  
NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

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**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 9, Tank G9  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-9-SB1	1	0	-	0
	3	0	-	0
	4.5	32	0	32
CEF-9-SB2	1	0	-	0
	3	0	-	0
	4.5	0	-	0
CEF-9-SB3	1	0	-	0
	3	0	-	0
	4.5	0	-	0
CEF-9-SB4	1	0	-	0
	3	0	-	0
	4.5	0	-	0
CEF-9-1S	1	0	-	0
	3	0	-	0
	5 (wet)	0	-	0
	11 (wet)	0	-	0

Notes: All soil samples were collected on January 13, 1997.  
Monitoring well CEF-9-1S was installed on March 6, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
- = filtered readings were not collected.  
wet = soil sample was completely saturated when analyzed.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank G9 site does not indicate the presence of contaminated soil. No contaminants were detected above regulatory standards specified in Chapter 62-770, FAC, in the groundwater sample collected from monitoring well CEF-9-1S. Therefore, no further action is recommended for the Tank G9 site.

## REFERENCES

ABB Environmental Services, Inc. (ABB-ES). 1994. *Environmental Baseline Survey Report, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).

ABB-ES. 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (November).

ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).

Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Aboveground Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

13929 - (

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

PROJECT: NAS Cecil Field		LOG of WELL: CEF-9-IS	BORING NO. CEF-9-IS
CLIENT: SOUTH DIV NAV FAC ENG COM	PROJECT NO: 8542-03	DATE STARTED: 3-8-97	COMPLETED: 3-8-97
DRILLING SUBCONTRACTOR: GEOTEK		SITE: Building 9	MONITOR INST. FID
METHOD: 8.25" HSA	WELL CASE DIAM.: 2"	SCREEN INT.: 3-13 FT.	SCREEN SLOT SIZE: D
TOC ELEVATION: FT. NGVD	GROUND ELEV.: FT. NGVD	NORTHING: 2142733	EASTING: 376395.6
WELL DEVELOP. DATE: 3-10-97	TOTAL DEPTH: 14 FT. BLS	DEPTH TO $\nabla$ 7.50 FT. BLS	LOGGED BY: J Koch

DEPTH FT.	SAMPLE INTERVAL RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0			LIMESTONE WITH SILTY SAND (FILL MATERIAL): Light brown to grey, coarse grain limestone with sand and silt, no petroleum odor.		GM		posthole
0			SAND: Light grey, fine grained, no petroleum odor.		SP		posthole
5	100%	0	CLAY: Grey, low plasticity, saturated, no petroleum odor.		CL	11,14	
10	100%	0	CLAYEY SAND: Light grey, fine grained, saturated, no petroleum odor.		SC	23,3,4	$\nabla$
15							
20							

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- TANK G9  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9453

Lab Sample Number: B7C2901230  
 Site BRACGREY  
 Locator CEF91S  
 Collect Date: 28-MAR-97

VALUE QUAL UNITS DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1
1,1,2,2-Tetrachloroethane	1 U	ug/l	1
1,1,2-Trichloroethane	1 U	ug/l	1
1,1-Dichloroethane	1 U	ug/l	1
1,1-Dichloroethene	1 U	ug/l	1
1,2-Dichlorobenzene	1 U	ug/l	1
1,3-Dichlorobenzene	1 U	ug/l	1
1,4-Dichlorobenzene	1 U	ug/l	1
1,2-Dichloroethane	1 U	ug/l	1
1,2-Dichloropropane	1 U	ug/l	1
1-Methylnaphthalene	2 U	ug/l	2
2-Methylnaphthalene	2 U	ug/l	2
Acenaphthene	2 U	ug/l	2
Acenaphthylene	2 U	ug/l	2
Anthracene	2 U	ug/l	2
Benzene	1 U	ug/l	1
Benzo (a) anthracene	.1 U	ug/l	.1
Benzo (a) pyrene	.1 U	ug/l	.1
Benzo (b) fluoranthene	.1 U	ug/l	.1
Benzo (g,h,i) perylene	.2 U	ug/l	.2
Benzo (k) fluoranthene	.15 U	ug/l	.15
Bromodichloromethane	1 U	ug/l	1
Bromoform	1 U	ug/l	1
Bromomethane	1 U	ug/l	1
Carbon tetrachloride	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1
Chloromethane	1 U	ug/l	1
Chloroform	1 U	ug/l	1
Chloromethane	1 U	ug/l	1
Chrysene	.1 U	ug/l	.1
Dibenzo (a,h) anthracene	.2 U	ug/l	.2
Dibromochloromethane	1 U	ug/l	1
Dichlorodifluoromethane	1 U	ug/l	1
Ethylbenzene	1 U	ug/l	1
Ethylene dibromide	.02 U	ug/l	.02
Fluoranthene	.2 U	ug/l	.2
Fluorene	2 U	ug/l	2
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1
Lead	5 U	ug/l	5
Methyl tert-butyl ether	1 U	ug/l	1
Methylene chloride	1 U	ug/l	1
Naphthalene	2 U	ug/l	2
Phenanthrene	2 U	ug/l	2
Pyrene	.2 U	ug/l	.2
Tetrachloroethene	1 U	ug/l	1
Toluene	1 U	ug/l	1
Total petroleum hydrocarbons	.5 U	mg/l	.5
Trichloroethene	1 U	ug/l	1
Trichlorofluoromethane	1 U	ug/l	1
Vinyl chloride	1 U	ug/l	1

NAS CECIL FIELD -- TANK G9  
UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9453

Lab Sample Number: B7C2901230  
Site BRACGREY  
Locator CEF91S  
Collect Date: 28-MAR-97

VALUE QUAL UNITS DL

Xylenes (total)	1 U	ug/l	1
cis-1,3-Dichloropropene	1 U	ug/l	1
trans-1,2-Dichloroethene	1 U	ug/l	1
trans-1,3-Dichloropropene	1 U	ug/l	1

Lead-DISS -

U = NOT DETECTED J = ESTIMATED VALUE  
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
R = RESULT IS REJECTED AND UNUSABLE

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 59, TANK G59**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

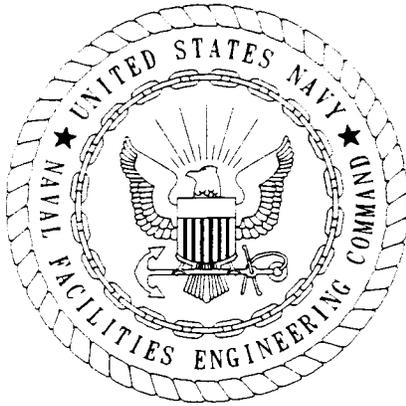
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**October 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: October 31, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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Building 59, Tank G59  
Naval Air Station Cecil Field  
Jacksonville, Florida

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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc
BEI	Bechtel Environmental Incorporated
FAC	Florida Administrative Code
OVA	organic vapor analyzer
ppm	parts per million
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank G59 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank G59 was an underground storage tank (UST) located at Building 59, the standby generator for the runway lights (Figure 1). The UST, which was installed in 1981, had a 500-gallon capacity and was used to store diesel fuel for the standby generator. A Contamination Assessment Plan for the assessment of soil and groundwater at Tank G59 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank G59 was removed by Bechtel Environmental, Inc. (BEI), on May 22, 1997. Twenty-five tons of excessively contaminated soil were removed at that time. A Closure Report was prepared for Tank G59 and submitted to the Florida Department of Environmental Protection in July of 1997 (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling for Tank G59 was initiated in January 1997 (before the UST was removed) and included

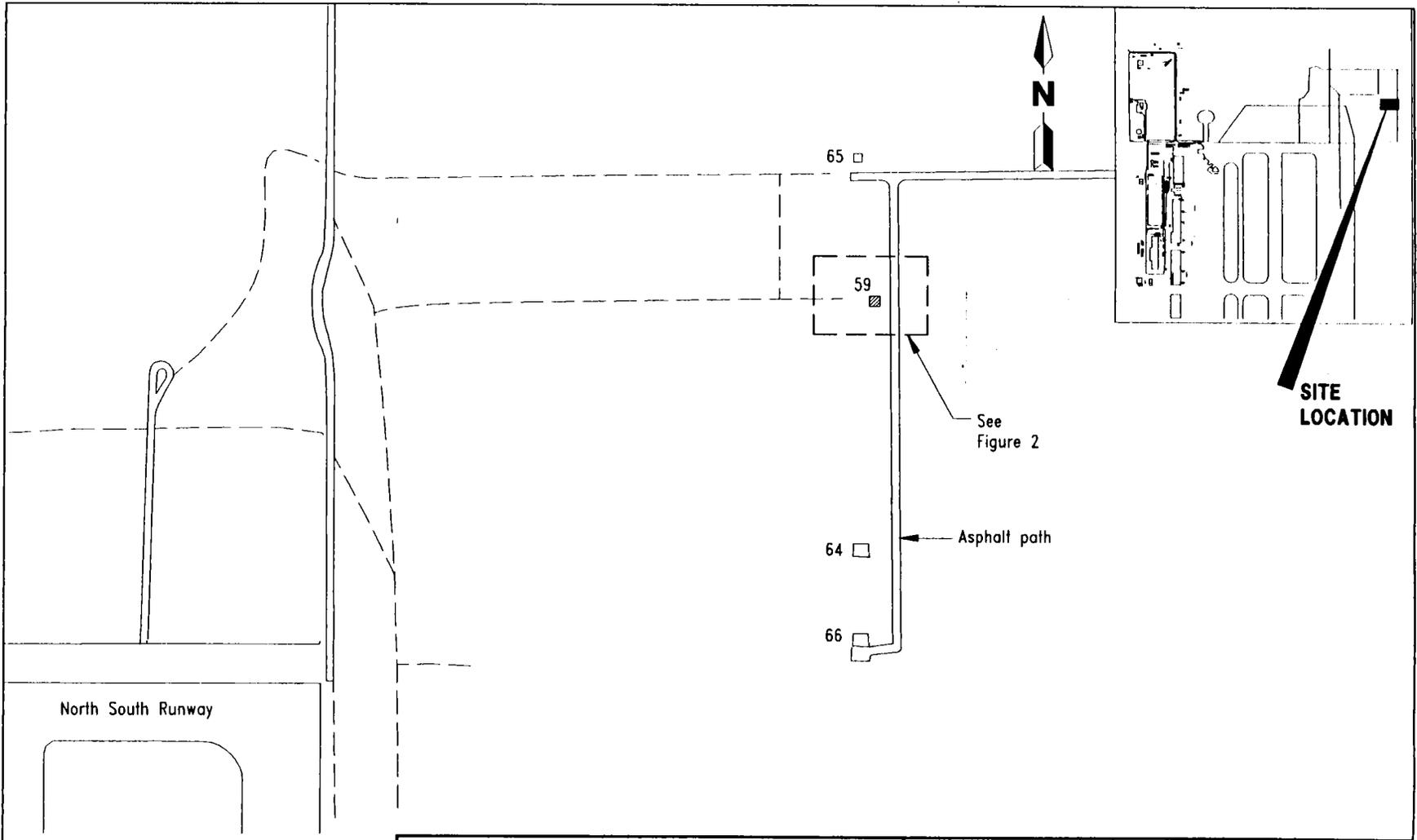
- the advancement of four soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

Soil samples were collected from each boring at depth intervals of 1-foot below land surface and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

One monitoring well, CEF-59-1S, was installed southwest of the UST near the location of CEF-59-SB2 to a depth of 12 feet below land surface. One groundwater sample was collected and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and monitoring well CEF-59-1S is presented on Figure 1. The monitoring well installation detail is included in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in all four soil borings. The highest OVA readings (>5,000 ppm) were detected in soil boring CEF-59-SB2 and during the installation of monitoring well CEF-59-1S at depths of 5 feet and 3 feet below land surface, respectively. The soil OVA data are summarized in Table 1 and presented on Figure 2.



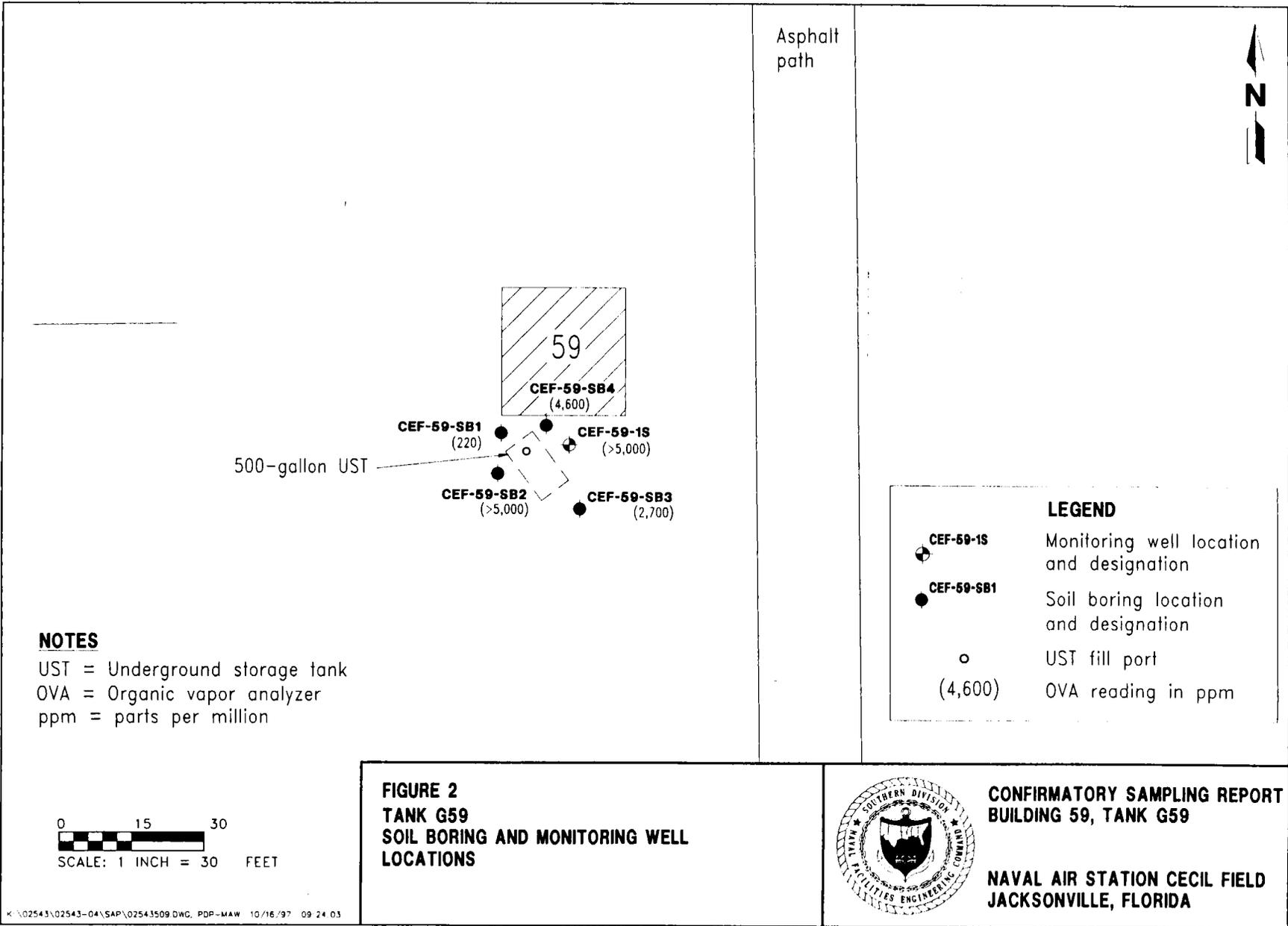
North South Runway

0 200 400  
SCALE: 1 INCH = 400 FEET

**FIGURE 1**  
**TANK G59**  
**STANDBY GENERATOR FOR NORTH SOUTH**  
**RUNWAY LIGHTS**

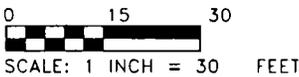


**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 59, TANK G59**  
  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**



**NOTES**

UST = Underground storage tank  
OVA = Organic vapor analyzer  
ppm = parts per million



**FIGURE 2  
TANK G59  
SOIL BORING AND MONITORING WELL  
LOCATIONS**



**CONFIRMATORY SAMPLING REPORT  
BUILDING 59, TANK G59**  
  
**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

Asphalt  
path



**Table 1**  
**Soil Screening Results**

Confirmatory Sampling Report  
Building 59, Tank G59  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-59-SB1	1	0	0	0
	3 (moist)	220	0	220
	4 (wet)	60	0	60
CEF-59-SB2	1	300	0	300
	3	3,000	0	3,000
	5 (moist)	>5,000	0	>5,000
	6 (wet)	>5,000	0	>5,000
CEF-59-SB3	1	0	0	0
	3	2,700	0	2,700
	5	700	0	700
	7 (wet)	120	0	120
CEF-59-SB4	1	600	0	600
	3	4,600	0	4,600
	5 (moist)	1,200	0	1,200
	6 (wet)	3,900	0	3,900
CEF-59-1S	1	2,800	--	2,800
	3	>5,000	--	>5,000
	5 (moist to wet)	1,400	--	1,400
	11 (wet)	320	--	320

Notes: All soil samples were collected on January 24, 1997.  
Monitoring well CEF-59-1S was installed on March 3, 1997.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
moist = soil sample was partially saturated when analyzed.  
wet = soil sample was completely saturated when analyzed.  
> = greater than.  
-- = filtered readings were not collected.

Groundwater contamination was not detected at concentrations exceeding requirements specified in Chapter 62-770 of the Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank G59 site did not provide an adequate assessment of the horizontal and vertical extent of excessively contaminated soil. No contaminants were detected above the regulatory standards specified in Chapter 62-770, FAC, in the groundwater sample collected from monitoring well CEF-59-1S at the site. Therefore, it is recommended that additional confirmatory sampling be conducted to assess the extent of excessively contaminated soil at the Tank G59 site.

REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan. Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan. Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM. North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

TITLE: NAS Cecil Field		LOG of WELL: DEF-54-13	BORING NO: DEF-54-13
CLIENT: SOUTH DIVNAVFACENSGCOM		PROJECT NO: 8542-07	
CONTRACTOR: GEOTEK		DATE STARTED: 4-27-97	COMPLTD: 5-27-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 2" L	PROTECTION LEVEL: 0
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 13 FEET	DPTH TO 5' SPS FEET:
LOGGED BY: J Koch	WELL DEVELOPMENT DATE: 3-5-97		SITE: Building 800

DEPTH F.T.	LABORATORY SAMPLE ID.	RECOVER SAMPLE	HEADSPACE (FEET)	SOIL/ROCK DESCRIPTION AND COMMENTS	UTROUSIC STATUS	SOIL CLASS	BLOWS/6-IN	WELL LOGS
2.800				SILTY SAND: Dark brown to dark grey, fine grain, no petroleum odor.		SM	posthole	
5.000			SILTY SAND: Light grey to dark grey, fine grain, no petroleum odor.			posthole		
1.400		80%		SILTY SAND: Light grey to dark grey, fine grain, wood and organics, saturated, slight petroleum odor.			3, 7, 10, 15	
320		40%		SILTY SAND: Light brown to dark brown, fine grain, no petroleum odor.			2, 3, 5, 11	

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- TANK G59  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9390

Lab Sample Number:	B7C2201010		B7C2201010	
Site	BRACGREY		BRACGREY	
Locator	CEF591S		CEF591S	
Collect Date:	21-MAR-97		21-MAR-97	
	VALUE	QUAL UNITS	DL	VALUE
				QUAL UNITS
				DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1	-
1,1,2,2-Tetrachloroethane	1 U	ug/l	1	-
1,1,2-Trichloroethane	1 U	ug/l	1	-
1,1-Dichloroethane	1 U	ug/l	1	-
1,1-Dichloroethene	1 U	ug/l	1	-
1,2-Dichlorobenzene	1 U	ug/l	1	-
1,3-Dichlorobenzene	1 U	ug/l	1	-
1,4-Dichlorobenzene	1 U	ug/l	1	-
1,2-Dichloroethane	1 U	ug/l	1	-
1,2-Dichloropropane	1 U	ug/l	1	-
1-Methylnaphthalene	2 U	ug/l	2	-
2-Methylnaphthalene	2 U	ug/l	2	-
Acenaphthene	2 U	ug/l	2	-
Acenaphthylene	2 U	ug/l	2	-
Anthracene	2 U	ug/l	2	-
Benzene	1 U	ug/l	1	-
Benzo (a) anthracene	.1 U	ug/l	.1	-
Benzo (a) pyrene	.1 U	ug/l	.1	-
Benzo (b) fluoranthene	.1 U	ug/l	.1	-
Benzo (g,h,i) perylene	.2 U	ug/l	.2	-
Benzo (k) fluoranthene	.15 U	ug/l	.15	-
Bromodichloromethane	1 U	ug/l	1	-
Bromoform	1 U	ug/l	1	-
Bromomethane	1 U	ug/l	1	-
Carbon tetrachloride	1 U	ug/l	1	-
Chlorobenzene	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chloroform	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chrysene	.1 U	ug/l	.1	-
Dibenzo (a,h) anthracene	.2 U	ug/l	.2	-
Dibromochloromethane	1 U	ug/l	1	-
Dichlorodifluoromethane	1 U	ug/l	1	-
Ethylbenzene	1 U	ug/l	1	-
Ethylene dibromide	.02 U	ug/l	.02	-
Fluoranthene	.2 U	ug/l	.2	-
Fluorene	2 U	ug/l	2	-
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1	-
Lead	10.6	ug/l	5	-
Methyl tert-butyl ether	1 U	ug/l	1	-
Methylene chloride	1 U	ug/l	1	-
Naphthalene	2 U	ug/l	2	-
Phenanthrene	2 U	ug/l	2	-
Pyrene	.2 U	ug/l	.2	-
Tetrachloroethene	1 U	ug/l	1	-
Toluene	1 U	ug/l	1	-
Total petroleum hydrocarbons	.5 U	mg/l	.5	-
Trichloroethene	1 U	ug/l	1	-
Trichlorofluoromethane	1 U	ug/l	1	-
Vinyl chloride	1 U	ug/l	1	-

13929 = 1

NAS CECIL FIELD -- TANK G59  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9390

Lab Sample Number:	B7C2201010	B7C2201010				
Site	BRACGREY	BRACGREY				
Locator	CEF591S	CEF591S				
Collect Date:	21-MAR-97	21-MAR-97				
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

Xylenes (total)	1 U	ug/l	1	-		
cis-1,3-Dichloropropene	1 U	ug/l	1	-		
trans-1,2-Dichloroethene	1 U	ug/l	1	-		
trans-1,3-Dichloropropene	1 U	ug/l	1	-		
Lead-DISS	-			7.7	ug/l	5

U = NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R = RESULT IS REJECTED AND UNUSABLE

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 271, TANK 271-OW**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

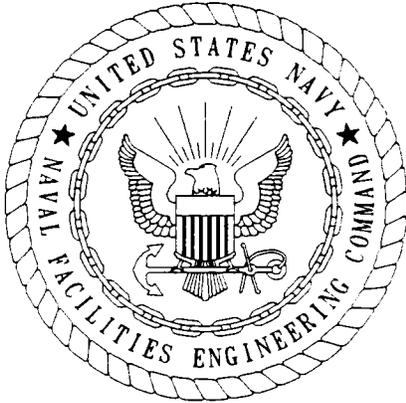
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**November 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: November 24, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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Naval Air Station Cecil Field  
Jacksonville, Florida

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Naval Air Station Cecil Field  
Jacksonville, Florida

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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc
bls	below land surface
FAC	Florida Administrative Code
NAS	Naval Air Station
OVA	organic vapor analyzer

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for the oil-water separator, 271-OW, at Naval Air Station (NAS) Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 271-OW is an oil-water separator located east of Building 271. Building 271 serves as the gasoline service station for NAS Cecil Field (Figure 1). The oil-water separator has a 500-gallon capacity and is used to separate and store waste oil (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 271-OW was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling for Tank 271-OW was initiated in February 1997. It included the advancement of four soil borings to the water table and the collection and analysis of one groundwater sample from monitoring well CEF-271-2S.

Soil samples were collected from each boring at depth intervals of 1 foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

One groundwater sample was collected from an existing monitoring well (CEF-271-2S) and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and the monitoring well is presented on Figure 2. The monitoring well construction is presented in Appendix A.

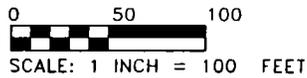
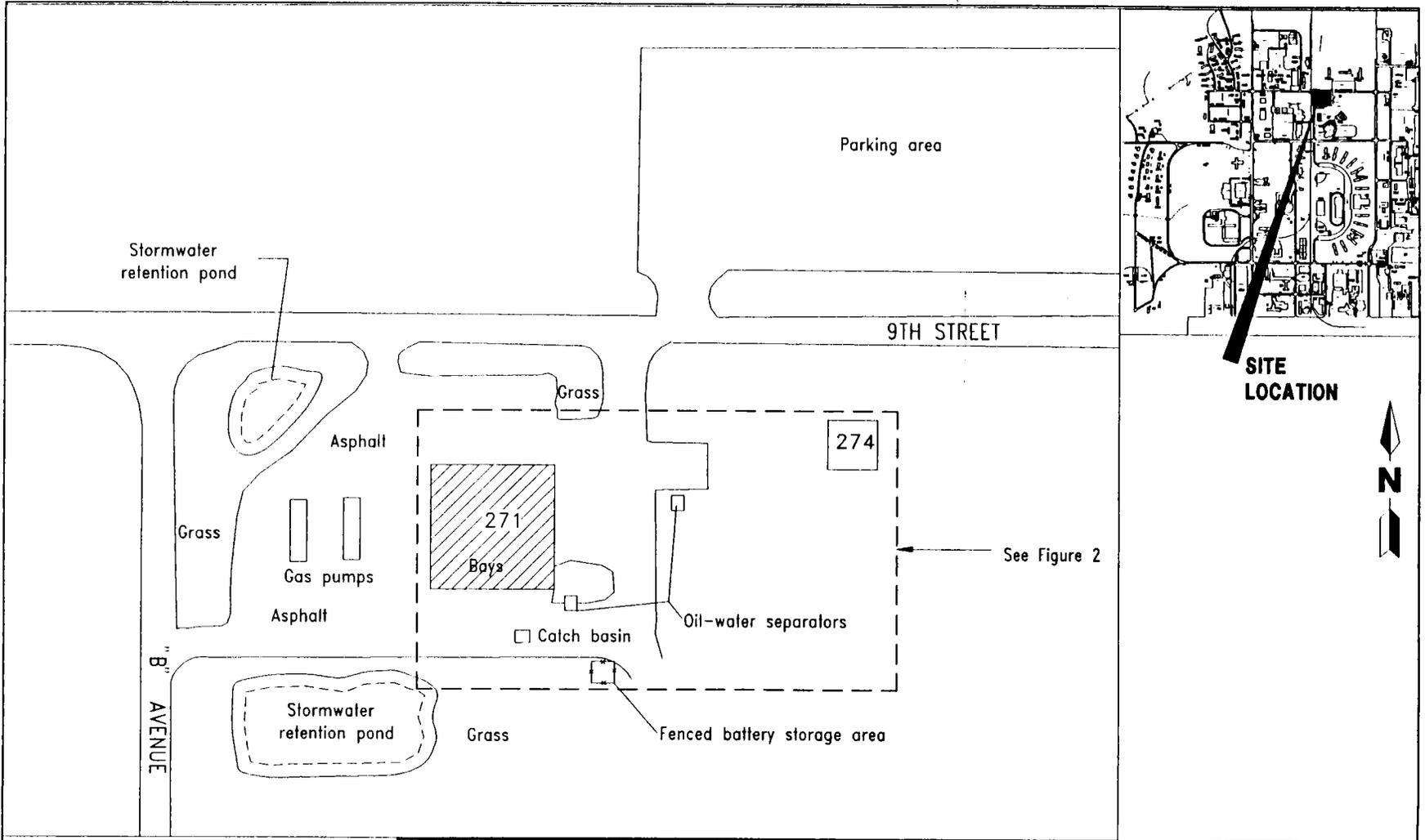
## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil was not detected in soil samples collected during the confirmatory sampling. The soil OVA data collected during the confirmatory sampling are summarized in Table 1 and presented on Figure 2.

Contaminant concentrations in groundwater were below the regulatory standards specified in Chapter 62-770 of the Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank 271-OW site did not indicate the presence of contaminated soil. No contaminants were detected above regulatory standards specified in Chapter 62-770, FAC, in the groundwater sample collected from monitoring well CEF-271-2S. Therefore, no further action is recommended for the Tank 271-OW site until proper tank removal and closure is performed.

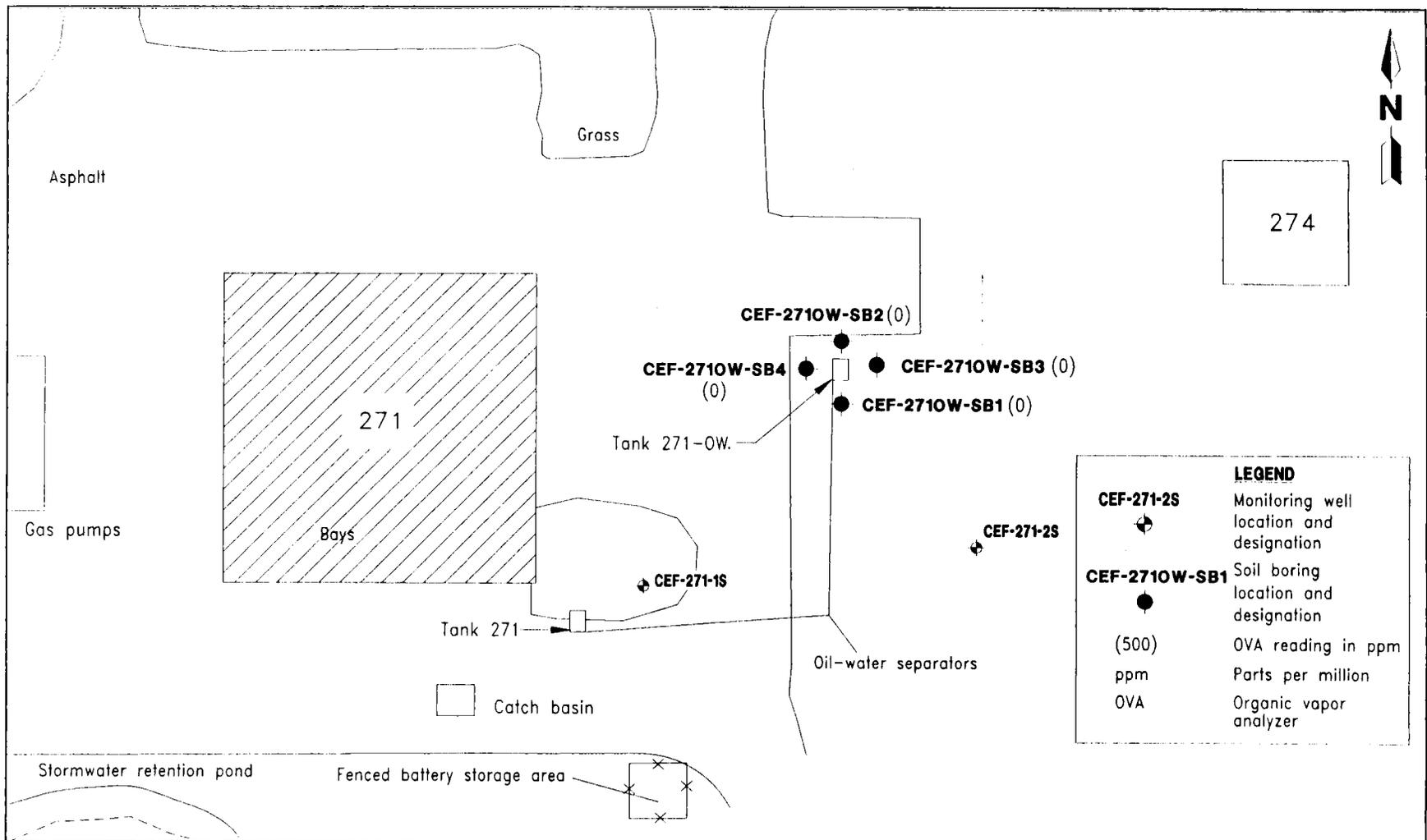


**FIGURE 1**  
**TANK 271-OW**  
**SERVICE STATION (BASE GAS STATION)**

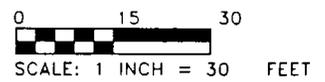


**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 271, TANK 271-OW**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**



LEGEND	
<p>CEF-271-2S</p> 	Monitoring well location and designation
<p>CEF-271OW-SB1</p> 	Soil boring location and designation
(500)	OVA reading in ppm
ppm	Parts per million
OVA	Organic vapor analyzer



**FIGURE 2**  
**TANK 271-OW**  
**SOIL BORING AND MONITORING WELL LOCATIONS**



**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 271, TANK 271-OW**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 271, Tank 271-OW  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-271OW-SB1	1	0	--	0
	3	0	--	0
	5	0	--	0
	7 (moist to wet)	0	--	0
CEF-271OW-SB2	1	0	--	0
	3 (refusal)	0	--	0
CEF-271OW-SB3	1	0	--	0
	3	0	--	0
	5 (moist)	0	--	0
	7	0	--	0
	8.5 (wet)	0	--	0
CEF-271OW-SB4	1	0	--	0
	3	0	--	0
	5	0	--	0
	6	0	--	0

Notes: All soil samples were collected on February 5, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.

ppm = parts per million.

bls = below land surface.

