1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HM2103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-08

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2C7014

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. 14 Date Analyzed: 04/05/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q		
71-43-2	Benzene	2.3	U	UJ	C05, K01
108-88-3	Toluene	2.3	U	UJ	K01
100-41-4	Ethylbenzene	2.3	U	UJ	K01
1330-20-7	Xylenes (total)	16.9		J	K01

DATA VALIDATION
COPY

Use

FORM I VOA

FORM 1 Science Applications02-APR-1998 SA
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

HM2103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-08

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 4B30016

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: 14 decanted: (Y/N) N Date Extracted:04/03/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/08/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	5.0	B	= F01, F08

FORM I SV

FORM 1 Science Applications02-APR-1998 SA
VOLATILE ORGANICS ANALYSIS DATA SHEET

HM2103 ✓

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-08

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1D3023

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. 14 Date Analyzed: 04/09/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	581	U	UJ G02,C05

DATA VALIDATION COPY

use

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HM2103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA
Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S
Matrix: (soil/water) SOIL Lab Sample ID: 9804063-08
Sample wt/vol: 30.2 (g/mL) G Lab File ID: 10424
Level: (low/med) LOW Date Received: 04/02/98
% Moisture: 14 decanted: (Y/N) N Date Extracted: 04/03/98
Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/10/98
Injection Volume: 1.0(uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	385	U
91-58-7	2-chloronaphthalene	385	U
208-96-8	acenaphthylene	385	U
83-32-9	acenaphthene	385	U
86-73-7	fluorene	385	U
85-01-8	phenanthrene	385	U
120-12-7	anthracene	385	U
206-44-0	fluoranthene	385	U
129-00-0	pyrene	385	U
56-55-3	benzo(a)anthracene	385	U
218-01-9	chrysene	385	U
205-99-2	benzo(b)fluoranthene	385	U
207-08-9	benzo(k)fluoranthene	385	U
50-32-8	benzo(a)pyrene	385	U
193-39-5	indeno(1,2,3-cd)pyrene	385	U
53-70-3	dibenz(a,h)anthracene	385	U
191-24-2	benzo(g,h,i)perylene	385	U

U

FORM I SV-1 OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HM3101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-09

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2C7015

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. 14 Date Analyzed: 04/05/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	
71-43-2	Benzene	2.3	U	UJ	C05, K01
108-88-3	Toluene	2.7		J	K01
100-41-4	Ethylbenzene	2.3	U	UJ	K01
1330-20-7	Xylenes (total)	7.0	U	UJ	K01

DATA VALIDATION COPY

use

FORM I VOA

FORM 1 Science Applications02-APR-1998 SA
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

HM3101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-09

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4B30017

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: 14 decanted: (Y/N) N Date Extracted: 04/03/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/08/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	3.3	B	= FØ1, FØ8

FORM I SV

FORM 1 Science Applications 23-APR-1998 SA
VOLATILE ORGANICS ANALYSIS DATA SHEET

HM3101 ✓

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-09

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1D5

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. 14 Date Analyzed: 04/10/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	581	U	UJ G02

Use

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HM3101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA
Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S
Matrix: (soil/water) SOIL Lab Sample ID: 9804063-09
Sample wt/vol: 30.4 (g/mL) G Lab File ID: 10425
Level: (low/med) LOW Date Received: 04/02/98
% Moisture: 14 decanted: (Y/N) N Date Extracted: 04/03/98
Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/10/98
Injection Volume: 1.0(uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	382	U
91-58-7	2-chloronaphthalene	382	U
208-96-8	acenaphthylene	382	U
83-32-9	acenaphthene	382	U
86-73-7	fluorene	382	U
85-01-8	phenanthrene	382	U
120-12-7	anthracene	382	U
206-44-0	fluoranthene	382	U
129-00-0	pyrene	382	U
56-55-3	benzo(a)anthracene	382	U
218-01-9	chrysene	382	U
205-99-2	benzo(b)fluoranthene	382	U
207-08-9	benzo(k)fluoranthene	382	U
50-32-8	benzo(a)pyrene	382	U
193-39-5	indeno(1,2,3-cd)pyrene	382	U
53-70-3	dibenz(a,h)anthracene	382	U
191 24-2	benzo(g,h,i)perylene	382	U

U

FORM I SV-1 OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HM3103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-10

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2D1010

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. 14 Date Analyzed: 04/06/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	2.3	U	UJ C$5
108-88-3	Toluene	2.3	U	UJ C$5
100-41-4	Ethylbenzene	2.3	U	U
1330-20-7	Xylenes (total)	7.0	U	U

FORM I VOA

FORM 1 Science Applications02-APR-1998 SA
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

HM3103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-10

Sample wt/vol: 30.4 (g/mL) G Lab File ID: 4B30031

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: 14 decanted: (Y/N) N Date Extracted:04/03/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/09/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG		Q	
	----------Diesel Range Organics	2.3	B	U	F01, F07

FORM I SV

FORM 1 Science Applications02-APR-1998 SA
VOLATILE ORGANICS ANALYSIS DATA SHEET

HM3103 ✓

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-10

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1D3C26

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. 14 Date Analyzed: 04/09/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	581	U	UJ G02,C05

use

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HM3103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA00LS

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-10

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 10426

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: 14 decanted: (Y/N) N Date Extracted: 04/03/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/10/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	384	U
91-58-7	2-chloronaphthalene	384	U
208-96-8	acenaphthylene	384	U
83-32-9	acenaphthene	384	U
86-73-7	fluorene	384	U
85-01-8	phenanthrene	384	U
120-12-7	anthracene	384	U
206-44-0	fluoranthene	384	U
129-00-0	pyrene	384	U
56-55-3	benzo(a)anthracene	384	U
218-01-9	chrysene	384	U
205-99-2	benzo(b)fluoranthene	384	U
207-08-9	benzo(k)fluoranthene	384	U
50-32-8	benzo(a)pyrene	384	U
193-39-5	indeno(1,2,3-cd)pyrene	384	U
53-70-3	dibenz(a,h)anthracene	384	U
191-24-2	benzo(g,h,i)perylene	384	U

U

FORM I SV-1 OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HM4101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-12

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2C7019

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. 15 Date Analyzed: 04/05/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	2.4	U
108-88-3	Toluene	2.4	U
100-41-4	Ethylbenzene	2.4	U
1330-20-7	Xylenes (total)	7.0	U

UJ CϕS,Kϕ
UJ KϕI

use

FORM I VOA

FORM 1 Science Applications02-APR-1998 SA
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

HM4101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-12

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4B30220

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: 15 decanted: (Y/N) N Date Extracted:04/03/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/09/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG		Q
----------	---Diesel Range Organics	1.3	B	U F01,F07

