

N60200.AR.002028
NAS CECIL FIELD, FL
5090.3a

SITE ASSESSMENT REPORT FOR BUILDING 639 TANK G639 BASE REALIGNMENT AND
CLOSURE UNDERGROUND STORAGE TANK AND ABOVEGROUND STORAGE TANK
GREY SITES REVISION 1 NAS CECIL FIELD FL
8/1/1999
HARDING LAWSON ASSOCIATES

SITE ASSESSMENT REPORT
BUILDING 639, TANK G639
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-0317/090

Prepared by:

Harding Lawson Associates
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

August 1999

Revision 1.0



CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, Harding Lawson Associates, hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/090 are complete and accurate and comply with all requirements of this contract.

DATE: August 23, 1999

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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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
BEI	Bechtel Environmental, Inc.
bls	below land surface
CSR	confirmatory sampling report
FDEP	Florida Department of Environmental Protection
HLA	Harding Lawson Associates
KAG	Kerosene Analytical Group
mg/kg	milligrams per kilogram
OVA	organic vapor analyzer
ppm	parts per million
SA	site assessment
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 G639 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 639 was an underground storage tank (UST) located at Building 639. Building 639 is located in the Yellow Water Weapons Complex and is used to house stand-by generators (Figure 1). The UST, which was installed in 1977, had a 3,000-gallon capacity and was used to store diesel fuel for the stand-by generators (ABB-ES, 1994). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank G639 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank G639 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 G639 and submitted to the Florida Department of Environmental Protection (BEI, 1997).

2.0 FIELD INVESTIGATION

The confirmatory sampling for Tank G639 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-639-1S, was installed north of the UST near the location of soil boring CEF-639-SB2 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 monitoring well CEF-639-1S 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 three of four soil borings. The highest OVA reading (1,300 ppm) was detected at 3 feet bls in soil boring CEF-639-SB2. The soil OVA data are summarized in Table 1.

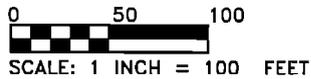
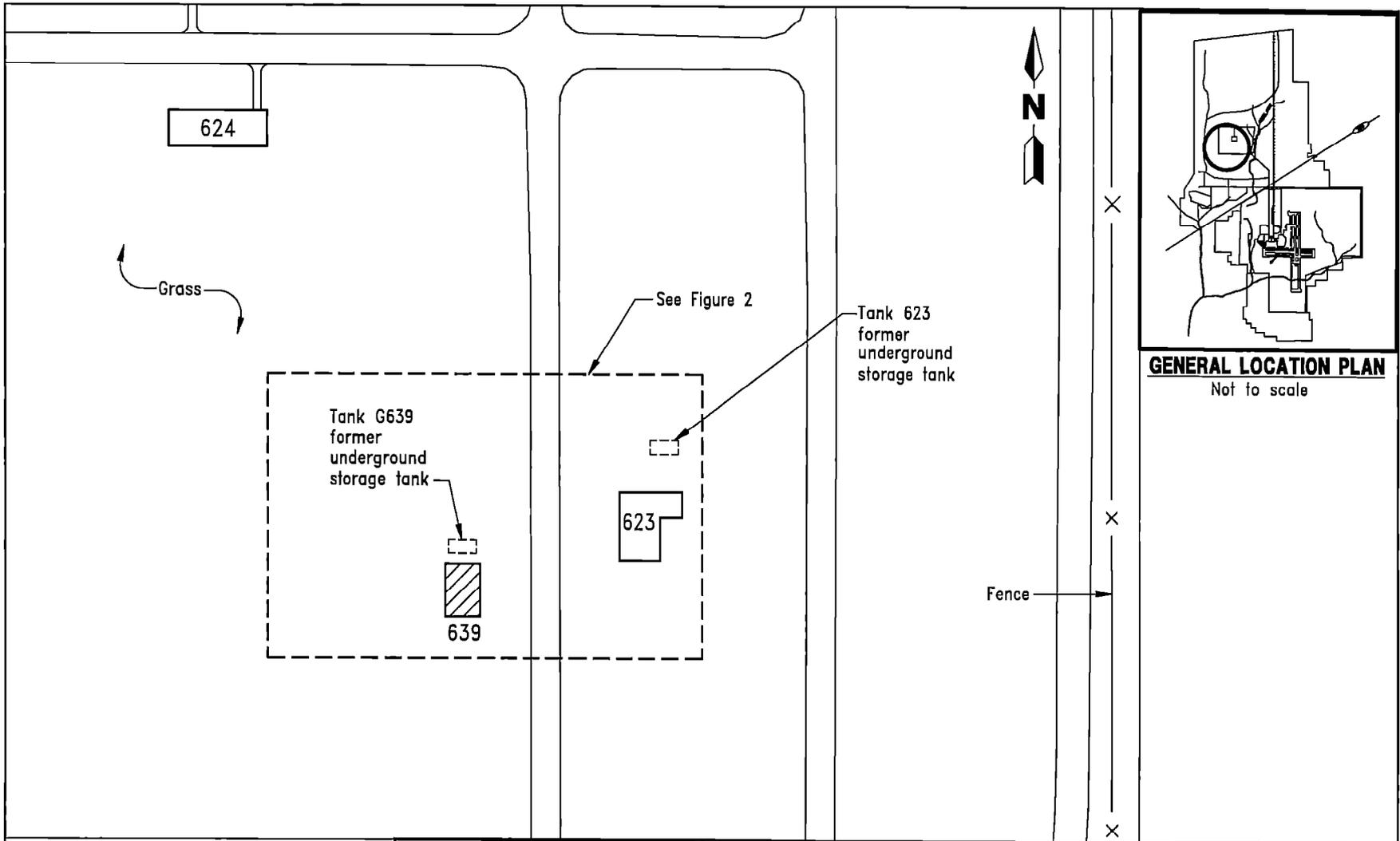
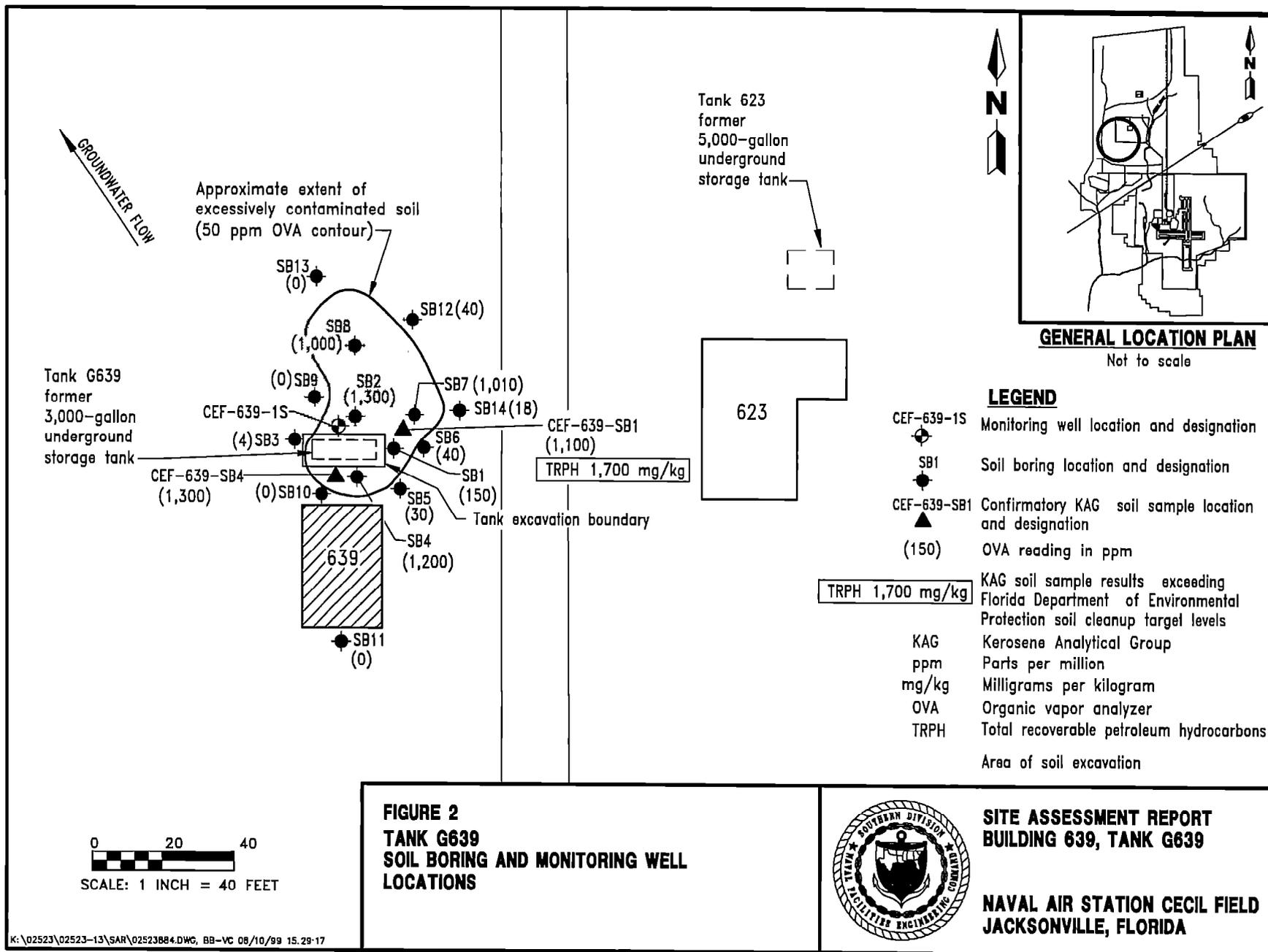


FIGURE 1
TANK G639
STANDBY GENERATOR BUILDING



SITE ASSESSMENT REPORT
BUILDING 639, TANK G639

NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA



3.0 SCREENING AND ANALYTICAL RESULTS

Based on the groundwater flow direction at the Tank 623 site (located approximately 120 feet east of the Tank G639 site), it is anticipated that the groundwater flow direction at the Tank G639 site is to the northeast.

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in 2 of 10 soil borings advanced during the SA. The highest OVA reading (1,010 ppm) was detected at 3 feet bls in soil boring CEF-639-SB7. The extent of excessively contaminated soil is presented on Figure 2. The soil OVA data are summarized in Table 1 and presented on Figure 2.

**Table 1
Soil Screening Results**

Site Assessment Report
Building 639, Tank G639
Naval Air Station Cecil Field
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
SB1	1	100	0	100
	3	150	0	150
	4.5 (wet)	250	0	250
SB2	1	0	--	0
	3	1,300	0	1,300
	5	800	0	800
SB3	1	0	--	0
	3	4	0	4
	4 (wet)	20	0	20
SB4	1	0	--	0
	3	1,200	0	1,200
	5 (wet)	110	0	110
CEF-639-1S	1	0	--	0
	3	0	--	0
	5 (wet)	0	--	0
	11 (wet)	44	--	44
SB5	1	0	--	0
	3	45	15	30
	4.5 (wet)	8	--	8
SB6	1	0	--	0
	3	190	150	40
	4.5 (wet)	32	9	23
SB7	1	0	--	0
	3	1,200	190	1,010
	4.5 (wet)	140	35	105
SB8	1	0	--	0
	3	2,000	1,000	1,000
	4.5 (wet)	300	180	120
SB9	1	0	--	0
	3	0	--	0
	4.5 (wet)	0	--	0
SB10	1	0	--	0
	3	0	--	0
	4.5 (wet)	26	0	26

See notes at end of table.

**Table 1 (Continued)
Soil Screening Results**

Site Assessment Report
Building 639, Tank G639
Naval Air Station Cecil Field
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
SB11	1	0	--	0
	3	0	--	0
	4.5 (wet)	0	--	0
SB12	1	0	--	0
	3	190	150	40
	4.5 (wet)	70	26	44
SB13	1	0	--	0
	3	0	--	0
	4.5 (wet)	3	--	3
SB14	1	0	--	0
	3	30	12	18
	4 (wet)	60	29	31

Notes: Soil samples were collected on January 23, 1997, and October 23, 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.

Approximately 280 tons of petroleum contaminated soil was excavated by CH2M Hill in January 1999. The horizontal limits of the excavation had OVA readings less than 50 ppm. One soil sample was collected for KAG analysis. No contaminants were detected in this sample. The source removal report for Tank G369 is included in Appendix C.

