

N60200.AR.001540  
NAS CECIL FIELD, FL  
5090.3a

SITE ASSESSMENT REPORT FOR BUILDING 289A TANK G289A BASE REALIGNMENT  
AND CLOSURE UNDERGROUND STORAGE TANK AND ABOVEGROUND STORAGE TANK  
GREY SITES REVISION 1 NAS CECIL FIELD FL  
11/1/1998  
HARDING LAWSON ASSOCIATES

**SITE ASSESSMENT REPORT**  
**BUILDING 289A, TANK G289-A**  
**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**

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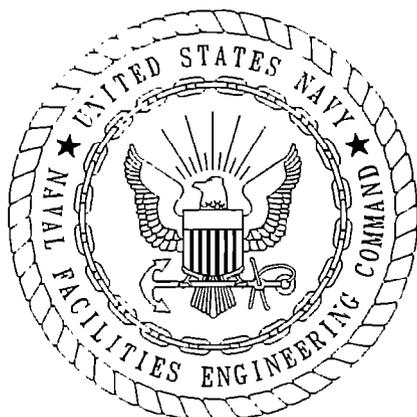
**Prepared for:**

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**Naval Facilities Engineering Command**  
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**November 1998**

**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: November 3, 1998

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara  
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(DFAR 252.227-7036)

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GLOSSARY

ABB-ES      ABB Environmental Services, Inc.  
AST          aboveground storage tank

bls          below land surface

CSR          confirmatory sampling report

HLA          Harding Lawson Associates

NAS          Naval Air Station

OVA          organic vapor analyzer

ppm          parts per million

SA          site assessment

## 1.0 INTRODUCTION

Harding Lawson Associates (HLA), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the Site Assessment (SA) for Tank G289-A at Naval Air Station (NAS) Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the SA.

Tank G289-A is an aboveground storage tank (AST) located at Building 289-A, which is a standby generator building located southeast of the runways and adjacent to Building 289. The AST, which was installed in 1996, has a 250-gallon capacity and is used to store diesel fuel for an emergency generator (ABB Environmental Services, Inc. [ASS-ES], 1997). A contamination assessment plan for the assessment of soil and groundwater at Tank G289-A was prepared by HLA (then ABB-ES) in November 1996 (ABB-ES, 1996). Results of the contamination assessment are presented in the Confirmatory Sampling Report (CSR), which recommended that additional soil assessment be conducted to delineate the extent of excessively contaminated soil (ABB-ES, 1998).

## 2.0 FIELD INVESTIGATION

The SA for Tank G289-A was initiated in October 1997 and included

- the advancement of five soil borings to the water table, and
- collection and analysis of one subsurface soil sample.

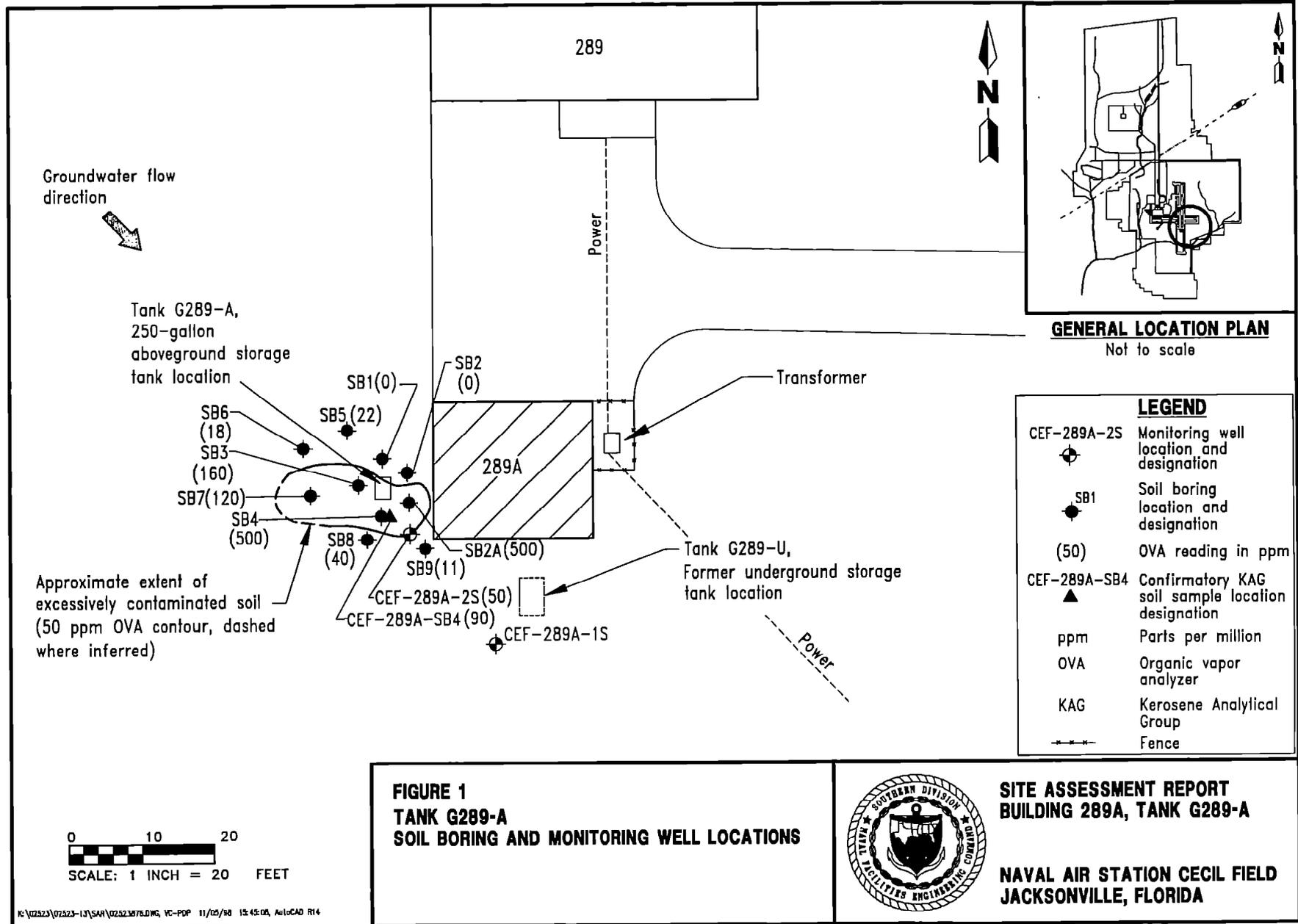
Soil samples were collected from each boring at depth intervals of 1 foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA). One subsurface soil sample was collected on May 28, 1998, from 3 feet bls near soil boring location SB4 (which had the highest OVA reading) and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings is presented on Figure 1.