FORM I SV

FORM 1 Science Applications02-APR-1998 SA
VOLATILE ORGANICS ANALYSIS DATA SHEET

HM4101 ✓

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-12

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1D5014

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. 15 Date Analyzed: 04/10/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	588	U	UJ G02

use

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HM4101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA031S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-12

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 10428

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: 15 decanted: (Y/N) N Date Extracted: 04/03/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/10/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	390	U
91-58-7	2-chloronaphthalene	390	U
208-96-8	acenaphthylene	390	U
83-32-9	acenaphthene	390	U
86-73-7	fluorene	390	U
85-01-8	phenanthrene	390	U
120-12-7	anthracene	390	U
206-44-0	fluoranthene	390	U
129-00-0	pyrene	390	U
56-55-3	benzo(a)anthracene	390	U
218-01-9	chrysene	390	U
205-99-2	benzo(b)fluoranthene	390	U
207-08-9	benzo(k)fluoranthene	390	U
50-32-8	benzo(a)pyrene	390	U
193-39-5	indeno(1,2,3-cd)pyrene	390	U
53-70-3	dibenz(a,h)anthracene	390	U
191-24-2	benzo(g,h,i)perylene	390	U

U

FORM I SV-1

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HM4103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-11

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2D1011

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. 14 Date Analyzed: 04/06/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	2.3	U	UJ C$S
108-88-3	Toluene	2.3	U	UJ C$S
100-41-4	Ethylbenzene	2.3	U	U
1330-20-7	Xylenes (total)	7.0	U	U

FORM I VOA

FORM 1 Science Applications02 APR-1998 SA
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

HM4103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-11

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 4B30032

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: 14 decanted: (Y/N) N Date Extracted: 04/03/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/09/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	5.2	B	= F01, F08

FORM I SV

FORM 1 Science Applications02-APR-1998 SA
VOLATILE ORGANICS ANALYSIS DATA SHEET

HM4103 ✓

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-11

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1D3027

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. 14 Date Analyzed: 04/09/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	581	U	UJ GD2,CD

use

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HM4103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA001S

Matrix: (soil/water) SOIL Lab Sample ID: 9804063-11

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 10427

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: 14 decanted: (Y/N) N Date Extracted: 04/03/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/10/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	385	U
91-58-7	2-chloronaphthalene	385	U
208-96-8	acenaphthylene	385	U
83-32-9	acenaphthene	385	U
86-73-7	fluorene	385	U
85-01-8	phenanthrene	385	U
120-12-7	anthracene	385	U
206-44-0	fluoranthene	385	U
129-00-0	pyrene	385	U
56-55-3	benzo(a)anthracene	385	U
218-01-9	chrysene	385	U
205-99-2	benzo(b)fluoranthene	385	U
207-08-9	benzo(k)fluoranthene	385	U
50-32-8	benzo(a)pyrene	385	U
193-39-5	indeno(1,2,3-cd)pyrene	385	U
53-70-3	dibenz(a,h)anthracene	385	U
191-24-2	benzo(g,h,i)perylene	385	U

U

FORM I SV-1 OLM03.0

APPENDIX VI

ALTERNATE THRESHOLD LEVEL (ATL) CALCULATIONS

THIS PAGE INTENTIONALLY LEFT BLANK

Calculations of alternate threshold levels are not indicated for the Former Heating Oil Tank (HOT), Building 725 site because soil concentrations did not exceed the Georgia Environmental Protection Division (GA EPD) applicable soil threshold levels (i.e., Table A, column 1).

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX VII

MONITORING WELL DETAILS

THIS PAGE INTENTIONALLY LEFT BLANK

Monitoring wells were not installed as part of the Corrective Action Plan-Part A investigation. Temporary piezometers were installed at the Former Heating Oil Tank (HOT), Building 725 site. Refer to Appendix IV for temporary piezometer installation details.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX VIII

GROUNDWATER LABORATORY RESULTS

THIS PAGE INTENTIONALLY LEFT BLANK

Former HOT, Building 725
Hunter Army Airfield
Chatham County

TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS[2]

Location Sample ID Date Collected Depth (ft BGS)	Applicable Standards[1]	M-1 HM1200 04/02/98 4.0 to 8.0	M-2 HM2200 04/02/98 5.0 to 9.0	M-3 HM3200 04/02/98 5.5 to 9.5	M-4 HM4200 04/02/98 6.0 to 10.0
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	2 U	2 U	2 U	2 U
Toluene	1,000	2 UJ	2 U	2 U	2 U
Ethylbenzene	700	3 J	2 U	2 U	2 U
Xylenes	10,000	5.4 J	6 U	6 U	6 U
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Acenaphthene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Acenaphthylene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Anthracene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Benzo(a)anthracene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Benzo(a)pyrene	0.2	10.2 U	10.3 U	10.4 U	10.3 U
Benzo(b)fluoranthene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Benzo(g,h,i)perylene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Benzo(k)fluoranthene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Chrysene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Dibenzo(a,h)anthracene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Fluoranthene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Fluorene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Indeno(1,2,3-cd)pyrene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Naphthalene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Phenanthrene	NRC	10.2 U	10.3 U	10.4 U	10.3 U
Pyrene	NRC	10.2 U	10.3 U	10.4 U	10.3 U

NOTE: [1]U.S. Environmental Protection Agency maximum contaminant level.
[2]All field work and analytical sampling were performed prior to the release of the new Georgia Department of Natural Resources (GA DNR) Corrective Action Plan (CAP)-Part A Guidance (i.e., May 1998); therefore, the new analytical methods specified were not used.
BGS - Below ground surface.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.

Laboratory Qualifiers
U - Indicates the compound was not detected at the concentration reported.
J - Indicates the value for the compound is an estimated value.
UJ - Indicates the compound was not detected at the reported concentration and the concentration was estimated.

THIS PAGE INTENTIONALLY LEFT BLANK

SAIC An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: 40298C

PROJECT NAME: CAP - Hunter AFB - Part A

PROJECT NUMBER: 0019

PROJECT MANAGER: Allison Bailey

Sampler (Signature): Mitchell Hall (Printed Name): Mitchell Hall

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (803) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	DRP	GRO	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
HM120Φ	4/Φ2/98	Φ85Φ	water	X			X		2	NA	9804064-04
~~HM122Φ~~											
HM223Φ	Φ4/Φ2/98	Φ915	water	X			X		2	NA	9804064-05
HM220Φ	Φ4/Φ2/98	Φ93Φ	water	X			X		2	NA	9804064-06
~~HM222Φ~~											
HM320Φ	Φ4/Φ2/98	1Φ35	water	X			X		2	NA	9804064-07

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature: 4°C
Mitchell H. Hall	4/02/98 1324		4.2.98 1645	Cooler ID: 479	FEDEX NUMBER:
COMPANY NAME: SAIC		COMPANY NAME: GEL			
RECEIVED BY:	Date/Time 4/02/98 1520	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			
RELINQUISHED BY:	Date/Time 4/2/98 1645	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			