Total recoverable petroleum hydrocarbons (TRPH) was the only parameter that was detected above FDEP soil cleanup target levels in the subsurface soil samples collected for KAG analysis. TRPH was detected at 1,700 milligrams per kilogram (mg/kg) in soil sample CEF-639-SB1 and exceeded the FDEP soil cleanup target level (leachability) of 340 mg/kg. Subsurface soil analytical results are summarized in Table 2 and presented in Appendix B.

No contaminants were detected above FDEP cleanup target levels (with the exception of lead) in the groundwater sample collected from monitoring well CEF-639-1S during the confirmatory sampling. Lead, however, is not a component of diesel fuel and is most likely present in groundwater because of suspended solids. Analytical results are summarized in Table 3 and presented in Appendix B.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the SA at the Tank G639 site provided an adequate assessment of the horizontal and vertical extent of excessively contaminated soil.

TRPH was detected in subsurface soil sample CEF-639-SB1 at a concentration (1,700 mg/kg) that exceeded FDEP soil cleanup target levels. Petroleum contaminated soil was removed in January 1999 and the limits of the excavation had OVA readings less than 50 ppm.

No contaminants were detected above cleanup target levels (with the exception of lead) in the groundwater sample collected from monitoring well CEF-639-1S.

It is recommended that no further action take place at the Tank G639 site.

**Table 2
Summary of Subsurface Soil Analytical Detections**

Site Assessment Report
Building 639, Tank G639
Naval Air Station Cecil Field
Jacksonville, Florida

Compound	CEF-639-SB1 (3 to 4 ft bls; OVA = 150)	CEF-639-SB4 (3 to 4 ft bls; OVA = 1,200)	Soil Cleanup Target Levels ¹
<u>Volatle Organic Aromatics (USEPA Method 8020) (mg/kg)</u>			
No compounds detected			
<u>Polynuclear Aromatic Hydrocarbons (USEPA Method 8310) (mg/kg)</u>			
Benzo(a)anthracene	0.52	0.029	1.4/2.9
Dibenz(a,h)anthracene	ND	0.014	0.1/14
Fluoranthene	1.7	0.0085	2,800/550
Pyrene	0.75	ND	2,200/570
<u>Total Recoverable Petroleum Hydrocarbons (TRPH) (FL-PRO) (mg/kg)</u>			
TRPH	1,700	ND	350/340

¹ Chapter 62-770, Florida Administrative Code: Direct Exposure I/Leachability, Table V.

Notes: Soil samples were collected on April 16, 1998.

Bold = indicates concentration exceeded cleanup target level.
USEPA = U.S. Environmental Protection Agency.
mg/kg = milligrams per kilogram.
FL-PRO = Florida-Petroleum Residual Organics.
ND = not detected.

**Table 3
Summary of Groundwater Analytical Results**

Site Assessment Report
Building 639, Tank G639
Naval Air Station Cecil Field
Jacksonville, Florida

Compound	CEF-639-1S	Groundwater Cleanup Target Levels ¹
<u>Volatile Organic Aromatics (USEPA Method 601/602) (µg/l)</u>		
No compounds detected.		
<u>Polynuclear Aromatic Hydrocarbons (USEPA Method 625) (µg/l)</u>		
No compounds detected.		
<u>Total Recoverable Petroleum Hydrocarbons (TRPH) (FL-PRO) (mg/l)</u>		
Not detected		
<u>Lead (µg/l)</u>		
	53²16.3	15
¹ Chapter 62-770, Florida Administrative Code. ² Dissolved lead. Notes: Bold indicates concentration exceeds cleanup target level. USEPA = U.S. Environmental Protection Agency. µg/l = micrograms per liter. J = estimated value. FL-PRO = Florida Petroleum Residual Organics. mg/l = milligrams per liter.		

5.0 PROFESSIONAL REVIEW CERTIFICATION

The SA contained in this report was prepared using sound hydrogeologic principles and judgment. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. This SA report was developed for the Tank G639 site at NAS Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.


Eric A. Blomberg
Professional Geologist
P.G. No. 0001695

8-27-99
Date

5.0 PROFESSIONAL REVIEW CERTIFICATION

The SA contained in this report was prepared using sound hydrogeologic principles and judgment. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. This SA report was developed for the Tank G639 site at NAS Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.

Eric A. Blomberg
Professional Geologist
P.G. No. 0001695

Date

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. 1997a. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOC, North Charleston, South Carolina (January).
- ABB-ES. 1997b. *Confirmatory Sampling Report, Building 639, Tank G639, Base Realignment and Closure, Underground Storage Tank and Aboveground Storage Tank Grey Sites, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOC, North Charleston, South Carolina (December).
- Bechtel Environmental, Inc. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida* (July).
- Harding Lawson Associates. 1998. *Site Assessment Report, Building 639, Tank G639, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOC, North Charleston, South Carolina (September).

APPENDIX A

MONITORING WELL CONSTRUCTION DETAIL

TITLE: NAS Cecil Field		LOG of WELL: CEF-639-IS	BORING NO. CEF-639-IS
CLIENT: SOUTHDIVNAVFACENGCOM			PROJECT NO: 8542-03
CONTRACTOR: GEOTEK		DATE STARTED: 2-25-97	COMPLTD: 2-25-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 3-13	PROTECTION LEVEL: D
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 14 FEET.	DPTH TO ∇ 1.78 FEET.
LOGGED BY: J Koch	WELL DEVELOPMENT DATE: 3-3-97		SITE: Building 639

DEPTH F.T.	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 grey to dark grey, fine grain, no petroleum odor.		SM	posthole	
0			SILTY SAND: As above, no petroleum odor.	SM		posthole		
5		100%	0	SILTY SAND: Light grey to dark grey, fine grain with traces of clay, no petroleum odor.		SM	4,4,7,13	
10		100%	44	SAND: Medium grey, fine grain, no petroleum odor.			4,6,10,13	
15								
20								

APPENDIX B
ANALYTICAL DATA

NAS CECIL FIELD -- TANK G639
 SOIL DATA -- KEROSENE ANALYTICAL GROUP -- REPORT REQ NO. 9956

Lab Sample Number:	ABD1701040	ABD1701040
Site	UST GREY	UST GREY
Locator	CEF-639-SB1	CEF-639-SB4
Collect Date:	16-APR-98	16-APR-98

	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
UST GREY								
Benzene	12	U	ug/kg	12	1.2	U	ug/kg	1.2
Ethylbenzene	12	U	ug/kg	12	1.2	U	ug/kg	1.2
Toluene	12	U	ug/kg	12	1.2	U	ug/kg	1.2
Xylenes (total)	12	U	ug/kg	12	1.2	U	ug/kg	1.2
Acenaphthene	12000	U	ug/kg	12000	230	U	ug/kg	230
Acenaphthylene	12000	U	ug/kg	12000	230	U	ug/kg	230
Anthracene	12000	U	ug/kg	12000	230	U	ug/kg	230
Benzo (a) anthracene	520	J	ug/kg	310	29	J	ug/kg	5.8
Benzo (a) pyrene	310	U	ug/kg	310	5.8	U	ug/kg	5.8
Benzo (b) fluoranthene	310	U	ug/kg	310	5.8	U	ug/kg	5.8
Benzo (g,h,i) perylene	310	U	ug/kg	310	5.8	U	ug/kg	5.8
Benzo (k) fluoranthene	310	U	ug/kg	310	5.8	U	ug/kg	5.8
Chrysene	1200	U	ug/kg	1200	23	U	ug/kg	23
Dibenzo (a,h) anthracene	310	U	ug/kg	310	14	U	ug/kg	5.8
Fluoranthene	1700	J	ug/kg	310	8.5	U	ug/kg	5.8
Fluorene	12000	U	ug/kg	12000	230	U	ug/kg	230
Indeno (1,2,3-cd) pyrene	310	U	ug/kg	310	5.8	U	ug/kg	5.8
Naphthalene	12000	U	ug/kg	12000	230	U	ug/kg	230
Phenanthrene	12000	U	ug/kg	12000	230	U	ug/kg	230
Pyrene	750	J	ug/kg	310	5.8	U	ug/kg	5.8
FLA PRO								
TPH C8-C40	1700		mg/kg	49	12	U	mg/kg	12

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

NAS CECIL FIELD -- TANK G639
UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9497

Lab Sample Number:	B7C2001620	B7C2001620	
Site	BRACGREY	BRACGREY	
Locator	CEF6391S	CEF6391S	
Collect Date:	19-MAR-97	19-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	53	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	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 G639
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9497

Lab Sample Number:	B7C2001620	B7C2001620
Site	BRACGREY	BRACGREY
Locator	CEF6391S	CEF6391S
Collect Date:	19-MAR-97	19-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	-				16.3		ug/l	5

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

APPENDIX C
SOURCE REMOVAL REPORT

SOURCE REMOVAL REPORT

Revision No.: 01

UST G639

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

Unit Identification Code: N60200
Contract No. N62467-98-D-0995, CTO No. 0002

Prepared by:

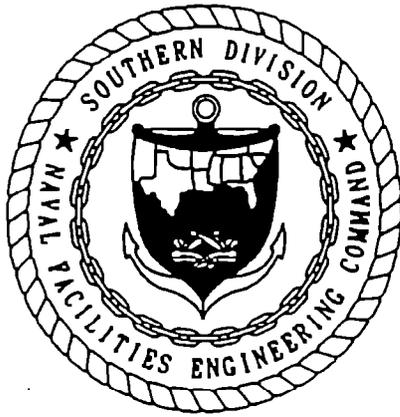
CH2M HILL Constructors, Inc.
115 Perimeter Center Place, N.E., Suite 700
Atlanta, Georgia 30346

Prepared for:

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

Bryan Kizer, Engineer-in-Charge

June 1999

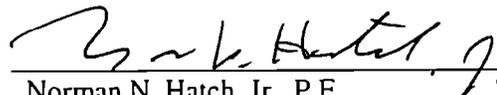


**CERTIFICATION OF TECHNICAL
DATA CONFORMITY (JUNE 1999)**

The contractor, CH2M HILL Constructors, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-98-D-0995, Contract Task Order (CTO) No. 0002 are complete and accurate and comply with all requirements of this contract.

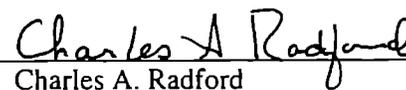
DATE: June 5, 1999

NAME AND TITLE OF CERTIFYING OFFICIAL:



Norman N. Hatch, Jr., P.E.
Contract Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL:



Charles A. Radford
Project Technical Lead

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Appendix E: Soil KAG Analytical Results

GLOSSARY

ABB	ABB Environmental Services, Inc.
bls	below land surface
CCI	CH2M HILL Constructors, Inc.
CTO	Contract Task Order
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FID	flame ionization detector
KAG	kerosene analytical group
NAS	Naval Air Station
OVA	organic vapor analyzer
PAHs	polynuclear aromatic hydrocarbons
PID	photoionization detector
ppm	parts per million
SA	Site Assessment
SCTLs	selected soil cleanup target levels
SJRWMD	St. Johns River Water Management District
SOUTHNAV- FACENCOM	Southern Division, Naval Facilities Engineering Command
TRPH	total recoverable petroleum hydrocarbons
UST	underground storage tank
VOCs	volatile organic compounds

SOURCE REMOVAL REPORT REQUIREMENTS – CHECKLIST

Per FAC 62-770.300(3) the Source Removal Report shall contain the following information in detail, as applicable:

Site Name: UST G639

Date(s) of Source Removal: 1/12/99

Required Information	Response
1. Volume of product that was discharged, if known	<i>Unknown</i>
2. Volume of free product and the volume of groundwater recovered	<i>No free product found</i>
3. Volume of contaminated soil excavated and treated or properly disposed	<i>280 tons of soil excavated and disposed of offsite</i>
4. Disposal or recycling methods for free product and contaminated soil	<i>Contaminated soils recycled at Kedesh, Inc., Kingsland, Georgia</i>
5. Disposal methods for other contaminated media	<i>No other contaminated media</i>
6. Scaled site map (including a graphical representation of the scale used) showing location(s) of free product recovered and the area of soil removed or treated and the approximate locations of all samples taken	<i>See Figure 2-1</i>
7. Table summarizing free product thickness in each monitoring well or piezometer and the dates the measurements were made	<i>No free product found</i>
8. Type of field screening instrument or method used	<i>OVA/FID and PID</i>
9. Dimensions of the excavation(s) and location(s), integrity, capacities and last known contents of storage tanks, integral piping, dispensers, or appurtenances removed	<i>Excavation area: 31.5 feet long x 30 feet wide x 7 feet deep (see Figure 2-1) 3000-gallon UST, contained diesel (see Figure 1-1)</i>
10. Dimensions of the excavation(s) and location(s) and capacities of replacement underground storage tanks	<i>Not Applicable. No replacement UST installed</i>
11. Table indicating the identification, depth and field soil screening results of each sample collected	<i>See Table 2-2</i>
12. Depth to groundwater at the time of each excavation, measurement locations and method used to obtain that information	<i>Depth to groundwater approximately 6 feet bls. Measured in monitoring well CEF-639-1S and by visual observation (See Section 2.2.1)</i>
13. Type of petroleum or petroleum products discharged	<i>Diesel</i>
14. Documentation confirming the proper treatment or proper disposal of the free product or contaminated soil, including disposal manifests for free product, a copy of the treatment or acceptance of the contaminated soil and results of analyses, if performed	<i>See Table 2-1 and Appendix C</i>
15. For land farmed soil, a copy of the pre-treatment and post-treatment analytical results	<i>Not Applicable. Soil disposed of offsite</i>

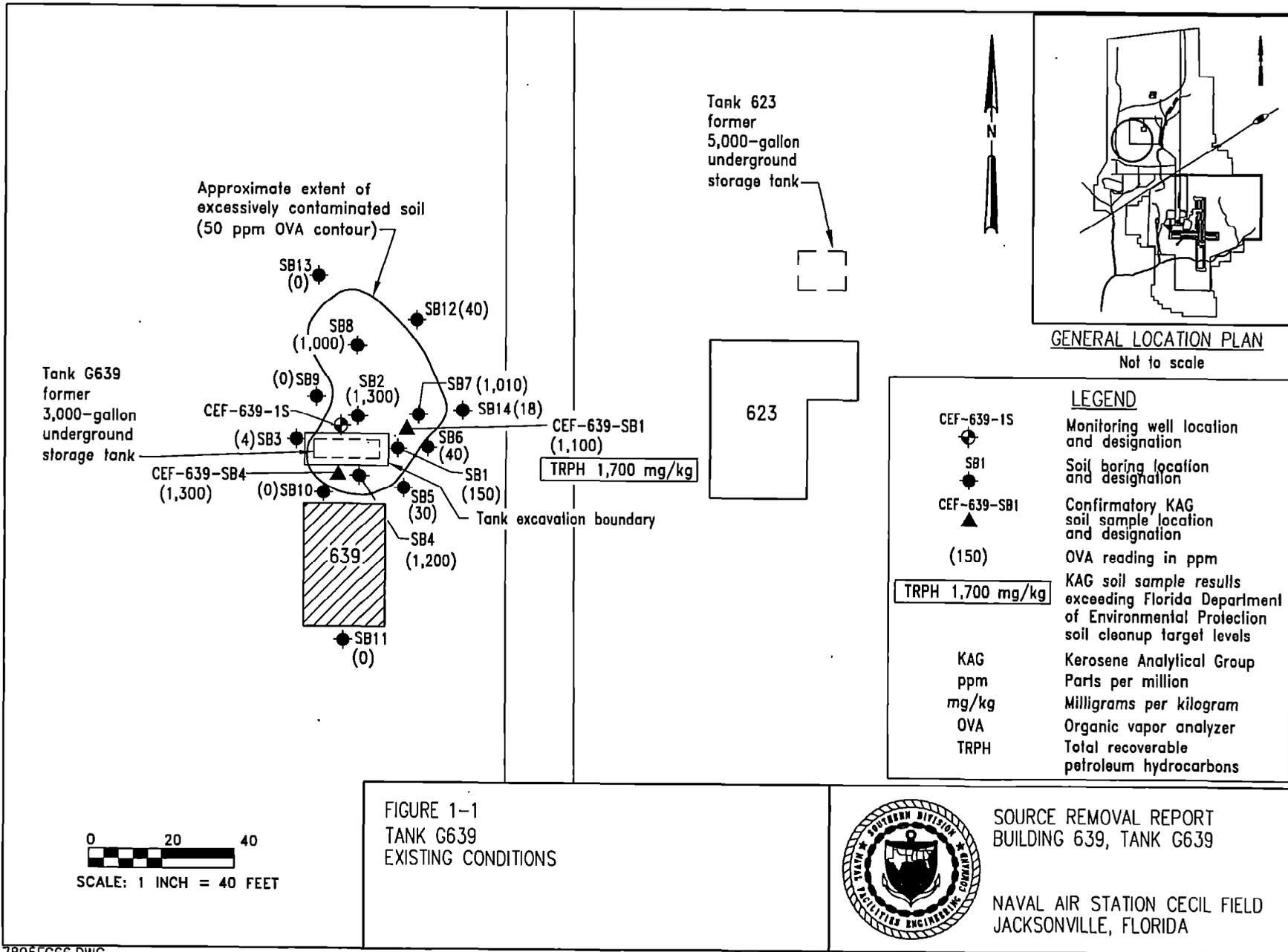
1.0 INTRODUCTION

CH2M HILL Constructors, Inc. (CCI) was contracted by the Southern Division Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to excavate petroleum-contaminated soil and prepare a Source Removal Report for the Underground Storage Tank (UST) Site G639 at Naval Air Station (NAS) Cecil Field in Jacksonville, Florida. The Source Removal was conducted in accordance with the Florida Department of Environmental Protection (FDEP) Petroleum Contamination Site Cleanup rule 62-770, Florida Administrative Code (FAC).

The scope of services for excavation of petroleum-contaminated soils at UST G639 is described in detail in the NAS Cecil Field Basewide Work Plan, Revision 1 (CCI, 1998a) and the Work Plan Addendum No. 1, Revision 1 (CCI, 1998b). This work was authorized under the Remedial Action Contract No. N62467-98-D-0995, Contract Task Order (CTO) No. 0002.

1.1 SITE BACKGROUND. UST G639, a 3,000-gallon diesel tank located in the Yellow Waters Weapons Complex, was used to store fuel for standby generators. The tank was installed in 1977 and removed April 15, 1997. No soil was excavated at the time the UST was removed (ABB, 1997). Subsequently, excessively contaminated soils were identified around UST G639 during the Site Assessment (SA) and a Source Removal was recommended. The proposed limits of the excavation area were determined during the SA by using both headspace analysis and laboratory analyses. A site plan showing the results of the SA soil delineation and the site conditions prior to the Source Removal is presented in Figure 1-1.

1.2 PROJECT OBJECTIVES. The primary objective of the soil excavation at UST G639 was to remove petroleum-contaminated soils that exceed the Selected Soil Cleanup Target Levels (SCTLs) outlined in FAC 62-770. FDEP allows the use of headspace analysis as a screening tool in evaluating whether the soil samples exceed the SCTLs. Under headspace analysis, soil samples are screened using an organic vapor analyzer (OVA) equipped with a flame ionization detector (FID) in accordance with the procedures outlined in FAC 62-770.200(8). Soils with an OVA reading exceeding 50 part per million (ppm), based on the kerosene analytical group (KAG), are considered to be excessively contaminated and are expected to contain constituents exceeding the SCTLs. Confirmatory sampling is required under FAC 62-770.200(8), where the OVA results are confirmed by laboratory analysis for the KAG. The KAG analysis for soils includes volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), and total recoverable petroleum hydrocarbons (TRPH) by the FLO-PRO method.



2.0 SOURCE REMOVAL ACTIVITIES

A Source Removal was conducted at UST G639 on January 12, 1999. Petroleum-contaminated soil was excavated from the area around the former location of the UST and disposed of offsite. No free product was found during the excavation. Photographs showing the site during and after the Source Removal are presented in Appendix A.

2.1 SITE PREPARATION. In preparation for excavation, monitoring well CEF-639-1S was abandoned on January 5, 1999. The well, abandoned in accordance with St. Johns River Water Management District (SJRWMD) regulations, was filled with a cement-bentonite grout. The well abandonment report is presented in Appendix B. The supports for an overhead piping rack were temporarily removed at UST G639 to obtain access to the excavation area.

2.2 SOIL EXCAVATION AND DISPOSAL. Soils were initially excavated based on the limits of the excessively contaminated soil delineated as part of the SA. The walls of the excavation were screened using headspace analysis to determine if additional soil should be excavated.

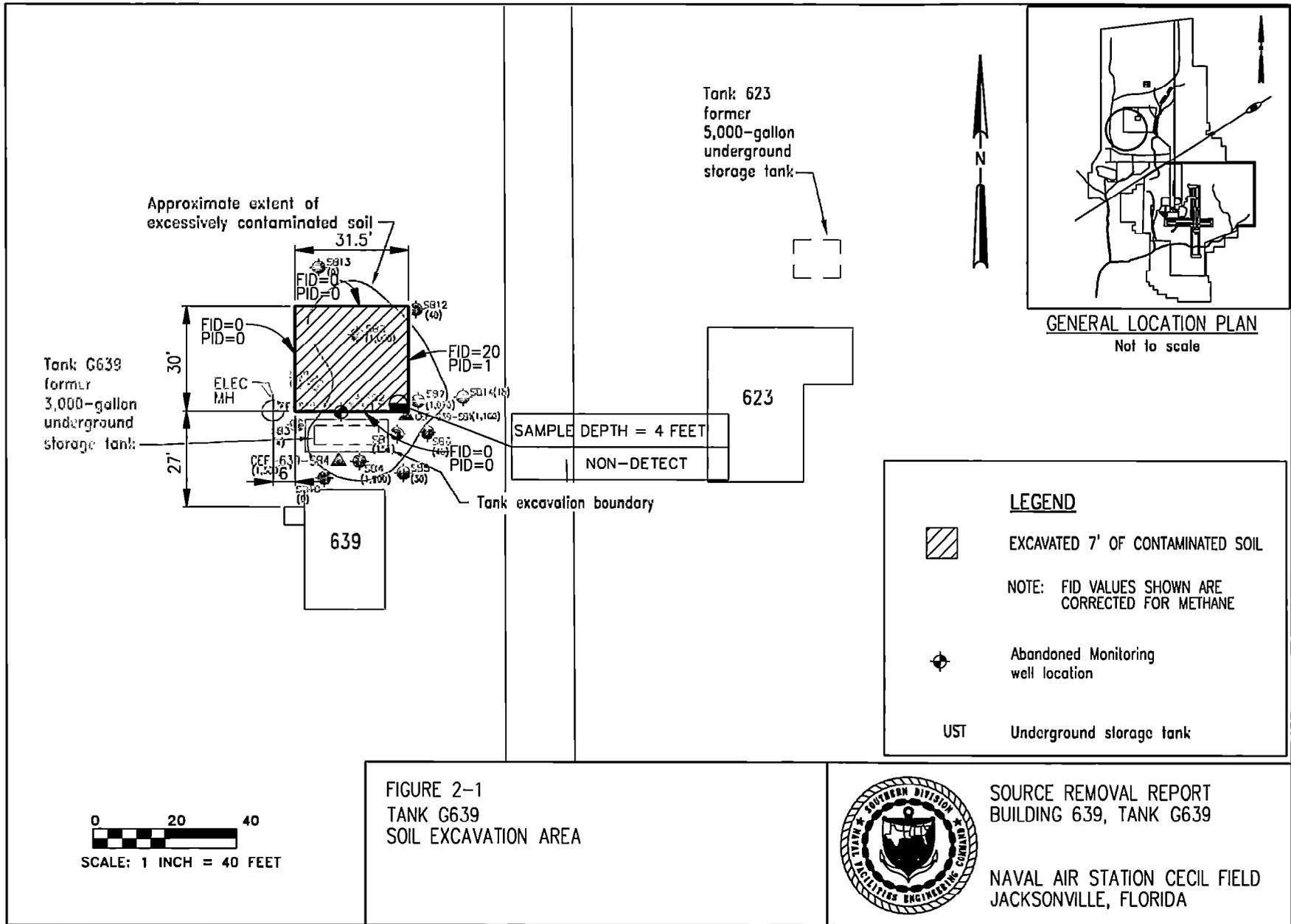
2.2.1 Soil Excavation. The soil was excavated to approximately 1 foot below the water table, to a depth of approximately 7 feet below land surface (bls). The depth to groundwater was originally estimated from the monitoring well CEF-639-1S, which was later abandoned. Immediately prior to excavation, the water table was determined by hand augering bore holes and measuring the depth to water. The groundwater level was confirmed by visual observation during the excavation.