Monitoring well CEF-289A-2S was installed during the confirmatory sampling. Monitoring well construction detail is presented in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

Groundwater flow direction at the Tank G289-A site is to the southeast based on the groundwater model prepared by the U.S. Geological Survey for NAS Cecil Field (Figure 1).

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in one of five soil borings advanced during the SA. The highest OVA reading (120 ppm) was detected at 1 foot bls in soil boring SB7. OVA soil screening results are summarized in Table 1. The extent of excessively contaminated soil is presented on Figure 1.



**Table 1  
Soil Screening Results**

Site Assessment Report  
Building 289A, Tank G289-A  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
SB1	1	0	-	0
	3	0	-	0
	4.5 (wet)	0	-	0
SB2	1 (refusal)	0	-	0
SB2A	3	500	0	500
	4.5	150	0	150
SB3	1	390	0	390
	3	160	0	160
	4.5 (wet)	120	0	120
SB4	1	70	0	70
	3	500	0	500
	4.5 (wet)	320	0	320
SB5	1	0	-	0
	3	40	18	22
	4 (wet)	80	0	80
SB6	1	15	0	15
	3	18	0	18
	4.5	18	0	18
SB7	1	90	0	90
	3	120	0	120
	4 (wet)	13	0	13
SB8	1	9	0	9
	3	40	0	40
	4 (wet)	22	0	22
SB9	1	0	-	0
	3	11	0	11
	4	2	0	2

Notes: Soil samples were collected on January 31, 1997, and October 15, 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.

refusal = subsurface obstruction encountered during boring advancement; no further samples collected at this location.

No contaminants were detected in the subsurface soil sample CEF-289A-SB4. Subsurface soil analytical results are presented in Table 2 and Appendix B.

No contaminants were detected above Florida Department of Environmental Protection cleanup target levels in the groundwater sample collected from monitoring well CEF-289A-2S. Groundwater analytical results are presented in Table 3 and Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the SA at the Tank G289-A site provided adequate assessment of the horizontal and vertical extent of excessively contaminated soil. No contaminants were detected in the subsurface soil sample CEF-289A-SB4.

No contaminants were detected above the regulatory standard specified in Chapter 62-770, Florida Administrative Code, in the groundwater sample collected from monitoring well CEF-289A-2S.

It is recommended that no further action take place at the Tank G289-A site until the tank is removed.

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

Site Assessment Report  
 Building 289A, Tank G289-A  
 Naval Air Station Cecil Field  
 Jacksonville, Florida

Compound	CEF-289A-SB4 (3 feet bls; OVA = 90 ppm)	Soil Cleanup Target Levels <sup>1</sup>
<b><u>Volatile Organic Aromatics (USEPA Method 8020) (mg/kg)</u></b>		
No compounds detected		
<b><u>Polynuclear Aromatic Hydrocarbons (USEPA Method 8310) (mg/kg)</u></b>		
No compounds detected		
<b><u>Total Recoverable Petroleum Hydrocarbons (FL-PRO) (mg/kg)</u></b>		
Not detected		
<sup>1</sup> Chapter 62-770, Florida Administrative Code.  Notes: Soil sample was collected on May 28, 1998.  bls = below land surface. OVA = organic vapor analyzer. ppm = parts per million. USEPA = U.S. Environmental Protection Agency. mg/kg = milligrams per kilogram. FL-PRO = Florida-Petroleum Residual Organics.		