-- = filtered readings were not collected.

moist = soil sample was partially saturated when analyzed.

refusal = subsurface obstruction encountered; unable to collect further samples at this location.

wet = soil sample was completely saturated when analyzed.

## REFERENCES

ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).

ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

Project: NAS Cecil Field BRAC		Well ID: CEF-271-2S	Boring ID: CEF-271-2S
Contract: SOUTHDIVNAVFACENCOM		Contractor: Alliance Environmental, Inc.	Job No.: 08520-85
Northing/Easting:		Date started: 12-3-95	Compltd: 12-3-95
Method: Auger	Casing dia.: 2 in.	Screened Int.: 7 - 17 ft.	Protection level: D
TOC elev.: Ft.	Type of QVM: PID	Total dpth: 18.0 Ft.	Dpth to $\nabla$ : 8.0 Ft.
ABB Rep.: R. Holloway	Well development date:		Site: 50 - 271 Service Station

Depth Ft.	Laboratory Sample ID.	Sample Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
0.5				SILTY SAND (SM): 100%, very dark gray, quartz, fine- to very fine-grained, subrounded to subangular, well sorted.		SM	posthole	
0.9							posthole	
1.3				CLAY (CL): 100%, gray, soft, moist, plastic.		CL	3,5,4,4	
1.8				SILTY SAND (SM): 100%, light olive brown, quartz, very fine-grained, subangular to subrounded, well sorted, saturated.		SM	8,9,10,10	
1.3							7,8,10,11	
5								
15								
20								
25								
30								

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- TANK 271-0W  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9501

Lab Sample Number: B7C2901230  
 Site BRACGREY  
 Locator CEF2712S  
 Collect Date: 28-MAR-97

VALUE QUAL UNITS DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1
1,1,2,2-Tetrachloroethane	1 U	ug/l	1
1,1,2-Trichloroethane	1 U	ug/l	1
1,1-Dichloroethane	1 U	ug/l	1
1,1-Dichloroethene	1 U	ug/l	1
1,2-Dichlorobenzene	10 U	ug/l	10
1,3-Dichlorobenzene	10 U	ug/l	10
1,4-Dichlorobenzene	1 U	ug/l	1
1,2-Dichloroethane	1 U	ug/l	1
1,2-Dichloropropane	1 U	ug/l	1
1-Methylnaphthalene	2 U	ug/l	2
2-Methylnaphthalene	2 U	ug/l	2
Acenaphthene	10 U	ug/l	10
Acenaphthylene	10 U	ug/l	10
Anthracene	2 U	ug/l	2
Benzene	1 U	ug/l	1
Benzo (a) anthracene	10 U	ug/l	10
Benzo (a) pyrene	10 U	ug/l	10
Benzo (b) fluoranthene	10 U	ug/l	10
Benzo (g,h,i) perylene	10 U	ug/l	10
Benzo (k) fluoranthene	10 U	ug/l	10
Bromodichloromethane	1 U	ug/l	1
Bromoform	1 U	ug/l	1
Bromomethane	1 U	ug/l	1
Carbon tetrachloride	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1
Chloromethane	1 U	ug/l	1
Chloroform	1 U	ug/l	1
Chloromethane	1 U	ug/l	1
Chrysene	10 U	ug/l	10
Dibenzo (a,h) anthracene	10 U	ug/l	10
Dibromochloromethane	1 U	ug/l	1
Dichlorodifluoromethane	1 U	ug/l	1
Ethylbenzene	1 U	ug/l	1
Ethylene dibromide	.02 U	ug/l	.02
Fluoranthene	10 U	ug/l	10
Fluorene	10 U	ug/l	10
Indeno (1,2,3-cd) pyrene	10 U	ug/l	10
Lead	5 U	ug/l	5
Methyl tert-butyl ether	1 U	ug/l	1
Methylene chloride	1 U	ug/l	1
Naphthalene	10 U	ug/l	10
Phenanthrene	10 U	ug/l	10
Pyrene	.2 U	ug/l	.2
Tetrachloroethene	1 U	ug/l	1
Toluene	1 U	ug/l	1
Total petroleum hydrocarbons	.5 U	mg/l	.5
Trichloroethene	1 U	ug/l	1
Trichlorofluoromethane	1 U	ug/l	1
Vinyl chloride	1 U	ug/l	1

NAS CECIL FIELD -- TANK 271-OW  
UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9501

Lab Sample Number: B7C2901230  
Site BRACGREY  
Locator CEF2712S  
Collect Date: 28-MAR-97

VALUE QUAL UNITS DL

Xylenes (total)	1 U	ug/l	1
cis-1,3-Dichloropropene	1 U	ug/l	1
trans-1,2-Dichloroethene	1 U	ug/l	1
trans-1,3-Dichloropropene	1 U	ug/l	1

U = NOT DETECTED J = ESTIMATED VALUE  
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- TANK 271-OW  
UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9501

Lab Sample Number: B7C2901230  
Site BRACGREY  
Locator CEF2712S  
Collect Date: 28-MAR-97

VALUE QUAL UNITS DL

Arsenic-DISS	300 U	ug/l	300
Cadmium-DISS	5 U	ug/l	5
Chromium-DISS	50 U	ug/l	50
Lead-DISS	5 U	ug/l	5

U = NOT DETECTED J = ESTIMATED VALUE  
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
R = RESULT IS REJECTED AND UNUSABLE

TANK 285-ST

Tank 285-ST and Tank 76-F are the same tank. The tank is part of ongoing remedial action for the North Fuel Farm. Tank 285-ST is proposed for deletion from the TIMs database to prevent redundancy.

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 900, TANK 900**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**November 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: November 11, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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Naval Air Station Cecil Field  
Jacksonville, Florida

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3.0	SCREENING AND ANALYTICAL RESULTS . . . . .	1
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Jacksonville, Florida

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
FAC	Florida Administrative Code
NAS	Naval Air Station
OVA	organic vapor analyzer
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank 900 at Naval Air Station Cecil (NAS) Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 900 is an underground storage tank (UST) located at Building 900, the NAS Cecil Field bowling alley (Figure 1). The UST, which was installed in 1968, has a 2,000-gallon capacity and was used to store heating oil for the building (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 900 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling of Tank 900 was initiated in January 19, 1997. It included the advancement of three soil borings to the water table. Soil samples were collected at depth intervals of 1 foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA). A general site plan indicating the location of the soil borings is presented on Figure 2.

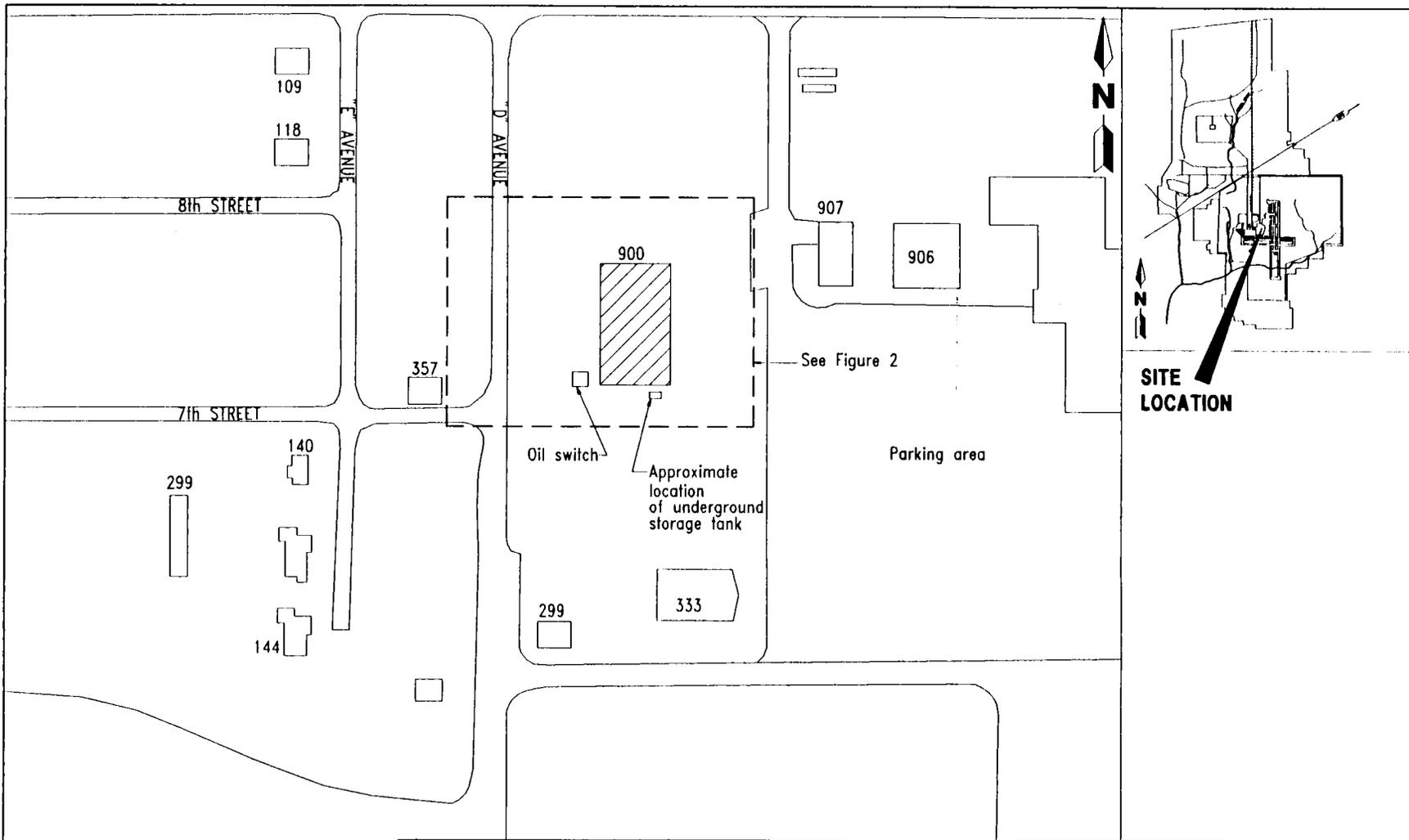
## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (having an OVA reading greater than 50 parts per million) was not detected at this site from zero to 7 feet bls. The soil OVA data are summarized in Table 1 and presented on Figure 2.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank 900 site did not indicate the presence of excessively contaminated soil. No groundwater data were collected at the Tank 900 site. Therefore, it is recommended that a temporary well be installed at the tank location and sampled and analyzed for the Kerosene Analytical Group parameters.

If contaminant concentrations in groundwater are below the regulatory standards specified in Chapter 62-770, Florida Administrative Code (FAC), it is recommended that no further action be taken at the site until proper closure and removal is performed for the UST. If contaminant concentrations in groundwater exceed Chapter 62-770, FAC standards, additional confirmatory sampling is recommended.



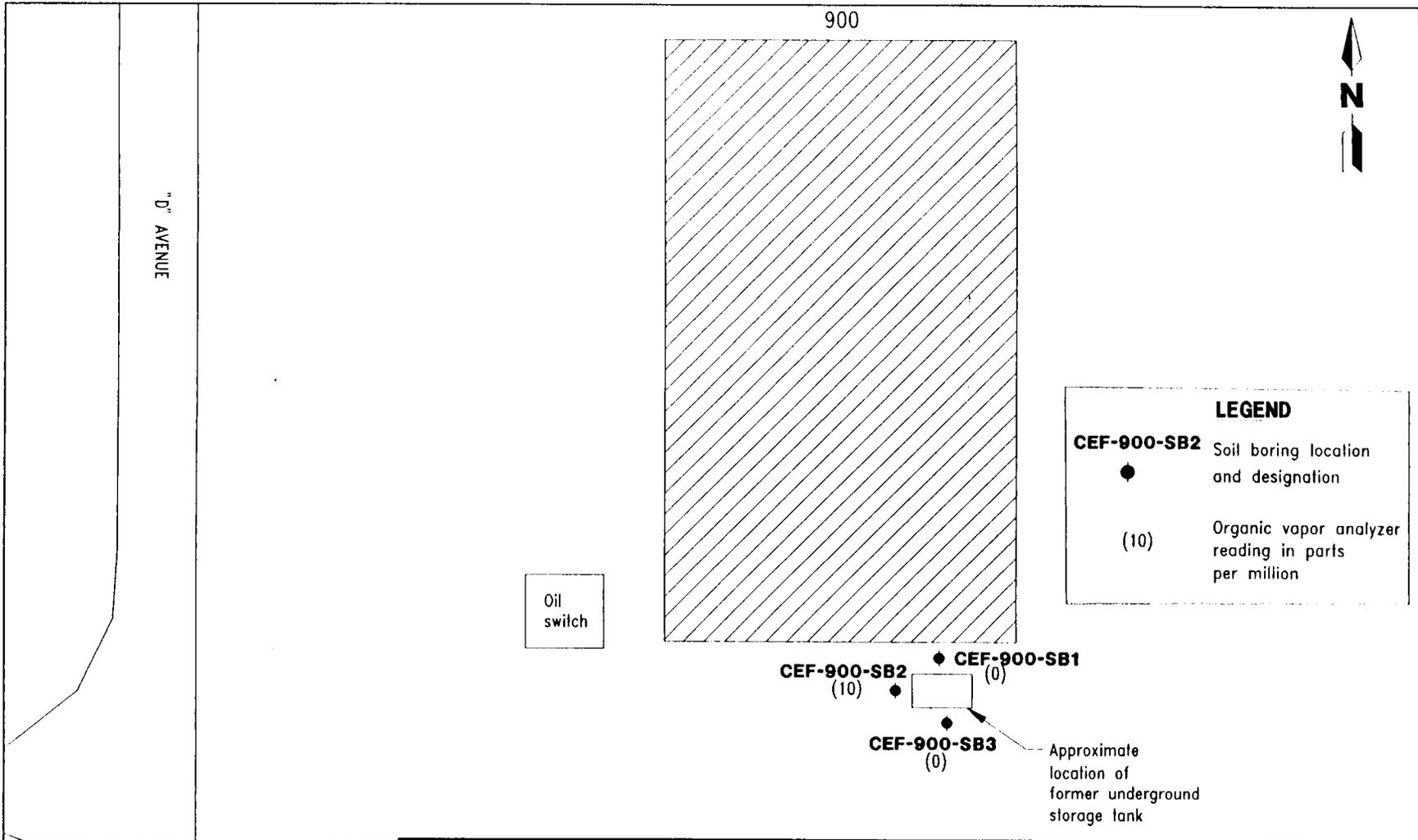
0 100 200  
SCALE: 1 INCH = 200 FEET

**FIGURE 1  
TANK 900  
BOWLING ALLEY**



**CONFIRMATORY SAMPLING REPORT  
BUILDING 900, TANK 900**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**



**FIGURE 2  
TANK 900  
SOIL BORING LOCATIONS**



**CONFIRMATORY SAMPLING REPORT  
BUILDING 900, TANK 900**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

**Table 1**  
**Soil Screening Results**

Confirmatory Sampling Report  
Building 900, Tank 900  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-900-SB1	1	0	-	0
	2 (refusal)	-	-	-
CEF-900-SB2	1	0	-	0
	3	0	-	0
	5	0	-	0
	7	10	0	10
CEF-900-SB3	1	0	-	0
	3	0	-	0
	3.5 (refusal)	-	-	-

Notes: All soil samples were collected on January 29, 1997.  
All concentrations are in ppm.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
- = filtered readings were not collected.  
refusal = a subsurface obstruction prevented the collection of additional samples at this location.

REFERENCES

ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan. Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).

ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 905, TANK 905**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

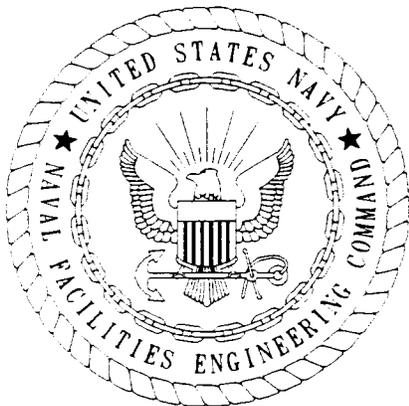
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**November 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: November 11, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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- Appendix A: Monitoring Well Installation Detail
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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
BEI	Bechtel Environmental Incorporated
bls	below land surface
FAC	Florida Administrative Code
OVA	organic vapor analyzer
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank 905 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 905 was an underground storage tank (UST) located on the east side of Building 905, the Main Exchange (Figure 1). The UST, which was installed in 1978, had a 2,000-gallon capacity and was used to store fuel oil for onsite heating (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 905 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank 905 was removed by Bechtel Environmental, Inc. (BEI), on May 8, 1997. No soil was removed from the site at that time. A Closure Report was prepared for Tank 905 and submitted to the Florida Department of Environmental Protection (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling at Tank 905 was initiated in January 1997 (before the UST was removed) and included

- the advancement of four soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

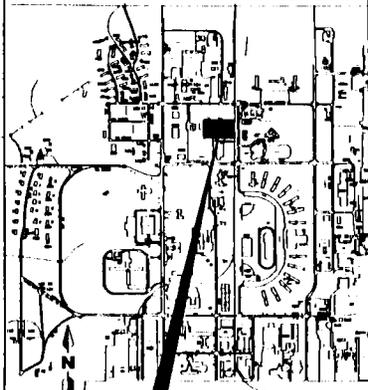
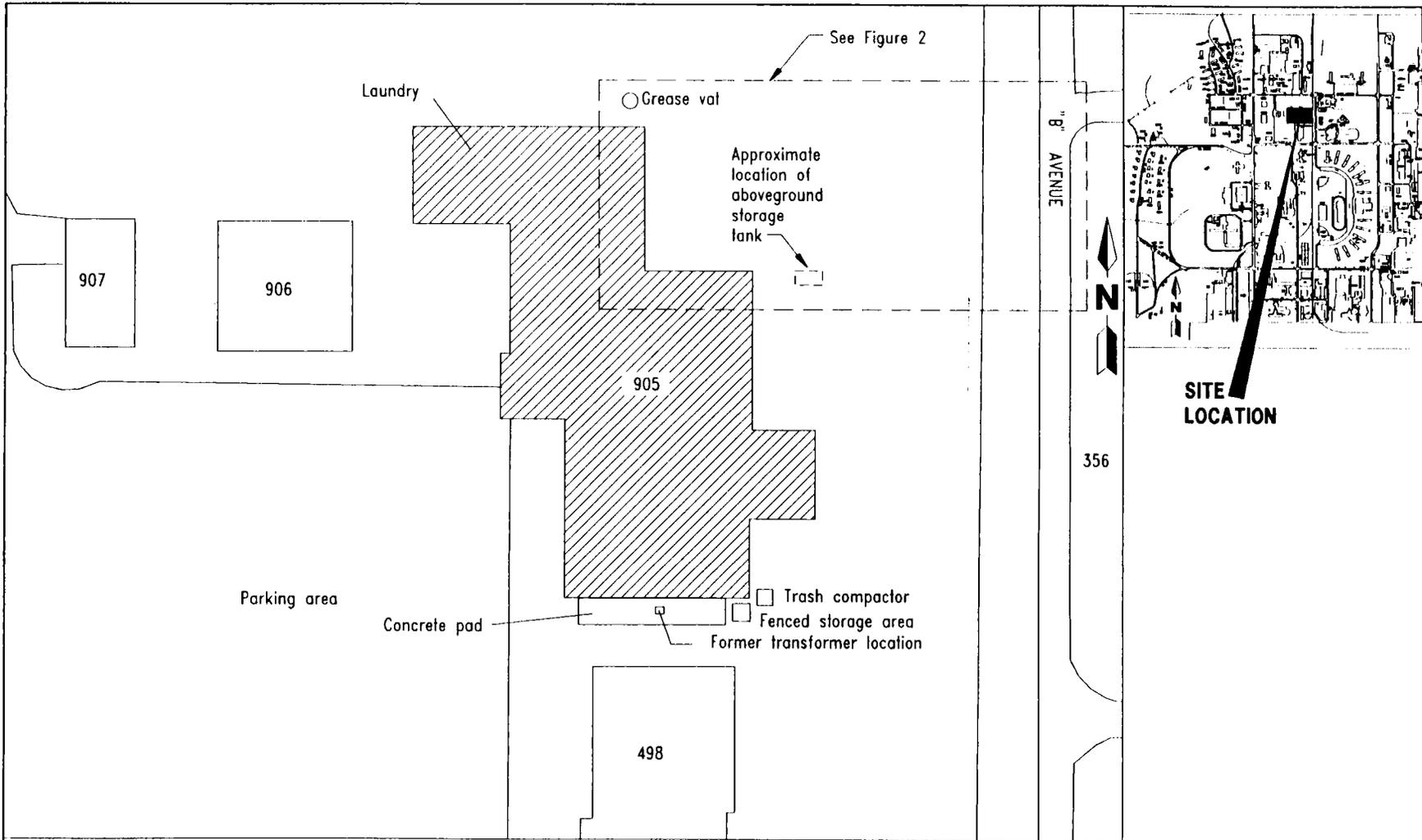
Soil samples were collected at depth intervals of 1 foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

One monitoring well, CEF-905-1S, was installed east of the UST near the location of soil boring CEF-905-SB2 to a depth of 14 feet bls. One groundwater sample was collected on March 25, 1997, and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and monitoring well CEF-905-1S is presented on Figure 2. The monitoring well installation detail is included in Appendix A.

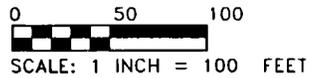
## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil was not detected in soil samples collected from the unsaturated zone during the confirmatory sampling and tank removal (BEI, 1997). The soil OVA data are summarized in Table 1 and presented on Figure 2.

Contaminant concentrations in groundwater were below the regulatory standards specified in Chapter 62-770 of the Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.



**SITE  
LOCATION**

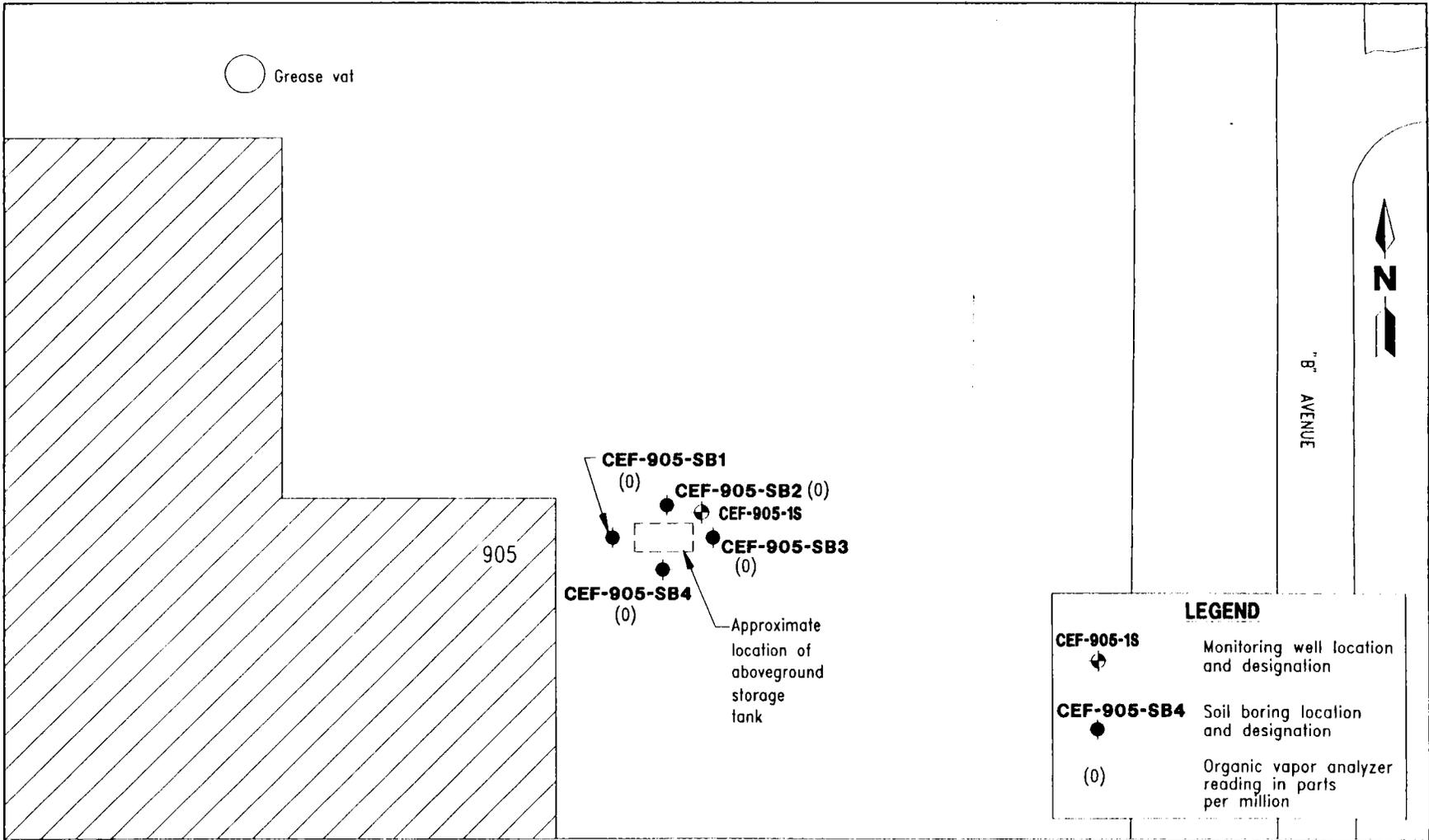


**FIGURE 1  
TANK 905  
MAIN EXCHANGE**

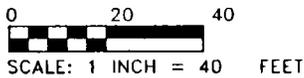


**CONFIRMATORY SAMPLING REPORT  
BUILDING 905, TANK 905**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**



LEGEND	
<p>CEF-905-1S</p>	Monitoring well location and designation
<p>CEF-905-SB4</p>	Soil boring location and designation
<p>(0)</p>	Organic vapor analyzer reading in parts per million



**FIGURE 2**  
**TANK 905**  
**SOIL BORING AND MONITORING WELL LOCATIONS**



**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 905, TANK 905**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 905, Tank 905  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-905-SB1	1	0	-	0
	3	0	-	0
	4.5 (wet)	0	-	0
CEF-905-SB2	1	0	-	0
	3	0	-	0
	4.5 (wet)	0	-	0
CEF-905-SB3	1	0	-	0
	3	0	-	0
	4.5 (wet)	0	-	0
CEF-905-SB4	1	0	-	0
	3	0	-	0
	4.5	0	-	0
CEF-905-1S	1	0	-	0
	3	0	-	0
	5 (wet)	0	-	0
	11 (wet)	0	-	0

Notes: All soil samples were collected on January 13, 1997.  
Monitoring well CEF-905-1S was installed on March 5, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
- = filtered readings were not collected.  
wet = soil sample was completely saturated when analyzed.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank 905 site do not indicate the presence of contaminated soil. No contaminants were detected above regulatory standards specified in Chapter 62-770, FAC, in the groundwater sample collected from monitoring well CEF-905-1S. Therefore, no further action is recommended for the Tank 905 site.

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOC), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOC, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Aboveground Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

PROJECT: NAS Cecil Field		LOG of WELL: CEF-905-IS	BORING NO. CEF-905-IS
CLIENT: SOUTHDIIVNAVFACENGCOM	PROJECT NO: 8542-03	DATE STARTED: 3-5-97	COMPLETED: 3-5-97
DRILLING SUBCONTRACTOR: GEOTEK		SITE: Building 905	MONITOR INST. FID
METHOD: 8.25" HSA	WELL CASE DIAM.: 2"	SCREEN INT.: 3-13 FT.	SCREEN SLOT SIZE: D
TOC ELEVATION: FT. NGVD	GROUND ELEV.: FT. NGVD	NORTHING: 2145884	EASTING: 378085
WELL DEVELOP. DATE: 3-8-97	TOTAL DEPTH: 14 FT. BLS	DEPTH TO $\nabla$ : 8.72 FT. BLS	LOGGED BY: J Koch

DEPTH FT.	SAMPLE INTERVAL RECOVERY HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0		SILTY SAND: Dark brown, fine grain, no petroleum odor.		SM		posthole
0		SILTY SAND: Dark Brown, fine grain, no petroleum odor.		SM		posthole
5	60%	SILTY CLAYEY SAND: Dark brown to dark grey, 30% clay, saturated.		SC	11,12	
10	100%	CLAYEY SAND WITH SILT. Light brown to light grey, fine-grain, wet.		SC	22,22	
15						
20						

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- TANK 905  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9456

Lab Sample Number:	B7C2601400	B7C2601400
Site	BRACGREY	BRACGREY
Locator	CEF9051S	CEF9051S
Collect Date:	25-MAR-97	25-MAR-97
	VALUE QUAL UNITS DL	VALUE QUAL UNITS DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1	-
1,1,2,2-Tetrachloroethane	1 U	ug/l	1	-
1,1,2-Trichloroethane	1 U	ug/l	1	-
1,1-Dichloroethane	1 U	ug/l	1	-
1,1-Dichloroethene	1 U	ug/l	1	-
1,2-Dichlorobenzene	1 U	ug/l	1	-
1,3-Dichlorobenzene	1 U	ug/l	1	-
1,4-Dichlorobenzene	1 U	ug/l	1	-
1,2-Dichloroethane	1 U	ug/l	1	-
1,2-Dichloropropane	1 U	ug/l	1	-
1-Methylnaphthalene	2 U	ug/l	2	-
2-Methylnaphthalene	2 U	ug/l	2	-
Acenaphthene	2 U	ug/l	2	-
Acenaphthylene	2 U	ug/l	2	-
Anthracene	2 U	ug/l	2	-
Benzene	1 U	ug/l	1	-
Benzo (a) anthracene	.1 U	ug/l	.1	-
Benzo (a) pyrene	.1 U	ug/l	.1	-
Benzo (b) fluoranthene	.1 U	ug/l	.1	-
Benzo (g,h,i) perylene	.2 U	ug/l	.2	-
Benzo (k) fluoranthene	.15 U	ug/l	.15	-
Bromodichloromethane	1 U	ug/l	1	-
Bromoform	1 U	ug/l	1	-
Bromomethane	1 U	ug/l	1	-
Carbon tetrachloride	1 U	ug/l	1	-
Chlorobenzene	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chloroform	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chrysene	.1 U	ug/l	.1	-
Dibenzo (a,h) anthracene	.2 U	ug/l	.2	-
Dibromochloromethane	1 U	ug/l	1	-
Dichlorodifluoromethane	1 U	ug/l	1	-
Ethylbenzene	1 U	ug/l	1	-
Ethylene dibromide	.02 U	ug/l	.02	-
Fluoranthene	.2 U	ug/l	.2	-
Fluorene	2 U	ug/l	2	-
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1	-
Lead	5 U	ug/l	5	-
Methyl tert-butyl ether	1 U	ug/l	1	-
Methylene chloride	1 U	ug/l	1	-
Naphthalene	2 U	ug/l	2	-
Phenanthrene	2 U	ug/l	2	-
Pyrene	.2 U	ug/l	.2	-
Tetrachloroethene	1 U	ug/l	1	-
Toluene	1 U	ug/l	1	-
Total petroleum hydrocarbons	.5 U	mg/l	.5	-
Trichloroethene	1 U	ug/l	1	-
Trichlorofluoromethane	1 U	ug/l	1	-
Vinyl chloride	1 U	ug/l	1	-

NAS CECIL FIELD -- TANK 905  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9456

Lab Sample Number:	B7C2601400	B7C2601400
Site	BRACGREY	BRACGREY
Locator	CEF9051S	CEF9051S
Collect Date:	25-MAR-97	25-MAR-97

	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
Xylenes (total)	1	U	ug/l	1	-			
cis-1,3-Dichloropropene	1	U	ug/l	1	-			
trans-1,2-Dichloroethene	1	U	ug/l	1	-			
trans-1,3-Dichloropropene	1	U	ug/l	1	-			
Lead-DISS	-				5	U	ug/l	5

U = NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R = RESULT IS REJECTED AND UNUSABLE

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 859, TANK G859**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

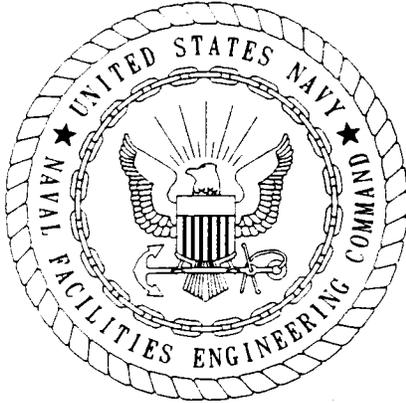
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**October 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: October 17, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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Jacksonville, Florida

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Confirmatory Sampling Report  
Building 859, Tank G859  
Naval Air Station Cecil Field  
Jacksonville, Florida

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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc
BEI	Bechtel Environmental Incorporated
bls	below land surface
FAC	Florida Administrative Code
$\mu\text{g}/\ell$	micrograms per liter
OVA	organic vapor analyzer
ppm	parts per million
TRPH	total recoverable petroleum hydrocarbons
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank G859 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank G859 was an underground storage tank (UST) located at Building 859, which serves as the operations center for the Antisubmarine Warfare Unit (Figure 1). The UST, which was installed in 1986, had a 1,000-gallon capacity and was used to store diesel for the diesel generators (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank G859 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank G859 was removed by Bechtel Environmental, Inc. (BEI), on May 12, 1997. No soil was removed at that time. A Closure Report was prepared for Tank G859 and submitted to the Florida Department of Environmental Protection in July of 1997 (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling for Tank G859 was initiated in January 1997 (before the UST was removed) and included

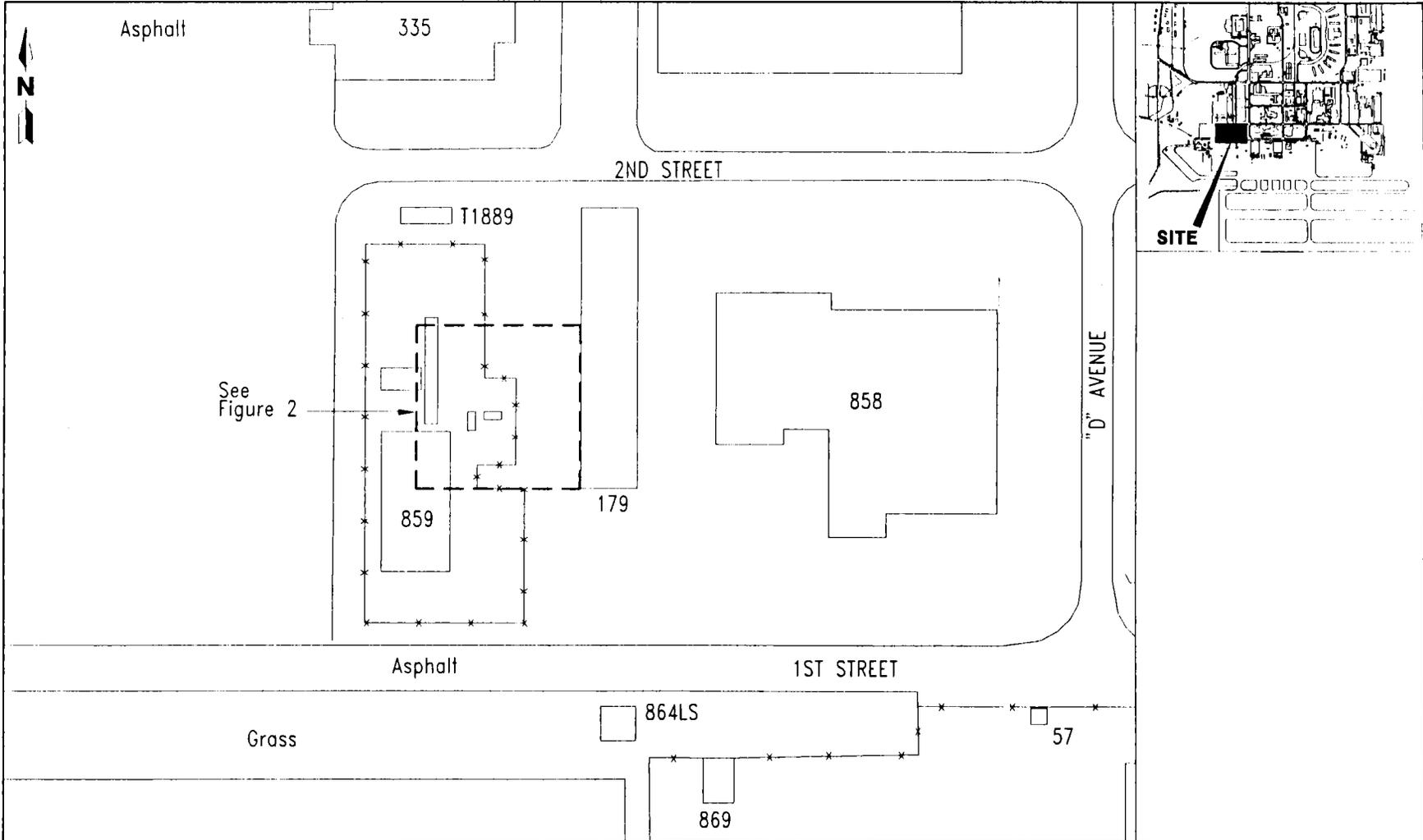
- the advancement of four soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

Soil samples were collected at depth intervals of 1-foot below land surface (bls) and every 2 feet thereafter to the water table. The samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

A monitoring well, CEF-859-1S, was installed in March 1997 east of the UST near the location of soil boring CEF-859-SB3 to a depth of 13 feet bls. One groundwater sample was collected from the well on March 24, 1997, and analyzed for the Kerosene Analytical Group parameters. Monitoring well CEF-859-1S was destroyed during the tank removal. A second well, monitoring well CEF-859-2S, was installed 10 feet east of the former well on July 24, 1997. This well was sampled and analyzed for the Kerosene Analytical Group parameters in August of 1997. A general site plan indicating the location of the soil borings and monitoring well CEF-859-1S is presented on Figure 2. The monitoring well installation details are included in Appendix A.