VIII-5

Hunter Army Airfield CAP-Part A Report
Former Heating Oil Tank, Building 725

THIS PAGE INTENTIONALLY LEFT BLANK

Science Applications International Corporation
An Employee-Owned Company
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: 40298A

PROJECT NAME: CAP - Hunter AFB - Part A

PROJECT NUMBER: 0019

PROJECT MANAGER: Allison Bailey

Sampler (Signature) (Printed Name)

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	DRP	GRO	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
HM2200	04/02/98	0930	water		X				2	NA	9804064-12
HM1200	04/02/98	0850	water		X				2	NA	13
HM4200	04/02/98	1140	water		X				2	NA	14
HM4200	04/02/98	1140	water	X					2		9804064-15

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature: 4°C
COMPANY NAME: SAIC	4/2/98 1329	COMPANY NAME: GEL	4-3-98 1645	Cooler ID: 552	FEDEX NUMBER:
RECEIVED BY:	Date/Time 4/02/98	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL	1320	COMPANY NAME:			
RELINQUISHED BY:	Date/Time 4/2/98	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL	1645	COMPANY NAME:			

THIS PAGE INTENTIONALLY LEFT BLANK

SAIC An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: 40298B

PROJECT NAME: CAP - Hunter AFB - Part A

PROJECT NUMBER: 0019

PROJECT MANAGER: Allison Bailey

Sampler (Signature): Mitchell H. Hall (Printed Name): Mitchell H. Hall

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (803) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	DRP	GRO	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
HD120Ø	Ø4/Ø1/98	135Ø	water		X				2	NA	98040964-08 Quick TAT
HD 22ØØ	Ø4/Ø1/98	1445	water		X				2	NA	98040964-09 Quick TAT
~~HM122Ø~~	Ø4/Ø2/98	Ø835	water		X				2	NA	Spl.t
HM 32ØØ	Ø4/Ø2/98	1Ø35	water		X				2	NA	98040964-10
HM 223Ø	Ø4/Ø2/98	Ø915	wate		X				2	NA	98040964-11 Expires 2 TAT

REQUESTED PARAMETERS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Mitchell H. Hall	4/02/98 1320		4-2-98
COMPANY NAME: SAIC		COMPANY NAME: GEL	1645
RECEIVED BY:	Date/Time 4/02/98 1720	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL		COMPANY NAME:	
RELINQUISHED BY:	Date/Time 4/2/98 1645	RECEIVED BY:	Date/Time
COMPANY NAME: GEL		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS:

Cooler ID: 3Ø1

Cooler Temperature: 4°C

FEDEX NUMBER:

All HD samples are quick turn around.

VIII-9

Hunter Army Airfield CAP-Part A Report
Former Heating Oil Tank, Building 725

THIS PAGE INTENTIONALLY LEFT BLANK

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HM1200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA002W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804064-04

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2C6012

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. _____ Date Analyzed: 04/04/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	2.0	U	UJ G01
108-88-3	Toluene	2.0	U	UJ G01
100-41-4	Ethylbenzene	3.0		J G01
1330-20-7	Xylenes (total)	5.4	JP	J G01,M08

DATA VALIDATION
COPY

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HM1200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA002W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804064-13

Sample wt/vol: 975.0 (g/mL) ML Lab File ID: 70322

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted:04/03/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/09/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	10.2	U
91-58-7	2-chloronaphthalene	10.2	U
208-96-8	acenaphthylene	10.2	U
83-32-9	acenaphthene	10.2	U
86-73-7	fluorene	10.2	U
85-01-8	phenanthrene	10.2	U
120-12-7	anthracene	10.2	U
206-44-0	fluoranthene	10.2	U
129-00-0	pyrene	10.2	U
56-55-3	benzo(a)anthracene	10.2	U
218-01-9	chrysene	10.2	U
205-99-2	benzo(b)fluoranthene	10.2	U
207-08-9	benzo(k)fluoranthene	10.2	U
50-32-8	benzo(a)pyrene	10.2	U
193-39-5	indeno(1,2,3-cd)pyrene	10.2	U
53-70-3	dibenz(a,h)anthracene	10.2	U
191-24-2	benzo(g,h,i)perylene	10.2	U

U

FORM I SV-1 OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HM2200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA002W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804064-06

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2C6014

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. _____ Date Analyzed: 04/04/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	2.0	U
108-88-3	Toluene	2.0	U
100-41-4	Ethylbenzene	2.0	U
1330-20-7	Xylenes (total)	6.0	U

U ↓

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HM2200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA
Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA002W
Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804064-12
Sample wt/vol: 970.0 (g/mL) ML Lab File ID: 70320
Level: (low/med) LOW Date Received: 04/02/98
% Moisture: _____ decanted: (Y/N)___ Date Extracted:04/03/98
Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/09/98
Injection Volume: 1.0(uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	10.3	U
91-58-7	2-chloronaphthalene	10.3	U
208-96-8	acenaphthylene	10.3	U
83-32-9	acenaphthene	10.3	U
86-73-7	fluorene	10.3	U
85-01-8	phenanthrene	10.3	U
120-12-7	anthracene	10.3	U
206-44-0	fluoranthene	10.3	U
129-00-0	pyrene	10.3	U
56-55-3	benzo(a)anthracene	10.3	U
218-01-9	chrysene	10.3	U
205-99-2	benzo(b)fluoranthene	10.3	U
207-08-9	benzo(k)fluoranthene	10.3	U
50-32-8	benzo(a)pyrene	10.3	U
193-39-5	indeno(1,2,3-cd)pyrene	10.3	U
53-70-3	dibenz(a,h)anthracene	10.3	U
191-24-2	benzo(g,h,i)perylene	10.3	U

U

FORM I SV-1 OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HM3200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA002W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804064-07

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2C6015

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. _____ Date Analyzed: 04/04/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	2.0	U
108-88-3	Toluene	2.0	U
100-41-4	Ethylbenzene	2.0	U
1330-20-7	Xylenes (total)	6.0	U

U

DATA VALIDATION
COPY

FORM I VOA

111

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HM3200
~~HD3200~~ JR 1/21

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA002W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804064-10

Sample wt/vol: 960.0 (g/mL) ML Lab File ID: 70318

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/03/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/09/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	10.4	U
91-58-7	2-chloronaphthalene	10.4	U
208-96-8	acenaphthylene	10.4	U
83-32-9	acenaphthene	10.4	U
86-73-7	fluorene	10.4	U
85-01-8	phenanthrene	10.4	U
120-12-7	anthracene	10.4	U
206-44-0	fluoranthene	10.4	U
129-00-0	pyrene	10.4	U
56-55-3	benzo(a)anthracene	10.4	U
218-01-9	chrysene	10.4	U
205-99-2	benzo(b)fluoranthene	10.4	U
207-08-9	benzo(k)fluoranthene	10.4	U
50-32-8	benzo(a)pyrene	10.4	U
193-39-5	indeno(1,2,3-cd)pyrene	10.4	U
53-70-3	dibenz(a,h)anthracene	10.4	U
191-24-2	benzo(g,h,i)perylene	10.4	U