The soil was excavated using a trackhoe and was immediately loaded into waiting trucks. No contaminated soil was stockpiled onsite. Based on the manifests, 280 tons of petroleum-contaminated soil were excavated and disposed of offsite. The excavation was approximately 31.5 feet long, 30 feet wide, and 7 feet deep, corresponding to approximately 245 cubic yards. The excavation area is shown in Figure 2-1.

2.2.2 Soil Transportation and Disposal. The petroleum-contaminated soil was transported offsite by truck to the Kedesh, Inc. soil thermal treatment facility in Kingsland, Georgia. A summary of the manifests is presented in Table 2-1 and copies of the manifests are presented in Appendix C.

**Table 2-1
Summary of Manifests for Soil Disposal**

Date	Truck #	Company	Manifest #	Weight (pounds)	Tare (pounds)	Net (pounds)
1/12/99	210	Modlin	CF 1121	68060	23500	44560
1/12/99	9800	Modlin	CF 1122	61780	22600	39180
1/12/99	202	Modlin	CF 1123	64880	22700	42180
1/12/99	9802	Modlin	CF 1124	61400	23200	38200
1/12/99	9809	Modlin	CF 1125	65440	23360	42080
1/12/99	9803	Modlin	CF 1126	63100	22600	40500
1/12/99	9801	Modlin	CF 1127	67180	22600	44580
1/12/99	209	Modlin	CF 1128	69480	23600	45880
1/12/99	210	Modlin	CF 1129	63380	23500	39880
1/12/99	202	Modlin	CF 1130	73180	22700	50480
1/12/99	9800	Modlin	CF 1131	61620	22600	39020
1/12/99	9802	Modlin	CF 1132	70920	23200	47720
1/12/99	9809	Modlin	CF 1133	69400	23360	46040
Number of Truck Loads = 13				Total Weight (pounds) =		560300
Total Weight (tons) =						280.15



2.2.3 Backfilling and Site Restoration. The material used to backfill the excavation was clean fill brought in from a borrow pit operated by Anderson-Columbia, Inc. in Maxville, Florida. A copy of the letter certifying that the material was clean fill is presented in Appendix D.

Once the excavation area was backfilled, the site was graded and seeded with Bahia grass.

2.3 SAMPLING AND ANALYSIS. Soil samples were collected from the walls of the excavation at a depth of 4.5 ft bls. Because soils were excavated to 1 foot below the water table, no samples were collected from the floor of the excavation. The sampling locations are shown in Figure 2-1.

2.3.1 Headspace Analysis. Soil samples collected from the UST G639 excavation were screened using an OVA equipped with an FID in accordance with the procedures outlined in 62-770.200(8) FAC. A methane filter was used to correct the results. Samples were also screened using a Photoionization Detector (PID). The results of the headspace analyses are shown in Table 2-2. All headspace results were below 50 ppm.

**Table 2-2
Summary of Headspace Screening Results**

Station ID	Depth (feet bls)	FID Unfiltered (ppm)	FID with Filter (ppm)	FID Corrected (ppm)	PID (ppm)
North	4.5	0	0	0	0
South	4.5	0	0	0	0
East	4.5	660	640	20	1
West	4.5	0	0	0	0

2.3.2 KAG Analysis. One soil sample was collected for KAG analysis at a depth of 4-feet at the southeast corner of the excavated area. Results were non-detect for all KAG parameters (Appendix E).

3.0 CONCLUSIONS

A total of 280 tons of petroleum-contaminated soils at UST G639 that were identified during the SA have been removed and disposed of offsite. The soil was excavated to approximately 1 foot below the water table, to a depth of approximately 7 feet bls. The horizontal limits of the excavation had headspace results (OVA with FID) of less than 50 ppm. A soil KAG sample collected at the southeast corner of the excavation was non-detect, confirming that the horizontal limits had been achieved. No free product was found during the excavation.

REFERENCES

ABB Environmental Services Inc., 1997, Confirmatory Sampling Report, Building 639, Tank G639, BRAC UST and AST Grey Sites, NAS Cecil Field, Jacksonville, Florida, December.

CH2M HILL Constructors, Inc. (CCI), 1998b, Basewide Work Plan, Revision No. 1, NAS Cecil Field, Jacksonville, Florida: prepared for Southern Division Naval Facilities Engineering Command, November.

CCI, 1998b, Work Plan Addendum No. 1, Revision 1, Excavation of Petroleum-Contaminated Soil from 11 Former UST Sites and the Day Tank 2 Area, NAS Cecil Field, Jacksonville, Florida: prepared for Southern Division Naval Facilities Engineering Command, November.

Southern Division Naval Facilities Engineering Command Quality Improvement Forum 1998, A Guideline for the Preparation of Remedial Action Reports/Closure Reports, Revision 0, May 11.

Southern Division Naval Facilities Engineering Command, 1996, Environmental Report Format Guidance Manual, Revision No. 5, October 9.

**APPENDIX A
PHOTOGRAPHS**



EXCAVATION IN PROGRESS

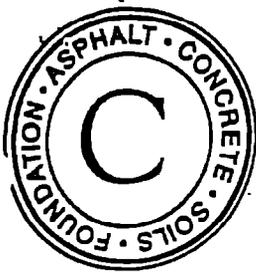


SITE RESTORATION

UST SITE
BUILDING 639
YELLOW WATER

CH2MHILL

APPENDIX B
WELL ABANDONMENT REPORT



CAL-TECH TESTING, INC.

ENGINEERING & TESTING LABORATORY

P.O. Box 1625, Lake City, FL 32056-1625
6900 Phillips Hwy., Ste. 3, Jacksonville, FL 32216
7850 Rex Drive, Milton, FL 32570

Lake City • (904) 755-3633
Fax • (904) 752-5456

Jacksonville • (904) 296-7201
Fax • (904) 296-7202

Milton • (904) 626-0080
Fax • (904) 626-0190

January 6, 1999

NAS Cecil Field
Attn: CH2M Hill Constructors, Inc.
13200 Normandy Blyd.
1st Street, Bldg. 884
Jacksonville, Florida 32215
Attn: Mr. Charlie Radford

Subject: Report of Monitoring Well Abandonment
Various UST Sites
NAS Cecil Field
Jacksonville, Florida
Cal-Tech Project No. 98-313

Dear Mr. Radford,

Cal-Tech Testing abandoned eleven monitoring wells for the subject project on January 5, 1999. These wells were all 2 inches in diameter. The wells were filled with a cement-bentonite grout which was tremmied to the bottom of each. The grout displaced the groundwater to the top of the well where it was captured and containerized. The table below shows the depth and diameter of each well:

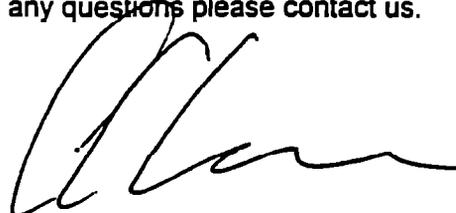
Monitoring Well No.	Diameter	Depth, Ft.
CEF-605-1S	2"	12' 1"
CEF-605-5D	2"	30' 3"
CEF-607-1S	2"	12' 4"
CEF-639-1S	2"	13' 2"
CEF-623-4D	2"	29' 6"
CEF-623-1S	2"	12' 2"
CEF-F-15	2"	14' 5"
CEF-880-1S	2"	14' 7"
CEF-502-5D	2"	30' 0"
CEF-502-2S	2"	13' 2"
CEF-502-1S	2"	10' 6"
TOTAL		192' 2"

Copies of the well abandonment reports are attached. These reports will be provided to the St. Johns Water Management District and The City of Jacksonville.

We have enjoyed serving you thus far. If you have any questions please contact us.

Very truly yours,
CAL-TECH TESTING, INC.


Lewis E. Hay, P.E., P.G.
Sr. Engineer



Calvin C. Creamer, Jr.
General Manager

WELL COMPLETION REPORT (Please complete in black ink or type.)

PERMIT # _____ CUP/WUP # _____ DID # _____

permit is for multiple wells indicate the number of wells drilled _____

indicate remaining wells to be cancelled _____

WATER WELL CONTRACTOR'S

SIGNATURE [Signature] License # 11026

I certify that the information provided in this report is accurate and true.

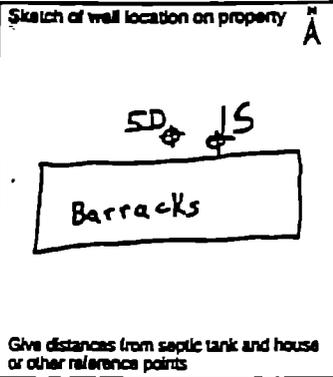
Grout	No. of Bags	From (FL)	To (FL)
Neat Cement	1/3	0	12.1
Bentonite:			

WELL LOCATION: County Duval

VW 14 of NE 14 of Section 10 Twp: 3S Rge: 24E

Latitude _____ Longitude _____

DATE STAMP _____
Official Use Only



CHEMICAL ANALYSIS WHEN REQUIRED

Iron: _____ ppm Sulfate: _____ ppm

Chloride: _____ ppm

Lab Test Field Test Kit

Pump Type

Centrifugal Jet Submersible Turbine

Horsepower _____ Capacity _____ G.P.M. _____

Pump Depth _____ FL Intake Depth _____ FL

Form 408-3-3 Rev. 12/85

OWNER'S NAME US Navy - NAS Cecil Field

COMPLETION DATE _____ Florida Unique I.D. _____

WELL USE: DEP/Public _____ Irrigation _____ Domestic _____ Monitor

HRS Limited _____ 62-524 _____ Other _____

DRILL METHOD Rotary Cable Tool Combination

Jet Auger Other _____

Measured Static Water Level _____		Measured Pumping Water Level _____	
After _____ Hours at _____ G.P.M. Measuring PL (describe): _____			
Which is _____ FL <input type="checkbox"/> Above <input type="checkbox"/> Below Land Surface			
Casing: <input type="checkbox"/> Black Steel <input type="checkbox"/> Galv. <input checked="" type="checkbox"/> PVC Other _____			
<input type="checkbox"/> Open Hole <input type="checkbox"/> Screen	Depth (FL)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material
Casing Diameter & Depth (FL)	From	To	
Diameter <u>2"</u> From <u>0</u> To <u>12' 1"</u>	0	12.1	Cement-bentonite grout
			Abandoned Well
Diameter _____ From _____ To _____			No CEF-605-IS
Liner <input type="checkbox"/> or Casing <input type="checkbox"/>			
Diameter _____ From _____ To _____			

Driller's Name: (print or type) Frank Linehan

WELL COMPLETION REPORT (Please complete in black ink or type.)

PERMIT # _____ CUP/WUP # _____ DID # _____

permit is for multiple wells indicate the number of wells drilled _____

indicate remaining wells to be cancelled _____

WATER WELL CONTRACTOR'S

SIGNATURE [Signature] License # 11026

I certify that the information provided in this report is accurate and true.