**Table 3  
Summary of Groundwater Analytical Detections**

Confirmatory Sampling Report  
Building 289A, Tank G289-A  
Naval Air Station Cecil Field  
Jacksonville, Florida

Compound	Monitoring Well CEF-289A-2S	Groundwater Cleanup Target Levels <sup>1</sup>
<b><u>Volatile Organic Aromatics (USEPA Method 601/602) (µg/l)</u></b>		
No compounds detected		
<b><u>Polynuclear Aromatic Hydrocarbons (USEPA Method 610) (µg/l)</u></b>		
1,4-Dichlorobenzene	1.1	NA
<b><u>Total Recoverable Petroleum Hydrocarbons (FL-PRO) (µg/l)</u></b>		
No compounds detected.		
<b><u>Lead (µg/l)</u></b>		
Lead	6.4	15
<sup>1</sup> Chapter 62-770, Florida Administrative Code.  Notes: Groundwater samples were collected on August 7, 1997.  USEPA = U.S. Environmental Protection Agency. µg/l = micrograms per liter. NA = not applicable. FL-PRO = Florida-Petroleum Residual Organics.		

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 SAR was developed for the Tank 289-A site at Naval Air Station Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.



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

11-23-98

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 (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).

ABB-ES. 1998. *Confirmatory Sampling Report, Building 289A, Tank G289-A, Base Realignment and Closure, Underground Storage Tank and Aboveground Storage Tank Grey Sites, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (April).

**APPENDIX A**  
**MONITORING WELL CONSTRUCTION DETAIL**

TITLE: NAS Cecil Field		LOG of WELL: CEF-289A-2S	BORING NO. CEF-289A-2S
CLIENT: SOUTHDIVNAVFACENCOM			PROJECT NO: 8542-03
CONTRACTOR: GEOTEK		DATE STARTED: 2-26-97	COMPLTD: 2-26-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 2-12	PROTECTION LEVEL: D
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 13 FEET.	DPTH TO $\nabla$ 2.00 FEET.
LOGGED BY: J Koch	WELL DEVELOPMENT DATE: 3-3-97		SITE: Building 289

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
50					SILTY SAND: Brown to dark grey, fine grain, no apparent petroleum odor.		SM	posthole	
8				SILTY SAND: Brown to dark grey, fine grain, no apparent petroleum odor.	posthole				
80			25%	SILTY SAND: Light grey to dark grey, fine grain, rotten egg odor (sulfur), saturated.	1,8,8,11				
16			60%	SILTY SAND: Light brown to dark grey, fine grain with traces of wood, rotten egg odor (sulfur), saturated.	1,2,7,8				

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

NAS CECIL FIELD -- TANK G289-A  
 SOIL DATA -- KEROSENE ANALYTICAL GROUP -- REPORT REQ NO. 9961

Lab Sample Number: ABE2901780  
 Site: UST GREY  
 Locator: CEF-289A-SB4  
 Collect Date: 28-MAY-98

VALUE QUAL UNITS DL

Compound	Value	Qual	Units	DL
<b>UST GREY</b>				
Benzene	1.2	U	ug/kg	1.2
Ethylbenzene	1.2	U	ug/kg	1.2
Toluene	1.2	U	ug/kg	1.2
Xylenes (total)	1.2	U	ug/kg	1.2
Acenaphthene	240	U	ug/kg	240
Acenaphthylene	240	U	ug/kg	240
Anthracene	240	U	ug/kg	240
Benzo (a) anthracene	6	U	ug/kg	6
Benzo (a) pyrene	6	U	ug/kg	6
Benzo (b) fluoranthene	6	U	ug/kg	6
Benzo (g,h,i) perylene	6	U	ug/kg	6
Benzo (k) fluoranthene	6	U	ug/kg	6
Chrysene	24	U	ug/kg	24
Dibenzo (a,h) anthracene	6	U	ug/kg	6
Fluoranthene	6	U	ug/kg	6
Fluorene	240	U	ug/kg	240
Indeno (1,2,3-cd) pyrene	6	U	ug/kg	6
Naphthalene	240	U	ug/kg	240
Phenanthrene	240	U	ug/kg	240
Pyrene	6	U	ug/kg	6
<b>FLA PRO</b>				
TPH C8-C40	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 G289A  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9488

Lab Sample Number:	B7C2201010	B7C2201010
Site	BRACGREY	BRACGREY
Locator	CEF289A2S	CEF289A2S
Collect Date:	21-MAR-97	21-MAR-97
VALUE	QUAL UNITS	DL

VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL
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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	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	-

NAS CECIL FIELD -- TANK G289A  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9488

Lab Sample Number:	B7C2201010	B7C2201010
Site	BRACGREY	BRACGREY
Locator	CEF289A2S	CEF289A2S
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	U	ug/l	5

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