U

FORM I SV-1 OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HM4200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA002W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804064-15

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2C6016

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: not dec. _____ Date Analyzed: 04/04/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	2.0	U
108-88-3	Toluene	2.0	U
100-41-4	Ethylbenzene	2.0	U
1330-20-7	Xylenes (total)	6.0	U

U

[illegible]
Conf

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HM4200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA002W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804064-14

Sample wt/vol: 970.0 (g/mL) ML Lab File ID: 70324

Level: (low/med) LOW Date Received: 04/02/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 04/03/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/09/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	10.3	U
91-58-7	2-chloronaphthalene	10.3	U
208-96-8	acenaphthylene	10.3	U
83-32-9	acenaphthene	10.3	U
86-73-7	fluorene	10.3	U
85-01-8	phenanthrene	10.3	U
120-12-7	anthracene	10.3	U
206-44-0	fluoranthene	10.3	U
129-00-0	pyrene	10.3	U
56-55-3	benzo(a)anthracene	10.3	U
218-01-9	chrysene	10.3	U
205-99-2	benzo(b)fluoranthene	10.3	U
207-08-9	benzo(k)fluoranthene	10.3	U
50-32-8	benzo(a)pyrene	10.3	U
193-39-5	indeno(1,2,3-cd)pyrene	10.3	U
53-70-3	dibenz(a,h)anthracene	10.3	U
191-24-2	benzo(g,h,i)perylene	10.3	U

U

FORM I SV-1 OLM03.0

APPENDIX IX

CONTAMINATED SOIL DISPOSAL MANIFESTS

THIS PAGE INTENTIONALLY LEFT BLANK

All soil removed during the Former Heating Oil Tank (HOT) removal effort for this site was returned to the tank excavation by Anderson Columbia Environmental, Inc. Therefore, soil disposal manifests do not exist for the Former HOT, Building 725 site.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX X

SITE RANKING FORM

THIS PAGE INTENTIONALLY LEFT BLANK

SITE RANKING FORM

Facility Name: Former Heating Oil Tank, Building 725 **Ranked by:** C. Allison Bailey

County: Chatham **Facility ID #:** N/A **Date Ranked:** 11/24/98

SOIL CONTAMINATION

A. Total PAHs –
Maximum Concentration found on the site
(Assume <0.660 mg/kg if only gasoline was stored on site)

☒	≤0.660 mg/kg	=	0
☐	>0.66 - 1 mg/kg	=	10
☐	>1 - 10 mg/kg	=	25
☐	>10 mg/kg	=	50

B. Total Benzene -
Maximum Concentration found on the site

☒	≤0.005 mg/kg	=	0
☐	>0.005 - .05 mg/kg	=	1
☐	>0.05 - 1 mg/kg	=	10
☐	>1 - 10 mg/kg	=	25
☐	>10 - 50 mg/kg	=	40
☐	>50 mg/kg	=	50

C. Depth to Groundwater
(bls = below land surface)

☐	>50' bls	=	1
☐	>25' - 50' bls	=	2
☐	>10' - 25' bls	=	5
☒	≤10' bls	=	10

Fill in the blanks: **(A. 0) + (B. 0) = (0) x (C. 10) = (D. 0)**

GROUNDWATER CONTAMINATION

E. Free Product (Nonaqueous-phase liquid hydrocarbons; See Guidelines For definition of "sheen").

☒	No free product =	0
☐	Sheen - 1/8" =	250
☐	>1/8" - 6" =	500
☐	>6" - 1ft. =	1,000
☐	For every additional inch, add another 100 points =	1,000 +

F. Dissolved Benzene -
Maximum Concentration at the site
(One well must be located at the source of the release.)

☒	≤5 µg/L	= 0
☐	>5 - 100 µg/L	= 5
☐	>100 - 1,000 µg/L	= 50
☐	>1,000 - 10,000 µg/L	= 100
☐	>10,000 µg/L	= 250

Fill in the blanks: **(E. 0) + (F. 0) = (G. 0)**

POTENTIAL RECEPTORS (MUST BE FIELD-VERIFIED)

Distance from nearest contaminant plume boundary to the nearest downgradient and hydraulically connected Point of Withdrawal for water supply. **If the point of withdrawal is not hydraulically connected, evidence as outlined in the CAP-A guidance document MUST be presented to substantiate this claim.**

H. Public Water Supply

☐	Impacted	= 2000
☐	≤500'	= 500
☐	>500' - ¼ mi	= 25
☐	¼ mi - 1 mi	= 10
☐	>1 mi - 2 mi	= 2
☒*	> 2 mi	= 0

For lower susceptibility areas only:

☐	>1 mi	= 0

Note: If site is in lower susceptibility area, do not use the shaded areas.

* Note: Please see Section 1.0, Other Geologic and Hydrogeologic Data, page X-5, for justification of this evaluation.

I. Non-Public Water Supply

☐	Impacted	= 1000
☐	≤100'	= 500
☐	>100' - 500'	= 25
☐	>500' - ¼ mi	= 5
☐	>¼ - ½ mi	= 2
☒	>½ mi	= 0

For lower susceptibility areas only:

☐	>¼ mi	= 0

J. Distance from nearest Contaminant Plume boundary to downgradient Surface Waters **OR UTILITY TRENCHES & VAULTS** (a utility trench may be omitted from ranking if its invert elevation is more than 5 feet above the water table)

☐	Impacted	= 500
☐	≤500'	= 50
☐	>500' - 1,000'	= 5
☒	>1,000'	= 1

K. Distance from any Free Product to basements and crawl spaces

☐	Impacted	= 500
☐	<500'	= 50
☐	>500' - 1,000'	= 5
☒	>1,000' or no free product.	= 0

Fill in the blanks: (H. 0) + (I. 0) + (J. 1) + (K. 0) = L. 1

(G. 0) x (L. 1) = M. 0

(M. 0) + (D. 0) = N. 0

P. **SUSCEPTIBILITY AREA MULTIPLIER**

☐ If site is located in a Low Ground-Water Pollution Susceptibility Area = 0.5

☒ All other sites = 1

Q. **EXPLOSION HAZARD**

Have any explosive petroleum vapors, possibly originating from this release, been detected in any subsurface structure (e.g., utility trenches, basements, vaults, crawl spaces, etc.)?