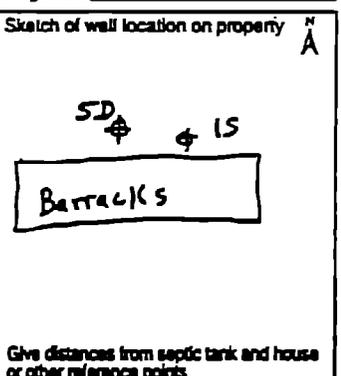
Grout	No. of Bags	From (FL)	To (FL)
Neat Cement	1	0	30.2
Bentonite:	1/4		

WELL LOCATION: County Duval

W 14 of NE 14 of Section 10 Twp: 3S Rge: 24E

Latitude _____ Longitude _____

DATE STAMP _____
Official Use Only



CHEMICAL ANALYSIS WHEN REQUIRED

Iron: _____ ppm Sulfate: _____ ppm

Chloride: _____ ppm

Lab Test Field Test Kit

Pump Type

Centrifugal Jet Submersible Turbine

Horsepower _____ Capacity _____ G.P.M. _____

Pump Depth _____ FL Intake Depth _____ FL

OWNER'S NAME US Navy - NAS Cecil Field

COMPLETION DATE _____ Florida Unique I.D. _____

WELL USE: DEP/Public _____ Irrigation _____ Domestic _____ Monitor

HRS Limited _____ 62-524 _____ Other _____

DRILL METHOD Rotary Cable Tool Combination

Jet Auger Other _____

Measured Static Water Level _____		Measured Pumping Water Level _____	
After _____ Hours at _____ G.P.M. Measuring PL (describe): _____			
Which is _____ FL <input type="checkbox"/> Above <input type="checkbox"/> Below Land Surface			
Casing: <input type="checkbox"/> Black Steel <input type="checkbox"/> Galv. <input checked="" type="checkbox"/> PVC Other _____			
<input type="checkbox"/> Open Hole <input type="checkbox"/> Screen	Depth (FL)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material
Casing Diameter & Depth (FL)	From	To	
Diameter <u>2"</u> From <u>0</u> To <u>30.2</u>	0	30.2	Cement-bentonite grout
			Abandoned Well
Diameter _____ From _____ To _____			No CEF-605-SD
Liner <input type="checkbox"/> or Casing <input type="checkbox"/>			
Diameter _____ From _____ To _____			

Driller's Name: (print or type) Frank Linehan

WELL COMPLETION REPORT

PERMIT # _____ CUP/WUP # _____ DID # _____

If permit is for multiple wells indicate the number of wells drilled _____

Indicate remaining wells to be cancelled _____

WATER WELL CONTRACTOR'S SIGNATURE _____ License # 11026

I certify that the information provided in this report is accurate and true.

Grout	No. of Bags	From (FL)	To (FL)
Neat Cement	1/3	0	12.3
Bentonite:			

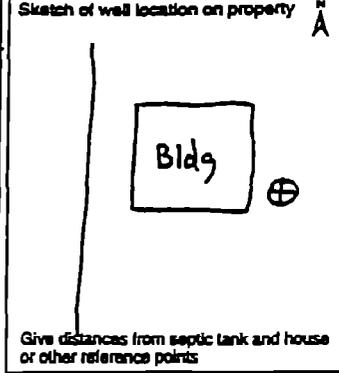
WELL LOCATION: County Duval

NW 1/4 of NE 1/4 of Section 10 Twp: 3S Rge: 24E

Latitude _____ Longitude _____

DATE STAMP

Official Use Only



CHEMICAL ANALYSIS WHEN REQUIRED

Iron: _____ ppm Sulfate: _____ ppm

Chloride: _____ ppm

[] Lab Test [] Field Test Kit

Pump Type

[] Centrifugal [] Jet [] Submersible [] Turbine

Horsepower _____ Capacity _____ G.P.M. _____

Pump Depth _____ Ft. Intake Depth _____ Ft.

OWNER'S NAME _____ Florida Unique I.D. _____

WELL USE: DEP/Public _____ Irrigation _____ Domestic _____ Monitor X

HRS Limited _____ 62-524 _____ Other _____

DRILL METHOD [] Rotary [] Cable Tool [] Combination

[] Jet [X] Auger Other _____

Measured Static Water Level _____ Measured Pumping Water Level _____

After _____ Hours at _____ G.P.M. Measuring Pt. (describe): _____

Which is _____ FL [] Above [] Below Land Surface

Casing: [] Black Steel [] Galv. [X] PVC Other _____

Casing Diameter & Depth (FL)	Depth (FL)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material
	From	To	
Diameter <u>2"</u> From <u>0</u> To <u>12.3</u>	<u>0</u>	<u>12.3</u>	<u>Cement Bentonite grout</u>
			<u>Abandoned Well No</u>
			<u>CEF-607-15</u>
Liner [] or Casing []			
Diameter _____			
From _____			
To _____			

Driller's Name: Frank Linehan
(print or type)

'ELL COMPLETION REPORT (Please complete in black ink or type.)

PERMIT # _____ CUP/WUP # _____ DID # _____

If permit is for multiple wells indicate the number of wells drilled _____

Indicate remaining wells to be cancelled _____

WATER WELL CONTRACTOR'S SIGNATURE _____ License # _____

I certify that the information provided in this report is accurate and true.

Grout	No. of Bags	From (FL)	To (FL)
Neat Cement	1/3	0	13.2
Bentonite:			

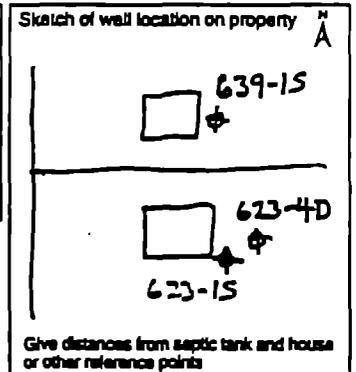
WELL LOCATION: County Duval

SE 1/4 of NE 1/4 of Section 3 Twp: 3S Rge: 24E

Latitude _____ Longitude _____

DATE STAMP

Official Use Only



CHEMICAL ANALYSIS WHEN REQUIRED

Iron: _____ ppm Sulfate: _____ ppm

Chloride: _____ ppm

[] Lab Test [] Field Test Kit

ump Type

[] Centrifugal [] Jet [] Submersible [] Turbine

Horsepower _____ Capacity _____ G.P.M. _____

Pump Depth _____ FL Intake Depth _____ Ft.

OWNER'S NAME US Navy - NAS Cecil Field

COMPLETION DATE _____ Florida Unique I.D. _____

WELL USE: DEP/Public _____ Irrigation _____ Domestic _____ Monitor X

HRS Limited _____ 62-524 _____ Other _____

DRILL METHOD [] Rotary [] Cable Tool [] Combination

[] Jet [X] Auger Other _____

Measured Static Water Level _____ Measured Pumping Water Level _____

After _____ Hours at _____ G.P.M. Measuring Pt. (describe): _____

Which is _____ FL [] Above [] Below Land Surface

Casing: [] Black Steel [] Galv. [X] PVC Other _____

Casing Diameter & Depth (FL)	Depth (FL)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material
	From	To	
Diameter <u>2"</u> From <u>0</u> To <u>13.2</u>	<u>0</u>	<u>13.2</u>	<u>CEMENT-Bentonite grout</u>
			<u>Abandoned Well No</u>
			<u>CEF-639-15</u>
Liner [] or Casing []			
Diameter _____			
From _____			
To _____			

Driller's Name: Frank Linehan
(print or type)

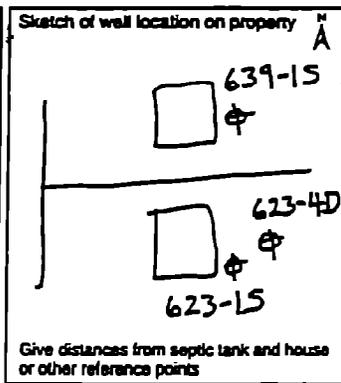
WELL COMPLETION REPORT (Please complete in black ink or type.)
 PERMIT # _____ CUP/WUP # _____ DID # _____
 If permit is for multiple wells indicate the number of wells drilled _____
 Indicate remaining wells to be cancelled _____
 WATER WELL CONTRACTOR'S
 SIGNATURE Frank Linehan License # 11026
 I certify that the information provided in this report is accurate and true.

Grout	No. of Bags	From (Fl.)	To (Fl.)
Neat Cement:	1/3	0	12.2
Bentonite:			

WELL LOCATION: County Duval
SE 1/4 of NE 1/4 of Section 3 Twp: 3S Rge: 24E
 Latitude _____ Longitude _____

DATE STAMP

Official Use Only



CHEMICAL ANALYSIS WHEN REQUIRED
 Iron: _____ ppm Sulfate: _____ ppm
 Chloride: _____ ppm
 Lab Test Field Test Kit
 Pump Type
 Centrifugal Jet Submersible Turbine
 Horsepower _____ Capacity _____ G.P.M. _____
 Pump Depth _____ Ft. Intake Depth _____ Ft.

Form 408-3-3 Rev. 12/95

OWNER'S NAME _____ Florida Unique I.D. _____
 COMPLETION DATE _____
 WELL USE: DEP/Public _____ Irrigation _____ Domestic _____ Monitor
 HRS Limited _____ 62-524 _____ Other _____
 DRILL METHOD Rotary Cable Tool Combination
 Jet Auger Other _____

Measured Static Water Level _____ Measured Pumping Water Level _____
 After _____ Hours at _____ G.P.M. Measuring PL (describe): _____
 Which is _____ FL Above Below Land Surface
 Casing: Black Steel Galv. PVC Other _____

Casing Diameter & Depth (FL)	Depth (FL)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material
	From	To	
Diameter <u>2"</u> From <u>0</u> To <u>12.2</u>	<u>0</u>	<u>12.2</u>	<u>Cement Bentonite grout</u>
Diameter _____ From _____ To _____			<u>Abandoned Well No</u>
			<u>CEF-623-1S</u>
Liner <input type="checkbox"/> or Casing <input type="checkbox"/> Diameter _____ From _____ To _____			

Driller's Name: Frank Linehan
 (print or type)

WELL COMPLETION REPORT (Please complete in black ink or type.)

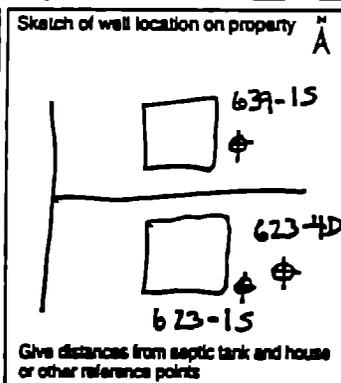
PERMIT # _____ CUP/WUP # _____ DID # _____
 If permit is for multiple wells indicate the number of wells drilled _____
 Indicate remaining wells to be cancelled _____
 WATER WELL CONTRACTOR'S
 SIGNATURE Frank Linehan License # 11026
 I certify that the information provided in this report is accurate and true.

Grout	No. of Bags	From (Fl.)	To (Fl.)
Neat Cement:	1	0	29.5
Bentonite:	1/4		

WELL LOCATION: County Duval
SE 1/4 of NE 1/4 of Section 3 Twp: 3S Rge: 24E
 Latitude _____ Longitude _____

DATE STAMP

Official Use Only



CHEMICAL ANALYSIS WHEN REQUIRED
 Iron: _____ ppm Sulfate: _____ ppm
 Chloride: _____ ppm
 Lab Test Field Test Kit
 Pump Type
 Centrifugal Jet Submersible Turbine
 Horsepower _____ Capacity _____ G.P.M. _____
 Pump Depth _____ Ft. Intake Depth _____ Ft.

Form 408-3-3 Rev. 12/95

OWNER'S NAME U.S. Navy - NAS Cecil Fi
 COMPLETION DATE _____ Florida Unique I.D. _____
 WELL USE: DEP/Public _____ Irrigation _____ Domestic _____ Monitor
 HRS Limited _____ 62-524 _____ Other _____
 DRILL METHOD Rotary Cable Tool Combination
 Jet Auger Other _____

Measured Static Water Level _____ Measured Pumping Water Level _____
 After _____ Hours at _____ G.P.M. Measuring PL (describe): _____
 Which is _____ FL Above Below Land Surface
 Casing: Black Steel Galv. PVC Other _____

Casing Diameter & Depth (FL)	Depth (FL)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material
	From	To	
Diameter <u>2"</u> From <u>0</u> To <u>29.5</u>	<u>0</u>	<u>29.5</u>	<u>Cement Bentonite grout</u>
Diameter _____ From _____ To _____			<u>Abandoned Well No</u>
			<u>CEF 623-4D</u>
Liner <input type="checkbox"/> or Casing <input type="checkbox"/> Diameter _____ From _____ To _____			

Driller's Name: Frank Linehan
 (print or type)

PERMIT # _____ CUP/WUP # _____ DID # _____

If permit is for multiple wells indicate the number of wells drilled _____

Indicate remaining wells to be cancelled _____

WATER WELL CONTRACTOR'S

SIGNATURE [Signature] License # 11026

I certify that the information provided in this report is accurate and true.