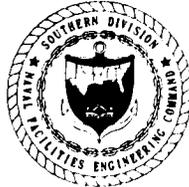
## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil was not detected in soil samples collected from the unsaturated zone during the confirmatory sampling and the tank removal (BEI, 1997). The soil OVA data are summarized in Table 1 and presented on Figure 2.



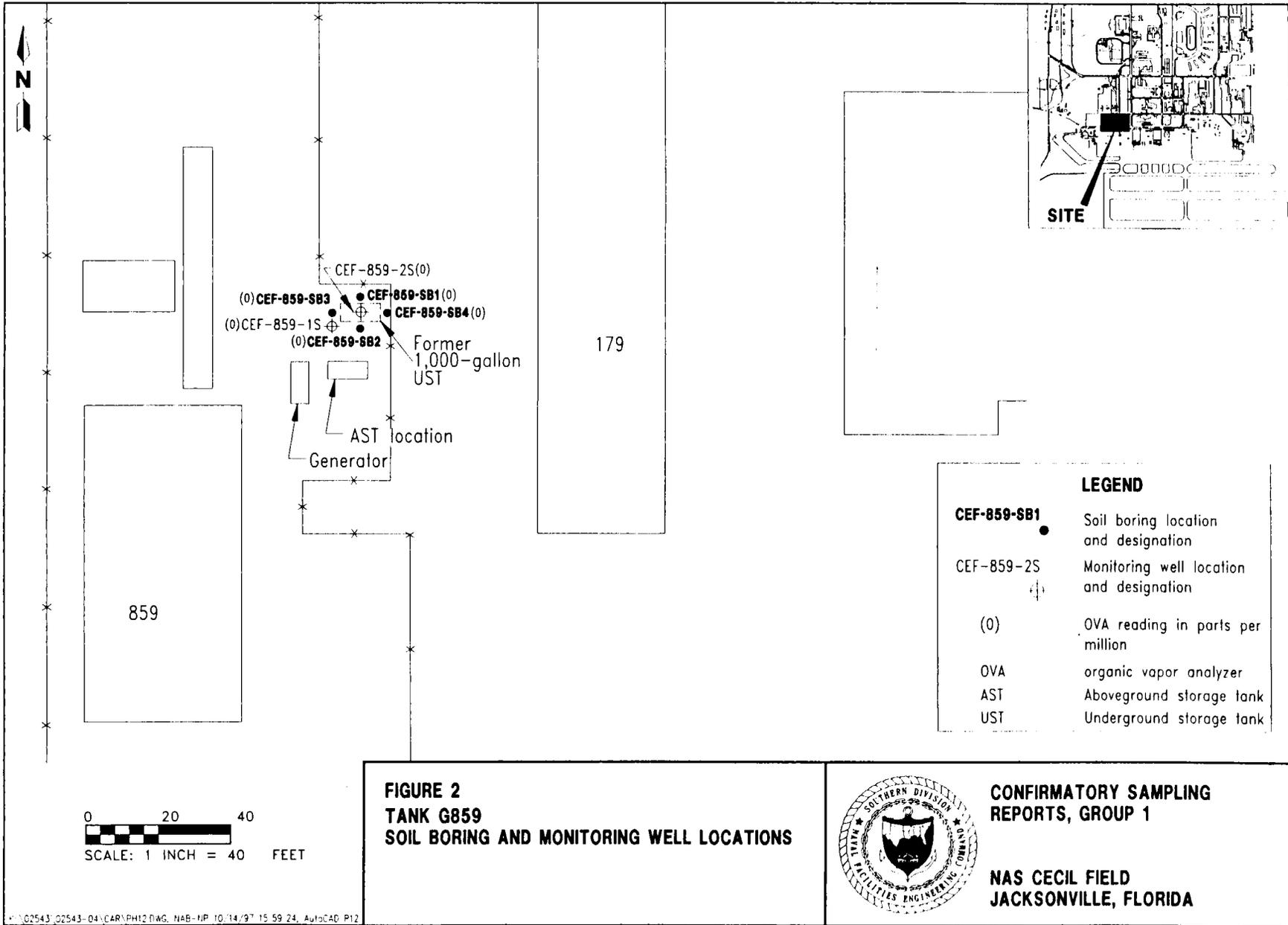
0 50 100  
 SCALE: 1 INCH = 100 FEET

**FIGURE 1  
 TANK G859  
 ANTISUBMARINE WARFARE OPERATIONS CENTER**



**CONFIRMATORY SAMPLING  
 REPORTS, GROUP 1**

**NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA**



**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 859, Tank G859  
Naval Air Station Cecil Field  
Jacksonville, Florida

Boring Number	OVA Concentration (ppm)			Actual
	Depth (feet bls)	Unfiltered	Filtered	
CEF-G859-SB1	1	0	-	0
	3	0	-	0
	5 (wet)	0	-	0
CEF-G859-SB2	1	0	-	0
	3	0	-	0
	5	0	-	0
CEF-G859-SB3	1	0	-	0
	3	0	-	0
	5	0	-	0
CEF-G859-SB4	1	0	-	0
	3	0	-	0
	5 (moist)	0	-	0
CEF-859-1S	1	0	-	0
	3	0	-	0
	5	0	-	0
	11 (wet)	0	-	0
CEF-859-2S	1	0	-	0
	3	0	-	0
	5	0	-	0
	9 (wet)	0	-	0

Notes: All soil samples were collected on January 21, 1997.  
Monitoring well CEF-859-1S was installed on March 7, 1997.  
Monitoring well CEF-859-2S was installed on July 29, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
wet = soil sample was completely saturated when analyzed.  
- = filtered readings were not collected.  
moist = soil sample was partially saturated when analyzed.

The concentration of benzene in groundwater collected from monitoring well CEF-859-1S on March 24, 1997 was 1 micrograms per liter ( $\mu\text{g}/\ell$ ), which is equal to the requirement of 1  $\mu\text{g}/\ell$  specified in Chapter 62-770 of the Florida Administrative Code (FAC). Other contaminants did not exceed their respective regulatory standards or guidance concentrations. At the request of the Naval Air Station Cecil Field partnering team, monitoring well CEF-859-2S was sampled on August 7, 1997 and no kerosene analytical group parameters were detected at concentrations above Chapter 62-770, FAC standards. A summary of the groundwater analytical results is presented in Table 2. The complete analytical data set is presented in Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Contaminated soil was not detected during the confirmatory sampling or the tank removal. No contaminants were detected above the regulatory standards specified in Chapter 62-770, FAC, in the two groundwater samples collected from monitoring well CEF-859-1S. Therefore, No Further Action is recommended for the Tank G859 site.

**Table 2**  
**Summary of Groundwater Analytical Results**

Confirmatory Sampling Report  
Building 859, Tank G859  
Naval Air Station Cecil Field  
Jacksonville, Florida

Compound	CEF-859-1S	CEF-859-2S	Chapter 62-770, FAC Regulatory Standards Draft July/August 1997
	March 1997	August 1997	
<b>Volatile Organic Aromatics (USEPA Method 601/602) (<math>\mu\text{g}/\text{l}</math>)</b>			
Chlorobenzene	1.4	ND	NA
1,2-Dichlorobenzene	<sup>1</sup> 1.6/1.9	ND	NA
1,3-Dichlorobenzene	<sup>1</sup> 1.6/2.3	ND	NA
1,4-Dichlorobenzene	<sup>1</sup> 1.6/1.8	ND	NA
Methylene chloride	1.7	ND	NA
Benzene	1	ND	1
Toluene	1	ND	40
Total Xylenes	2.3	ND	20
<sup>1</sup> Groundwater contaminant detected in samples analyzed by USEPA Methods 601 and 602.			
Notes: FAC = Florida Administrative Code. USEPA = U.S. Environmental Protection Agency. $\mu\text{g}/\text{l}$ = micrograms per liter. ND = not detected. NA = not applicable.			

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAILS**

TITLE: NAS Cecil Field		LOG of WELL: DEF-854-15	BORING NO. DEF-854-15
CLIENT: SOUTH DIVNAVFACENGBCOM		PROJECT NO: 8542-01	
CONTRACTOR: GEOTEK		DATE STARTED: 3-7-97	COMPLTD: 3-7-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 1-14	PROTECTION LEVEL: 0
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 14 FEET.	DPTH TO $\nabla$ : 0.14 FEET.
LOGGED BY: J Koch	WELL DEVELOPMENT DATE: 3-10-97		SITE: Building 854

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0			0	SILTY SAND: Light brown to dark brown, fine grained, no petroleum odor.		SM	posthole	
0			0	SILTY SAND: As above, no petroleum odor.			posthole	
5		100%	0	SILTY SAND: As above, saturated, no petroleum odor.			7,12,15,18	
10		100%	0	SILTY SAND: Brown, fine grained, no petroleum odor.				
			0	CLAYEY SAND: Dark brown, fine grained, no petroleum odor.		SC	1,3,3,4	
15								
20								

TITLE: NAS Cecil Field		LOG of WELL: CEF-859-2S	BORING NO. CEF-859-2S
CLIENT: SOUTH DIVNA VFA CEN GCOM			PROJECT NO: 8542-03
CONTRACTOR: GEOTEK		DATE STARTED: 7-24-97	COMPLTD: 7-24-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 3-13	PROTECTION LEVEL: 0
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 14 FEET.	DPTH TO $\nabla$ 6.14 FEET.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 7-24-97		SITE: Burong: 854

DEPTH FT.	LABORATORY SAMPLE ID.	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0				SILTY SAND: Light brown to dark brown, fine grained.		SM	posthole	
0			SILTY SAND: As above.	posthole				
5			SILTY SAND: As above, saturated.					
0			SILTY SAND: As above, wet.					
10								
15								
20								

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- TANK G859  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9399

Lab Sample Number:	B7C2501210		B7C2501210		B7H0801410		B7H0801410		
Site	BRACGREY		BRACGREY		BRACGREY		BRACGREY		
Locator	CEF8591S		CEF8591S		CEF-859-2S		CEF-859-2S		
Collect Date:	24-MAR-97		24-MAR-97		07-AUG-97		07-AUG-97		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1	-	1 U	ug/L	1	-
1,1,2,2-Tetrachloroethane	1 U	ug/l	1	-	1 U	ug/L	1	-
1,1,2-Trichloroethane	1 U	ug/l	1	-	1 U	ug/L	1	-
1,1-Dichloroethane	1 U	ug/l	1	-	1 U	ug/L	1	-
1,1-Dichloroethene	1 U	ug/l	1	-	1 U	ug/L	1	-
1,2-Dichlorobenzene	1.6	ug/l	1	-	1 U	ug/L	1	-
1,3-Dichlorobenzene	1.6	ug/l	1	-	1 U	ug/L	1	-
1,4-Dichlorobenzene	1.8	ug/l	1	-	1 U	ug/L	1	-
1,2-Dichloroethane	1 U	ug/l	1	-	1 U	ug/L	1	-
1,2-Dichloropropane	1 U	ug/l	1	-	1 U	ug/L	1	-
1-Methylnaphthalene	2 U	ug/l	2	-	2 U	ug/L	2	-
2-Methylnaphthalene	2 U	ug/l	2	-	2 U	ug/L	2	-
Acenaphthene	2 U	ug/l	2	-	2 U	ug/L	2	-
Acenaphthylene	2 U	ug/l	2	-	2 U	ug/L	2	-
Anthracene	2 U	ug/l	2	-	2 U	ug/L	2	-
Benzene	1	ug/l	1	-	1 U	ug/L	1	-
Benzo (a) anthracene	.1 U	ug/l	.1	-	.1 U	ug/L	.1	-
Benzo (a) pyrene	.1 U	ug/l	.1	-	.1 U	ug/L	.1	-
Benzo (b) fluoranthene	.1 U	ug/l	.1	-	.1 U	ug/L	.1	-
Benzo (g,h,i) perylene	.2 U	ug/l	.2	-	.2 U	ug/L	.2	-
Benzo (k) fluoranthene	.15 U	ug/l	.15	-	.15 U	ug/L	.15	-
Bromodichloromethane	1 U	ug/l	1	-	1 U	ug/L	1	-
Bromoform	1 U	ug/l	1	-	1 U	ug/L	1	-
Bromomethane	1 U	ug/l	1	-	1 U	ug/L	1	-
Carbon tetrachloride	1 U	ug/l	1	-	1 U	ug/L	1	-
Chlorobenzene	1.4	ug/l	1	-	1 U	ug/L	1	-
Chloromethane	1 U	ug/l	1	-	1 U	ug/L	1	-
Chloroform	1 U	ug/l	1	-	1 U	ug/L	1	-
Chloromethane	1 U	ug/l	1	-	1 U	ug/L	1	-
Chrysene	.1 U	ug/l	.1	-	.1 U	ug/L	.1	-
Dibenzo (a,h) anthracene	.2 U	ug/l	.2	-	.2 U	ug/L	.2	-
Dibromochloromethane	1 U	ug/l	1	-	1 U	ug/L	1	-
Dichlorodifluoromethane	1 U	ug/l	1	-	1 U	ug/L	1	-
Ethylbenzene	1 U	ug/l	1	-	1 U	ug/L	1	-
Ethylene dibromide	.02 U	ug/l	.02	-	.02 U	ug/L	.02	-
Fluoranthene	.2 U	ug/l	.2	-	.2 U	ug/L	.2	-
Fluorene	2 U	ug/l	2	-	2 U	ug/L	2	-
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1	-	.1 U	ug/L	.1	-
Lead	5 U	ug/l	5	-	5 U	ug/L	5	-
Methyl tert-butyl ether	1 U	ug/l	1	-	1 U	ug/L	1	-
Methylene chloride	1.7	ug/l	1	-	5 U	ug/L	5	-
Naphthalene	2 U	ug/l	2	-	2 U	ug/L	2	-
Phenanthrene	2 U	ug/l	2	-	2 U	ug/L	2	-
Pyrene	.2 U	ug/l	.2	-	.2 U	ug/L	.2	-
Tetrachloroethene	1 U	ug/l	1	-	1 U	ug/L	1	-
Toluene	1	ug/l	1	-	1 U	ug/L	1	-
Total petroleum hydrocarbons	.5 U	mg/l	.5	-	.5 U	mg/l	.5	-
Trichloroethene	1 U	ug/l	1	-	1 U	ug/L	1	-
Trichlorofluoromethane	1 U	ug/l	1	-	1 U	ug/L	1	-
Vinyl chloride	1 U	ug/l	1	-	1 U	ug/L	1	-

NAS CECIL FIELD -- TANK G859  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9399

Lab Sample Number:  
 Site  
 Locator  
 Collect Date:

B7C2501210  
 BRACGREY  
 CEF8591S  
 24-MAR-97

B7C2501210  
 BRACGREY  
 CEF8591S  
 24-MAR-97

B7H0801410  
 BRACGREY  
 CEF-859-2S  
 07-AUG-97

B7H0801410  
 BRACGREY  
 CEF-859-2S  
 07-AUG-97

	VALUE	QUAL	UNITS	DL												
Xylenes (total)	2.3		ug/l	1	-				1 U		ug/L	1	-			
cis-1,3-Dichloropropene	1 U		ug/l	1	-				1 U		ug/L	1	-			
trans-1,2-Dichloroethene	1 U		ug/l	1	-				1 U		ug/L	1	-			
trans-1,3-Dichloropropene	1 U		ug/l	1	-				1 U		ug/L	1	-			
Lead-DISS	-				5 U		ug/l	5	-				5 U		ug/L	5

U = NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R = RESULT IS REJECTED AND UNUSABLE

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 829, TANK G829**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

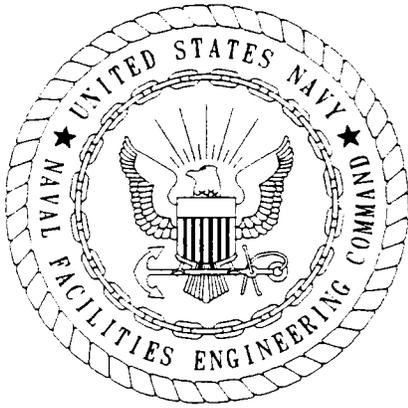
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**November 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: November 11, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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Jacksonville, Florida

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
BEI	Bechtel Environmental, Inc.
bls	below land surface
FAC	Florida Administrative Code
OVA	organic vapor analyzer
ppm	parts per million
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank G829 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank G829 was an underground storage tank (UST) located at Building 829, a facility used for housing radar equipment for tracking aircraft. The UST, which was installed in 1986, had a 1,000-gallon capacity and was used to store diesel oil for the building's boiler (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank G829 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank G829 was removed by Bechtel Environmental, Inc. (BEI), on April 21, 1997. No soil was removed from the site at that time. A closure report was prepared for Tank G829 and submitted to the Florida Department of Environmental Protection (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling for Tank G829 was initiated in January 1997 (before the UST was removed) and included

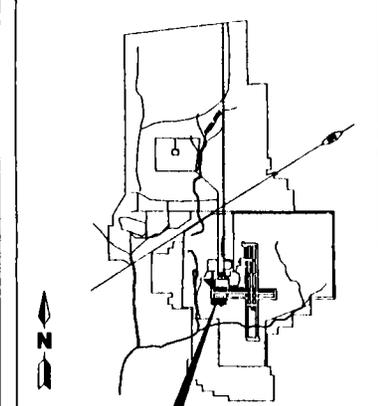
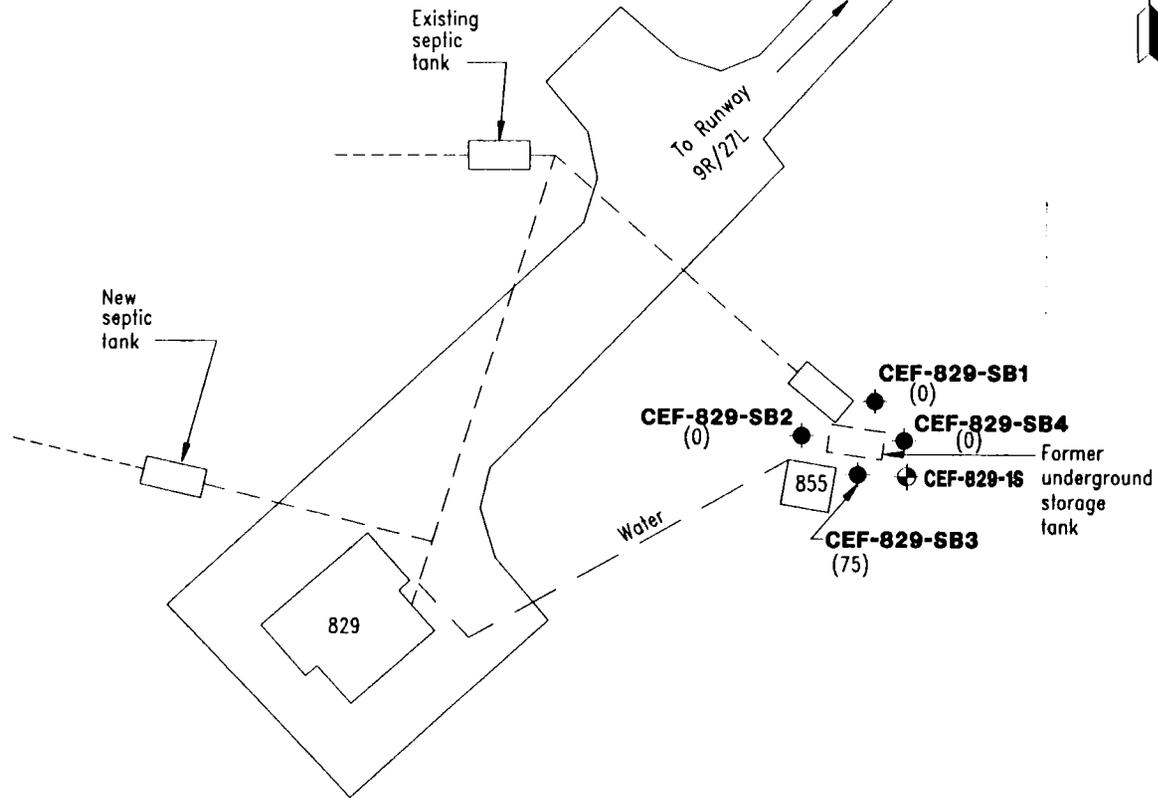
- the advancement of four soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

Soil samples were collected from each boring at depth intervals of 1 foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors using an organic vapor analyzer (OVA).

A monitoring well, CEF-855-1S, was installed south of the UST near the location of soil boring CEF-829-SB3 to a depth of 14 feet bls. One groundwater sample was collected from the well and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and the monitoring well is presented on Figure 1. The monitoring well installation detail is included as Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

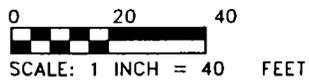
Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in one soil boring. The highest OVA reading (75 ppm) was detected at 5 feet bls from a moist sample collected from soil boring CEF-829-SB3. The soil OVA data are summarized in Table 1.



**SITE LOCATION**

**LEGEND**

- 
**CEF-829-1S** Monitoring well location and designation
- 
**CEF-829-SB1** Soil boring location and designation
- 
 (0) Organic vapor analyzer reading in parts per million



**FIGURE 1  
TANK 829  
SOIL BORING AND MONITORING WELL LOCATIONS**



**CONFIRMATORY SAMPLING REPORT  
BUILDING 829, TANK 829**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 829, Tank G829  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-829-SB1	1	0	--	0
	3	0	--	0
	5	0	--	0
CEF-829-SB2	1	0	--	0
	3	0	--	0
	5	0	--	0
CEF-829-SB3	1	0	--	0
	3	0	--	0
	5	75	0	75
CEF-829-SB4	1	0	--	0
	3	0	--	0
	5	0	--	0
CEF-855-1S	1	0	--	0
	3	0	--	0
	5	0	--	0
	7 (wet)	0	--	0
	11 (wet)	120	--	120

Notes: All soil samples were collected on January 14, 1997.  
Monitoring well CEF-855-1S was installed on February 25, 1997.  
All concentrations are in ppm.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
-- = filtered readings were not collected.  
wet = soil sample was completely saturated when analyzed.

Groundwater contamination was not detected at concentrations exceeding requirements specified in Chapter 62-770 of the Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank G829 site did not provide an adequate assessment of the horizontal and vertical extent of excessively contaminated soil. No contaminants were detected above the regulatory standard specified in Chapter 62-770, FAC, in the groundwater sample collected from monitoring well CEF-855-1S.

It is recommended that additional confirmatory sampling be conducted to assess the extent of excessively contaminated soil at the Tank G829 site.

## REFERENCES

ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).

ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).

Bechtel Environmental, Inc. 1997. DO #59: *Closure Report for Aboveground Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 800, TANK 800**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**October 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: October 28, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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- Appendix A: Monitoring Well Installation Detail
- Appendix B: Groundwater Analytical Data

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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc
BEI	Bechtel Environmental Incorporated
bls	below land surface
FAC	Florida Administrative Code
OVA	organic vapor analyzer
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank 800 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 800 was an underground storage tank (UST) located on the west side of Building 800, the memorial chapel (Figure 1). The UST, which was installed in 1966, had a 1,000-gallon capacity and was used to store fuel oil for onsite heating (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 800 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank 800 was removed by Bechtel Environmental, Inc. (BEI), on June 11, 1997. No soil was removed from the site. A Closure Report was prepared for Tank 800 and submitted to the Florida Department of Environmental Protection in July of 1997 (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling at Tank 800 was initiated in January 1997 (before the UST was removed) and included

- the advancement of two soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

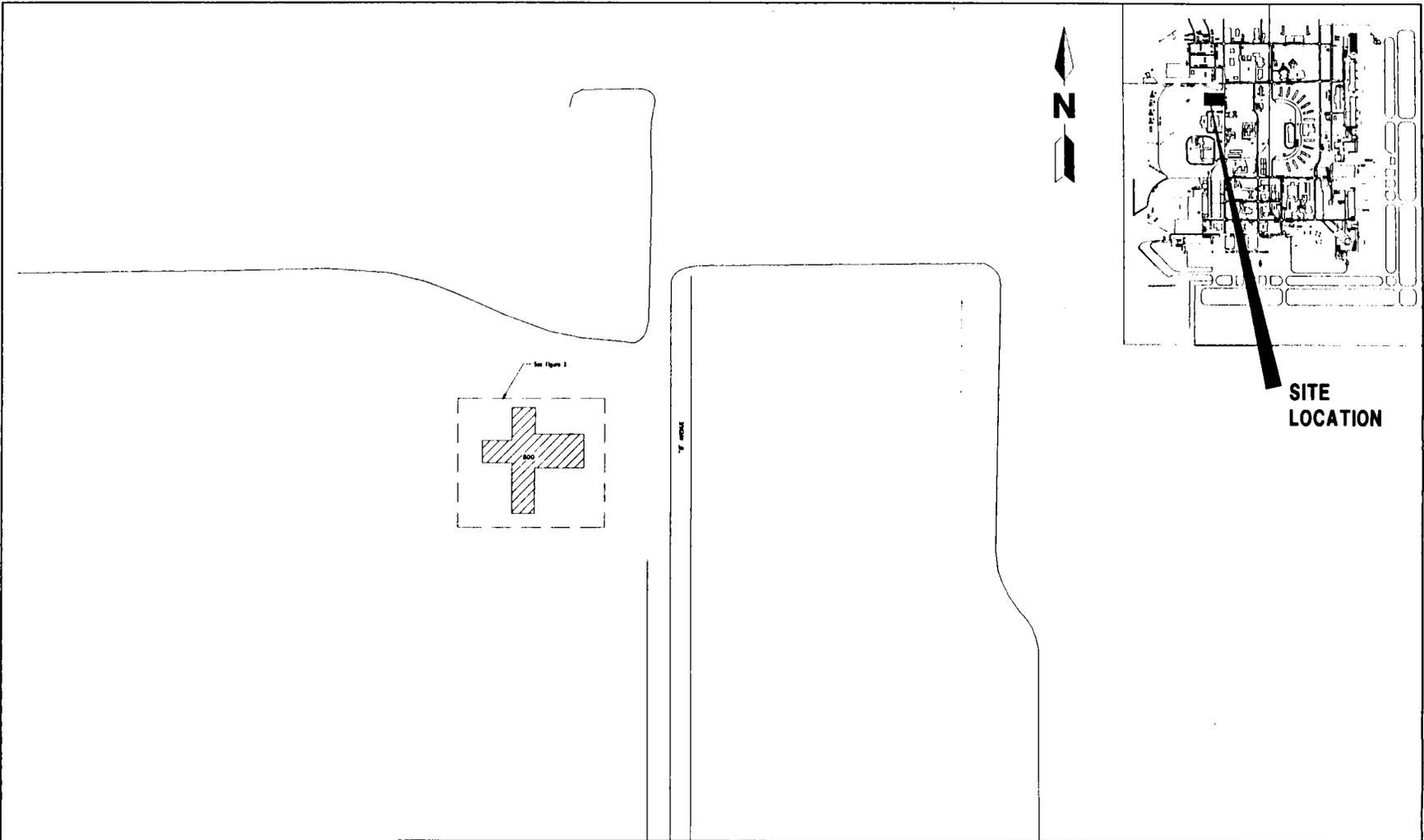
Soil samples were collected at depth intervals of 1-foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

One monitoring well, CEF-800-1S, was installed south of the UST near the location of soil boring CEF-800-SB2 to a depth of 14 feet bls. One groundwater sample was collected on March 26, 1997, and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and monitoring well CEF-800-1S is presented on Figure 2. The monitoring well installation detail is included in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil was not detected in soil samples collected from the unsaturated zone during the confirmatory sampling and tank removal (BEI, 1997). The soil OVA data are summarized in Table 1 and presented on Figure 2.

Contaminant concentrations in groundwater were below the regulatory standards for Class G-II groundwater as specified in Chapter 62-770 of the Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.