☐ Yes = 200,000

☒ No = 0

Fill in the blanks: (N. 0) x (P. 1) = (0) + (Q. 0)

= 0

ENVIRONMENTAL SENSITIVITY SCORE

1.0 OTHER GEOLOGIC AND HYDROGEOLOGIC DATA

The following information is presented to provide supporting documentation to Appendix X (Site Ranking Form) of the Corrective Action Plan (CAP)-Part A Form and provides detailed information relating to the geologic and hydrogeologic conditions at Hunter Army Airfield (HAAF) to support determinations of groundwater flow pathway(s) or direction(s) and contaminant transport.

1.1 REGIONAL GEOLOGY

Southeast Georgia is located within the Coastal Plain Physiographic Province of the Southeast United States (Clark and Zisa 1976). In this region, the thickness of southeastward dipping, subsurface strata ranges from 0 feet at the fall line, located approximately 350 miles inland from the Atlantic coast, to approximately 4200 feet below land surface (BLS) at the coast. Herrick (1961) provides detailed lithologic descriptions of the stratigraphic units encountered during the installation of water and petroleum exploration wells in Chatham County. The well log of GGS Well 125, located on White Bluff Road, 700 feet west and 0.3 miles north of Buckhalter Road, Savannah, provides one of the more complete lithologic descriptions of upper Eocene, Miocene, and Pliocene to Recent sedimentary strata in Chatham County.

The upper Eocene (Ocala Limestone) section of GGS Well 125 is approximately 225 feet thick and dominated by light-gray to white, fossiliferous limestone. The Miocene section is approximately 250 feet thick and consists of limestone with a 160-feet-thick cap of dark green phosphatic clay. This clay is regionally extensive and is known to occupy the Coosawatchie Formation of the Hawthorn Group (Furlow 1969; Arora 1984; Huddlestun 1988). The interval from approximately 80 feet to the surface is Pliocene to Recent in age and composed primarily of sand interbedded with clay and silt. This section is occupied by the Satilla and Cypresshead Formations (Huddlestun 1988).

1.2 LOCAL GEOLOGY

HAAF is located within the Barrier Island Sequence District of the Coastal Plain Physiographic Province of the Southeast United States (Clark and Zisa 1976). The Barrier Island Sequence District in Chatham and Bryan Counties is characterized by the existence of several marine terraces (step-like topographic surfaces that decrease in elevation toward the coast). These marine terraces, and their associated deposits, are the results of sea level fluctuations that occurred during the Pleistocene Epoch. The surficial (Quaternary) deposits in Chatham and Bryan Counties, in decreasing elevation and age, are part of the Okefenokee, Wicomico, Penholoway, Pamlico, and Silver Bluff terrace complexes (Wilkes et al. 1974; GA DNR 1976; Huddlestun 1988).

HAAF, as well as most of Chatham County, is underlain by the Pleistocene Pamlico Terrace. The Pleistocene Satilla Formation (formerly known as the Pamlico Formation) consists of deposits of the Pamlico Terrace complex and other terrace complexes in the region (Huddlestun 1988). The Satilla Formation is a lithologically heterogeneous unit that consists of variably bedded to nonbedded sand and variably bedded silty to sandy clay. During the Pleistocene, these sand and clay deposits were formed in offshore and inner continental shelf, barrier island, and marsh/lagoonal-type environments (Huddlestun 1988). According to the Geologic Map of Georgia (GA DNR 1976), clay beds of marsh origin, which were deposited on the northwest side

of the former Pamlico Barrier Island complex, exist in the western quarter of HAAF. Very fine- to coarse-grained sand deposits of barrier island origin are more common throughout the remaining areas of HAAF.

Based on the coring and sampling of unconsolidated strata at HAAF during the CAP-Part A investigations, it is concluded that all former heating oil tanks (HOTs) and underground storage tanks (USTs) were buried within the Satilla Formation, which is overlain by various soil types. Soil groups at HAAF include the Chipley, Leon, Ellabelle, Kershaw, Pelham, Albany, Wahee, and Ogeechee (Wilkes et al. 1974).

1.3 REGIONAL AND LOCAL HYDROGEOLOGY

The hydrogeology in the vicinity of HAAF is mostly influenced by two aquifer systems. These are referred to as the Principal (Floridan) Aquifer and the Surficial Aquifer (Miller 1990). The Principal Aquifer is the lowermost hydrologic unit and is regionally extensive from South Carolina through Georgia, Alabama, and most of Florida. Known elsewhere as the Floridan, this aquifer, approximately 800 feet in total thickness, is composed primarily of Tertiary age limestone including the Bug Island Formation, the Ocala Group, and the Suwannee Limestone. Groundwater from the Floridan is used primarily for drinking water (Arora 1984). According to Miller (1990), one of the largest cones of depression produced in the Upper Floridan Aquifer exists directly beneath Savannah, Georgia. Net water-level decline in the Floridan system, between the predevelopment period and 1980, exceeded 80 feet beneath Savannah. In addition, according to 1980 estimates, more than 500 million gallons of water per day were withdrawn from the Floridan for public and industrial use in southeast Georgia, more than any other region.

The confining layer for the Principal (Floridan) Aquifer is the phosphatic clay of the Hawthorn Group. There are minor occurrences of aquifer material within the Hawthorn Group; however, they have limited utilization (Miller 1990). The Surficial Aquifer overlies the Hawthorn confining unit.

The Surficial Aquifer consists of widely varying amounts of sand and clay, ranging from 55 to 150 feet in thickness, and is composed primarily of the Satilla and Cypresshead Formations in the Savannah vicinity (Arora 1984). This aquifer is primarily used for domestic lawn and agricultural irrigation. The top of the water table ranges from approximately 2 to 10 feet below ground level (Miller 1990). Groundwater in the Surficial Aquifer system is under unconfined, or water table, conditions. However, locally, thin clay beds create confined or semiconfined conditions, as is the case at HAAF where thin, surficial clay beds are present in the west quadrant (GA DNR 1976).

Groundwater encountered at all the UST/HOT investigation sites is part of the Surficial Aquifer system. Based on the fact that all public and non-public water supply wells draw water from the Principal (Floridan) Aquifer, and that the Hawthorn confining unit separates the Principal (Floridan) Aquifer from the Surficial Aquifer, it is concluded that there is no hydraulic interconnection between the HOT sites (and associated plumes, if applicable) and water supply withdrawal points (Figure X-A).

1.4 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS AT THE FORMER HOT, BUILDING 725 SITE

According to Wilkes et al. (1974), the soil common in the area occupied by Building 725 consists of the Chipley-Urban land complex (Cuc). This complex consists of 40 to 70 percent Chipley soils and 20 to 40 percent Urban land soils. The surface layer of this complex is very dark grayish brown to gray, with the underlying layer being olive brown to light yellowish brown mottled with gray. A seasonal high water table is 15 to 36 inches below the surface. In places, the soil profile has been altered due to the cutting, filing, and grading activities resulting from urban development (Wilkes et al. 1974).