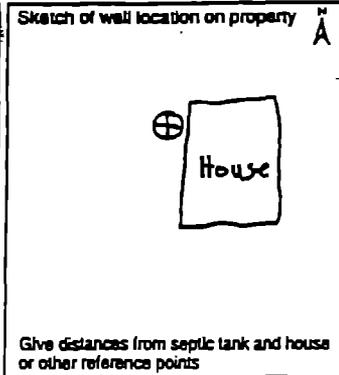
Grout	No. of Bags	From (FL)	To (FL)
Neat Cement:	1/3	0	14.4
Bentonite:			

WELL LOCATION: County Duval

NE 1/4 of SE 1/4 of Section 15 Twp: 35 Rge: 24E

Latitude _____ Longitude _____

DATE STAMP
Official Use Only



CHEMICAL ANALYSIS WHEN REQUIRED

Iron: _____ ppm Sulfate: _____ ppm

Chloride: _____ ppm

[] Lab Test [] Field Test Kit

Pump Type

[] Centrifugal [] Jet [] Submersible [] Turbine

Horsepower _____ Capacity _____ G.P.M. _____

Pump Depth _____ Ft. Intake Depth _____ Ft.

Form 408-3-3 Rev. 12/95

OWNER'S NAME _____ Florida Unique I.D. _____

WELL USE: DEP/Public _____ Irrigation _____ Domestic _____ Monitor X

HRS Limited _____ 62-524 _____ Other _____

DRILL METHOD [] Rotary [] Cable Tool [] Combination

[] Jet [X] Auger Other _____

Measured Static Water Level _____ Measured Pumping Water Level _____		After _____ Hours at _____ G.P.M. Measuring Pt. (Describe): _____		Which is _____ FL [] Above [] Below Land Surface		Casing: [] Black Steel [] Galv. [X] PVC Other _____	
[] Open Hole [] Screen	Depth (FL)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material				
Casing Diameter & Depth (FL)	From	To					
Diameter <u>2"</u> From <u>0</u> To <u>14.4</u>	<u>0</u>	<u>14.4</u>	<u>Cement-Bentonite grout</u>				
			<u>Abandoned Well No</u>				
Diameter _____ From _____ To _____			<u>CEF-F-15</u>				
Liner [] or Casing [] Diameter _____ From _____ To _____							

Driller's Name: Frank Linehan
(print or type)

WELL COMPLETION REPORT (Please complete in black ink or type.)

PERMIT # _____ CUP/WUP # _____ DID # _____

If permit is for multiple wells indicate the number of wells drilled _____

Indicate remaining wells to be cancelled _____

WATER WELL CONTRACTOR'S

SIGNATURE [Signature] License # 11026

I certify that the information provided in this report is accurate and true.

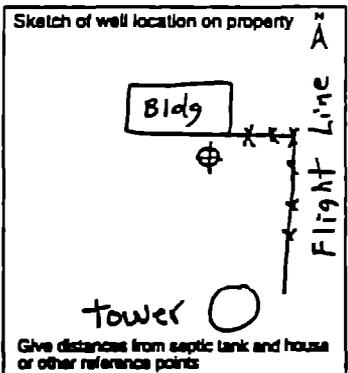
Grout	No. of Bags	From (FL)	To (FL)
Neat Cement:	1/3	0	14.6
Bentonite:			

WELL LOCATION: County Duval

SE 1/4 of NW 1/4 of Section 23 Twp: 35 Rge: 24E

Latitude _____ Longitude _____

DATE STAMP
Official Use Only



CHEMICAL ANALYSIS WHEN REQUIRED

Iron: _____ ppm Sulfate: _____ ppm

Chloride: _____ ppm

[] Lab Test [] Field Test Kit

Pump Type

[] Centrifugal [] Jet [] Submersible [] Turbine

Horsepower _____ Capacity _____ G.P.M. _____

Pump Depth _____ FL Intake Depth _____ FL

Form 408-3-3 Rev. 12/95

OWNER'S NAME US Navy - NAS Cecil Field

COMPLETION DATE _____ Florida Unique I.D. _____

WELL USE: DEP/Public _____ Irrigation _____ Domestic _____ Monitor X

HRS Limited _____ 62-524 _____ Other _____

DRILL METHOD [] Rotary [] Cable Tool [] Combination

[] Jet [X] Auger Other _____

Measured Static Water Level _____ Measured Pumping Water Level _____		After _____ Hours at _____ G.P.M. Measuring Pt. (Describe): _____		Which is _____ FL [] Above [] Below Land Surface		Casing: [] Black Steel [] Galv. [X] PVC Other _____	
[] Open Hole [] Screen	Depth (FL)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material				
Casing Diameter & Depth (FL)	From	To					
Diameter <u>2"</u> From <u>0</u> To <u>14.6</u>	<u>0</u>	<u>14.6</u>	<u>Cement-Bentonite grout</u>				
			<u>Abandoned Well No</u>				
Diameter _____ From _____ To _____			<u>CEF-880-15</u>				
Liner [] or Casing [] Diameter _____ From _____ To _____							

Driller's Name: Frank Linehan
(print or type)

PERMIT # _____ CUP/WUP # _____ DID # _____

If permit is for multiple wells indicate the number of wells drilled _____

Indicate remaining wells to be cancelled _____

WATER WELL CONTRACTOR'S

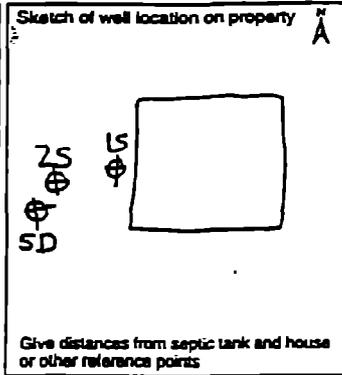
SIGNATURE Frank Linehan License # 11026
I certify that the information provided in this report is accurate and true.

Grout	No. of Bags	From (FL)	To (FL)
Neat Cement	1/3	0	10.5
Bentonite:			

WELL LOCATION: County Duval
SE 1/4 of SE 1/4 of Section 13 Twp: 3S Rge: 24E

Latitude _____ Longitude _____

DATE STAMP
Official Use Only



CHEMICAL ANALYSIS WHEN REQUIRED

Iron: _____ ppm Sulfate: _____ ppm

Chloride: _____ ppm

[] Lab Test [] Field Test Kit

Pump Type

[] Centrifugal [] Jet [] Submersible [] Turbine

Horsepower _____ Capacity _____ G.P.M. _____

Pump Depth _____ FL Intake Depth _____ FL

Form 408-3-3 Rev. 12/95

COMPLETION DATE _____ Florida Unique I.D. _____

WELL USE: DEP/Public _____ Irrigation _____ Domestic _____ Monitor

HRS Limited _____ 62-524 _____ Other _____

DRILL METHOD [] Rotary [] Cable Tool [] Combination

[] Jet Auger Other _____

Measured Static Water Level _____ Measured Pumping Water Level _____
 After _____ Hours at _____ G.P.M. Measuring Pt. (describe): _____
 Which is _____ FL [] Above [] Below Land Surface
 Casing: [] Black Steel [] Galv. PVC Other _____

[] Open Hole [] Screen	Depth (FL)	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material	
Casing Diameter & Depth (FL)	From	To	
Diameter <u>2"</u>	<u>0</u>	<u>10.5</u>	<u>Cement-bentonite grout</u>
From <u>0</u>			
To <u>10.5</u>			
			<u>Abandoned Well No.</u>
Diameter _____			<u>CEF-502-1S</u>
From _____			
To _____			
Liner [] or Casing []			
Diameter _____			
From _____			
To _____			

Driller's Name: Frank Linehan
(print or type)

WELL COMPLETION REPORT (Please complete in black ink or type.)

PERMIT # _____ CUP/WUP # _____ DID # _____

If permit is for multiple wells indicate the number of wells drilled _____

Indicate remaining wells to be cancelled _____

WATER WELL CONTRACTOR'S

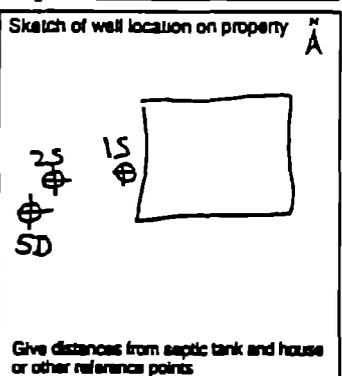
SIGNATURE Frank Linehan License # 11026
I certify that the information provided in this report is accurate and true.

Grout	No. of Bags	From (FL)	To (FL)
Neat Cement	1/3	0	13.2
Bentonite:			

WELL LOCATION: County Duval
SE 1/4 of SE 1/4 of Section 13 Twp: 3S Rge: 24E

Latitude _____ Longitude _____

DATE STAMP
Official Use Only



CHEMICAL ANALYSIS WHEN REQUIRED

Iron: _____ ppm Sulfate: _____ ppm

Chloride: _____ ppm

[] Lab Test [] Field Test Kit

Pump Type

[] Centrifugal [] Jet [] Submersible [] Turbine

Horsepower _____ Capacity _____ G.P.M. _____

Pump Depth _____ FL Intake Depth _____ FL

Form 408-3-3 Rev. 12/95

OWNER'S NAME US Navy - NAS Cecil Fir

COMPLETION DATE _____ Florida Unique I.D. _____

WELL USE: DEP/Public _____ Irrigation _____ Domestic _____ Monitor

HRS Limited _____ 62-524 _____ Other _____

DRILL METHOD [] Rotary [] Cable Tool [] Combination

[] Jet Auger Other _____

Measured Static Water Level _____ Measured Pumping Water Level _____
 After _____ Hours at _____ G.P.M. Measuring Pt. (describe): _____
 Which is _____ FL [] Above [] Below Land Surface
 Casing: [] Black Steel [] Galv. PVC Other _____

[] Open Hole [] Screen	Depth (FL)	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material	
Casing Diameter & Depth (FL)	From	To	
Diameter <u>2"</u>	<u>0</u>	<u>13.2</u>	<u>Cement-bentonite grout</u>
From <u>0</u>			
To <u>13.2</u>			
			<u>Abandoned Well No.</u>
Diameter _____			<u>CEF-502-2S</u>
From _____			
To _____			
Liner [] or Casing []			
Diameter _____			
From _____			
To _____			

Driller's Name: Frank Linehan
(print or type)

WELL COMPLETION REPORT (Please complete in black ink or type.)

PERMIT # _____ SUP/WUP # _____ DID # _____

If permit is for multiple wells indicate the number of wells drilled _____

Indicate remaining wells to be cancelled _____

WATER WELL CONTRACTOR'S

SIGNATURE Frank M. Linchan License # 11024

I certify that the information provided in this report is accurate and true.

Grout	No. of Bags	From (FL)	To (FL)
Neat Cement:	1	0	30.0
Bentonite:	1/4		

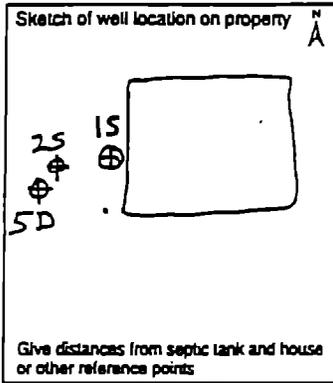
WELL LOCATION: County Duval

SE 1/4 of SE 1/4 of Section 13 Twp: 3S Rge: 24E

Latitude _____ Longitude _____

DATE STAMP

Official Use Only



CHEMICAL ANALYSIS WHEN REQUIRED

Iron: _____ ppm Sulfate: _____ ppm

Chloride: _____ ppm

Lab Test Field Test Kit

Pump Type

Centrifugal Jet Submersible Turbine

Horsepower _____ Capacity _____ G.P.M. _____

Pump Depth _____ FL Intake Depth _____ FL

Form 408-3-3 Rev. 12/85

OWNER'S NAME US Navy - NAS Cecil Field

COMPLETION DATE _____ Florida Unique I.D. _____

WELL USE: DEP/Public _____ Irrigation _____ Domestic _____ Monitor

HRS Limited _____ 62-524 _____ Other _____

DRILL METHOD Rotary Cable Tool Combination

Jet Auger Other _____

Measured Static Water Level _____ Measured Pumping Water Level _____
 After _____ Hours at _____ G.P.M. Measuring PL (Describe): _____
 Which is _____ FL Above Below Land Surface
 Casing: Black Steel Galv. PVC Other _____

Casing Diameter & Depth (FL)	Depth (FL)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material
	From	To	
Diameter <u>2"</u> From <u>0</u> To <u>30.0</u>	<u>0</u>	<u>30.0</u>	<u>Cement-bentonite grout</u>
Diameter _____ From _____ To _____			<u>Abandoned Well No</u> <u>CEF-502-SD</u>
Liner <input type="checkbox"/> or Casing <input type="checkbox"/> Diameter _____ From _____ To _____			

Driller's Name: Frank Linchan
 (print or type)

APPENDIX C
SOIL DISPOSAL MANIFESTS

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No. **CF-1721**

1. Page 1 of

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (904) **778-5620**

4. Transporter 1 Company Name **Medlin Trucking Co.**

5. Transporter 2 Company Name

6. Designated Facility Name and Site Address
**Kedesh, Inc.
Hwy 17 North
Kingsland, GA**

A. Transporter's Phone **904-584-9448**

B. Transporter's Phone

C. Facility's Phone
(912) 729-7555

7. Waste Shipping Name and Description

8. Containers		9. Total Quantity	10. Unit Wt/Vol
No.	Type		

a.	Petroleum Contaminated Soil	001	DT	2.2	T
b.					
c.					
d.					