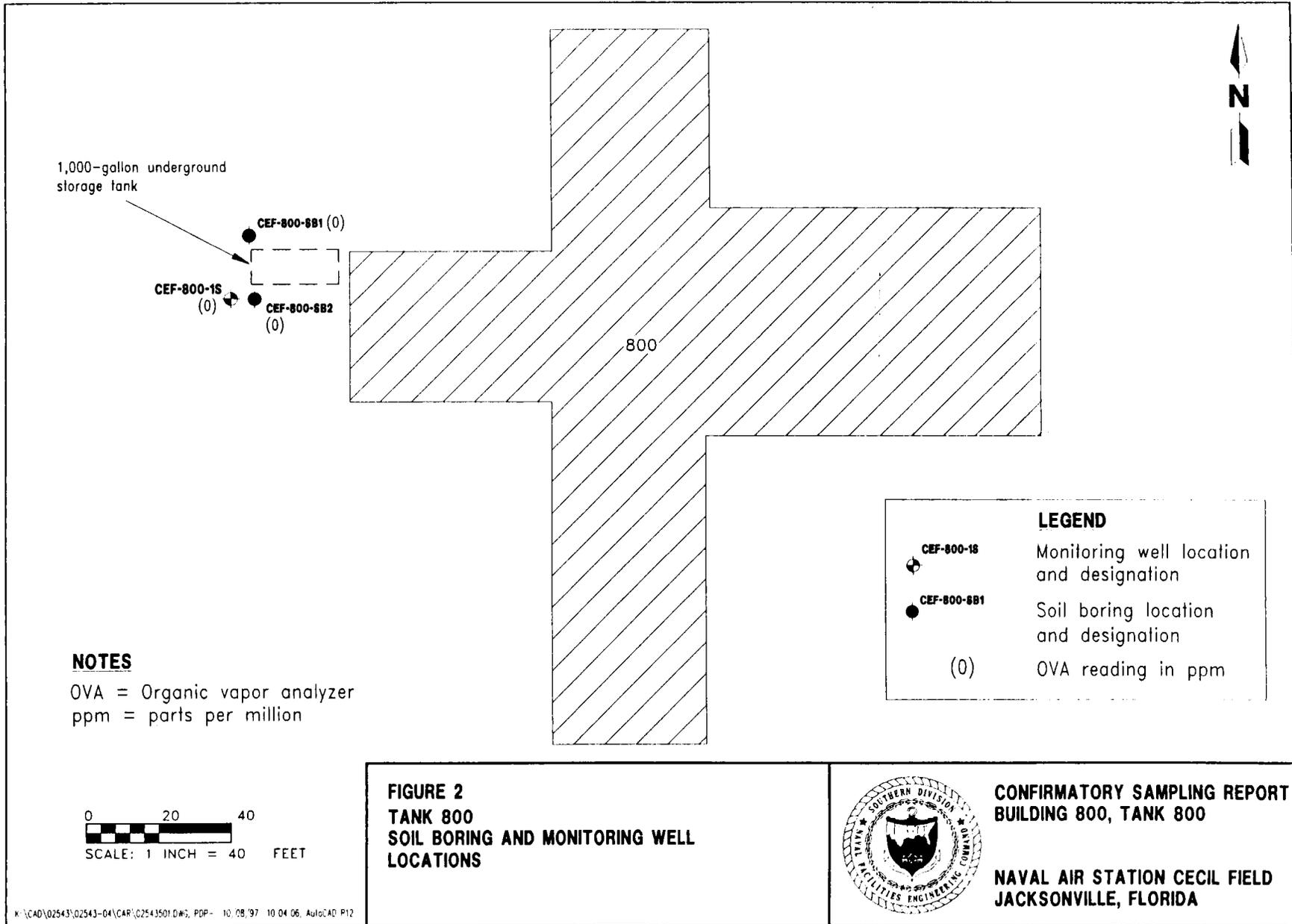
0 150 300  
SCALE: 1 INCH = 300 FEET

**FIGURE 1  
TANK 800  
MEMORIAL CHAPEL**



**CONFIRMATORY SAMPLING REPORT  
BUILDING 800, TANK 800**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**



**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 800, Tank 800  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-800-SB1	1	0	--	0
	3	0	--	0
	5 (wet)	0	--	0
CEF-800-SB2	1	0	--	0
	3	0	--	0
	5 (wet)	0	--	0
CEF-800-1S	1	0	--	0
	3	0	--	0
	5 (wet)	60	--	60
	11 (wet)	0	--	0

Notes: All soil samples were collected on January 13, 1997.  
Monitoring well CEF-800-1S was installed on March 6, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
wet = soil sample was completely saturated when analyzed.  
-- = filtered readings were not collected.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank 800 site does not indicate the presence of contaminated soil. No contaminants were detected above regulatory standards specified in Chapter 62-770, FAC, in the groundwater sample collected from monitoring well CEF-800-1S. Therefore, No Further Action is recommended for the Tank 800 site.

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan. Naval Air Station Cecil Field, Jacksonville, Florida.* Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan. Naval Air Station Cecil Field, Jacksonville, Florida.* Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida.* (July).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

TITLE: NAS Cecil Field		LOG of WELL: NEF-800-15	BORING NO. NEF-800-15
CLIENT: SOUTH DIVNAVFACENGBCOM		PROJECT NO: 8541-03	
CONTRACTOR: GEOTEK		DATE STARTED: 3-10-97	COMPLTD: 3-10-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 4-12	PROTECTION LEVEL: 0
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 15 FEET.	DPTH TO V 0.15 FEET.
LOGGED BY: J Koch	WELL DEVELOPMENT DATE: 3-10-97		SITE: Building 800

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	ETHANOLIC SAMPLE	SOIL CLASS	BLOWS/6-IN	WELL DATA
0				SILTY SAND: Light grey to black, fine grained, no petroleum odor.		SM	posthole	
0				SILTY SAND: Medium grey to black, fine grained no petroleum odor.			posthole	
5		100%	60	SILTY SAND: Light grey to medium grey, fine grained, no petroleum odor.			1.1.1	
10		50%	0	SILTY SAND: Dark brown to black, to 1/2" depth, no petroleum odor.			2.6.9.10	

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- TANK 800  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9398

Lab Sample Number:	B7C2701410	B7C2701410
Site	BRACGREY	BRACGREY
Locator	CEF8001S	CEF8001S
Collect Date:	26-MAR-97	26-MAR-97
	VALUE QUAL UNITS DL	VALUE QUAL UNITS DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1	-
1,1,2,2-Tetrachloroethane	1 U	ug/l	1	-
1,1,2-Trichloroethane	1 U	ug/l	1	-
1,1-Dichloroethane	1 U	ug/l	1	-
1,1-Dichloroethene	1 U	ug/l	1	-
1,2-Dichlorobenzene	1 U	ug/l	1	-
1,3-Dichlorobenzene	1 U	ug/l	1	-
1,4-Dichlorobenzene	1 U	ug/l	1	-
1,2-Dichloroethane	1 U	ug/l	1	-
1,2-Dichloropropane	1 U	ug/l	1	-
1-Methylnaphthalene	2 U	ug/l	2	-
2-Methylnaphthalene	2 U	ug/l	2	-
Acenaphthene	2 U	ug/l	2	-
Acenaphthylene	2 U	ug/l	2	-
Anthracene	2 U	ug/l	2	-
Benzene	1 U	ug/l	1	-
Benzo (a) anthracene	.1 U	ug/l	.1	-
Benzo (a) pyrene	.1 U	ug/l	.1	-
Benzo (b) fluoranthene	.1 U	ug/l	.1	-
Benzo (g,h,i) perylene	.2 U	ug/l	.2	-
Benzo (k) fluoranthene	.15 U	ug/l	.15	-
Bromodichloromethane	1 U	ug/l	1	-
Bromoform	1 U	ug/l	1	-
Bromomethane	1 U	ug/l	1	-
Carbon tetrachloride	1 U	ug/l	1	-
Chlorobenzene	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chloroform	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chrysene	.1 U	ug/l	.1	-
Dibenzo (a,h) anthracene	.2 U	ug/l	.2	-
Dibromochloromethane	1 U	ug/l	1	-
Dichlorodifluoromethane	1 U	ug/l	1	-
Ethylbenzene	1 U	ug/l	1	-
Ethylene dibromide	.02 U	ug/l	.02	-
Fluoranthene	.2 U	ug/l	.2	-
Fluorene	2 U	ug/l	2	-
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1	-
Lead	5 U	ug/l	5	-
Methyl tert-butyl ether	1 U	ug/l	1	-
Methylene chloride	2.5 U	ug/l	1	-
Naphthalene	2 U	ug/l	2	-
Phenanthrene	2 U	ug/l	2	-
Pyrene	.2 U	ug/l	.2	-
Tetrachloroethene	1 U	ug/l	1	-
Toluene	1 U	ug/l	1	-
Total petroleum hydrocarbons	.5 U	mg/l	.5	-
Trichloroethene	1 U	ug/l	1	-
Trichlorofluoromethane	1 U	ug/l	1	-
Vinyl chloride	1 U	ug/l	1	-

NAS CECIL FIELD -- TANK 800  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9398

Lab Sample Number:	B7C2701410	B7C2701410			
Site	BRACGREY	BRACGREY			
Locator	CEF8001S	CEF8001S			
Collect Date:	26-MAR-97	26-MAR-97			
	VALUE	DL	VALUE	QUAL UNITS	DL

Xylenes (total)	1 U	ug/l	1	-	
cis-1,3-Dichloropropene	1 U	ug/l	1	-	
trans-1,2-Dichloroethene	1 U	ug/l	1	-	
trans-1,3-Dichloropropene	1 U	ug/l	1	-	
Lead-DISS	-		5 U	ug/l	5

U = NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R = RESULT IS REJECTED AND UNUSABLE

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 68A, TANK 68A**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

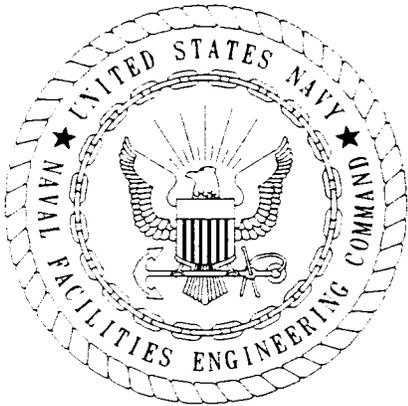
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**October 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: October 20, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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GLOSSARY

13929 = |

ABB-ES      ABB Environmental Services, Inc

BEI      Bechtel Environmental Incorporated  
bls      below land surface

UST      underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank 68A at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 68A was an underground storage tank (UST) located at Building 68A, a warehouse used for the storage of uniforms, personal protective equipment, tools, etc. (Figure 1). The UST, which was installed in 1986, had a 1,000-gallon capacity and was used to store diesel oil for the building's boiler (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 68A was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank 68A was removed by Bechtel Environmental, Inc. (BEI), on May 14, 1997. No soil was removed at that time. A Closure Report was prepared for Tank 68A and submitted to the Florida Department of Environmental Protection in July of 1997 (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling at Tank 68A was initiated in February 1997 (before the UST was removed) and included the advancement of one soil boring, CEF-68A-SB1, to the water table. Only one boring was advanced due to the limited access caused by the location of the tank beneath the loading dock of Building 68A.

Soil samples were collected at depth intervals of 1-foot below land surface (bls) and every 2 feet thereafter to the water table and screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

A general site plan indicating the location of the soil boring is presented on Figure 2.

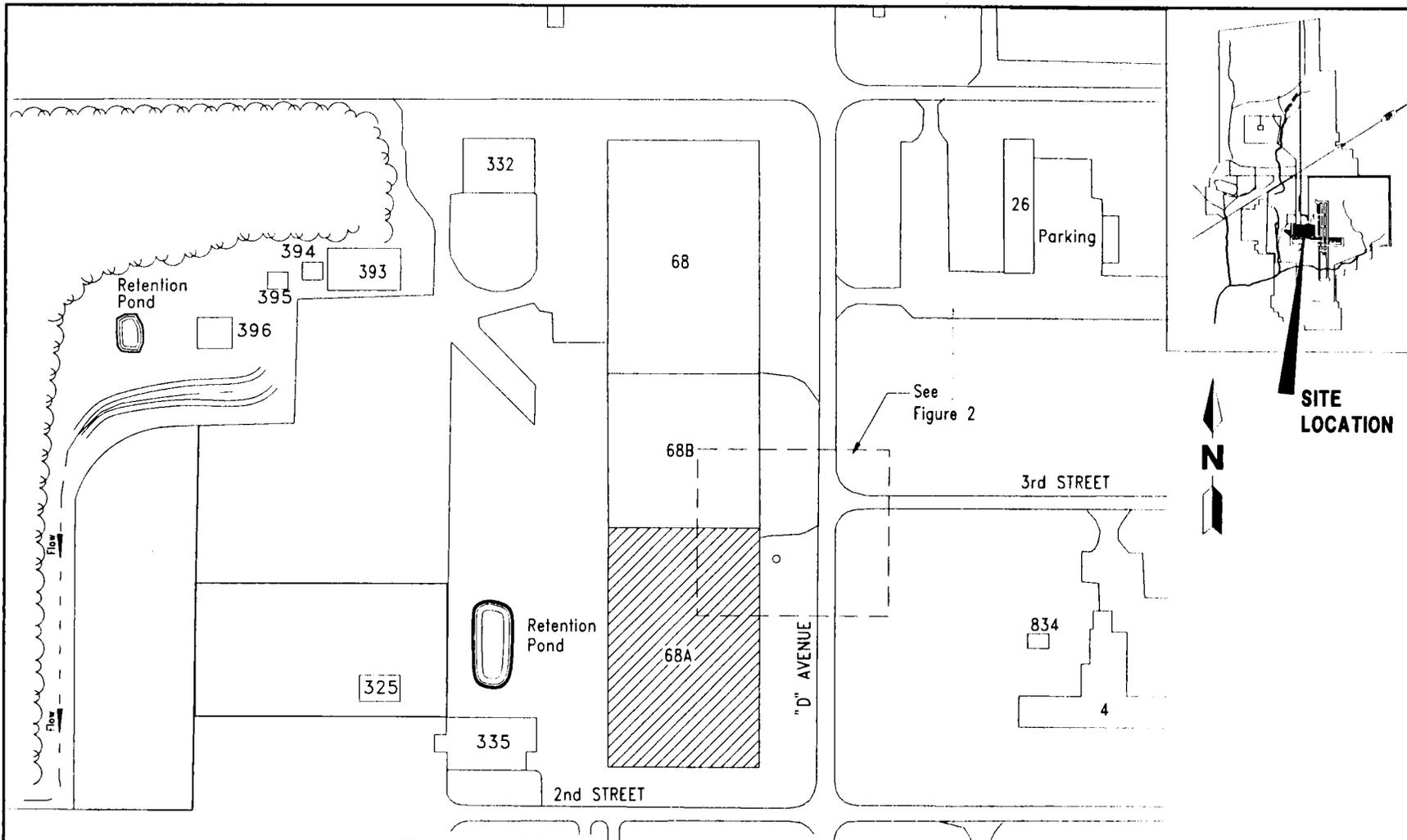
## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (having an OVA reading greater than 50 parts per million) was not detected at this site from zero to 7 feet bls.

Excessively contaminated soils were not detected in the 10 soil samples collected by BEI personnel during tank removal. These results are presented in Appendix B.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling and tank closure at the Tank 68A site did not indicate the presence of excessively contaminated soil. No groundwater data were collected at the Tank 68A site. Therefore, it is



**FIGURE 1**  
**TANK 68A - SUPPLY WAREHOUSE**

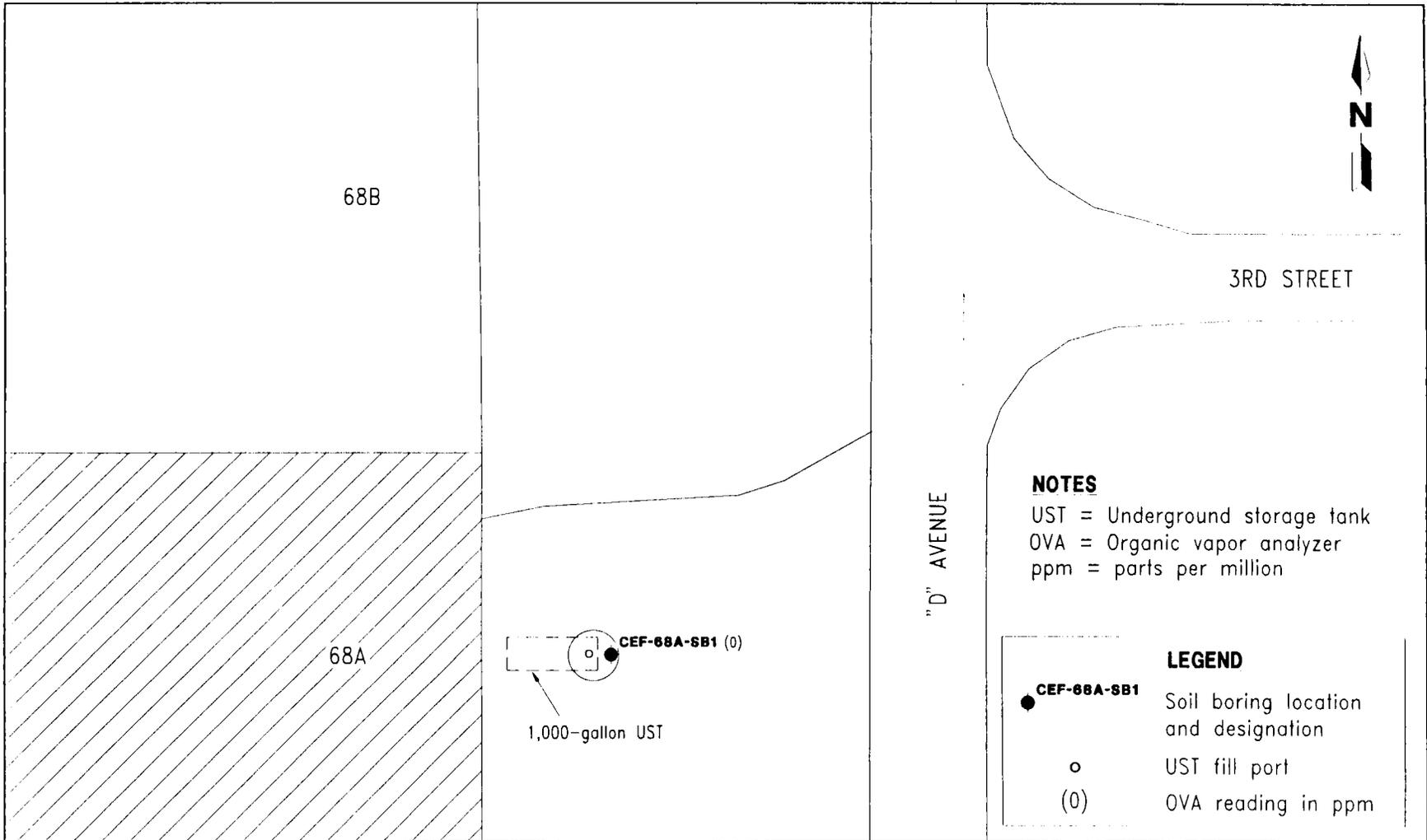
0 100 200  
 SCALE: 1 INCH = 200 FEET

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**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 68A, TANK 68A**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

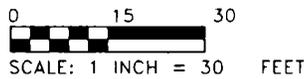


**NOTES**

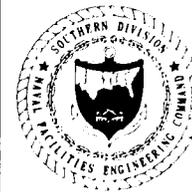
UST = Underground storage tank  
 OVA = Organic vapor analyzer  
 ppm = parts per million

**LEGEND**

- CEF-68A-SB1 Soil boring location and designation
- UST fill port
- (0) OVA reading in ppm



**FIGURE 2  
 TANK 68A  
 SOIL BORING LOCATION**



**CONFIRMATORY SAMPLING REPORT  
 BUILDING 68A, TANK 68A**

**NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA**

recommended that a temporary well be installed at the former tank location and sampled and analyzed for the Kerosene Analytical Group parameters.

If groundwater contaminants are below regulatory standards specified in Chapter 62-770, Florida Administrative Code, No Further Action will be proposed for this site. If concentrations exceed these standards, further assessment will then be required.

REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 82, TANK 82A**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

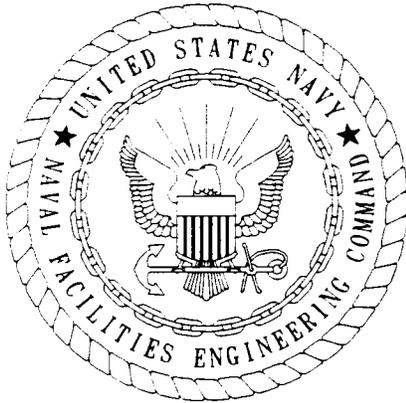
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**October 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: October 20, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

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Jacksonville, Florida

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Building 82, Tank 82A  
Naval Air Station Cecil Field  
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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc
BEI	Bechtel Environmental Incorporated
FAC	Florida Administrative Code
OVA	organic vapor analyzer
ppm	parts per million
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank 82A at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 82A was an underground storage tank (UST) located at the southeast corner of Building 82, the air traffic control tower and disaster preparedness center (Figure 1). The UST, which was installed in 1987, had a 1,000-gallon capacity and was used to fuel the backup power generator for the building (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 82A was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank 82A was removed by Bechtel Environmental, Inc. (BEI), on June 3, 1997. Three tons of excessively contaminated soil were removed at that time. A Closure Report was prepared for Tank 82A and submitted to the Florida Department of Environmental Protection in July of 1997 (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling at Tank 82A was initiated in January 1997 (before the UST was removed) and included the following:

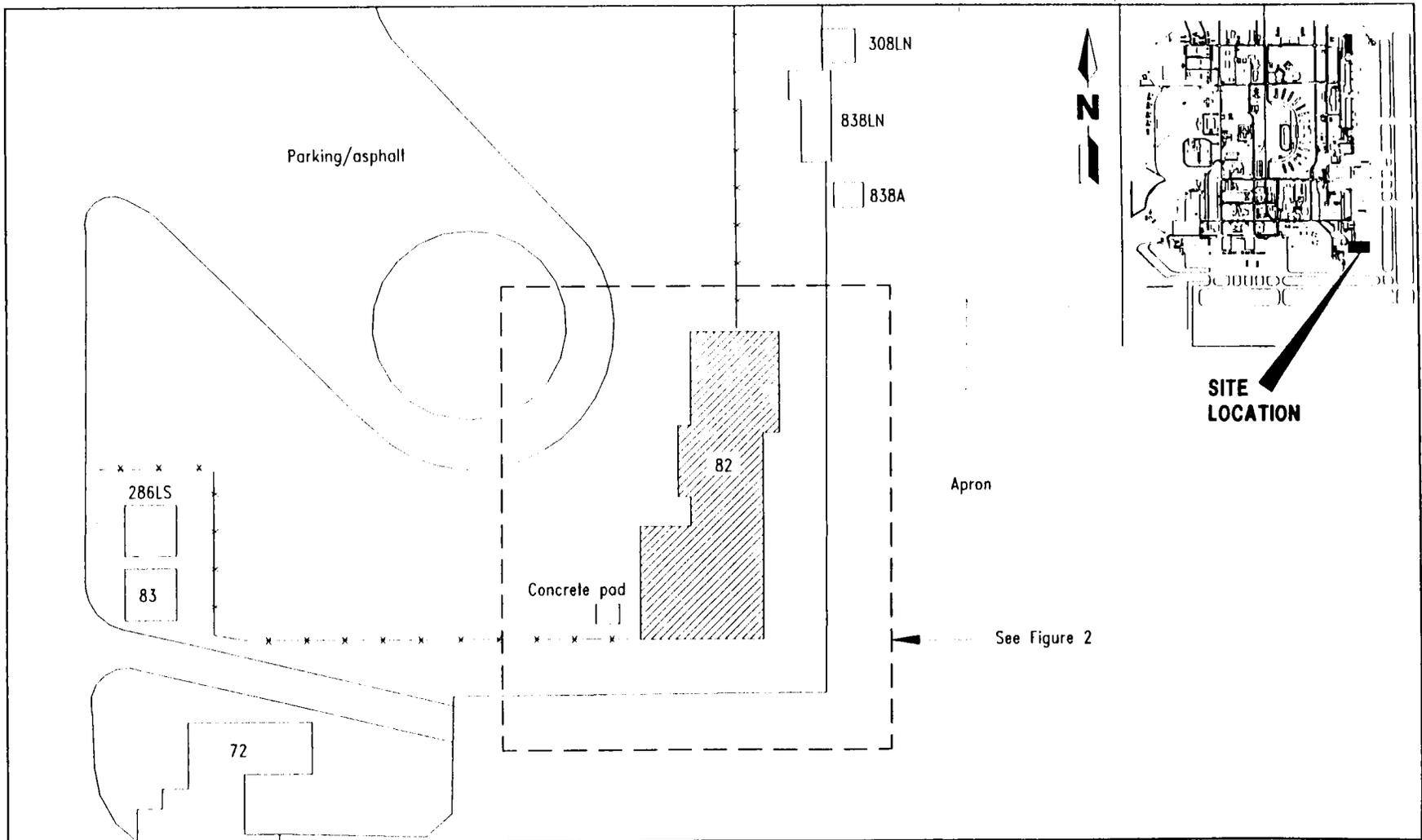
- the advancement of three soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

Soil samples were collected at depth intervals of 1-foot below land surface and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

A monitoring well, CEF-82-1S, was installed south of the UST near soil boring CEF-82A-SB2 to a depth of 15 feet below land surface. One groundwater sample was collected on March 21, 1997, and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and monitoring well CEF-82-1S is presented on Figure 2. The monitoring well installation detail is presented in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil was not detected in soil samples collected from the unsaturated zone during the confirmatory sampling and closure (BEI, 1997). The soil OVA data collected during the confirmatory sampling are summarized in Table 1 and is presented on Figure 2.

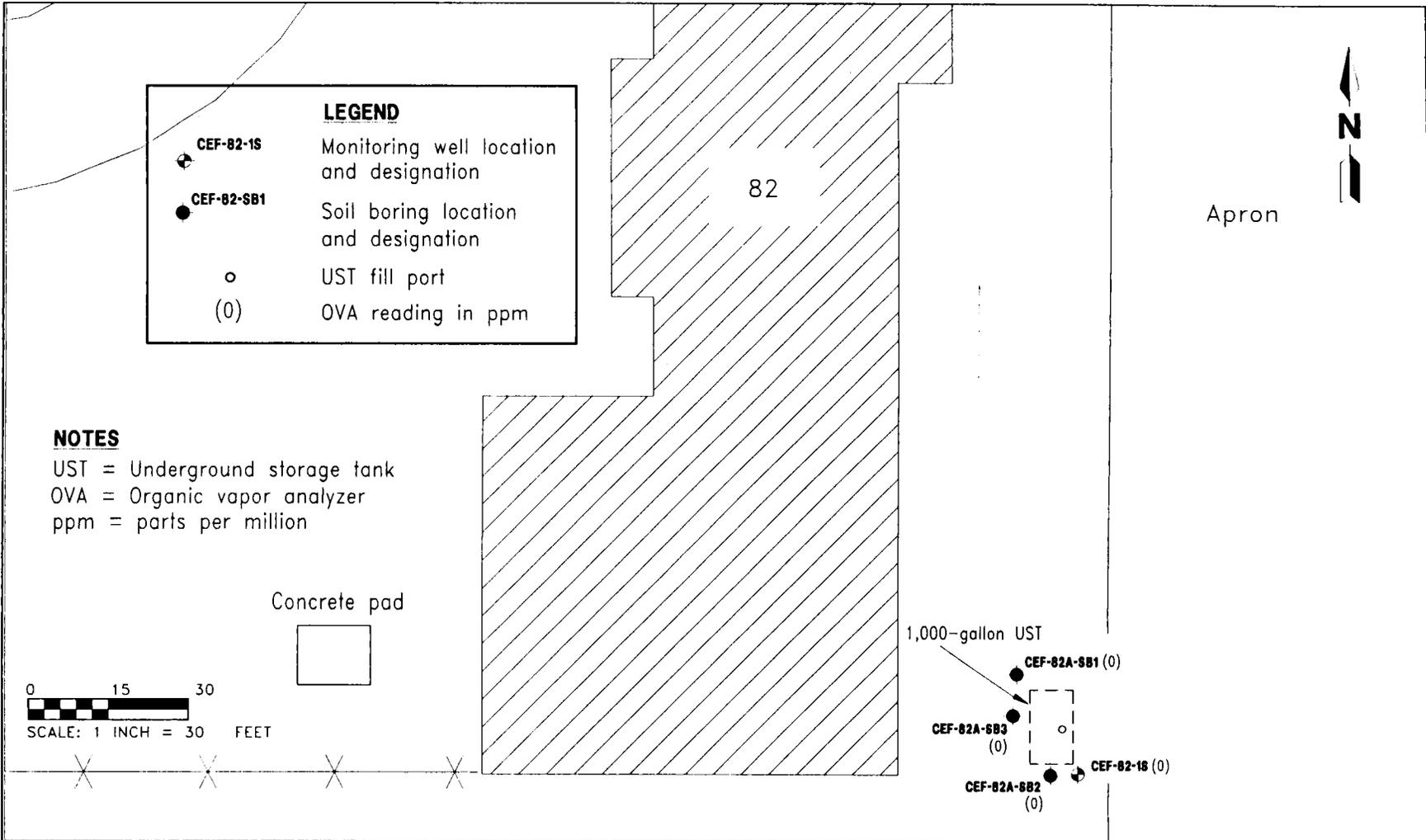


0 50 100  
 SCALE: 1 INCH = 100 FEET

**FIGURE 1  
 TANK 82A  
 AIR TRAFFIC CONTROL TOWER AND  
 DISASTER PREPAREDNESS CENTER**



**CONFIRMATORY SAMPLING REPORT  
 BUILDING 82, TANK 82A  
 NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA**



**FIGURE 2  
 TANK 82A  
 SOIL BORING AND MONITORING WELL  
 LOCATIONS**



**CONFIRMATORY SAMPLING REPORT  
 BUILDING 82, TANK 82A**

**NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA**

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**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 82, Tank 82A  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-82A-SB1	1	0	-	0
	3	0	-	0
	5	0	-	0
	7	0	-	0
	8 (wet)	0	-	0
CEF-82A-SB2	1	0	-	0
	3	0	-	0
	5	0	-	0
	7	0	-	0
	8.5 (wet)	11	0	11
<sup>1</sup> CEF-82A-SB3	1	0	-	0
	3	0	-	0
CEF-82-1S	1	0	-	0
	3	0	-	0
	5	0	-	0
	11 (wet)	0	-	0

Notes: <sup>1</sup> Met refusal at 3.5 feet below land surface.  
All soil samples were collected on January 14, 1997.  
Monitoring well CEF-82-1S was installed on March 10, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
wet = soil sample was completely saturated when analyzed.  
moist = soil sample was partially saturated when analyzed.  
- = filtered readings were not collected.

Contaminant concentrations in groundwater were below the regulatory standards specified in Chapter 62-770 of the Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank 82A site did not indicate the presence of contaminated soil. Based on the groundwater sample collected from monitoring well CEF-82A-1S, concentrations do not exceed regulatory requirements specified in Chapter 62-770, FAC. Therefore, No Further Action is recommended for the Tank 82A site.