During direct-push soil sampling events at the Former HOT, Building 725 site, two major unconsolidated sediment types were encountered (Figure 4, Appendix I). These include: (1) organic-rich, fine- to medium-grained sand interbedded with tan clay laminations (OL/OH); and (2) tan, well-sorted, fine-grained quartz sand (SW).

Water levels measured on April 6, 1998, in the temporary piezometers installed on April 2, 1998, indicate a localized high in the groundwater level corresponding to the former tank location (Figure 6). This groundwater high is likely a result of water that has percolated through the higher permeability excavation fill. This percolated water ponds in the bottom of the excavation fill/native soil interface. Groundwater flow across the site is not anticipated to be influenced by this ponding. Water levels from piezometers M2, M3, and M4 (located outside the influence of the more permeable fill) were used to determine groundwater flow across the site which is to the northeast.

THIS PAGE INTENTIONALLY LEFT BLANK

FIGURES

THIS PAGE INTENTIONALLY LEFT BLANK

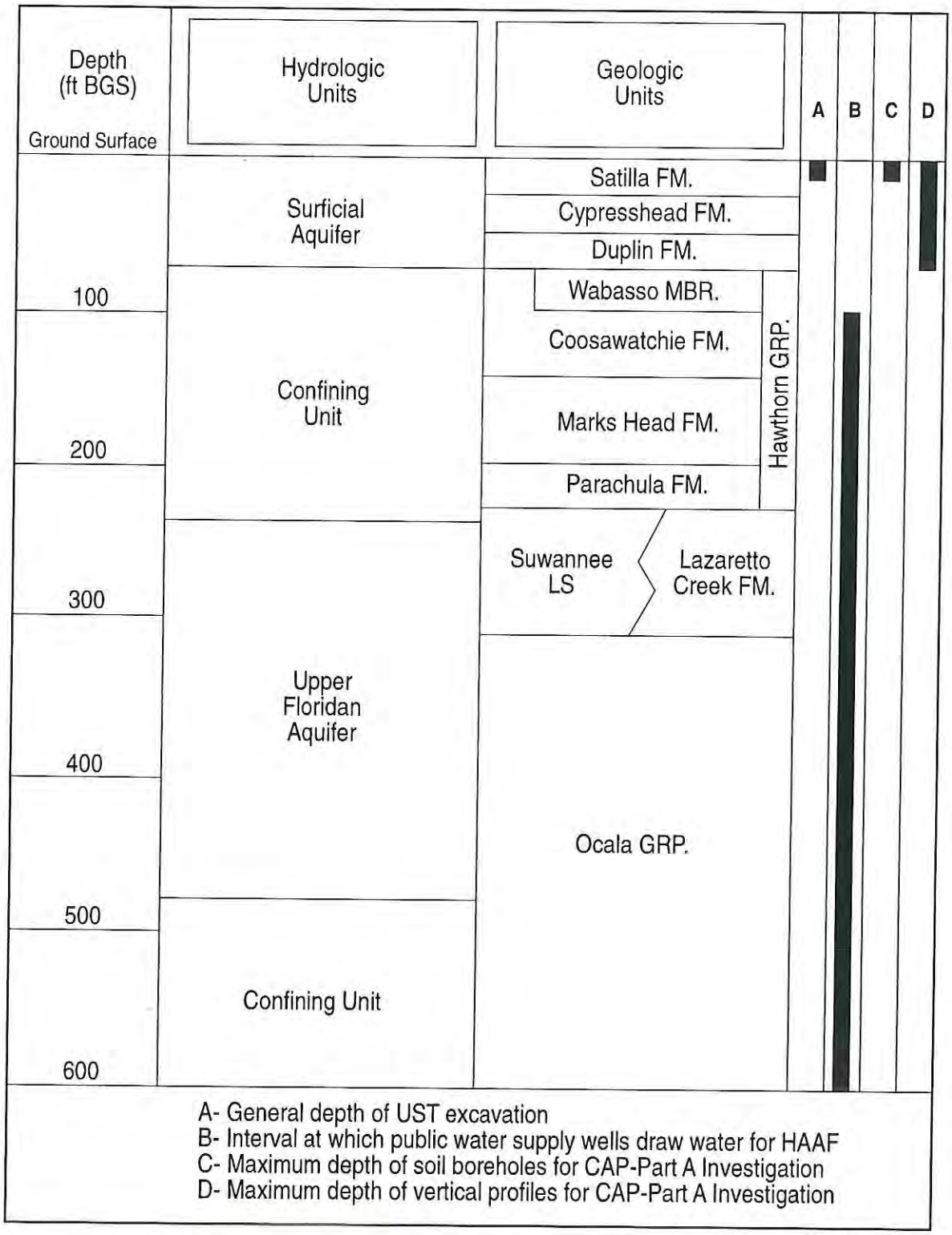

Figure X-A. Generalized Stratigraphy of Chatham County, Georgia

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX XI

COPIES OF PUBLIC NOTIFICATION LETTERS AND CERTIFIED RECEIPTS OR NEWSPAPAPER NOTICE

THIS PAGE INTENTIONALLY LEFT BLANK

Public notification letters are not required for the Former Heating Oil Tank (HOT), Building 725 site because heating oil tanks are not regulated as defined by Georgia Department of Natural Resources (GA DNR) guidance.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX XII

GUST TRUST FUND REIMBURSEMENT APPLICATION AND CLAIM FOR REIMBURSEMENT

THIS PAGE INTENTIONALLY LEFT BLANK

The Hunter Army Airfield is a federally owned facility and has funded the investigation for the Former Heating Oil Tank (HOT), Building 725 site, which is unregulated as defined by Georgia Department of Natural Resources (GA DNR) guidance and has no Facility Identification Number, using Environmental Restoration Account funds. Application for Georgia Underground Storage Tank Trust Fund reimbursement is not being pursued at this time.

THIS PAGE INTENTIONALLY LEFT BLANK

ATTACHMENT A

TECHNICAL APPROACH

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

THIS PAGE INTENTIONALLY LEFT BLANK

TECHNICAL APPROACH

1.0 INTRODUCTION

The overall objective of this project was to provide the services required to produce Corrective Action Plans (CAPs) for the subject heating oil tank (HOT) sites per the requirement of the Georgia Environmental Protection Division (EPD). The field activities included the installation of temporary piezometers, soil borings, and soil and groundwater sampling. Upon completion of the field activities, this CAP-Part A report was prepared to meet requirements of the Georgia EPD, Fort Stewart Directorate of Public Works (FS DPW), and the U.S. Army Corps of Engineers (USACE)-Savannah District.

2.0 FIELD ACTIVITIES

The following sections detail the methodologies used for direct-push sampling and piezometer installation. All boreholes were drilled and piezometers installed by R. E. Wright [Science Applications International Corporation (SAIC), Drilling Services Division], a drilling firm licensed in the state of Georgia. A geologist from SAIC, working under the direction of a registered professional engineer, was on site at all times. No drilling activities were undertaken until all utility clearances and permits were obtained from Hunter Army Airfield (HAAF) utility personnel.