D. Additional Descriptions for Materials Listed Above **SITE #:**

Non-RCRA, Non-Hazardous

E. Handling Codes for Wastes Listed Above

Job #5495/Profile #11800

11. Special Handling Instructions and Additional Information

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name LARRY A LONG	Signature <i>Larry A Long</i>	Month Day Year 11 17 99
---	----------------------------------	-----------------------------------

13. Transporter 1 Acknowledgement of Receipt of Materials		
Printed/Typed Name Elmer McQuint	Signature <i>Elmer McQuint</i>	Month Day Year 11 12 99

14. Transporter 2 Acknowledgement of Receipt of Materials		
Printed/Typed Name	Signature	Month Day Year

15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name Kevin Crews	Signature <i>Kevin Crews</i>	Month Day Year 11 12 99
--	---------------------------------	-----------------------------------

ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No. **CF-1122**

1. Page 1 of

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (**904**) **778-5620**

4. Transporter 1 Company Name **Medlin's Trucking Co. 9800**

5. Transporter 2 Company Name

6. Designated Facility Name and Site Address
**Kedesh, Inc.
Hwy 17 North
Kingsland, GA**

A. Transporter's Phone **904-284-9448**

B. Transporter's Phone

C. Facility's Phone
(912) 729-7555

7. Waste Shipping Name and Description

8. Containers		9. Total Quantity	10. Unit W/Vol
No.	Type		

a.	Petroleum Contaminated Soil	001	DT	22	T
b.					
c.					
d.					

D. Additional Descriptions for Materials Listed Above **SITE #:**

Non-RCRA, Non-Hazardous

E. Handling Codes for Wastes Listed Above

Job #5495/Profile #1180u

11. Special Handling Instructions and Additional Information

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name LeRoy A Long	Signature <i>LeRoy A Long</i>	Month 11	Day 12	Year 99
---	----------------------------------	--------------------	------------------	-------------------

13. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name Jeff Nicholson	Signature <i>Jeff Nicholson</i>	Month 11	Day 12	Year 99
---	------------------------------------	--------------------	------------------	-------------------

14. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
--------------------	-----------	-------	-----	------

15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 15.

Printed/Typed Name Peggy Crews	Signature <i>Peggy Crews</i>	Month 11	Day 12	Year 99
--	---------------------------------	--------------------	------------------	-------------------

ORIGINAL - RETURN TO GENERATOR

GENERATOR
TRANSPORTER
FACILITY

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No. **CF 1123**

1. Page 1 of 1

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (904) 778-5620

4. Transporter 1 Company Name **Modlin Trucking Co.**

5. Transporter 2 Company Name

6. Designated Facility Name and Site Address
**Kedesh, Inc.
Hwy 17 North
Kingsland, GA**

A. Transporter's Phone **904-284-9448**

B. Transporter's Phone

C. Facility's Phone
(912) 729-7555

7. Waste Shipping Name and Description

8. Containers		9. Total Quantity	10. Unit Wt/Vol
No.	Type		

a. **Petroleum Contaminated Soil**

001	DT	22	T

b.

c.

d.

D. Additional Descriptions for Materials Listed Above **SITE #: COS 639**

E. Handling Codes for Wastes Listed Above

Non-RCRA, Non-Hazardous

Job #5495/Profile #11800

11. Special Handling Instructions and Additional Information

Truck # 202

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name **LEROY A LONG**

Signature **Leroy A Long**

Month Day Year **11/12/99**

13. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name **Joe Weydener**

Signature **Joe Weydener**

Month Day Year **11/12/99**

14. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 15.

Printed/Typed Name **Kerri Cates**

Signature **Kerri Cates**

Month Day Year **11/12/99**

ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No. **2-F-1124**

1. Page 1 of 1

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (904) **778-5620**

4. Transporter 1 Company Name **Modine Trucking Co.**

5. Transporter 2 Company Name

6. Designated Facility Name and Site Address
**Kedesh, Inc.
Hwy 17 North
Kingsland, GA**

A. Transporter's Phone **904-286-9468**

B. Transporter's Phone

C. Facility's Phone
(912) 729-7555

7. Waste Shipping Name and Description

8. Containers		9. Total Quantity	10. Unit WWVol
No.	Type		

a. **Petroleum Contaminated Soil**

001	DT	22	T

b.

c.

d.

D. Additional Descriptions for Materials Listed Above **SITE #: 639**

Non-RCRA, Non-Hazardous

E. Handling Codes for Wastes Listed Above

Job #5495/Profile #11800

11. Special Handling Instructions and Additional Information

#4802

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

Leroy A Long

Signature

Leroy A Long

Month Day Year
11 12 99

13. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Stephen Leiox

Signature

Stephen Leiox

Month Day Year
11 12 99

14. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Regan Crews

Signature

Regan Crews

Month Day Year
11 12 99

ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No. **CF-1125**

1. Page 1 of 1

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (**904**) **778-5620**

4. Transporter 1 Company Name
Modlin Trucking Co.

5. Transporter 2 Company Name

6. Designated Facility Name and Site Address
**Kedesh, Inc.
Hwy 17 North
Kingland, GA**

A. Transporter's Phone **904-284-9446**
B. Transporter's Phone
C. Facility's Phone
(912) 729-7555

7. Waste Shipping Name and Description	8. Containers		9. Total Quantity	10. Unit Wt/Vol
	No.	Type		
a. Petroleum Contaminated Soil	001	DT	22	T
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above **SITE #: 639**

Non-RCRA, Non-Hazardous

E. Handling Codes for Wastes Listed Above
Job #5495/Profile #11800

11. Special Handling Instructions and Additional Information

9809

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name **LeRoy A Long** Signature **LeRoy A Long** Month **11** Day **13** Year **98**

13. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name **Deloris Williams** Signature **Deloris Williams** Month **11** Day **12** Year **98**

14. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Month Day Year

15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 15.

Printed/Typed Name **Peggy Crews** Signature **Peggy Crews** Month **11** Day **13** Year **99**

ORIGINAL - RETURN TO GENERATOR

GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No. **CE1126**

1. Page 1 of 1

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (**904**) **778-5620**

4. Transporter 1 Company Name
Modlin Trucking Co.

5. Transporter 2 Company Name

6. Designated Facility Name and Site Address
**Kedesh, Inc.
Hwy 17 North
Kingstond, GA**

A. Transporter's Phone **904-284-9446**

B. Transporter's Phone

C. Facility's Phone
(912) 729-7555

7. Waste Shipping Name and Description	8. Containers		9. Total Quantity	10. Unit Wt/Vol
	No.	Type		
a. Petroleum Contaminated Soil	001	DT	22	T
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above **SITE #: 639**

Non-RCRA, Non-Hazardous

E. Handling Codes for Wastes Listed Above
Job #5495/Profile #11800

11. Special Handling Instructions and Additional Information
T# 9803

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name **LEROY A LONG** Signature **Leroy A Long** Month Day Year **10/1/99**

13. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name **RANDY JENKINS** Signature **Randy Jenkins** Month Day Year **10/1/99**

14. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name _____ Signature _____ Month Day Year _____

15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 15.

Printed/Typed Name **Reggie Crews** Signature **Reggie Crews** Month Day Year **11/1/99**

GENERATOR
TRANSPORTER
FACILITY

ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST.

Manifest Document No. **CE1127**

1. Page 1 of 1

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (904) **778-5620**

4. Transporter 1 Company Name
Modlin Trucking Co.

5. Transporter 2 Company Name

6. Designated Facility Name and Site Address
**Kedesh, Inc.
Hwy 17 North
Kingsland, GA**

A. Transporter's Phone **904-284-9448**

B. Transporter's Phone

C. Facility's Phone
(912) 729-7555

7. Waste Shipping Name and Description

8. Containers	9. Total Quantity	10. Unit WWVol
001	22	T

Petroleum Contaminated Soil

D. Additional Descriptions for Materials Listed Above **SITE #: 639**
Non-RCRA, Non-Hazardous

E. Handling Codes for Wastes Listed Above
Job #5495/Profile #11800

11. Special Handling Instructions and Additional Information
9801

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name **L. Ray A Long** Signature **L. Ray A Long** Month **10** Day **12** Year **1999**

13. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name **Douglas L. Feltow** Signature **Douglas L Feltow** Month **10** Day **12** Year **1999**

14. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____

15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name **Peggy Crews** Signature **Peggy Crews** Month **11** Day **12** Year **1999**

ORIGINAL - RETURN TO GENERATOR

GENERATOR
TRANSPORTER
FACILITY

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No. **CF-1128**

1. Page 1 of 1

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (904) 778-5620

4. Transporter 1 Company Name
Modlin Trucking Co.

5. Transporter 2 Company Name

6. Designated Facility Name and Site Address
**Kedesh, Inc.
Hwy 17 North
Kingsland, GA**

A. Transporter's Phone **704-284-9446**
B. Transporter's Phone
C. Facility's Phone
(912) 729-7555

7. Waste Shipping Name and Description

8. Containers
No. Type
9. Total Quantity
10. Unit Wt/Vol

7. Waste Shipping Name and Description		8. Containers		9. Total Quantity	10. Unit Wt/Vol
a.		No.	Type		
	Petroleum Contaminated Soil	001	DT	22	T
b.					
c.					
d.					

D. Additional Descriptions for Materials Listed Above **SITE #: 639**
Non-RCRA, Non-Hazardous

E. Handling Codes for Wastes Listed Above
Job #5495/Profile #11800

11. Special Handling instructions and Additional Information
TA # 209

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name **LEROY A LONG** Signature **Leroy A Long** Month Day Year **10/12/99**

13. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name **DAVID M'GIE** Signature **David M'Gie** Month Day Year **10/12/99**

14. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Month Day Year

15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name **Kevin Crews** Signature **Kevin Crews** Month Day Year **10/12/99**

ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No. **C.F. 7129**

1. Page 1 of 1

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (904) 778-5620

4. Transporter 1 Company Name **Modlin Trucking Co.**

5. Transporter 2 Company Name

6. Designated Facility Name and Site Address
**Kedesh, Inc.
Hwy 17 North
Kingsland, GA**

A. Transporter's Phone **704-284-9448**
B. Transporter's Phone
C. Facility's Phone **(912) 729-7555**

7. Waste Shipping Name and Description

8. Containers
No. Type 9. Total Quantity 10. Unit W/Vol

a. **Petroleum Contaminated Soil** **001** **DT** **22** **T**

b.

c.

d.

D. Additional Descriptions for Materials Listed Above **SITE #: G39**
Non-RCRA, Non-Hazardous

E. Handling Codes for Wastes Listed Above
Job #5495/Profile #11800

11. Special Handling Instructions and Additional Information **T.A.# 210**

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name **LEROY A LONG** Signature **Leroy A Long** Month **12** Day **17** Year **97**

13. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name **Elmer McQuint** Signature **Elmer McQuint** Month **12** Day **17** Year **97**

14. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Month Day Year

15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.