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

PROJECT: NAS Cecil Field		LOG of WELL: CEF-82-1S	BORING NO. CEF-82-1S
CLIENT: SOUTHDIVNAVFACENGCOM	PROJECT NO: 8542-03	DATE STARTED: 3-10-97	COMPLETED: 3-10-97
DRILLING SUBCONTRACTOR: GEOTEK		SITE: Building 82	MONITOR INST. FID
METHOD: 8.25" HSA	WELL CASE DIAM: 2"	SCREEN INT.: 5-15 FT.	SCREEN SLOT SIZE: 0
TOC ELEVATION: FT. NGVD	GROUND ELEV.: FT. NGVD	NORTHING: 2141483	EASTING: 378079.2
WELL DEVELOP. DATE: 3-11-97	TOTAL DEPTH: 18 FT. BLS	DEPTH TO $\nabla$ 7.95 FT. BLS	LOGGED BY: J Koch

DEPTH FT.	SAMPLE INTERVAL RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0		0	GRAVEL AND SILTY SAND. Light grey to dark grey, no petroleum odor.		GM	posthole	
0		0	SILTY SAND. Dark brown, fine grain, no petroleum odor.		SM	posthole	
5	100%	0	SILTY SAND. Dark brown, fine grain, no petroleum odor.			24.47	
10	100%	0	SILTY SAND. Dark brown, fine grain, no petroleum odor.			13.48	
15							
20							

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- TANK 82A  
UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9391

Lab Sample Number:	B7C2501210	B7C2501210	
Site	BRACGREY	BRACGREY	
Locator	CEF821S	CEF821S	
Collect Date:	24-MAR-97	24-MAR-97	
	VALUE	QUAL UNITS	DL
	VALUE	QUAL UNITS	DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1	-
1,1,2,2-Tetrachloroethane	1 U	ug/l	1	-
1,1,2-Trichloroethane	1 U	ug/l	1	-
1,1-Dichloroethane	1 U	ug/l	1	-
1,1-Dichloroethene	1 U	ug/l	1	-
1,2-Dichlorobenzene	1 U	ug/l	1	-
1,3-Dichlorobenzene	1 U	ug/l	1	-
1,4-Dichlorobenzene	1 U	ug/l	1	-
1,2-Dichloroethane	1 U	ug/l	1	-
1,2-Dichloropropane	1 U	ug/l	1	-
1-Methylnaphthalene	2 U	ug/l	2	-
2-Methylnaphthalene	2 U	ug/l	2	-
Acenaphthene	2 U	ug/l	2	-
Acenaphthylene	2 U	ug/l	2	-
Anthracene	2 U	ug/l	2	-
Benzene	1 U	ug/l	1	-
Benzo (a) anthracene	.1 U	ug/l	.1	-
Benzo (a) pyrene	.1 U	ug/l	.1	-
Benzo (b) fluoranthene	.1 U	ug/l	.1	-
Benzo (g,h,i) perylene	.2 U	ug/l	.2	-
Benzo (k) fluoranthene	.15 U	ug/l	.15	-
Bromodichloromethane	1 U	ug/l	1	-
Bromoform	1 U	ug/l	1	-
Bromomethane	1 U	ug/l	1	-
Carbon tetrachloride	1 U	ug/l	1	-
Chlorobenzene	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chloroform	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chrysene	.1 U	ug/l	.1	-
Dibenzo (a,h) anthracene	.2 U	ug/l	.2	-
Dibromochloromethane	1 U	ug/l	1	-
Dichlorodifluoromethane	1 U	ug/l	1	-
Ethylbenzene	1 U	ug/l	1	-
Ethylene dibromide	.02 U	ug/l	.02	-
Fluoranthene	.2 U	ug/l	.2	-
Fluorene	2 U	ug/l	2	-
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1	-
Lead	5 U	ug/l	5	-
Methyl tert-butyl ether	1 U	ug/l	1	-
Methylene chloride	1 U	ug/l	1	-
Naphthalene	2 U	ug/l	2	-
Phenanthrene	2 U	ug/l	2	-
Pyrene	.2 U	ug/l	.2	-
Tetrachloroethene	1 U	ug/l	1	-
Toluene	1 U	ug/l	1	-
Total petroleum hydrocarbons	.5 U	mg/l	.5	-
Trichloroethene	1 U	ug/l	1	-
Trichlorofluoromethane	1 U	ug/l	1	-
Vinyl chloride	1 U	ug/l	1	-

NAS CECIL FIELD -- TANK 82A  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9391

Lab Sample Number:	B7C2501210			B7C2501210		
Site	BRACGREY			BRACGREY		
Locator	CEF821S			CEF821S		
Collect Date:	24-MAR-97			24-MAR-97		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

Xylenes (total)	1 U	ug/l	1	-		
cis-1,3-Dichloropropene	1 U	ug/l	1	-		
trans-1,2-Dichloroethene	1 U	ug/l	1	-		
trans-1,3-Dichloropropene	1 U	ug/l	1	-		
Lead-DISS	-			5 U	ug/l	5

U \* NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R \* RESULT IS REJECTED AND UNUSABLE

13929-1

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 220, TANK 220**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

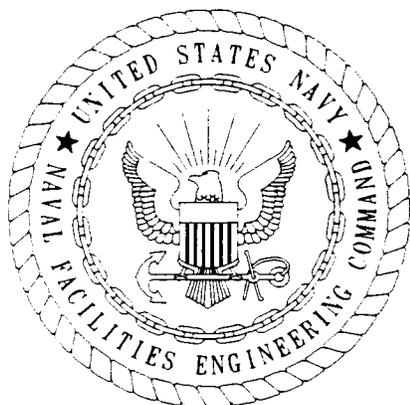
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**October 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE:           October 20, 1997          

NAME AND TITLE OF CERTIFYING OFFICIAL:      Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL:      Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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Naval Air Station Cecil Field  
Jacksonville, Florida

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4.0	CONCLUSIONS AND RECOMMENDATIONS . . . . .	5

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GLOSSARY

13929 = /

ABB-ES	ABB Environmental Services, Inc
BEI	Bechtel Environmental Incorporated
bls	below land surface
FAC	Florida Administrative Code
OVA	organic vapor analyzer
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank 220 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 220 was an underground storage tanks (UST) located on the northern side of Building 220, formerly known as Ace's Place (Figure 1). The primary purpose of this facility is as a food service facility, which includes several restaurants, bars, and conference rooms. The UST, which was installed in 1954, had a 5,000-gallon capacity and was used to store fuel oil for heating (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 220 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank 220 was removed by Bechtel Environmental, Inc. (BEI), on May 20, 1997. Ten tons of excessively contaminated soil were removed at that time. A Closure Report was prepared for Tank 220 and submitted to the Florida Department of Environmental Protection in July of 1997 (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling at Tank 220 was initiated in January 1997 (before the UST was removed) and included

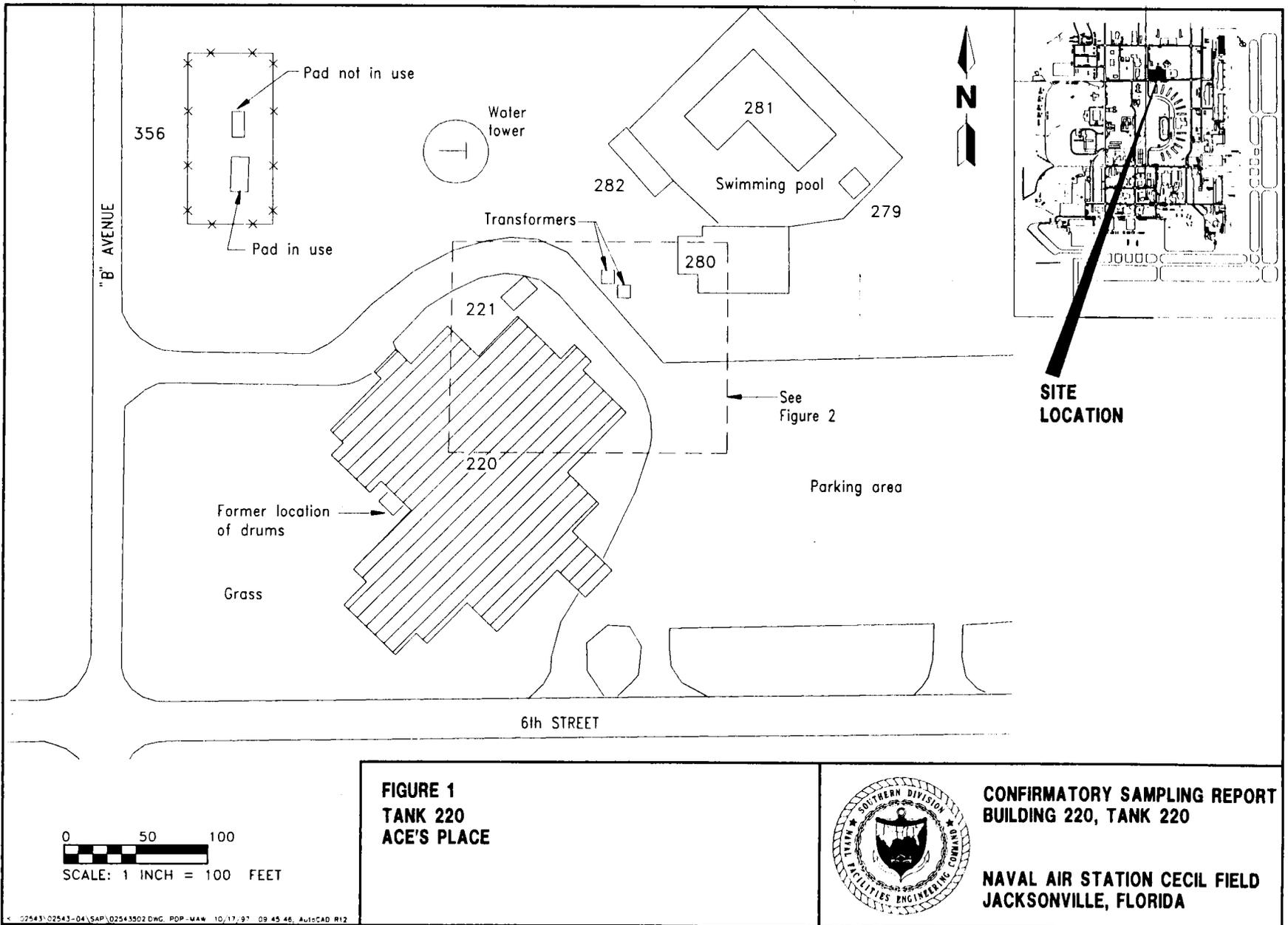
- the advancement of four soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

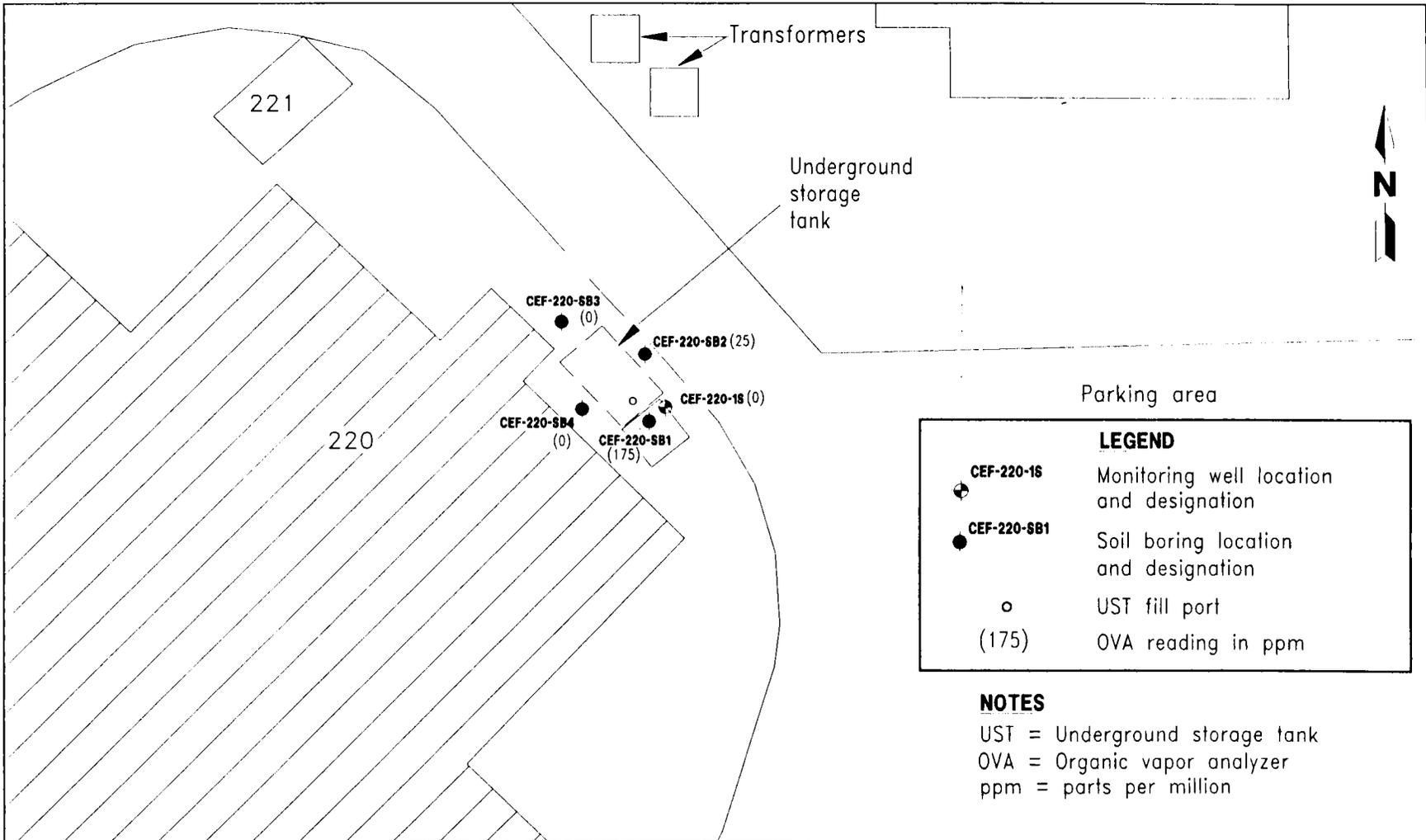
Soil samples were collected at depth intervals of 1-foot below land surface (bls) and every 2 feet thereafter to the water table and screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

A monitoring well, CEF-220-1S, was installed south of the UST in the location of soil boring CEF-220-SB1 to a depth of 13 feet bls. One groundwater sample was collected on March 21, 1997, and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and monitoring well CEF-220-1S is presented on Figure 2. The monitoring well installation detail is included in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

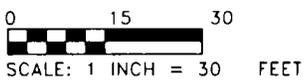
Excessively contaminated soil (having an OVA reading greater than 50 parts per million) was only detected at 4.5 feet bls in soil boring CEF-220-SB1 at a concentration of 170 ppm. The soil OVA data are summarized in Table 1 and presented on Figure 2.





LEGEND	
	CEP-220-18 Monitoring well location and designation
	CEP-220-SB1 Soil boring location and designation
	UST fill port
(175)	OVA reading in ppm

**NOTES**  
 UST = Underground storage tank  
 OVA = Organic vapor analyzer  
 ppm = parts per million



**FIGURE 2  
 TANK 220  
 SOIL BORING AND MONITORING WELL  
 LOCATIONS**



**CONFIRMATORY SAMPLING REPORT  
 BUILDING 220, TANK 220**  
  
**NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA**

13929 = 1

**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 220, Tank 220  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-220-SB1	1	0	--	0
	3	0	--	0
	4.5 (moist)	175	0	175
CEF-220-SB2	1	0	--	0
	3	0	--	0
	4 (moist)	25	0	25
CEF-220-SB3	1	0	--	0
	3	0	--	0
	4.5	0	--	0
CEF-220-SB4	1	0	--	0
	3	0	--	0
	4.5	0	--	0
CEF-220-1S	2	0	--	0
	4	0	--	0
	6 (wet)	0	--	0
	10 (wet)	14	0	0

Notes: All soil samples were collected on January 14, 1997.  
Monitoring well CEF-220-1S was installed on March 3, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
wet = soil sample was completely saturated when analyzed.  
moist = soil sample was partially saturated when analyzed.  
-- = filtered readings were not collected.

Groundwater contamination was not detected at concentrations exceeding requirements specified in Chapter 62-770 of the Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank 220 site did not provide an adequate assessment of the horizontal and vertical extent of excessively contaminated soil. The subsequent removal of Tank 220 did not remove all the excessively contaminated soil. No contaminants were detected above the regulatory standards specified in Chapter 62-770, FAC, in the groundwater sample collected from monitoring well CEF-220-1S.

It is recommended that additional confirmatory sampling be conducted to assess the extent of excessively contaminated soil at the Tank 220 site.

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

TITLE: NAS Cecil Field		LOG of WELL: WEF-220-15	BORING NO.: WEF-220-15
CLIENT: SOUTHDIVNAVFACEN6COM		PROJECT NO: 6541-01	
CONTRACTOR: GEOTEK		DATE STARTED: 1-3-97	COMPLTD: 1-3-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 1/2"	PROTECTION LEVEL: C
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 14 FEET.	DPTH TO 1/2" DIA FEET.
LOGGED BY: J Tarr		WELL DEVELOPMENT DATE: 1-4-97	SITE: Building 220

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	REC'D: EPT	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0					SILTY SAND: Light gray, fine grained, no petroleum odor.		SM	posthole	
0					SILTY SAND: As above.			posthole	
0			100%		SILTY SAND: Gray to reddish brown, fine grained, poorly graded.			9,18,20,37	
14			100%	14	SAND: Light brown, fine grained with some medium grained soil, no petroleum odor.			1,5,5,7	

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- TANK 220  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9393

Lab Sample Number:	B7C2501210	B7C2501210
Site	BRACGREY	BRACGREY
Locator	CEF2201S	CEF2201S
Collect Date:	24-MAR-97	24-MAR-97
VALUE	QUAL UNITS	DL
VALUE	QUAL UNITS	DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1	-
1,1,2,2-Tetrachloroethane	1 U	ug/l	1	-
1,1,2-Trichloroethane	1 U	ug/l	1	-
1,1-Dichloroethane	1 U	ug/l	1	-
1,1-Dichloroethene	1 U	ug/l	1	-
1,2-Dichlorobenzene	1 U	ug/l	1	-
1,3-Dichlorobenzene	1 U	ug/l	1	-
1,4-Dichlorobenzene	1 U	ug/l	1	-
1,2-Dichloroethane	1 U	ug/l	1	-
1,2-Dichloropropane	1 U	ug/l	1	-
1-Methylnaphthalene	3.6	ug/l	2	-
2-Methylnaphthalene	4.8	ug/l	2	-
Acenaphthene	2 U	ug/l	2	-
Acenaphthylene	2 U	ug/l	2	-
Anthracene	2 U	ug/l	2	-
Benzene	1 U	ug/l	1	-
Benzo (a) anthracene	.1 U	ug/l	.1	-
Benzo (a) pyrene	.1 U	ug/l	.1	-
Benzo (b) fluoranthene	.1 U	ug/l	.1	-
Benzo (g,h,i) perylene	.2 U	ug/l	.2	-
Benzo (k) fluoranthene	.15 U	ug/l	.15	-
Bromodichloromethane	1 U	ug/l	1	-
Bromoform	1 U	ug/l	1	-
Bromomethane	1 U	ug/l	1	-
Carbon tetrachloride	1 U	ug/l	1	-
Chlorobenzene	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chloroform	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chrysene	.1 U	ug/l	.1	-
Dibenzo (a,h) anthracene	.2 U	ug/l	.2	-
Dibromochloromethane	1 U	ug/l	1	-
Dichlorodifluoromethane	1 U	ug/l	1	-
Ethylbenzene	1 U	ug/l	1	-
Ethylene dibromide	.02 U	ug/l	.02	-
Fluoranthene	.2 U	ug/l	.2	-
Fluorene	2 U	ug/l	2	-
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1	-
Lead	5.4	ug/l	5	-
Methyl tert-butyl ether	1 U	ug/l	1	-
Methylene chloride	1 U	ug/l	1	-
Naphthalene	2 U	ug/l	2	-
Phenanthrene	2 U	ug/l	2	-
Pyrene	.2 U	ug/l	.2	-
Tetrachloroethene	1 U	ug/l	1	-
Toluene	1 U	ug/l	1	-
Total petroleum hydrocarbons	.5 U	mg/l	.5	-
Trichloroethene	1 U	ug/l	1	-
Trichlorofluoromethane	1 U	ug/l	1	-
Vinyl chloride	1 U	ug/l	1	-

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NAS CECIL FIELD -- TANK 220  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9393

Lab Sample Number:	B7C2501210	B7C2501210
Site	BRACGREY	BRACGREY
Locator	CEF2201S	CEF2201S
Collect Date:	24-MAR-97	24-MAR-97

	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
Xylenes (total)	1	U	ug/l	1	-			
cis-1,3-Dichloropropene	1	U	ug/l	1	-			
trans-1,2-Dichloroethene	1	U	ug/l	1	-			
trans-1,3-Dichloropropene	1	U	ug/l	1	-			
Lead-DISS	-				5	U	ug/l	5

U \* NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R = RESULT IS REJECTED AND UNUSABLE

13929-1

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 289A, TANK G289U**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**October 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: October 31, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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GLOSSARY

13929 = /

ABB-ES	ABB Environmental Services, Inc
BEI	Bechtel Environmental Incorporated
bls	below land surface
OVA	organic vapor analyzer
ppm	parts per million
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank G289U at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank G289U was an underground storage tank (UST) located at Building 289A, a standby generator for the runways. The UST, which was installed in 1983, had a 275-gallon capacity. A Contamination Assessment Plan for the assessment of soil and groundwater at Tank G289U was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank G289U was removed by Bechtel Environmental, Inc. (BEI), on June 4, 1997. Two tons of excessively contaminated soil were removed at that time. A Closure Report was prepared for Tank G289U and submitted to the Florida Department of Environmental Protection in July of 1997 (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling at Tank G289U was initiated in January 1997 and included

- the advancement of four soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

Soil samples were collected from each boring at depth intervals of 1-foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

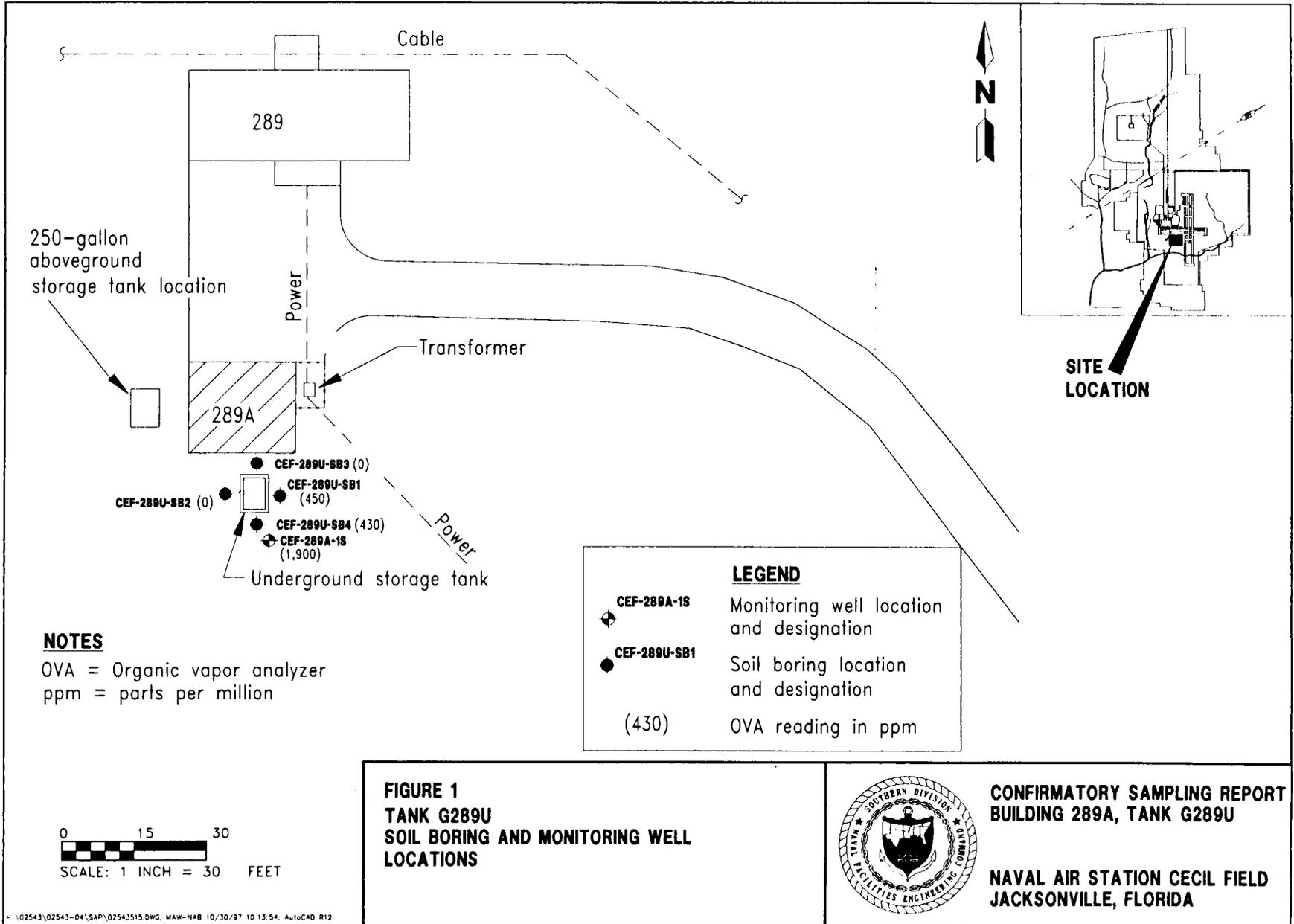
One monitoring well, CEF-289A-1S, was installed south of the tank near the location of soil boring CEF-289A-SB4 to a depth of 12 feet bls. One groundwater sample was collected and analyzed for the Kerosene Analytical Group parameters.

A general site plan indicating the location of the soil borings and monitoring well CEF-289A-1S is presented on Figure 1. The monitoring well installation detail is included in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in two soil borings. The highest OVA reading (1,900 ppm) was detected in a soil sample from 1-foot bls collected during the installation of monitoring well CEF-289A-1S. The soil OVA data are summarized in Table 1.

Groundwater contaminant concentrations were below the regulatory standards as specified in Chapter 62-770, Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.



**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 289A, Tank G289U  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet)	Unfiltered	Filtered	Actual
CEF-289A-SB1	1	450	0	450
	3 (wet)	210	0	210
CEF-289A-SB2	1	0	--	0
	2 (wet)	0	--	0
CEF-289A-SB3	1	0	--	0
	2 (wet)	0	--	0
CEF-289A-SB4	1	430	0	430
	2 (wet)	1,200	0	1,200
CEF-289A-1S	1	1,900	--	1,900
	3 (wet)	70	--	70
	5 (wet)	100	--	100
	11 (wet)	31	--	31

Notes: All soil samples were collected on January 31, 1997.  
Monitoring well CEF-289A-1S was installed on February 26, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
wet = soil sample was completely saturated when analyzed.  
-- = filtered readings were not collected.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank G289U site did not provide an adequate assessment of the horizontal and vertical extent of excessively contaminated soil. The subsequent removal of Tank G289U did not remove all the excessively contaminated soil.

No contaminants were detected above the regulatory standards specified in Chapter 62-770, FAC, in the groundwater sample collected from monitoring well CEF-289A-1S.

It is recommended that additional confirmatory sampling be conducted to assess the extent of excessively contaminated soil at the Tank G289U site.

REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan. Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOCM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan. Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOCM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. m m (July).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

TITLE: NAS Cecil Field		LOG of WELL: CEF-2890-15	BORING NO. CEF-2890-15
CLIENT: SOUTHDIIVNAVFACENGC0M		PROJECT NO: 8543-03	
CONTRACTOR: GEOTEK		DATE STARTED: 2-28-97	COMPLTD: 2-26-97
METHOD: 6.25" HSA	CASE SIZE: 3"	SCREEN INT.: 0-12	PROTECTION LEVEL: 0
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 14 FEET.	DPTH TO 1" DIA FEET:
LOGGED BY: J Koch	WELL DEVELOPMENT DATE: 3-1-97		SITE: Building 250

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SUPPORT	SOIL CLASS	BLOWS 6-IN	WELL DATA
1.900				SILTY SAND: Brown to dark grey, fine grain, no apparent petroleum odor.		SM	posthole	
70				SILTY SAND: Brown to dark grey, fine grain, no apparent petroleum odor.			posthole	
5		60%	100	SILTY SAND: Light grey to dark grey, fine grain, rotten egg odor (sulfur), saturated.			11,9,6,6	
10		80%	31	SILTY SAND: Light brown to dark grey, fine grain with traces of wood, rotten egg odor (sulfur), saturated.			6,7,9,13	
15								
20								

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- TANK 289A  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9394

Lab Sample Number:	B7C2201010	B7C2201010
Site	BRACGREY	BRACGREY
Locator	CEF289A1S	CEF289A1S
Collect Date:	21-MAR-97	21-MAR-97
	VALUE QUAL UNITS DL	VALUE QUAL UNITS DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1	-
1,1,2,2-Tetrachloroethane	1 U	ug/l	1	-
1,1,2-Trichloroethane	1 U	ug/l	1	-
1,1-Dichloroethane	1 U	ug/l	1	-
1,1-Dichloroethene	1 U	ug/l	1	-
1,2-Dichlorobenzene	1 U	ug/l	1	-
1,3-Dichlorobenzene	1 U	ug/l	1	-
1,4-Dichlorobenzene	1 U	ug/l	1	-
1,2-Dichloroethane	1 U	ug/l	1	-
1,2-Dichloropropane	1 U	ug/l	1	-
1-Methylnaphthalene	2 U	ug/l	2	-
2-Methylnaphthalene	2 U	ug/l	2	-
Acenaphthene	2 U	ug/l	2	-
Acenaphthylene	2 U	ug/l	2	-
Anthracene	2 U	ug/l	2	-
Benzene	1 U	ug/l	1	-
Benzo (a) anthracene	.1 U	ug/l	.1	-
Benzo (a) pyrene	.1 U	ug/l	.1	-
Benzo (b) fluoranthene	.1 U	ug/l	.1	-
Benzo (g,h,i) perylene	.2 U	ug/l	.2	-
Benzo (k) fluoranthene	.15 U	ug/l	.15	-
Bromodichloromethane	1 U	ug/l	1	-
Bromoform	1 U	ug/l	1	-
Bromomethane	1 U	ug/l	1	-
Carbon tetrachloride	1 U	ug/l	1	-
Chlorobenzene	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chloroform	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chrysene	.1 U	ug/l	.1	-
Dibenzo (a,h) anthracene	.2 U	ug/l	.2	-
Dibromochloromethane	1 U	ug/l	1	-
Dichlorodifluoromethane	1 U	ug/l	1	-
Ethylbenzene	1 U	ug/l	1	-
Ethylene dibromide	.02 U	ug/l	.02	-
Fluoranthene	.2 U	ug/l	.2	-
Fluorene	2 U	ug/l	2	-
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1	-
Lead	6.4	ug/l	5	-
Methyl tert-butyl ether	1 U	ug/l	1	-
Methylene chloride	1 U	ug/l	1	-
Naphthalene	2 U	ug/l	2	-
Phenanthrene	2 U	ug/l	2	-
Pyrene	.2 U	ug/l	.2	-
Tetrachloroethene	1 U	ug/l	1	-
Toluene	1 U	ug/l	1	-
Total petroleum hydrocarbons	.5 U	mg/l	.5	-
Trichloroethene	1 U	ug/l	1	-
Trichlorofluoromethane	1 U	ug/l	1	-
Vinyl chloride	1 U	ug/l	1	-

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NAS CECIL FIELD -- TANK 289A  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9394

Lab Sample Number:	B7C2201010	B7C2201010			
Site	BRACGREY	BRACGREY			
Locator	CEF289A1S	CEF289A1S			
Collect Date:	21-MAR-97	21-MAR-97			
VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

Xylenes (total)	1 U	ug/l	1	-	
cis-1,3-Dichloropropene	1 U	ug/l	1	-	
trans-1,2-Dichloroethene	1 U	ug/l	1	-	
trans-1,3-Dichloropropene	1 U	ug/l	1	-	
Lead-DISS	-			5.5	ug/l 5

U \* NOT DETECTED J = ESTIMATED VALUE  
 UJ \* REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R \* RESULT IS REJECTED AND UNUSABLE

**CONFIRMATORY SAMPLING REPORT**

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**BUILDING 68, TANK 68**

**BASE REALIGNMENT AND CLOSURE**

**UNDERGROUND STORAGE TANK AND  
ABOVEGROUND STORAGE TANK GREY SITES**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

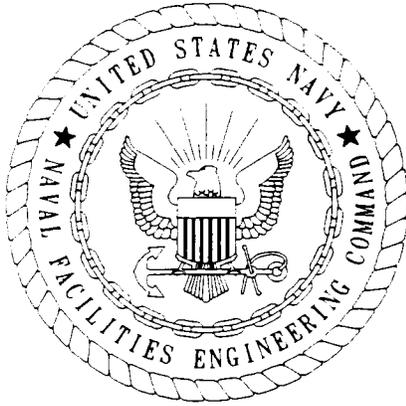
**ABB Environmental Services, Inc.  
2590 Executive Center Circle, East  
Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division  
Naval Facilities Engineering Command  
2155 Eagle Drive  
North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**October 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: October 17, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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Jacksonville, Florida

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc
BEI	Bechtel Environmental Incorporated
bls	below land surface
OVA	organic vapor analyzer
ppm	parts per million
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank 68 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 68 was an underground storage tank (UST) located at Building 68, a supply warehouse used for receiving and staging general purpose items for the base (Figure 1). The UST, which was installed in 1986, had a 1,000-gallon capacity and was used to store diesel oil for the building's boiler (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 68 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank 68 was removed by Bechtel Environmental, Inc. (BEI), on April 21, 1997. A Closure Report was prepared for Tank 68 and submitted to the Florida Department of Environmental Protection in July of 1997 (BEI, 1997). No contaminated soil was removed from the site at that time.

## 2.0 FIELD INVESTIGATION

The confirmatory sampling for Tank 68 was initiated in January 1997 (before the UST was removed) and included

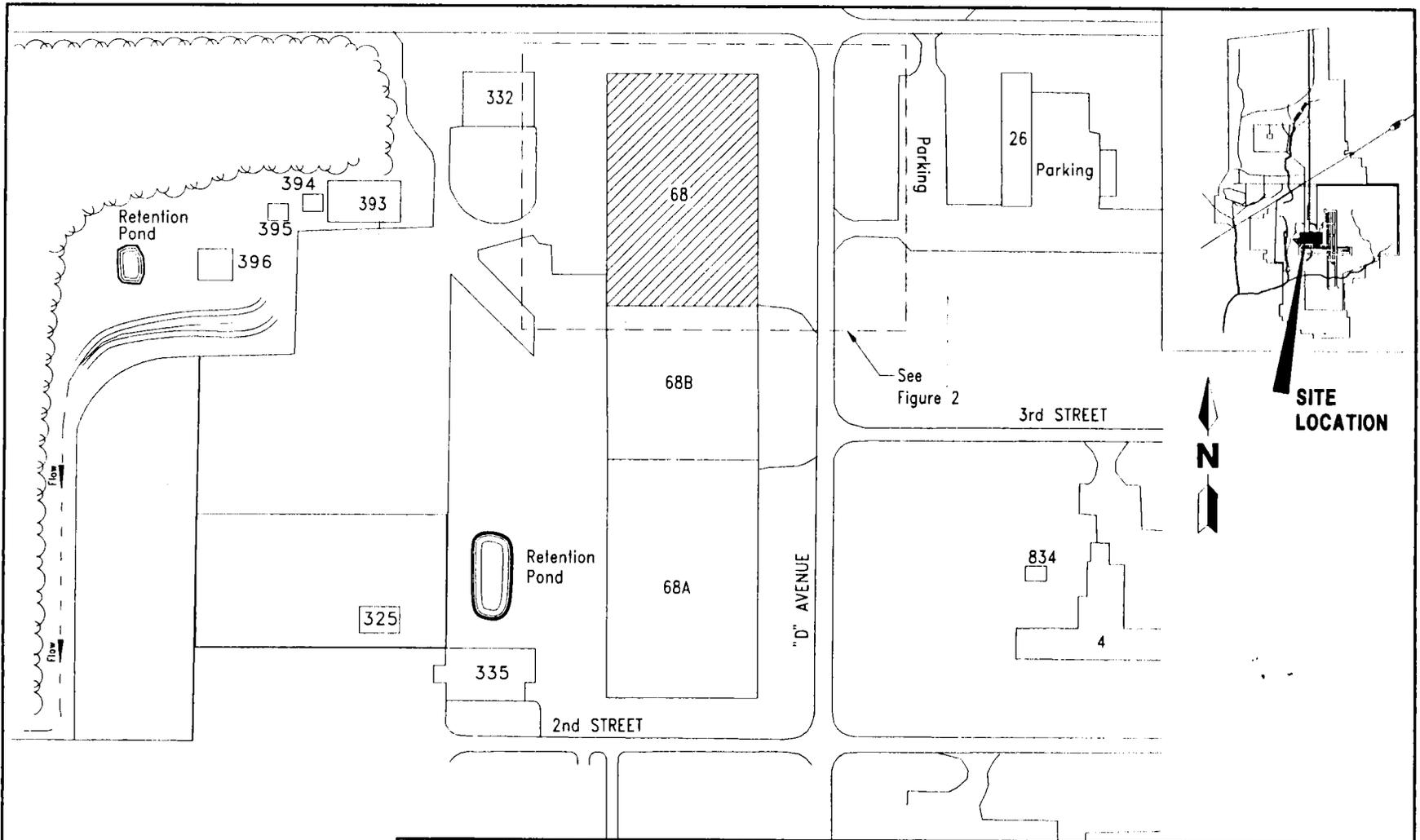
- the advancement of three soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

Soil samples were collected from each boring at depth intervals of 1-foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

A monitoring well, CEF-68-1S, was installed north of the UST near the location of soil boring CEF-68-SB3 to a depth of 12 feet bls. One groundwater sample was collected from the well and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and the monitoring well is presented on Figure 1. The monitoring well installation detail is included in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in all three soil borings. The highest OVA reading (600 ppm) was detected at 3 feet bls during the advancement of monitoring well CEF-68-1S. The soil OVA data are summarized in Table 1 and presented on Figure 2.