2.1 SUBSURFACE SOIL SAMPLING

2.1.1 Borehole Installation

A truck-mounted direct-push Geoprobe was used for installation of soil boreholes. All sampling devices were pushed to required depths using 4.0- and 3.0-foot push rods. During all borehole drilling, 4.0-foot soil cores were collected continuously from ground surface to the top of the water table.

2.1.2 Sample Collection

Soil samples were collected from boreholes using a 4.0-foot acetate-lined, steel macrocoring device. Upon retrieval of the sampling device, the acetate liner containing the soil core was removed from the steel macrocoring device and removed from the core using a truck-mounted, acetate-liner cutting device. The exposed soil core was split into two 2.0-foot sections using a stainless steel knife. A portion of each 2.0-foot section was collected for possible laboratory analysis. The remaining portion of each 2.0-foot section was used for field measurements.

Samples designated for possible laboratory analysis were collected from the cores using a stainless steel spoon. Soil was collected from along the entire length of the core in order to collect a representative sample. The portion of the sample designated for volatile organic analyses was placed into laboratory sample containers first, followed by placement of the remaining portion of the sample into the containers designated for other types of analyses. Sample containers designated for volatile organic analyses were filled so that minimal headspace was present. Headspace gas concentration measurements were made using a field organic vapor meter (OVM). Initially, soil

from each 2.0-foot interval was placed into a glass jar, leaving some air space, and covered with aluminum foil to create an air-tight seal. The sample was allowed to volatilize for a minimum of 15 minutes. The sealed jar was punctured with the OVM probe and headspace gas drawn until the meter reading was stable. The concentration of the headspace gas was recorded to the nearest 0.1 parts per million (ppm).

Immediately following collection of each sample and completion of bottle label information, each potential analytical sample container was placed into an ice-filled cooler to ensure preservation. A clean acetate-lined, steel macrocore sampling device was used to collect soil core from each interval of the project boreholes. Information regarding the soil sample selection criteria for off-site shipment to a laboratory for chemical analysis is presented in Section 3.1.3 of the project Sampling and Analysis Plan. Soil samples, which were not selected for laboratory analysis, were disposed of as investigation-derived waste (IDW).

2.2 GROUNDWATER SAMPLING

2.2.1 Groundwater Collection

Collection of groundwater samples from soil boreholes was accomplished through the use of a 3.5-foot-long, 1.0-inch-diameter steel slotted screen encased in a 3.5-foot-long, 1.5-inch-diameter stainless steel sleeve attached to an expendable 1.5-inch length, 1.5-inch-diameter steel drive point. The entire device was pushed 5 feet below the water table. The 3.5-foot steel sleeve was subsequently raised 4.0 feet from the bottom while discarding the steel drive point and exposing the entire length of the screen to groundwater. By raising the steel sleeve 4.0 feet, the steel slotted screen was raised 0.5 feet from the bottom of the borehole. As a result, the groundwater was collected from a 4.0-foot interval. Water was brought to the surface using a peristaltic pump attached to a clean acetate tube, which was cut to desired length prior to sampling and discarded following each sampling event. Enough water was extracted for laboratory sample containment and for water quality parameters to be measured with a Horiba U-10. Following groundwater sample collection, subsurface sampling devices were removed from the borehole, and a temporary piezometer was installed. Temporary piezometers were constructed of 1.0-inch inside diameter (ID) polyvinyl chloride (PVC) casing with a 5-foot screened interval.

2.2.2 Field Measurements

Groundwater field measurements performed during the project included measurement of static groundwater level, pH, specific conductance, and temperature. Groundwater levels were measured inside the temporary PVC piezometers. A summary of the procedures and criteria to be used for groundwater field measurements is presented in the following sections.

Static Groundwater Level

Static groundwater level measurements were made using an electronic water-level indicator. Initially, the indicator probe was lowered into each temporary piezometer casing until the alarm sounded and/or the indicator light illuminated. The probe was withdrawn several feet and slowly lowered again until the groundwater surface was contacted as indicated by the alarm and/or light. Water-level measurements were estimated to the nearest 0.01 foot based on the difference between the nearest probe cord mark to the top of the piezometer casing.

The distance between the top of the casing and the surrounding ground surface was taken into account in measuring the water level to within 0.01 foot. The static water level measurement

procedure was repeated two or three times to ensure that the water level measurements were consistent (plus or minus 0.01 foot).

Free Product Thickness

Free product layer thickness measurements were collected at applicable sites using an electric interface probe. Initially, the interface probe was lowered into each temporary piezometer casing until the alarm sounded and/or the indicator light was illuminated. The probe was withdrawn and then slowly lowered again until the liquid surface was contacted as noted by the alarm and/or indicator light. The meter was lowered until the alarm indicated the water surface. The thickness of the product was determined by subtracting the measurement of the free product layer surface from the measurement of the water surface. The water/product level measurements were estimated to the nearest 0.01 foot based on the difference between the nearest probe cord mark to the top of the piezometer casing.

The free product measurement was repeated two or three times to ensure that the measurements were consistent (plus or minus 0.01 foot).

pH, Specific Conductance, and Temperature

The pH, specific conductance, and temperature measurements were recorded for groundwater during groundwater sampling. The pH, temperature, and conductivity measurements were made using a Horiba U-10 designed to measure these parameters. A portion of each groundwater sample was retrieved from the sampler and poured into the collection cup. With the combination meter set in the pH mode, the meter electrode was swirled at a slow, constant rate within the sample until the meter reading reached equilibrium. The sample pH was recorded to the nearest 0.1 pH unit.

Upon completion of the pH measurement, conductivity and temperature measurements were made on a groundwater sample collected in the same manner as described above. With the combination meter set in the conductivity mode, the meter electrode was swirled at a slow, constant rate until the meter reading reached equilibrium. Concurrently, a temperature probe was placed into the sample and allowed to reach equilibrium. The sample conductivity was recorded to the nearest 10 mS/cm and the temperature to the nearest 0.1°C. All recorded conductivity values were converted to conductance at 25°C.

2.3 TEMPORARY PIEZOMETER INSTALLATION

Following the collection of the groundwater sample, a 2-inch PVC piezometer, with a 5-foot screened section, was installed to prevent the borehole from collapsing. The piezometer remained in the borehole at least 24 hours, after which time the static water level was measured.

2.4 BOREHOLE ABANDONMENT

Once static water levels were measured, the temporary piezometers were removed, and the boreholes were abandoned. Abandonment was conducted in a manner preventing any current, or subsequent, fluid media from entering, or migrating within, the subsurface environment along the axis or from the endpoint of the borehole. Abandonment was accomplished by filling the entire volume of the borehole with bentonite powder.