Printed/Typed Name **Peay Crews** Signature **Peay Crews** Month **12** Day **17** Year **97**

ORIGINAL - RETURN TO GENERATOR

GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No. **CF-1150**

1. Page 1 of 1

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (904) 778-5620

4. Transporter 1 Company Name **Modlin Trucking Co. 202**

5. Transporter 2 Company Name

6. Designated Facility Name and Site Address
**Kedesh, Inc.
Hwy 17 North
Kingsland, GA**

A. Transporter's Phone **904-284-9448**

B. Transporter's Phone

C. Facility's Phone
(912) 729-7555

7. Waste Shipping Name and Description	8. Containers		9. Total Quantity	10. Unit Wt/Vol
	No.	Type		
a. Petroleum Contaminated Soil	001	DT	22	T
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above **SITE #:**

Non-RCRA, Non-Hazardous

E. Handling Codes for Wastes Listed Above

Job #5495/Profile #1180L

11. Special Handling Instructions and Additional Information

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name **LARRY A LONG** Signature **Larry A Long** Month Day Year **01/12/92**

13. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name **Joe Weydener** Signature **Joe Weydener** Month Day Year **01/12/92**

14. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name _____ Signature _____ Month Day Year _____

15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 15.

Printed/Typed Name **Peggy Crews** Signature **Peggy Crews** Month Day Year **1/12/92**

GENERATOR

TRANSPORTER

FACILITY

ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No. **CE1131**

1. Page 1 of 1

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (904) **778-5620**

4. Transporter 1 Company Name
Modlin Trucking Co.

5. Transporter 2 Company Name

8. Designated Facility Name and Site Address
**Kedesh, Inc.
Hwy 17 North
Kingsland, GA**

A. Transporter's Phone **704-254-9449**
B. Transporter's Phone
C. Facility's Phone
(912) 729-7555

7. Waste Shipping Name and Description	8. Containers		9. Total Quantity	10. Unit Wt/Vol
	No.	Type		
a. Petroleum Contaminated Soil	001	DT	22	T
b.				
c.				
d.				

GENERATOR

D. Additional Descriptions for Materials Listed Above **SITE #: 639**
Non-RCRA, Non-Hazardous

E. Handling Codes for Wastes Listed Above
Job #5495/Profile #11800

11. Special Handling Instructions and Additional Information
Tr # 9800

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name **Leroy A Long** Signature **Leroy A Long** Month **11** Day **12** Year **99**

13. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name **Jeff Nicholson** Signature **Jeff Nicholson** Month **11** Day **12** Year **99**

14. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____

15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.

Printed/Typed Name **Peggy Crews** Signature **Peggy Crews** Month **11** Day **12** Year **99**

TRANSPORTER

FACILITY

ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No. **CF-1132**

1. Page 1 of 1

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (904) 778-5620

4. Transporter 1 Company Name **Modlin Trucking Co.**

5. Transporter 2 Company Name

6. Designated Facility Name and Site Address **Kedesh, Inc.
Hwy 17 North
Kingsland, GA**

A. Transporter's Phone **704-284-9445**

B. Transporter's Phone

C. Facility's Phone **(912) 729-7555**

7. Waste Shipping Name and Description

8. Containers
No. Type 9. Total Quantity 10. Unit Wt/Vol

	8. Containers No.	Type	9. Total Quantity	10. Unit Wt/Vol
a. Petroleum Contaminated Soil	001	DT	22	T
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above **SITE #: 639**

Non-RCRA, Non-Hazardous

E. Handling Codes for Wastes Listed Above

Job #5495/Profile #1180

11. Special Handling Instructions and Additional Information

9802

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name **LEROY A LONG** Signature **Leroy A Long** Month **11** Day **12** Year **99**

13. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name **STEPHEN P. ROX** Signature **Stephen P. Rox** Month **11** Day **21** Year **99**

14. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Month Day Year

15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 15.

Printed/Typed Name **PEGGY CREWS** Signature **Peggy Crews** Month **11** Day **12** Year **99**

ORIGINAL - RETURN TO GENERATOR

GENERATOR
TRANSPORTER
FACILITY

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No. **C-F-1133**

1. Page 1 of 1

2. Generator's Name and Mailing Address **Commanding Officer, Staff Civil Eng.
P.O. Box 108, Code 184, NAS Cecil Field
Jacksonville, FL 32215**

3. Generator's Phone (904) 778-5620

4. Transporter 1 Company Name **Modlin Trucking Co.**

5. Transporter 2 Company Name

6. Designated Facility Name and Site Address
**Kedesh, Inc.
Hwy 17 North
Kingsland, GA**

A. Transporter's Phone **704-284-7448**

B. Transporter's Phone

C. Facility's Phone
(912) 729-7555

7. Waste Shipping Name and Description

8. Containers	9. Total Quantity	10. Unit W/Vol

a. Petroleum Contaminated Soil	001	DT	22	T
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above **SITE #: 639**

Non-RCRA, Non-Hazardous

E. Handling Codes for Wastes Listed Above

Job #5495/Profile #11800

11. Special Handling Instructions and Additional Information

9809

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name LEROY A LONG	Signature Leroy A Long	Month Day Year 11 12 99
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13. Transporter 1 Acknowledgement of Receipt of Materials	Printed/Typed Name DeLoris	Signature DeLoris	Month Day Year 11 12 99
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14. Transporter 2 Acknowledgement of Receipt of Materials	Printed/Typed Name	Signature	Month Day Year
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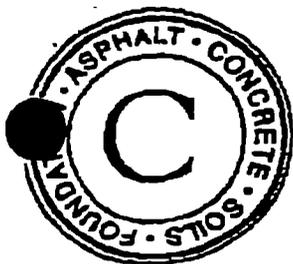
15. Discrepancy Indication Space

16. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name POGGY COWS	Signature Poggy Cows	Month Day Year 11 12 99
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ORIGINAL - RETURN TO GENERATOR

**APPENDIX D
CLEAN FILL CERTIFICATION**



CAL-TECH TESTING, INC.

ENGINEERING & TESTING LABORATORY

P.O. Box 1625, Lake City, FL 32058-1625
6800 Phillips Hwy., Sta. 3, Jacksonville, FL 32216
7850 Rex Drive, Milton, FL 32570

Lake City - (904) 755-9833

Fax - (904) 752-6458

Jacksonville - (904) 296-7201

Fax - (904) 296-7202

Milton - (904) 626-0080

Fax - (904) 626-0190

January 27, 1999

CH2MHILL Constructors, Inc.
115 Perimeter Center Place, N.E.
Suite 700
Atlanta, GA 30346-1278
Attn: Charles Radford

RE: Response to Request for Information

Dear Mr. Radford:

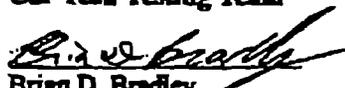
The Cal-Tech Testing Team (CTT) is writing this letter in response to your request for information concerning the disposal of the liner and information concerning the source of fill material used for the backfilling operations at Day Tank 2 and the 8 UST locations at Naval Air Station Cecil Field.

The liner, excavated from the day tank 2 site, was shipped to the Trail Ridge Landfill in Baldwin, Florida. The landfill charges disposal by the size of the incoming container. The liner was shipped in two 20 cubic yard roll-off containers. The disposal charge was for 40 cubic yards. We have attached copies of the manifests indicating the volume of materials and the transporter information. No weigh tickets are available for this material.

The fill material used for the Day Tank 2 and 8 UST locations was native soil excavated from an Anderson Columbia Co. Inc. (ACCI) facility located in Maxville, Florida. The fill was from a natural sand bar formation. This material was undisturbed prior to use at the Naval Air Station Cecil Field projects.

Questions related to this item can be directed to myself at (904) 755-1196 and fax is (904) 758-9050.

Sincerely,
Cal-Tech Testing Team


Brian D. Bradley
Project Manager

Appendix E
Soil KAG Analytical Results

Advanced Environmental Laboratories, Inc.

Analytical Report

Client: CH2M Hill Constructors, Inc.
 Project No.: CTO No. 2 Former UST Sites
 Matrix: Soil

Report No.: J990657
 Date Sampled: 4/6/99
 Date Submitted: 4/8/99
 Date Reported: 4/20/99

Page No.: 3 of 11

Volatile Aromatic Hydrocarbons
 EPA Method 5035/8021
 Units: µg/Kg

	Lab Code:	990657-4	990657-5	990655-mb
	Dilution Factor:	5	5	1
	Date Analyzed:	4/11/99	4/11/99	4/11/99
Analytes	MRL	Sample Name:	68-SB1-4'	639-SB1-4' Method Blank

Methyl- <i>tert</i> -butyl ether	5	U	U	U
Benzene	5	U	U	U
Toluene	5	U	U	U
Chlorobenzene	5	U	U	U
Ethylbenzene	5	U	U	U
<i>m&p</i> - Xylenes	5	U	U	U
<i>o</i> -Xylenes	5	U	U	U
1,3-Dichlorobenzene	5	U	U	U
1,4-Dichlorobenzene	5	U	U	U
1,2-Dichlorobenzene	5	U	U	U

Surrogates	Acceptance Limits	Percent Recovery	Percent Recovery	Percent Recovery
Bromofluorobenzene	70-135	71	74	70

Advanced Environmental Laboratories, Inc.

Analytical Report

Client: CH2M Hill Constructors, Inc.
 Project No.: CTO No. 2 Former UST Sites
 Matrix: Soil

Report No.: J990657
 Date Sampled: 4/6/99
 Date Submitted: 4/8/99
 Date Reported: 4/20/99

Page No.: 4 of 11

Polynuclear Aromatic Hydrocarbons

EPA Methods 3550A/8270

Units: µg/Kg

Analytes	MRL	Lab Code:	990657-4	990657-5	990653-mb
		Dilution Factor:	1	1	1
		Date Extracted:	4/9/99	4/9/99	4/9/99
		Date Analyzed:	4/9/99	4/9/99	4/9/99
		Sample Name:	68-SB1-4'	639-SB1-4'	Method Blank
Naphthalene	200		U	U	U
2-Methylnaphthalene	200		U	U	U
1-Methylnaphthalene	200		U	U	U
Acenaphthylene	200		U	U	U
Acenaphthene	200		U	U	U
Fluorene	200		U	U	U
Phenanthrene	200		U	U	U
Anthracene	200		U	U	U
Fluoranthene	200		U	U	U
Pyrene	200		U	U	U
Benzo(a)anthracene	200		U	U	U
Chrysene	200		U	U	U
Benzo(b)fluoranthene	200		U	U	U
Benzo(k)Fluoranthene	200		U	U	U
Benzo(a)pyrene	200		U	U	U
Indeno-1,2,3(cd)pyrene	200		U	U	U
Dibenzo(ah)anthracene	200		U	U	U
Benzo(ghi)perylene	200		U	U	U
Surrogate	Acceptance Limits	Percent Recovery	Percent Recovery	Percent Recovery	Percent Recovery
2-Fluorobiphenyl	43-130	91	90	68	

U Not detected above the MRL
 MRL Method Reporting Limit

Advanced Environmental Laboratories, Inc.

Analytical Report

Client: CH2M Hill Constructors, Inc.
 Project No.: CTO No. 2 Former UST Sites
 Matrix: Soil

Report No.: J990657
 Date Sampled: 4/6/99
 Date Submitted: 4/8/99
 Date Reported: 4/20/99

Page No.: 7 of 11

Florida Petroleum Residual Organic
 EPA Methods 3550/FL-PRO
 Units: µg/Kg

	Lab Code: 990657-4	990657-5	990653-mb	
	Dilution Factor: 1	1	1	
	Date Extracted: 4/9/99	4/9/99	4/9/99	
	Date Analyzed: 4/16/99	4/16/99	4/16/99	
Analytes	MRL	68-SB1-4'	639-SB1-4'	Method
				Blank

Octane (C ₈)	250	U	U	U
Decane (C ₁₀)	250	U	U	U
Dodecane (C ₁₂)	250	U	U	U
Tetradecane (C ₁₄)	250	U	U	U
Hexadecane (C ₁₆)	250	U	U	U
Octadecane (C ₁₈)	250	U	U	U
Eicosane (C ₂₀)	250	U	U	U
Docosane (C ₂₂)	250	U	U	U
Tetracosane (C ₂₄)	250	U	U	U
Hexacosane (C ₂₆)	250	U	U	U
Octacosane (C ₂₈)	250	U	U	U
Triacosane (C ₃₀)	250	U	U	U
Dotriacontane (C ₃₂)	250	U	U	U
Tetracontane (C ₃₄)	250	U	U	U
Hexatriacontane (C ₃₆)	250	U	U	U
Octatriacontane (C ₃₈)	250	U	U	U
Tetracosane (C ₄₀)	250	U	U	U
TOTAL PHS	4000	U	U	U

Surrogate	Acceptance Limits	Percent Recovery	Percent Recovery	Percent Recovery
Ortho-terphenyl	42-142	94	90	94