**FIGURE 1**  
**TANK 68 - SUPPLY WAREHOUSE**

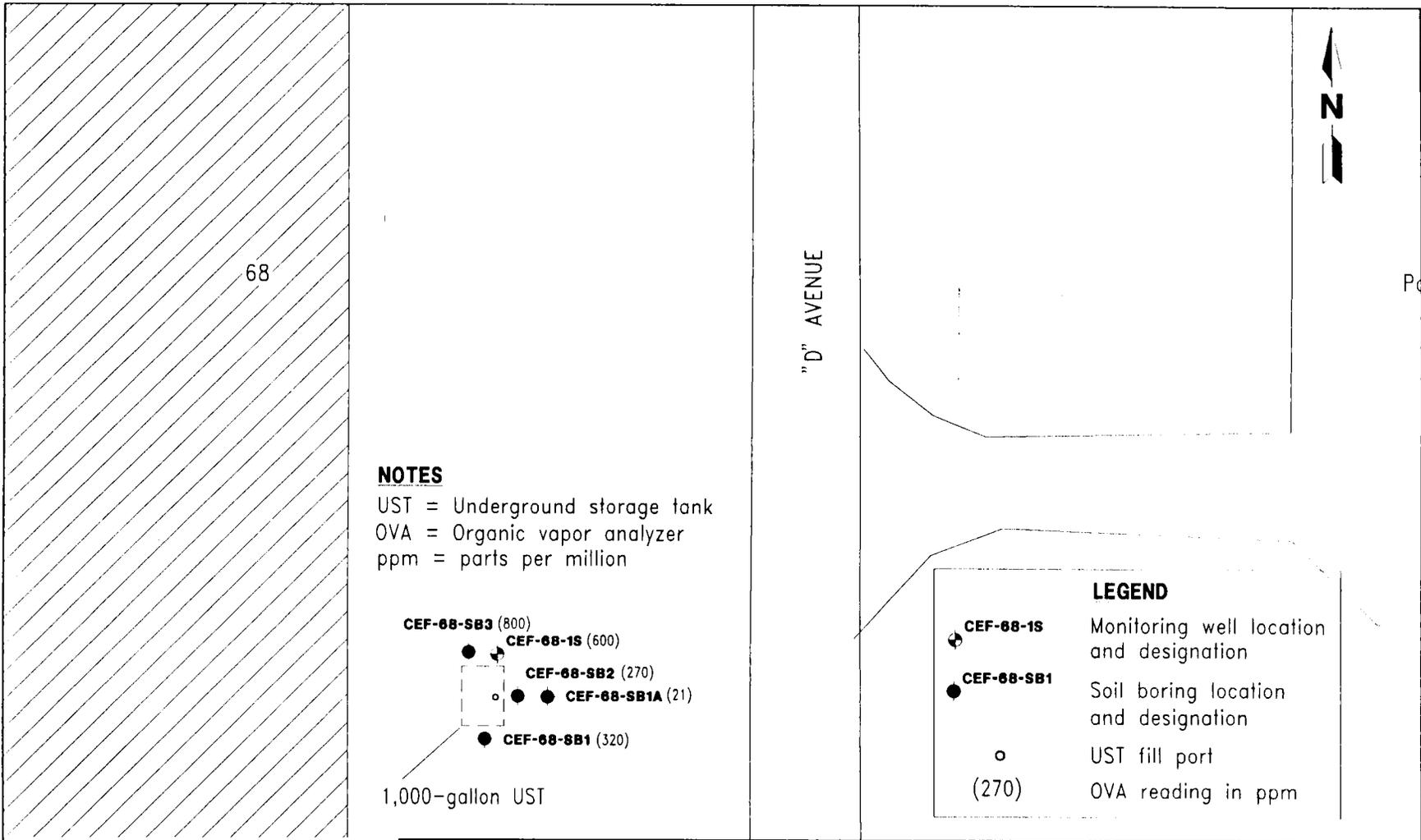
0 100 200  
 SCALE: 1 INCH = 200 FEET

K:\02543\02543-04\SAP\02543513.DWG, POP-MAW 10/16/97 09:51:16



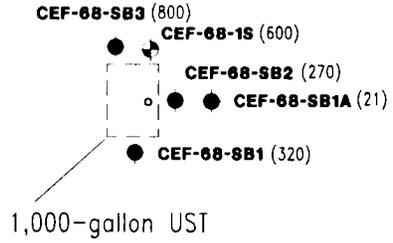
**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 68, TANK 68**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**



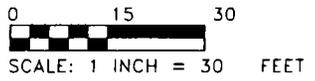
**NOTES**

UST = Underground storage tank  
 OVA = Organic vapor analyzer  
 ppm = parts per million



**LEGEND**

- CEF-68-1S Monitoring well location and designation
- CEF-68-SB1 Soil boring location and designation
- UST fill port
- (270) OVA reading in ppm



**FIGURE 2  
 TANK 68 - SUPPLY WAREHOUSE  
 SOIL BORING AND MONITORING WELL  
 LOCATIONS**



**CONFIRMATORY SAMPLING REPORT  
 BUILDING 68, TANK 68**

**NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA**

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1392921

**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 68, Tank 68  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-68-SB1 <sup>1</sup>	1	320	0	320
CEF-68-SB1A	1	0	-	0
	3	0	-	0
	5	21	0	21
	7	7	0	7
CEF-68-SB2	1	0	-	0
	3	0	-	0
	5 (refusal)	270	0	270
CEF-68-SB3	1	0	-	0
	3	0	-	0
	5	210	0	210
	6 (moist)	800	0	800
	7 (wet)	800	0	800
CEF-68-1S	1	0	-	0
	3	600	-	600
	5 (wet)	500	-	500
	11 (wet)	160	-	160

<sup>1</sup> Encountered refusal at 1 foot bls.

Notes: All soil samples were collected on February 5, 1997.  
Monitoring well CEF-68-1S was installed on February 28, 1997.  
All concentrations in ppm.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
- = filtered readings were not collected.  
refusal = subsurface obstruction prevented further sample collection at this location.  
wet = soil sample was completely saturated when analyzed.  
> = greater than.  
moist = soil sample was partially saturated when analyzed.

Groundwater contamination was not detected at concentrations exceeding requirements specified in Chapter 62-770 of the Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank 68 site did not provide an adequate assessment of the horizontal and vertical extent of excessively contaminated soil. No contaminants were detected above the regulatory standard specified in Chapter 62-770, FAC, in the groundwater sample collected from monitoring well CEF-68-1S.

It is recommended that additional confirmatory sampling be conducted to assess the extent of excessively contaminated soil at the Tank 68 site.

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

TITLE: NAS Cecil Field		LOG of WELL: CEF-18-15	BORING NO: CEF-68-15
CLIENT: SOUTH DIVNAVFACENCOM		PROJECT NO: 5542-04	
CONTRACTOR: GEOTEK		DATE STARTED: 2-28-97	COMPLTD: 2-28-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 3-11	PROTECTION LEVEL: 0
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 14 FEET.	DPTH TO $\nabla$ : 4.90 FEET.
LOGGED BY: J Koch		WELL DEVELOPMENT DATE: 4-4-97	SITE: Bunker OS

DEPTH F.T.	LABORATORY SAMPLE ID.	SAMPLE RECOVERED	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGICAL STRIP	SOIL CLASS	Blows/ft-IN	WELL LOG
0				SANDY GRAVEL: Light brown to grey, well graded, no petroleum odor.	0 0 0 0 0 0 0 0 0 0	GM	posthole	
6.00				SILTY SAND: Medium grey, fine grain, no petroleum odor.		SM	posthole	
5.00		50%		SILTY SAND: Medium grey, fine grain, saturated, no petroleum odor.		5.5, 6, 7		
10.00		80%	160	SILTY SAND: Medium grey, brown to black, fine grain, no petroleum odor.		12, 7, 12		
15								
20								

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL 1 J -- TANK 68  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9392

Lab Sample Number:	B7C2701410	B7C2701410
Site	BRACGREY	BRACGREY
Locator	CEF681S	CEF681S
Collect Date:	26-MAR-97	26-MAR-97

	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL
<b>BRACGREY ANALYTICAL PARAMETERS</b>						
1,1,1-Trichloroethane	1 U	ug/l	1	-		
1,1,2,2-Tetrachloroethane	1 U	ug/l	1	-		
1,1,2-Trichloroethane	1 U	ug/l	1	-		
1,1-Dichloroethane	1 U	ug/l	1	-		
1,1-Dichloroethene	1 U	ug/l	1	-		
1,2-Dichlorobenzene	1 U	ug/l	1	-		
1,3-Dichlorobenzene	1 U	ug/l	1	-		
1,4-Dichlorobenzene	1 U	ug/l	1	-		
1,2-Dichloroethane	1 U	ug/l	1	-		
1,2-Dichloropropane	1 U	ug/l	1	-		
1-Methylnaphthalene	2 U	ug/l	2	-		
2-Methylnaphthalene	2 U	ug/l	2	-		
Acenaphthene	2 U	ug/l	2	-		
Acenaphthylene	2 U	ug/l	2	-		
Anthracene	2 U	ug/l	2	-		
Benzene	1 U	ug/l	1	-		
Benzo (a) anthracene	.1 U	ug/l	.1	-		
Benzo (a) pyrene	.1 U	ug/l	.1	-		
Benzo (b) fluoranthene	.1 U	ug/l	.1	-		
Benzo (g,h,i) perylene	.2 U	ug/l	.2	-		
Benzo (k) fluoranthene	.15 U	ug/l	.15	-		
Bromodichloromethane	1 U	ug/l	1	-		
Bromoform	1 U	ug/l	1	-		
Bromomethane	1 U	ug/l	1	-		
Carbon tetrachloride	1 U	ug/l	1	-		
Chlorobenzene	1 U	ug/l	1	-		
Chloromethane	1 U	ug/l	1	-		
Chloroform	1 U	ug/l	1	-		
Chloromethane	1 U	ug/l	1	-		
Chrysene	.1 U	ug/l	.1	-		
Dibenzo (a,h) anthracene	.2 U	ug/l	.2	-		
Dibromochloromethane	1 U	ug/l	1	-		
Dichlorodifluoromethane	1 U	ug/l	1	-		
Ethylbenzene	1 U	ug/l	1	-		
Ethylene dibromide	.02 U	ug/l	.02	-		
Fluoranthene	.2 U	ug/l	.2	-		
Fluorene	2 U	ug/l	2	-		
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1	-		
Lead	5 U	ug/l	5	-		
Methyl tert-butyl ether	1 U	ug/l	1	-		
Methylene chloride	1.9	ug/l	1	-		
Naphthalene	2 U	ug/l	2	-		
Phenanthrene	2 U	ug/l	2	-		
Pyrene	.2 U	ug/l	.2	-		
Tetrachloroethene	1 U	ug/l	1	-		
Toluene	1 U	ug/l	1	-		
Total petroleum hydrocarbons	.5 U	mg/l	.5	-		
Trichloroethene	1 U	ug/l	1	-		
Trichlorofluoromethane	1 U	ug/l	1	-		
Vinyl chloride	1 U	ug/l	1	-		

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NAS CECIL FIELD -- TANK 68  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9392

Lab Sample Number:	B7C2701410	B7C2701410
Site	BRACGREY	BRACGREY
Locator	CEF681S	CEF681S
Collect Date:	26-MAR-97	26-MAR-97

	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL
Xylenes (total)	1 U	ug/l	1	-		
cis-1,3-Dichloropropene	1 U	ug/l	1	-		
trans-1,2-Dichloroethene	1 U	ug/l	1	-		
trans-1,3-Dichloropropene	1 U	ug/l	1	-		
Lead-DISS	-			5 U	ug/l	5

U = NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R = RESULT IS REJECTED AND UNUSABLE

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 880, TANK G880B**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

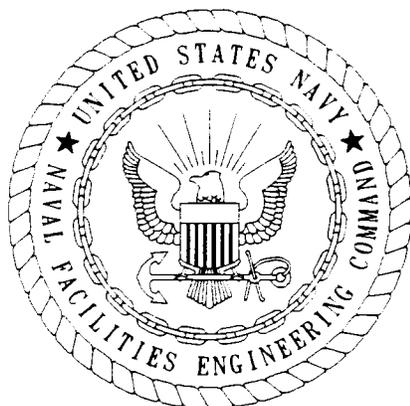
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**November 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: November 11, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

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Building 880, Tank G880B  
Naval Air Station Cecil Field  
Jacksonville, Florida

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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
BEI	Bechtel Environmental, Inc.
bls	below land surface
OVA	organic vapor analyzer
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank G880B at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank G880B was an underground storage tank (UST) located at Building 880, a cinderblock building used to house electronic equipment and operations for Radar Air Traffic Control (Figure 1). The UST, which was installed in 1976, had a 275-gallon capacity and was used to store diesel fuel (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank G880B was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank G880B was removed by Bechtel Environmental, Inc. (BEI), on May 12, 1997. No excessively contaminated soil was removed at that time. A Closure Report was prepared for Tank G880B and submitted to the Florida Department of Environmental Protection (BEI, 1997).

## 2.0 FIELD INVESTIGATION

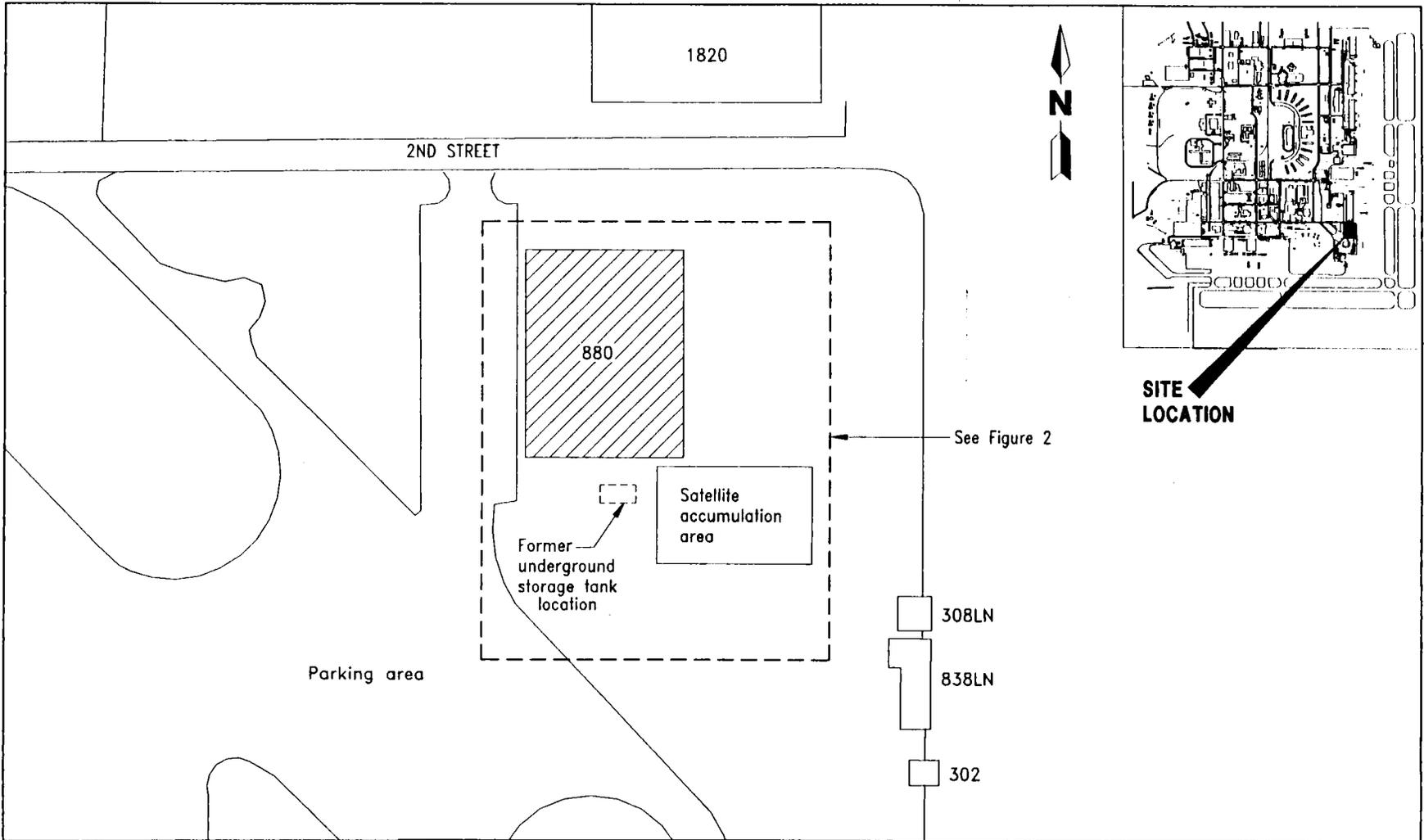
The confirmatory sampling of Tank G880B was initiated in February 1997 (before the AST was removed) and included the advancement of four soil borings to the water table. Soil samples were collected at depth intervals of 1 foot below land surface (bls) and every 2 feet thereafter to the water table and screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

A monitoring well, CEF-880-1S, was installed south of the UST near the location of soil boring CEF-880B-SB3 to a depth of 16 feet bls. One groundwater sample was collected from the well and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and the monitoring well is presented on Figure 2. The monitoring well installation detail is included in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in one soil boring. The highest OVA reading (440 ppm) was detected at 7 feet bls from a moist sample collected from soil boring CEF-880B-SB3. The soil OVA data are summarized in Table 1.

Groundwater contamination was not detected at concentrations exceeding requirements specified in Chapter 62-770 of the Florida Administrative Code. The complete analytical data set is presented in Appendix B.

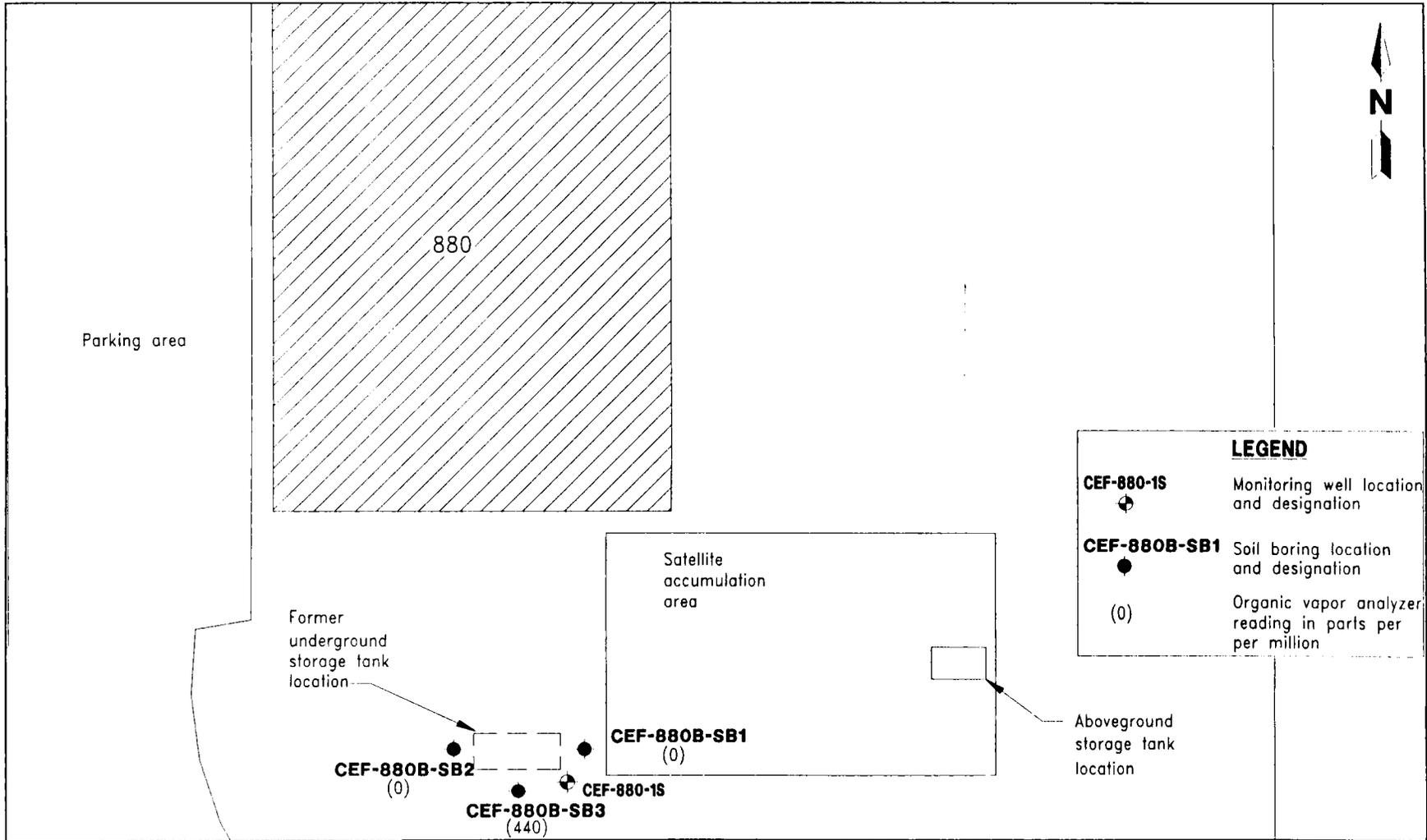


0 50 100  
SCALE: 1 INCH = 100 FEET

**FIGURE 1**  
**TANK G880B**  
**RADAR AIR TRAFFIC CONTROL BUILDING**

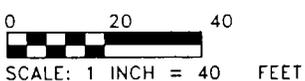


**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 880, TANK G880B**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**



**LEGEND**

- 
**CEF-880-1S** Monitoring well location and designation
- 
**CEF-880B-SB1** Soil boring location and designation
- 
 Organic vapor analyzer reading in parts per million



**FIGURE 2**  
**TANK G880B**  
**SOIL BORING AND MONITORING WELL LOCATION**



**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 880, TANK G880B**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 880, Tank G880B  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-880B-SB1	1	0	-	0
	3	0	-	0
	5	0	-	0
	7	0	-	0
	9 (wet)	130	0	130
CEF-880B-SB2	1	0	-	0
	3	0	-	0
	5	0	-	0
	7	0	-	0
	9 (wet)	38	0	38
CEF-880B-SB3	1	0	-	0
	3	140	0	140
	5	270	0	270
	7	440	0	440
	9 (wet)	1,100	-	1,100
CEF-880-IS	1	0	-	0
	3	50	-	50
	5	340	-	340
	7	0	-	0
	10 (wet)	70	-	70

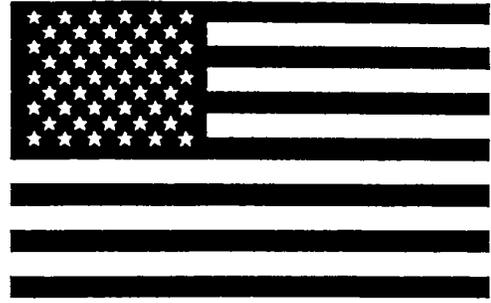
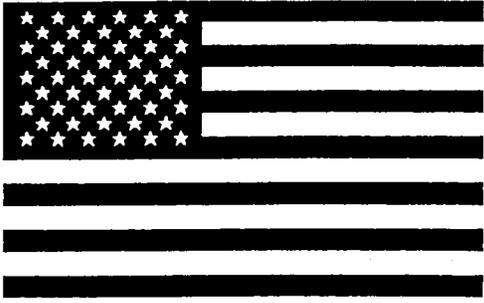
Notes: All soil samples were collected on January 24, 1997.  
Monitoring well CEF-880-1S was installed on March 5, 1997.  
All concentrations are in ppm.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
- = filtered readings were not collected.  
wet = soil sample was completely saturated when analyzed.

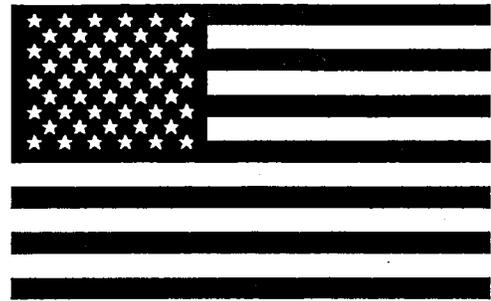
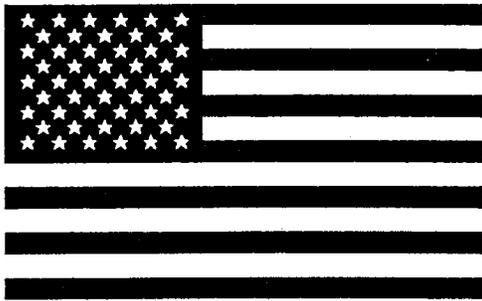
#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank G880 site did not provide an adequate assessment of the horizontal and vertical extent of excessively contaminated soil. No contaminants were detected above the regulatory standard specified in Chapter 62-770, FAC in the groundwater sample collected from monitoring well CEF-880-1S.

It is recommended that additional soil sampling be conducted to assess the extent of excessively contaminated soil at the Tank G880 site.



FILEBREAK\*\*\*\*\*FILEBREAK\*\*\*\*\*FILEBREAK



FILENAME: CCN013929

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Aboveground Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

<b>PROJECT:</b> NAS Cecil Field		<b>LOG of WELL:</b> CEF-880-IS	<b>BORING NO.</b> CEF-880-IS
<b>CLIENT:</b> SOUTH DIV NAV FAC ENG COM	<b>PROJECT NO:</b> 8542-03	<b>DATE STARTED:</b> 3-5-97	<b>COMPLETED:</b> 3-5-97
<b>DRILLING SUBCONTRACTOR:</b> GEOTEK		<b>SITE:</b> Building 880	<b>MONITOR INST.</b> FID
<b>METHOD:</b> 8.25" HSA	<b>WELL CASE DIAM:</b> 2"	<b>SCREEN INT.:</b> 5-15 FT.	<b>SCREEN SLOT SIZE:</b> 0
<b>TOC ELEVATION:</b> FT. NGVD	<b>GROUND ELEV.:</b> FT. NGVD	<b>NORTHING:</b> 2141922	<b>EASTING:</b> 377943.1
<b>WELL DEVELOP. DATE:</b> 3-5-97	<b>TOTAL DEPTH:</b> 18 FT. BLS	<b>DEPTH TO <math>\nabla</math>:</b> 8.80 FT. BLS	<b>LOGGED BY:</b> J Koch

DEPTH FT.	SAMPLE INTERVAL RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/8-IN	WELL DATA
0			SILTY SAND: Light brown to dark brown, fine grained.		SM	posthole	
50			SILTY SAND: As above, petroleum odor.			posthole	
5	100%	340	SILTY SAND: Medium brown to dark brown, fine grained, slight petroleum odor.			6,7,9	
10	100%	70	SILTY SAND: Dark brown, hard pan, fine grained, slight petroleum odor.			3,3,3,5	
15							
20							

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- TANK G880  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9454

Lab Sample Number: B7C2501210  
 Site BRACGREY  
 Locator CEF8801S  
 Collect Date: 24-MAR-97

VALUE QUAL UNITS DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1
1,1,2,2-Tetrachloroethane	1 U	ug/l	1
1,1,2-Trichloroethane	1 U	ug/l	1
1,1-Dichloroethane	1 U	ug/l	1
1,1-Dichloroethene	1 U	ug/l	1
1,2-Dichlorobenzene	1 U	ug/l	1
1,3-Dichlorobenzene	1 U	ug/l	1
1,4-Dichlorobenzene	1 U	ug/l	1
1,2-Dichloroethane	1 U	ug/l	1
1,2-Dichloropropane	1 U	ug/l	1
1-Methylnaphthalene	2 U	ug/l	2
2-Methylnaphthalene	2 U	ug/l	2
Acenaphthene	2 U	ug/l	2
Acenaphthylene	2 U	ug/l	2
Anthracene	2 U	ug/l	2
Benzene	1 U	ug/l	1
Benzo (a) anthracene	.1 U	ug/l	.1
Benzo (a) pyrene	.1 U	ug/l	.1
Benzo (b) fluoranthene	.1 U	ug/l	.1
Benzo (g,h,i) perylene	.2 U	ug/l	.2
Benzo (k) fluoranthene	.15 U	ug/l	.15
Bromodichloromethane	1 U	ug/l	1
Bromoform	1 U	ug/l	1
Bromomethane	1 U	ug/l	1
Carbon tetrachloride	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1
Chloromethane	1 U	ug/l	1
Chloroform	1 U	ug/l	1
Chloromethane	1 U	ug/l	1
Chrysene	.1 U	ug/l	.1
Dibenzo (a,h) anthracene	.2 U	ug/l	.2
Dibromochloromethane	1 U	ug/l	1
Dichlorodifluoromethane	1 U	ug/l	1
Ethylbenzene	1 U	ug/l	1
Ethylene dibromide	.02 U	ug/l	.02
Fluoranthene	.2 U	ug/l	.2
Fluorene	2 U	ug/l	2
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1
Lead	5 U	ug/l	5
Methyl tert-butyl ether	1 U	ug/l	1
Methylene chloride	1 U	ug/l	1
Naphthalene	2 U	ug/l	2
Phenanthrene	2 U	ug/l	2
Pyrene	.2 U	ug/l	.2
Tetrachloroethene	1 U	ug/l	1
Toluene	1 U	ug/l	1
Total petroleum hydrocarbons	.5 U	mg/l	.5
Trichloroethene	1 U	ug/l	1
Trichlorofluoromethane	1 U	ug/l	1
Vinyl chloride	1 U	ug/l	1

NAS CECIL FIELD -- TANK G880  
UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9454

Lab Sample Number: B7C2501210  
Site BRACGREY  
Locator CEF8801S  
Collect Date: 24-MAR-97

VALUE QUAL UNITS DL

Xylenes (total)	1 U	ug/l	1
cis-1,3-Dichloropropene	1 U	ug/l	1
trans-1,2-Dichloroethene	1 U	ug/l	1
trans-1,3-Dichloropropene	1 U	ug/l	1

Lead-DISS

U = NOT DETECTED J = ESTIMATED VALUE  
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
R = RESULT IS REJECTED AND UNUSABLE

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 605, TANK 605**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**October 1997**

13929



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: October 31, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc
BEI	Bechtel Environmental Incorporated
bls	below land surface
OVA	organic vapor analyzer
ppm	parts per million
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank 605 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 605 was an underground storage tank (UST) located at Building 605, which served as a housing facility for Marine personnel (Figure 1). The UST had a capacity of 3,000 gallons and was used to store heating oil for Building 605 (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 605 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank 605 was removed by Bechtel Environmental, Inc. (BEI), on April 8, 1997. No soil was removed from the site. A Closure Report was prepared for Tank 605 and submitted to the Florida Department of Environmental Protection in July of 1997 (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling for Tank 605 was initiated in January 1997 (before the UST was removed) and included

- the advancement of four soil borings to the water table and
- the installation of one shallow monitoring well.

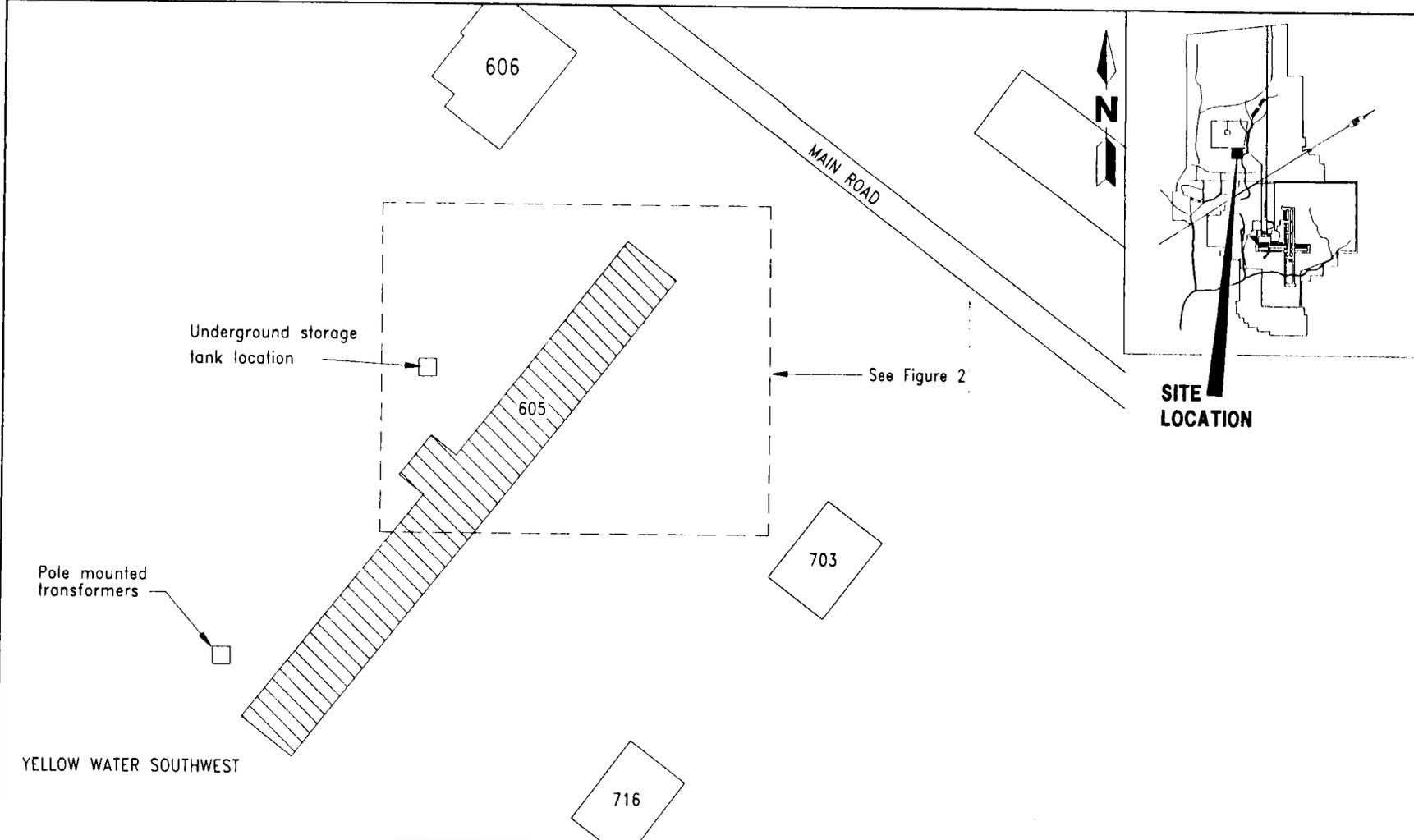
Soil samples were collected from each boring at depth intervals of 1-foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

One monitoring well, CEF-605-1S, was installed northeast of the UST near the location of soil boring CEF-605-SB2 to a depth of 12 feet bls. This monitoring well was later destroyed during the tank removal. A general site plan indicating the locations of the soil borings and the former monitoring well location is presented on Figure 2. The monitoring well installation detail is included in Appendix A.

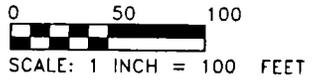
## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in all four soil borings and during the installation of the monitoring well. The highest OVA reading (greater than 5,000 ppm) was detected at 4 feet bls during the installation of monitoring well CEF-605-1S. The soil OVA data are summarized in Table 1 and presented on Figure 2.

Free product with an apparent thickness of 1.13 feet was measured in monitoring well CEF-605-1S. No groundwater sample was collected from monitoring well CEF-605-1S due to the presence of free product.



YELLOW WATER SOUTHWEST



**FIGURE 1**  
**TANK 605**  
**MARINE BARRACKS**

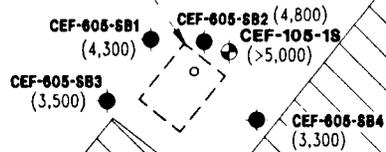


**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 605, TANK 605**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**



3,000-gallon underground storage tank location

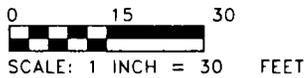


**LEGEND**

- CEF-605-18 Monitoring well location and designation
- CEF-605-SB1 Soil boring location and designation
- UST fill port
- (4,300) OVA reading in ppm

**NOTES**

UST = Underground storage tank  
OVA = Organic vapor analyzer  
ppm = parts per million



**FIGURE 2  
TANK 605  
SOIL BORING AND MONITORING WELL  
LOCATIONS**



**CONFIRMATORY SAMPLING REPORT  
BUILDING 605, TANK 605**

**NAVAL AIR FIELD CECIL FIELD  
JACKSONVILLE, FLORIDA**

**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 605, Tank 605  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-605-SB1	1	3,300	0	3,300
	3	2,900	0	2,900
	5	4,300	0	4,300
	7 (wet)	2,600	0	2,600
CEF-605-SB2	1	140	0	140
	3	2,200	0	2,200
	5	4,800	0	4,800
	7 (wet)	>5,000	0	>5,000
	8 (wet)	3,800	0	3,800
CEF-605-SB3	1	9	0	9
	3	1,300	0	1,300
	5	3,500	0	3,500
	7 (wet)	1,400	0	1,400
CEF-605-SB4	1	0	--	0
	3	3,300	0	3,300
	5	3,100	0	3,100
	7 (wet)	1,400	0	1,400
CEF-605-1S	2	1,200	0	1,200
	4	>5,000	0	>5,000
	11	2,000	0	2,000

Notes: All soil samples were collected on January 22, 1997.  
Monitoring well CEF-605-1S was installed on February 20, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
wet = soil sample was completed saturated when analyzed.  
> = greater than.  
-- = filtered readings were not collected.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank 605 site did not provide an adequate assessment of the horizontal and vertical extent of excessively contaminated soil. Groundwater contamination was not assessed due to the presence of free product in monitoring well CEF-605-1S. Therefore, it is recommended that site assessment be conducted to assess the extent of excessively contaminated soil, free product, and groundwater contamination at the Tank 605 site.

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

TITLE: NAS Cecil Field		LOG of WELL: DEF-005-1S	BORING NO. DEF-005-1S
CLIENT: SOUTHDIYNAVAFACENCOM		PROJECT NO: 8542-03	
CONTRACTOR: GEOTEK		DATE STARTED: 2-20-97	COMPLTD: 2-20-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 2-12	PROTECTION LEVEL: 0
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 11.6 FEET	DPTH TO S: 3.05 FEET
LOGGED BY: J Koch	WELL DEVELOPMENT DATE: Free Product		SITE: Building 005

DEPTH FT.	LABORATORY SAMPLE ID.	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
1.200				SILTY SAND: Dark brown to black, fine-grained, very strong petroleum odor.		SM	posthole	
5.000				SILTY SAND: As above, very strong petroleum odor.			posthole	
5.000				SILTY SAND: As above, saturated, very strong petroleum odor.			posthole	
10.000		100%	2,000	CLAYEY SAND: Medium grey to dark grey, fine grain, petroleum odor.		SC	3,4,8,9	

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 541, TANK G541**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

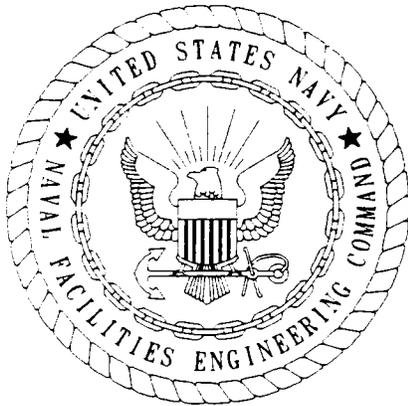
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**October 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: October 17, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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Jacksonville, Florida

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3.0	SCREENING AND ANALYTICAL RESULTS . . . . .	1
4.0	CONCLUSIONS AND RECOMMENDATIONS . . . . .	5

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Building 541, Tank G541  
Naval Air Station Cecil Field  
Jacksonville, Florida

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc
BEI	Bechtel Environmental Incorporated
bls	below land surface
OVA	organic vapor analyzer
ppm	parts per million
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank G541 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank G541 was an underground storage tank (UST) located at Building 541, which is used to house an emergency generator for Building 540 (Figure 1). The UST, which was installed in 1979, had a 250-gallon capacity and was used to store diesel fuel for the generator (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank G541 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank G541 was removed by Bechtel Environmental, Inc. (BEI), on May 22, 1997. Ten tons of excessively contaminated soil were removed at that time. A Closure Report was prepared for Tank G541 and submitted to the Florida Department of Environmental Protection in July of 1997 (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling for Tank G541 was initiated in January 1997 (before the UST was removed) and included

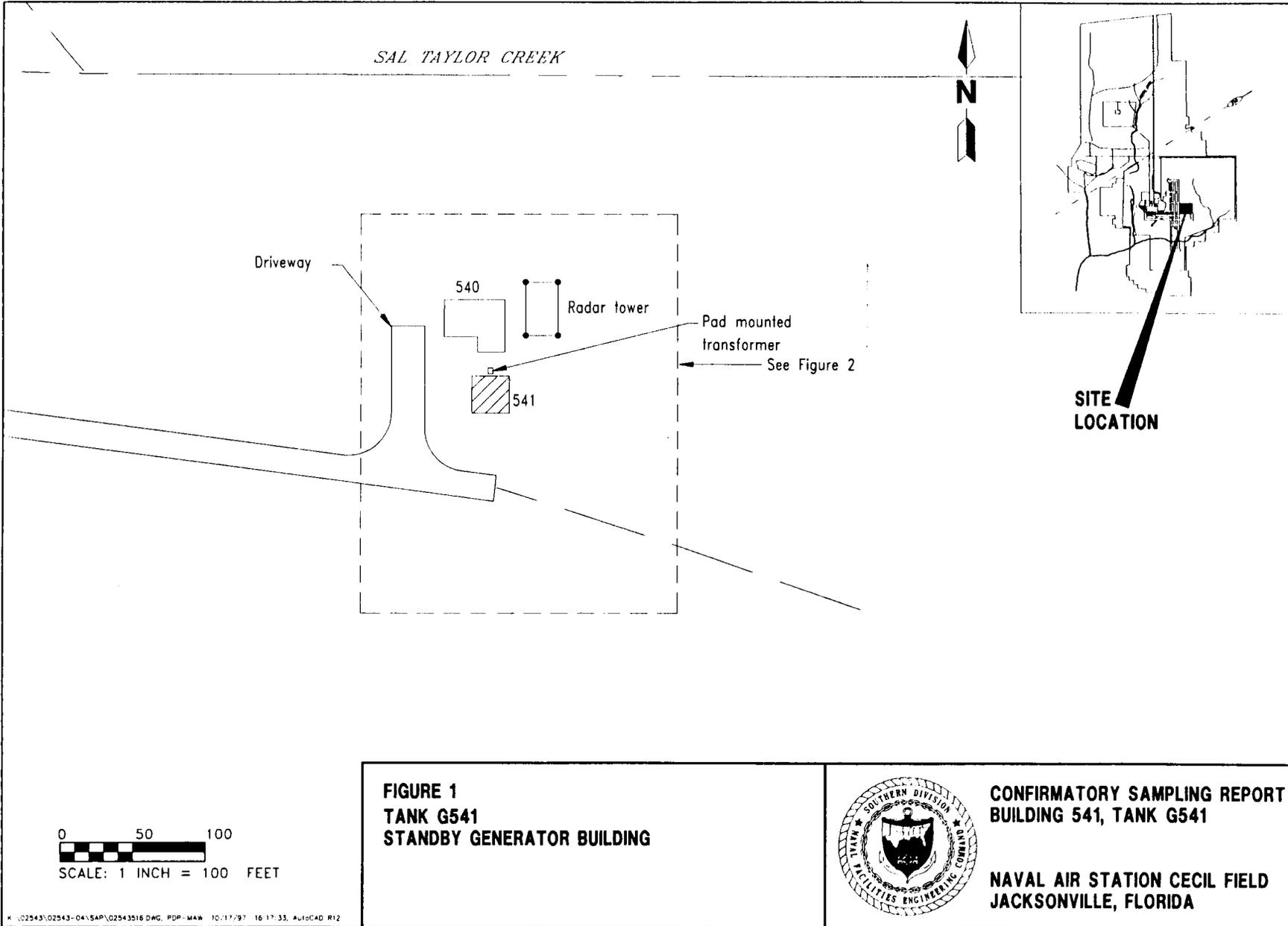
- the advancement of four soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

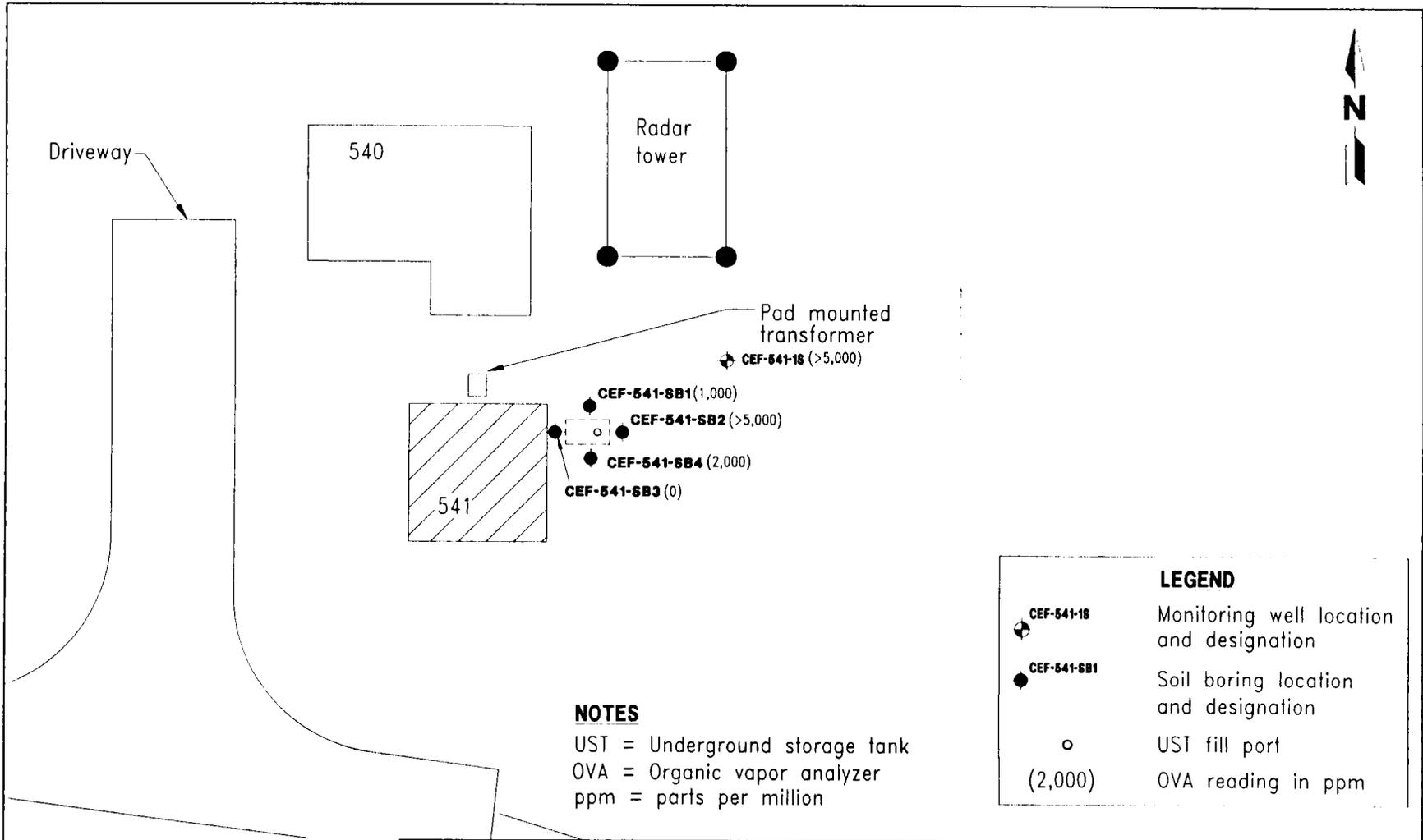
Soil samples were collected from each boring at depth intervals of 1-foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

A monitoring well, CEF-541-1S, was installed east of the UST near the location of soil boring CEF-541-SB2 to a depth of 12 feet bls. One groundwater sample was collected from the well and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and the monitoring well is presented on Figure 2. The monitoring well installation detail is included in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in three of the four soil borings and during the installation of the monitoring well. The highest OVA reading (>5,000 ppm) was detected at 1 and 3 feet bls during the advancement of monitoring well CEF-541-1S and at 3 feet bls in soil boring CEF-541-SB2. The soil OVA data are summarized in Table 1 and are presented on Figure 2.





**NOTES**

UST = Underground storage tank  
 OVA = Organic vapor analyzer  
 ppm = parts per million

**LEGEND**

-  CEF-541-18 Monitoring well location and designation
-  CEF-541-SB1 Soil boring location and designation
-  UST fill port
-  (2,000) OVA reading in ppm

0 15 30  
 SCALE: 1 INCH = 30 FEET

**FIGURE 2  
 TANK G541  
 SOIL BORING AND MONITORING WELL  
 LOCATIONS**



**CONFIRMATORY SAMPLING REPORT  
 BUILDING 541, TANK G541**

**NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA**

**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 541, Tank G541  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bis)	Unfiltered	Filtered	Actual
CEF-541-SB1	1	140	0	140
	3	1,000	0	1,000
	4.5 (wet)	2,000	0	2,000
CEF-541-SB2	1	230	0	230
	3	>5,000	0	>5,000
	4.5 (wet)	>5,000	0	>5,000
CEF-541-SB3	1	0	-	0
	3 (wet)	0	-	0
CEF-541-SB4	1	38	-	38
	3	2,000	-	2,000
	4 (wet)	>5,000	-	>5,000
CEF-541-1S	1	>5,000	-	>5,000
	3	>5,000	-	>5,000
	5 (wet)	>5,000	-	>5,000
	11 (wet)	1,100	-	1,100

Notes: All soil samples were collected on January 21, 1997.  
Monitoring well CEF-541-1S was installed on February 26, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
wet = soil sample was completely saturated when analyzed.  
> = greater than.  
- = filtered readings were not collected.

Groundwater contamination was not detected at concentrations exceeding requirements specified in Chapter 62-770 of the Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank G541 site did not provide an adequate assessment of the horizontal and vertical extent of excessively contaminated soil. The subsequent removal of Tank G541 did not remove all the excessively contaminated soil. No contaminants were detected above the regulatory standards specified in Chapter 62-770, FAC, in the groundwater sample collected from monitoring well CEF-541-1S. Therefore, it is recommended that additional confirmatory sampling be conducted to assess the extent of excessively contaminated soil at the Tank G541 site.

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

TITLE: NAS Cecil Field		LOG of WELL: DEF-541-13	BORING NO. DEF-541-13
CLIENT: SOUTHDIIVNAVFACENCOM		PROJECT NO: 8542-03	
CONTRACTOR: GEOTEK		DATE STARTED: 2-26-87	COMPLTD: 2-26-87
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 2-12	PROTECTION LEVEL: 0
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 13 FEET	DPH TO GROUND FEET:
LOGGED BY: J Koch	WELL DEVELOPMENT DATE: 3-4-87		SITE: Building 541

DEPTH FT.	LABORATORY SAMPLE ID.	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	UTLTI LITHOLOGY	SM	FLOWS-IN	WELL TOOLS
5.000		25%	5,000	SILTY SAND: Light grey to medium grey, fine grain, moderate petroleum odor.			posthole	
5.000			5,000	SILTY SAND: Light grey to medium grey, fine grain, moderate petroleum odor.			posthole	
5.000			5,000	SILTY SAND: Light grey to medium grey, fine grain, moderate petroleum odor.			1,1,10	
10.000		100%	1,500	SILTY SAND: Light brown to dark grey, fine grain, no apparent petroleum odor.			2,4,8,12	

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIE. -- TANK 541  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9397

Lab Sample Number:	B7C2201010	B7C2201010
Site	BRACGREY	BRACGREY
Locator	CEF5411S	CEF5411S
Collect Date:	20-MAR-97	20-MAR-97
	VALUE QUAL UNITS DL	VALUE QUAL UNITS DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1	-
1,1,2,2-Tetrachloroethane	1 U	ug/l	1	-
1,1,2-Trichloroethane	1 U	ug/l	1	-
1,1-Dichloroethane	1 U	ug/l	1	-
1,1-Dichloroethene	1 U	ug/l	1	-
1,2-Dichlorobenzene	1 U	ug/l	1	-
1,3-Dichlorobenzene	1 U	ug/l	1	-
1,4-Dichlorobenzene	1.1 U	ug/l	1	-
1,2-Dichloroethane	1 U	ug/l	1	-
1,2-Dichloropropane	1 U	ug/l	1	-
1-Methylnaphthalene	2 U	ug/l	2	-
2-Methylnaphthalene	2 U	ug/l	2	-
Acenaphthene	2 U	ug/l	2	-
Acenaphthylene	2 U	ug/l	2	-
Anthracene	2 U	ug/l	2	-
Benzene	1 U	ug/l	1	-
Benzo (a) anthracene	.1 U	ug/l	.1	-
Benzo (a) pyrene	.1 U	ug/l	.1	-
Benzo (b) fluoranthene	.1 U	ug/l	.1	-
Benzo (g,h,i) perylene	.2 U	ug/l	.2	-
Benzo (k) fluoranthene	.15 U	ug/l	.15	-
Bromodichloromethane	1 U	ug/l	1	-
Bromoform	1 U	ug/l	1	-
Bromomethane	1 U	ug/l	1	-
Carbon tetrachloride	1 U	ug/l	1	-
Chlorobenzene	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chloroform	1 U	ug/l	1	-
Chloromethane	1 U	ug/l	1	-
Chrysene	.1 U	ug/l	.1	-
Dibenzo (a,h) anthracene	.2 U	ug/l	.2	-
Dibromochloromethane	1 U	ug/l	1	-
Dichlorodifluoromethane	1 U	ug/l	1	-
Ethylbenzene	1 U	ug/l	1	-
Ethylene dibromide	.02 U	ug/l	.02	-
Fluoranthene	.2 U	ug/l	.2	-
Fluorene	2 U	ug/l	2	-
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1	-
Lead	71.5 U	ug/l	25	-
Methyl tert-butyl ether	1 U	ug/l	1	-
Methylene chloride	1 U	ug/l	1	-
Naphthalene	2 U	ug/l	2	-
Phenanthrene	2 U	ug/l	2	-
Pyrene	.2 U	ug/l	.2	-
Tetrachloroethene	1 U	ug/l	1	-
Toluene	1 U	ug/l	1	-
Total petroleum hydrocarbons	.5 U	ug/l	.5	-
Trichloroethene	1 U	ug/l	1	-
Trichlorofluoromethane	1 U	ug/l	1	-
Vinyl chloride	1 U	ug/l	1	-

NAS CECIL FIELD -- TANK 541  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9397

Lab Sample Number:	B7C2201010	B7C2201010
Site	BRACGREY	BRACGREY
Locator	CEF5411S	CEF5411S
Collect Date:	20-MAR-97	20-MAR-97

	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
Xylenes (total)	1	U	ug/l	1	-			
cis-1,3-Dichloropropene	1	U	ug/l	1	-			
trans-1,2-Dichloroethene	1	U	ug/l	1	-			
trans-1,3-Dichloropropene	1	U	ug/l	1	-			
Lead-DISS	-				34.8		ug/l	10

U = NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R = RESULT IS REJECTED AND UNUSABLE

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 502, TANK 502**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

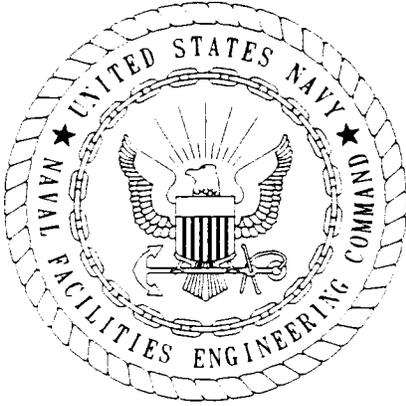
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**October 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: October 17, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc
BEI	Bechtel Environmental Incorporated
bls	below land surface
$\mu\text{g}/\ell$	micrograms per liter
$\text{mg}/\ell$	milligrams per liter
OVA	organic vapor analyzer
ppm	parts per million.
TRPH	total recoverable petroleum hydrocarbons
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank 502 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 502 was an underground storage tank (UST) located at Building 502, which originally served as a maintenance facility for equipment and vehicles associated with the Aviation Ordnance Area (Figure 1). The UST, which was installed in 1957, had a 1,000-gallon capacity and was used to supply fuel oil to a hot-water boiler (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 502 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank 502 was removed by Bechtel Environmental, Inc. (BEI), on April 16, 1997. Five tons of excessively contaminated soil were removed at that time. A Closure Report was prepared for Tank 502 and submitted to the Florida Department of Environmental Protection in July of 1997 (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling for Tank 502 was initiated in February 1997 (before the UST was removed) and included

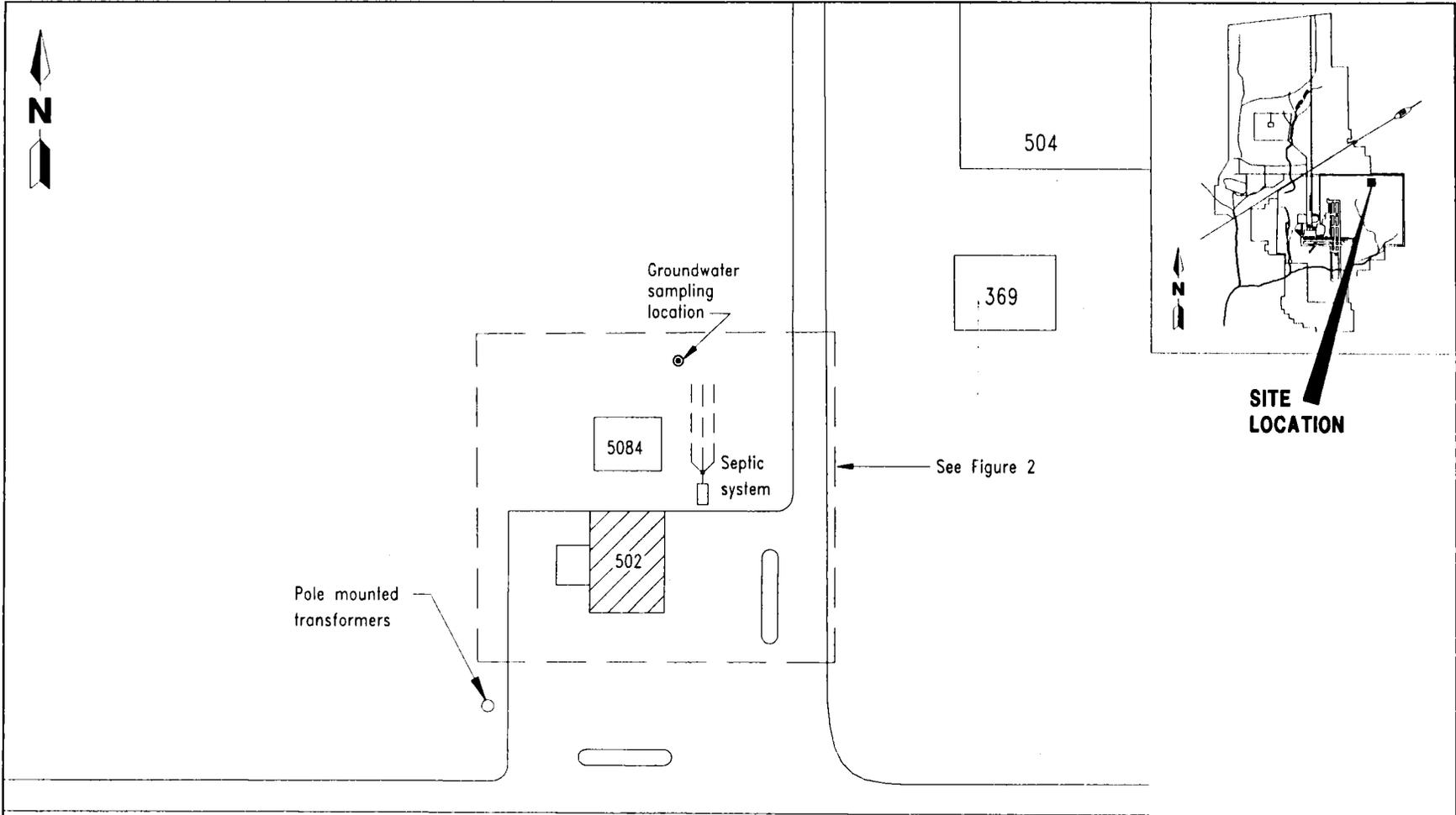
- the advancement of three soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

Soil samples were collected from each boring at depth intervals of 1-foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

A monitoring well, CEF-502-1S, was installed west of the UST near the location of soil boring CEF-502-SB1 to a depth of 12 feet bls. One groundwater sample was collected from the well and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and monitoring well CEF-502-1S is presented on Figure 2. The monitoring well installation detail is included in Appendix A.

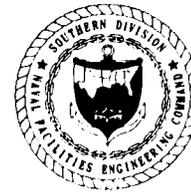
## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in one of the three soil borings. The highest OVA reading (130 ppm) was detected at 5 feet bls in soil boring SB-1. The soil OVA data are summarized in Table 1 and presented on Figure 2.



0 50 100  
 SCALE: 1 INCH = 100 FEET

**FIGURE 1**  
**TANK 502**  
**ORDNANCE ADMINISTRATION**  
**ARMORY BUILDING**



**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 502, TANK 502**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

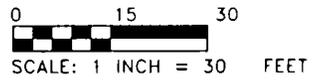
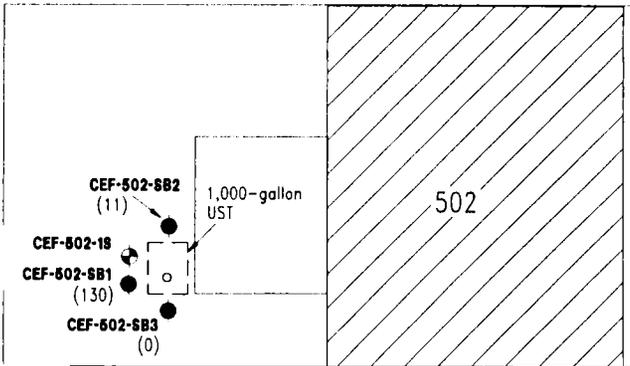
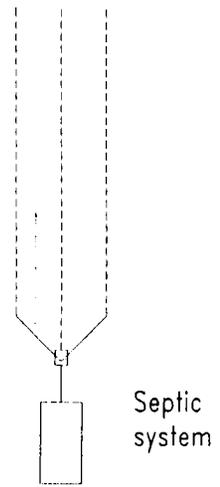
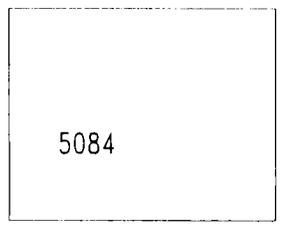
**LEGEND**

	<b>CEF-502-18</b>	Monitoring well location and designation
	<b>CEF-502-SB1</b>	Soil boring location and designation
		UST fill port
		OVA reading in ppm

**NOTES**

UST = Underground storage tank  
 OVA = Organic vapor analyzer  
 ppm = parts per million  
 OVA readings taken during monitoring well installation

sampling location 



**FIGURE 2  
 TANK 502  
 SOIL BORING AND MONITORING WELL  
 LOCATIONS**



**CONFIRMATORY SAMPLING REPORT  
 BUILDING 502, TANK 502**

**NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA**

X:\02543\02543-04\SAP\02543521.DWG, POP-MAW 10, 11/97 16:03:09, A:\0CAD\R12

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**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 502, Tank 502  
Naval Air Station Cecil Field  
Jacksonville, Florida

Boring Number	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-502-SB1	1	0	--	0
	3	60	0	60
	5	130	0	130
	6.5 (wet)	1,000	0	1,000
CEF-502-SB2	1	0	--	0
	3	0	--	0
	5	11	0	11
	6.5 (wet)	1,400	0	1,400
CEF-502-SB3	1	0	--	0
	3	0	--	0
	5	0	--	0
	6.5 (wet)	130	0	130

Notes: All soil samples were collected on February 3, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.  
OVA readings were not taken during monitoring well installation.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
wet = soil sample was completely saturated when analyzed.  
-- = filtered readings were not collected.

Volatile organic aromatics, polynuclear aromatic hydrocarbons, and total recoverable petroleum hydrocarbons (TRPH) were detected in the groundwater sample collected from monitoring well CEF-502-1S. Naphthalene (160 micrograms per liter [ $\mu\text{g}/\ell$ ]) exceeded the requirement of 20  $\mu\text{g}/\ell$ , and TRPH (7.5 milligrams per liter) exceeded the requirement of 5  $\text{mg}/\ell$  specified in Chapter 62-770 of the Florida Administrative Code (FAC). A summary of the groundwater analytical results is presented in Table 2. The complete analytical data set is presented in Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank 502 site did not provide an adequate assessment of the horizontal and vertical extent of excessively contaminated soil. The subsequent removal of Tank 502 did not remove all the excessively contaminated soil and did not address groundwater contamination. Therefore, it is recommended that a site assessment be conducted to assess the extent of excessively contaminated soil and groundwater contamination at the Tank 502 site.

**Table 2**  
**Summary of Groundwater Analytical Results**

Confirmatory Sampling Report  
Building 502, Tank 502  
Naval Air Station Cecil Field  
Jacksonville, Florida

Compound	CEF-502-1S	Groundwater Cleanup Target Levels <sup>1</sup>
<b><u>Volatile Organic Aromatics (USEPA Method 601/602) (<math>\mu\text{g}/\ell</math>)</u></b>		
Ethylbenzene	19	30
Xylenes	7.9	20
<b><u>Polynuclear Aromatic Hydrocarbons (USEPA Method 625) (<math>\mu\text{g}/\ell</math>)</u></b>		
1-Methylnaphthalene	150	NA
2-Methylnaphthalene	200	NA
Naphthalene	160	20
<b><u>Total Recoverable Petroleum Hydrocarbons (TRPH) (Florida Pro) (mg/l)</u></b>		
TRPH	7.5	5
<sup>1</sup> Chapter 62-770, Florida Administrative Code.  Notes: Groundwater sample was collected on March 20, 1997.  USEPA = U.S. Environmental Protection Agency. $\mu\text{g}/\ell$ = micrograms per liter. NA = not applicable. $\text{mg}/\ell$ = milligrams per liter.		

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

TITLE: NAS Cecil Field		LOG of WELL: LEF-502-19	BORING NO. DEF-502-19
CLIENT: SOUTH DIV NAVFACENGCOM		PROJECT NO: 8542-01	
CONTRACTOR: GEOTEK		DATE STARTED: 3-17-97	COMPLTD: 3-17-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 6.5-10.5	PROTECTION LEVEL: 0
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 10.5 FEET.	DPTH TO $\nabla$ : 0.50 FEET.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 3-17-97		SITE: Building 502

DEPTH F.T.	LABORATORY SAMPLE ID.	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SAMPLE	SOIL CLASS	BLOWS/6-IN	WELL DATA
0				SANDY GRAVEL (FILL MATERIAL): Light Brown, gravel with sand and silt, well graded.		SM	posthole	
60				SILTY SAND: Grey to brown, fine grain, poorly graded, strong petroleum odor.		SM	posthole	
1,400				SILTY SAND: Light brown to black, very brittle, hard pan, petroleum odor.			Hand Auger	
1,000				SILTY SAND: Light brown to black, very brittle, hard pan, petroleum odor.			Hand Auger	

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- TANK 502  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9396

Lab Sample Number: B7C2201010  
 Site BRACGREY  
 Locator CEF5021S  
 Collect Date: 20-MAR-97

VALUE QUAL UNITS DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1
1,1,2,2-Tetrachloroethane	1 U	ug/l	1
1,1,2-Trichloroethane	1 U	ug/l	1
1,1-Dichloroethane	1 U	ug/l	1
1,1-Dichloroethene	1 U	ug/l	1
1,2-Dichlorobenzene	1 U	ug/l	1
1,3-Dichlorobenzene	1 U	ug/l	1
1,4-Dichlorobenzene	1 U	ug/l	1
1,2-Dichloroethane	1 U	ug/l	1
1,2-Dichloropropane	1 U	ug/l	1
1-Methylnaphthalene	150	ug/l	20
2-Methylnaphthalene	200	ug/l	20
Acenaphthene	20 U	ug/l	20
Acenaphthylene	20 U	ug/l	20
Anthracene	20 U	ug/l	20
Benzene	1 U	ug/l	1
Benzo (a) anthracene	1 U	ug/l	1
Benzo (a) pyrene	1 U	ug/l	1
Benzo (b) fluoranthene	1 U	ug/l	1
Benzo (g,h,i) perylene	2 U	ug/l	2
Benzo (k) fluoranthene	1.5 U	ug/l	1.5
Bromodichloromethane	1 U	ug/l	1
Bromoform	1 U	ug/l	1
Bromomethane	1 U	ug/l	1
Carbon tetrachloride	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1
Chloromethane	1 U	ug/l	1
Chloroform	1 U	ug/l	1
Chloromethane	1 U	ug/l	1
Chrysene	1 U	ug/l	1
Dibenzo (a,h) anthracene	2 U	ug/l	2
Dibromochloromethane	1 U	ug/l	1
Dichlorodifluoromethane	1 U	ug/l	1
Ethylbenzene	19	ug/l	1
Ethylene dibromide	.02 U	ug/l	.02
Fluoranthene	2 U	ug/l	2
Fluorene	20 U	ug/l	20
Indeno (1,2,3-cd) pyrene	1 U	ug/l	1
Lead	5 U	ug/l	5
Methyl tert-butyl ether	1 U	ug/l	1
Methylene chloride	1 U	ug/l	1
Naphthalene	160	ug/l	20
Phenanthrene	20 U	ug/l	20
Pyrene	2 U	ug/l	2
Tetrachloroethene	1 U	ug/l	1
Toluene	1 U	ug/l	1
Total petroleum hydrocarbons	7.5	mg/l	.5
Trichloroethene	1 U	ug/l	1
Trichlorofluoromethane	1 U	ug/l	1
Vinyl chloride	1 U	ug/l	1

NAS CECIL FIELD -- TANK 502  
UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9396

Lab Sample Number: B7C2201010  
Site BRACGREY  
Locator CEF5021S  
Collect Date: 20-MAR-97

VALUE QUAL UNITS DL

Xylenes (total)	7.9	ug/l	1
cis-1,3-Dichloropropene	1 U	ug/l	1
trans-1,2-Dichloroethene	1 U	ug/l	1
trans-1,3-Dichloropropene	1 U	ug/l	1

Lead-DISS -

U = NOT DETECTED J = ESTIMATED VALUE  
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
R = RESULT IS REJECTED AND UNUSABLE

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 367, TANK 367**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

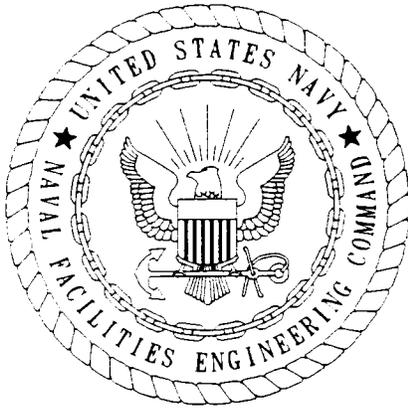
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**November 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: November 11, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)

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 Naval Air Station Cecil Field  
 Jacksonville, Florida

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4.0	CONCLUSIONS AND RECOMMENDATIONS . . . . .	5

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Appendix A: Monitoring Well Installation Detail

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Building 367, Tank 367  
Naval Air Station Cecil Field  
Jacksonville, Florida

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
OVA	organic vapor analyzer
ppm	parts per million
PWC	Public Works Center
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank 367 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 367 was an underground storage tank (UST) located at Building 367, a general storage shed (Figure 1). The UST had a capacity of 500 gallons and was formerly associated with a boiler furnace in Building 364 (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 367 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank 367 was removed by the Navy Public Works Center (PWC), Pensacola, February 28, 1997. Approximately 18 cubic yards of excessively contaminated soil were removed from the site. A Closure Report was prepared for Tank 367 and submitted to the Florida Department of Environmental Protection (Navy PWC, 1997)

## 2.0 FIELD INVESTIGATION

The confirmatory sampling for Tank 367 was initiated in January 1997 (before the UST was removed) and included

- the advancement of eight soil borings to the water table and
- the installation of one shallow monitoring well.

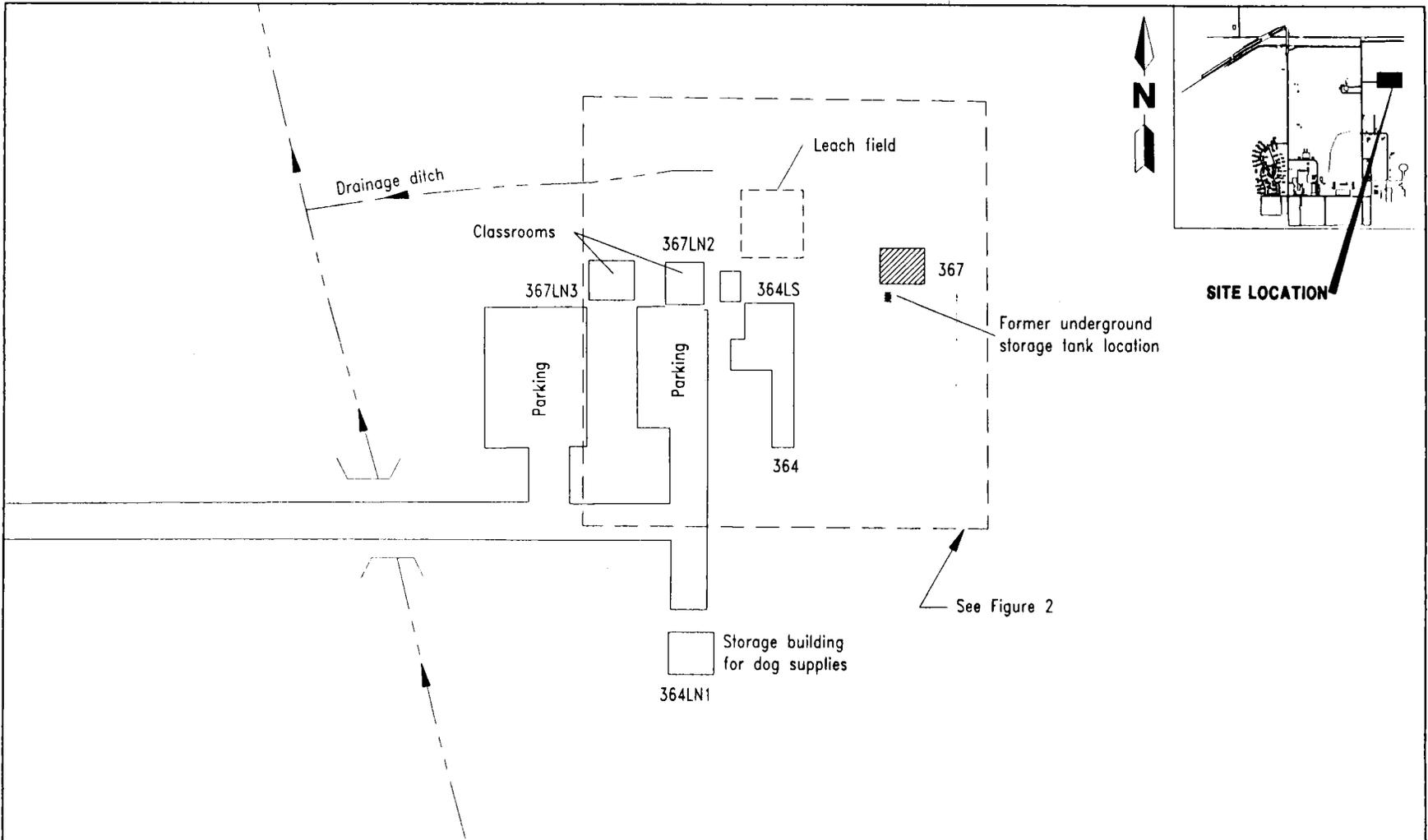
Soil samples were collected from each boring at depth intervals of 1 foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors using an organic vapor analyzer (OVA).

One monitoring well, CEF-367-1S, was installed south of the tank location near soil boring CEF-367-SB5 to a depth of 12 feet bls. This monitoring well was later destroyed during the tank removal. A general site plan indicating the locations of the soil borings and the former monitoring well location is presented on Figure 2. The monitoring well installation detail is included in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in five of eight soil borings and during the installation of the monitoring well. The highest OVA reading (greater than 5,000 ppm) was detected at 2.5 feet bls in soil boring CEF-367-SB5. The soil OVA data are summarized in Table 1 and presented on Figure 2.

Free product with an apparent thickness of 1.14 feet was measured in monitoring well CEF-367-1S. No groundwater sample was collected from monitoring well CEF-367-1S due to the presence of free product.

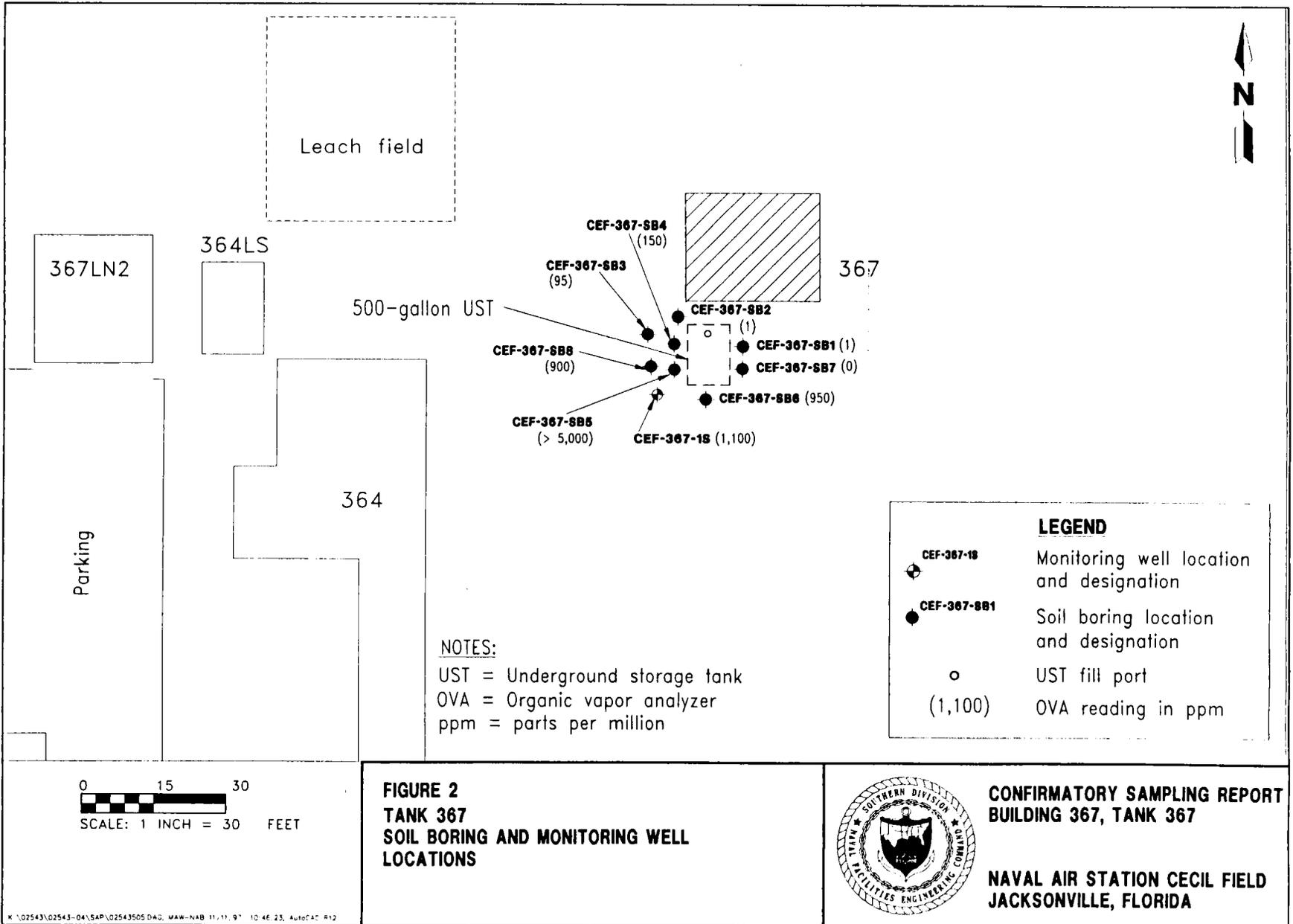


**FIGURE 1**  
**TANK 367**  
**STORAGE SHED FOR BUILDING 364**



**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 367, TANK 367**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**



**Table 1**  
**Soil Screening Results**

Confirmatory Sampling Report  
Building 367, Tank 367  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-367-SB1	1.5	0	--	0
	3 (moist)	1	--	1
CEF-367-SB2	1	1	--	1
	3	0	--	0
CEF-367-SB3	1	10	0	10
	3	95	0	95
CEF-367-SB4	1	0	--	0
	2.5	150	0	150
CEF-367-SB5	1	0	--	0
	2.5	>5,000	0	>5,000
CEF-367-SB6	1	90	0	90
	2.5	950	0	950
CEF-367-SB7	1	0	--	0
	2	0	--	0
CEF-367-SB8	1	110	0	110
	2	900	0	900
CEF-367-1S	2	180	--	180
	4 (moist to wet)	1,100	--	1,100

Notes: All soil samples were collected on January 14, 1997.  
Monitoring well CEF-367-1S was installed on February 14, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
-- = filtered readings were not collected.  
moist = soil sample was partially saturated when analyzed.  
> = greater than.  
wet = soil sample was completely saturated when analyzed.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank 367 site did not provide an adequate assessment of the horizontal and vertical extent of excessively contaminated soil. Groundwater contamination was not assessed due to the presence of free product in monitoring well CEF-367-1S. Therefore, it is recommended that site assessment be conducted to assess the extent of excessively contaminated soil, free product, and groundwater contamination at the Tank 367 site.

REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Navy Public Works Center, Pensacola. 1997. *Closure Assessment Underground Storage Tank Building 364, Naval Air Station Cecil Field, Jacksonville, Florida* (April).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

<b>PROJECT:</b> NAS Cecil Field		<b>LOG of WELL:</b> CEF-387-IS	<b>BORING NO.</b> CEF-387-IS
<b>CLIENT:</b> SOUTH DIV NAV FAC ENG COM	<b>PROJECT NO:</b> 8542-03	<b>DATE STARTED:</b> 2-14-97	<b>COMPLETED:</b> 2-14-97
<b>DRILLING SUBCONTRACTOR:</b> GEOTEK		<b>SITE:</b> Building 387	<b>MONITOR INST.</b> FID
<b>METHOD:</b> 8.25" HSA	<b>WELL CASE DIAM.:</b> 2"	<b>SCREEN INT.:</b> 2-12 FT.	<b>SCREEN SLOT SIZE:</b> D
<b>TOC ELEVATION:</b> FT. NGVD	<b>GROUND ELEV.:</b> FT. NGVD	<b>NORTHING:</b> 2149373	<b>EASTING:</b> 378087.8
<b>WELL DEVELOP. DATE:</b> Free Product	<b>TOTAL DEPTH:</b> 13 FT. BLS	<b>DEPTH TO <math>\nabla</math>:</b> FT. BLS	<b>LOGGED BY:</b> J Tarr

DEPTH FT.	SAMPLE INTERVAL RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
		80	SILTY SAND: Grey, fine grain, poorly graded, slight petroleum odor.		SM		
		1100	SILTY SAND: Grey, fine grain, poorly graded, strong petroleum odor.				
5		N/A				Hand Auger	
		N/A				Hand Auger	
10							
		N/A					Hand Auger
15							
20							

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**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 334, TANK 325-OW**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

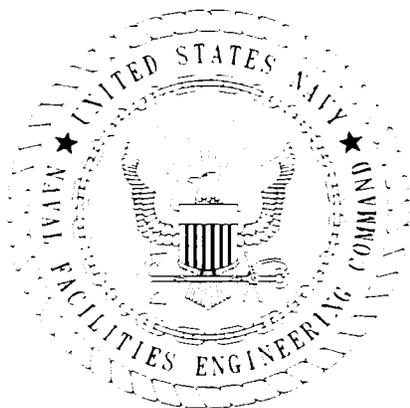
**ABB Environmental Services, Inc.**  
**2590 Executive Center Circle, East**  
**Tallahassee, Florida 32301**

**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
**2155 Eagle Drive**  
**North Charleston, South Carolina 29418**

**Bryan Kizer, Code 1842, Engineer-in-Charge**

**October 1997**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

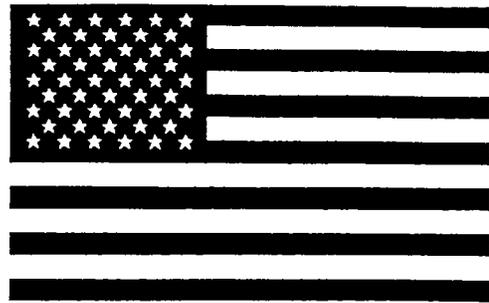
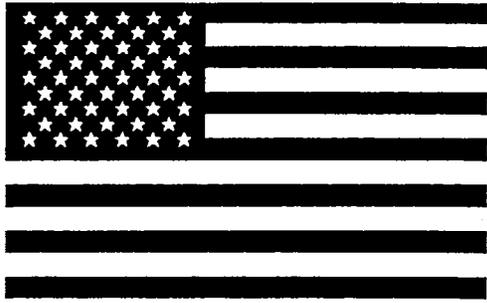
The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: October 28, 1997

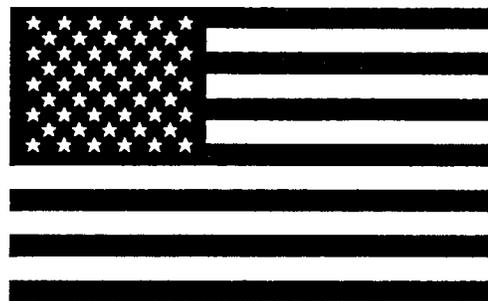
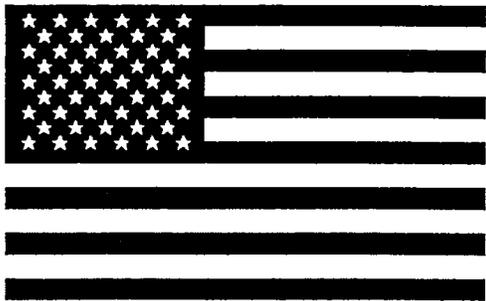
NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.  
Project Technical Lead

(DFAR 252.227-7036)



FILEBREAK\*\*\*\*\*FILEBREAK\*\*\*\*\*FILEBREAK



FILENAME: CCN013929

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GLOSSARY

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ABB-ES	ABB Environmental Services, Inc
bls	below land surface
FAC	Florida Administrative Code
OVA	organic vapor analyzer
ppm	parts per million

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for the oil-water separator, 325-OW, at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 325-OW is an oil-water separator located at Building 334, a jet engine test facility. The separator, which was installed in 1991, has a 500-gallon capacity and is used to separate and store waste oil generated from test cell use (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Jet Engine Test Cell was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling at Tank 325-OW was initiated in February 1997. It included

- the advancement of four soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- the collection and analysis of one groundwater sample.

Soil samples were collected from each boring at depth intervals of 1-foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

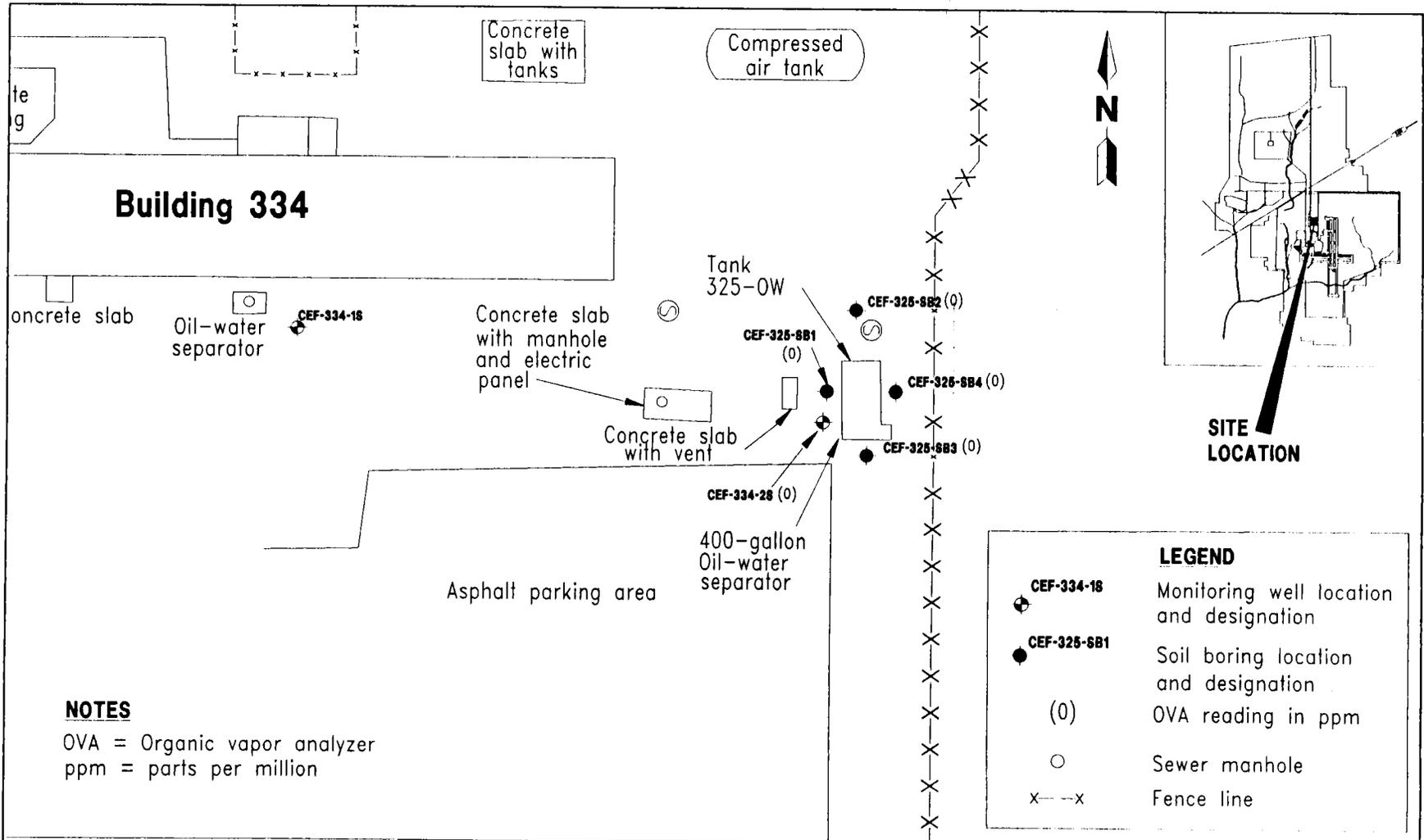
One monitoring well, CEF-334-2S, was installed north of the separator near the location of CEF-325-SB2 to a depth of 13 feet bls. One groundwater sample was collected and analyzed for the Kerosene Analytical Group parameters.

A general site plan indicating the location of the soil borings and the monitoring well is presented on Figure 1. The monitoring well installation detail is presented in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

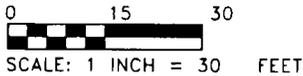
Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) in the unsaturated zone was not detected in the four soil borings. The highest OVA reading (70 ppm) was detected in a fully saturated sample collected from 7 feet bls. The soil OVA data are summarized in Table 1 and presented on Figure 1.

Contaminant concentrations in groundwater collected from monitoring well CEF-334-2S were below the regulatory standards specified in Chapter 62-770 of the Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.



**NOTES**

OVA = Organic vapor analyzer  
ppm = parts per million



**FIGURE 1  
TANK 325-OW  
SOIL BORING AND MONITORING WELL  
LOCATIONS**



**CONFIRMATORY SAMPLING REPORT  
BUILDING 334, TANK 325-OW**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 334, Tank 325-OW  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-325-SB1	1	0	--	0
	3	0	--	0
	5	0	--	0
	7 (wet)	50	0	50
CEF-325-SB2	1	0	--	0
	3	0	--	0
	5	0	--	0
	7 (wet)	70	--	70
CEF-325-SB3	1	0	--	0
	3	0	--	0
	5	0	--	0
	6.5 (moist; refusal)	0	--	0
CEF-325-SB4	1	0	--	0
	3	0	--	0
	5	0	--	0
	7 (moist to wet)	40	0	40
CEF-334-2S	1	0	--	0
	3	0	--	0
	5 (wet)	0	--	0
	11 (wet)	0	--	0

Notes: All soil samples were collected on January 28, 1997.  
Monitoring well CEF-334-2S was installed on February 17, 1997.  
All concentrations in ppm.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
wet = soil sample was completely saturated when analyzed.  
-- = filtered readings were not collected.  
moist = soil sample was partially saturated when analyzed.  
refusal = subsurface obstruction prevented further sample collection at this location.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the oil-water separator 325-OW site did not indicate the presence of excessively contaminated soil. No contaminants were detected above the regulatory standards specified in Chapter 62-770, FAC, in the groundwater sample collected from monitoring well CEF-334-2S. Therefore, it is recommended that no further action be taken until the oil-water separator is taken out of use and proper closure is performed.

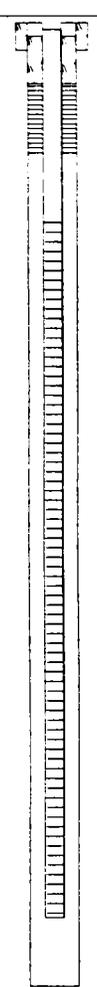
## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan. Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan. Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

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**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

TITLE: NAS Cecil Field		LOG of WELL: DEF-334-25	BORING NO. DEF-334-25
CLIENT: SOUTH DIVNAVFACENSGCOM		PROJECT NO: 854-103	
CONTRACTOR: GEOTEK		DATE STARTED: 1-17-97	COMPLTD: 1-17-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 5-11"	PROTECTION LEVEL: 0
TOC ELEV.: FEET.	MONITOR INST.: F10	TOT DPTH: 14 FEET	DPTH TO 1/2" DIA FEET:
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 1-17-97		SITE: Building 314

DEPTH F.T.	LABORATORY SAMPLE ID.	SAMPLE RECOVERY	HEADSPACE (FPM)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SUBSTR	SOIL CLASS	BLOWSPER-IN	WELL DATA
0				SILTY SAND: Light grey, fine grained, no petroleum odor.		SM	posthole	
0				SILTY SAND: As above.			posthole	
5		80%		SILTY SAND: As above, saturated.			1,2,1,5	
10		80%		SAND: Light brown, fine grained with some medium grained soil, no petroleum odor.		SP	1,2,2,4	

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- TANK 3250W  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9395

Lab Sample Number: B7C2601400  
 Site BRACGREY  
 Locator CEF3342S  
 Collect Date: 25-MAR-97

VALUE QUAL UNITS DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1
1,1,2,2-Tetrachloroethane	1 U	ug/l	1
1,1,2-Trichloroethane	1 U	ug/l	1
1,1-Dichloroethane	1 U	ug/l	1
1,1-Dichloroethene	1 U	ug/l	1
1,2-Dichlorobenzene	10 U	ug/l	10
1,3-Dichlorobenzene	10 U	ug/l	10
1,4-Dichlorobenzene	10 U	ug/l	10
1,2-Dichloroethane	1 U	ug/l	1
1,2-Dichloropropane	1 U	ug/l	1
1-Methylnaphthalene	2 U	ug/l	2
2-Methylnaphthalene	2 U	ug/l	2
Acenaphthene	2 U	ug/l	2
Acenaphthylene	2 U	ug/l	2
Anthracene	2 U	ug/l	2
Benzene	1 U	ug/l	1
Benzo (a) anthracene	.1 U	ug/l	.1
Benzo (a) pyrene	10 U	ug/l	10
Benzo (b) fluoranthene	.1 U	ug/l	.1
Benzo (g,h,i) perylene	10 U	ug/l	10
Benzo (k) fluoranthene	10 U	ug/l	10
Bromodichloromethane	1 U	ug/l	1
Bromoform	1 U	ug/l	1
Bromomethane	1 U	ug/l	1
Carbon tetrachloride	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1
Chloromethane	1 U	ug/l	1
Chloroform	1 U	ug/l	1
Chloromethane	1 U	ug/l	1
Chrysene	.1 U	ug/l	.1
Dibenzo (a,h) anthracene	.2 U	ug/l	.2
Dibromochloromethane	1 U	ug/l	1
Dichlorodifluoromethane	1 U	ug/l	1
Ethylbenzene	1 U	ug/l	1
Ethylene dibromide	.02 U	ug/l	.02
Fluoranthene	.2 U	ug/l	.2
Fluorene	2 U	ug/l	2
Indeno (1,2,3-cd) pyrene	.1 U	ug/l	.1
Lead	5 U	ug/l	5
Methyl tert-butyl ether	1 U	ug/l	1
Methylene chloride	1 U	ug/l	1
Naphthalene	2 U	ug/l	2
Phenanthrene	10 U	ug/l	10
Pyrene	.2 U	ug/l	.2
Tetrachloroethene	1 U	ug/l	1
Toluene	1 U	ug/l	1
Total petroleum hydrocarbons	.5 U	mg/l	.5
Trichloroethene	1 U	ug/l	1
Trichlorofluoromethane	1 U	ug/l	1
Vinyl chloride	1 U	ug/l	1

NAS CECIL FIELD -- TANK 3250W  
UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9395

Lab Sample Number: B7C2601400  
Site BRACGREY  
Locator CEF3342S  
Collect Date: 25-MAR-97

VALUE QUAL UNITS DL

Xylenes (total)	1 U	ug/l	1
cis-1,3-Dichloropropene	1 U	ug/l	1
trans-1,2-Dichloroethene	1 U	ug/l	1
trans-1,3-Dichloropropene	1 U	ug/l	1

Lead-DISS

U = NOT DETECTED J = ESTIMATED VALUE  
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
R = RESULT IS REJECTED AND UNUSABLE