Boreholes located in concrete-covered areas were capped with grout. After a 24-hour period, the abandoned borehole was checked for grout and bentonite settlement.

2.5 SURVEYING

A topographic survey of the horizontal and vertical locations of all soil boreholes was conducted after completion of field activities. The topographic survey was conducted by a surveyor registered in the state of Georgia.

The horizontal coordinates for each soil borehole were surveyed to the closest 1.0 foot and referenced to the State Plane Coordinate System. Ground elevations were surveyed to the closest 0.01 foot. Elevations were referenced to the National Geodetic Vertical Datum of 1983.

2.6 DECONTAMINATION PROCEDURES

Decontamination of equipment used for soil and groundwater sampling was conducted at each investigation site. Non-dedicated equipment was decontaminated after each use. The direct-push sampling equipment was decontaminated by removing soil and other contaminants with potable water, phosphate-free detergent, and scrub brushes. This was followed by a potable water rinse, American Society for Testing and Materials (ASTM) Type I or equivalent water rinse, methanol rinse, and ASTM Type I or equivalent water rinse. The sampling equipment was then allowed to air dry and was wrapped in plastic or aluminum foil.

In addition to the sampling equipment, field measurement instruments were also decontaminated between uses. Only those portions of each instrument that came into contact with environmental media were decontaminated. Because of the delicate nature of these instruments, the decontamination procedure only involved initial rinsing of the instrument probes with ASTM Type I or equivalent water.

2.7 INVESTIGATION-DERIVED WASTE MANAGEMENT

Soil cuttings obtained during the installation of each borehole, and water collected for the measurement of water quality parameters, were the only indigenous IDW generated during the project. Non-indigenous IDW included solid compactible trash, decontamination solutions, and sludges.

2.7.1 Waste Collection and Containment

All soil waste was contained in a 55-gallon U.S. Department of Transportation (DOT) Specification 17C drums at the point of generation. At each site, water waste was contained in four 55-gallon DOT specification 17E drums. All containers were appropriately labeled with generation point information and transported to the Central Staging Area. Sanitary waste was placed in trash bags at the point of generation.

2.7.2 Waste Characterization

Soil IDW was characterized by collecting a representative soil aliquot from each drum and creating a single homogenized composite sample. The sample was analyzed for Resource Conservation and Recovery Act Toxicity Characteristic Leaching Procedure (TCLP) analytes. Soil was considered

non-contaminated if the TCLP results were below the regulatory criteria, and the analytical results for the associated field samples indicated all of the following:

- benzene, toluene, ethylbenzene, and xylene (BTEX) and polynuclear aromatic hydrocarbon (PAH) concentrations below applicable Table A or B Threshold Levels as defined in Rules of Georgia Department of Natural Resources, Environmental Protection Division, rule 391-3-15-.09;
- total petroleum hydrocarbon (TPH) concentrations below 100 ppm; and
- total lead concentrations below 100 ppm.

Water IDW was characterized by collecting one sample from each drum. Each sample was analyzed for BTEX, pH, oil and grease, phenols, and TCLP metals.

2.7.3 Waste Disposal

All of the soil IDW was characterized as being non-contaminated and approved for disposal by FS DPW personnel. The soil was spread in the area designated by FS DPW personnel.

All of the water IDW was characterized as meeting the acceptance criteria of the FS Industrial Waste Treatment Plant (IWTP) and approved for disposal by FS DPW personnel at the IWTP.

2.8 DOCUMENTATION OF FIELD ACTIVITIES

All information pertinent to drilling and sampling activities, including instrument calibration data, was recorded in field logbooks. The logbooks were bound and the pages consecutively numbered. Entries in the logbooks were made in black permanent ink and included, at a minimum, a description of all activities, individuals involved in drilling and sampling activities, date and time of drilling and sampling, weather conditions, problems encountered, and field measurements. Lot numbers, manufacturers' names, and expiration dates of standard solutions used for field instrument calibration were also recorded. Sufficient information was recorded in the logbooks to permit reconstruction of direct-push and sampling activities.

3.0 SAMPLE HANDLING AND ANALYSIS

3.1 ANALYTICAL PROGRAM

Soil samples were screened for the presence of volatile vapors using a PhotoVac photoionization detector. The PhotoVac was calibrated daily using 100 ppm isobutylene. The headspace of each sample was measured approximately 15 minutes after collection.

Soil samples were analyzed for BTEX by method SW 846-8020, for PAH by method SW 846-8270, and for TPH by method SW 846-8015 (modified). TPH analysis included both gasoline-range organics and diesel-range organics. Groundwater samples were analyzed for BTEX by method SW 846-8240 and PAH by method SW 846-8270. The groundwater and soil sample containers, preservatives, and holding times are summarized in Table 1.1 of the Quality Assurance

Project Plan of the SAP (SAIC 1998). All samples were shipped to General Engineering Laboratories (GEL), Charleston, South Carolina.

Duplicate samples of soil and groundwater were collected throughout the project and represented approximately 10 percent of the total sample population. Rinsate blanks, which represented approximately 5 percent of the total sample population, were collected to detect sample cross-contamination. Duplicates and rinsates were submitted to GEL.

Split samples were collected in addition to the other quality control samples but were sent to the USACE quality assurance laboratory in Marietta, Georgia, as an independent quality check.

3.2 SAMPLE PACKAGING AND SHIPMENT

Each sample container was labeled and taped shut with electrical tape (except those containing samples designated for volatile organic analysis), and an initialed/dated custody seal was placed over the lid. Each sample bottle was placed into a separate plastic bag and sealed. The samples were placed upright in thermally insulated rigid-body coolers and surrounded by vermiculite to prevent breakage during shipment. In addition, samples were cooled to approximately 4°C with wet ice. These measures were taken to slow the decomposition and volatilization of contaminants during shipping and handling. The sample coolers were shipped to the analytical laboratory via courier service provided by the laboratory.

ATTACHMENT B

REFERENCES

THIS PAGE INTENTIONALLY LEFT BLANK

Anderson Columbia Environmental, Inc. (ACE), 1997. *Field Report for No. 2 Fuel Oil Tank, Building 725*, Hunter Army Airfield, Savannah, Georgia.

Arora, Ram, 1984. *Hydrologic Evaluation for Underground Injection Control in the Coastal Plain of Georgia*, Department of Natural Resources, Environmental Protection Division, Georgia Geological Survey.

Clark, W. Z. Jr., and Zisa, A. C., 1976. *Physiographic Map of Georgia,* Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey (reprinted 1988).

City of Savannah Bureau of Water Operations, 1998. *Personal communication with Michael Coon.*

City of Savannah Bureau of Sewer and Water Planning, 1998. *Personal communication with Clay Rogers.*

Environmental Protection Agency (EPA), 1998. *Watershed Environmental Profile, Ogeechee Coastal Dataset*, July.

Furlow, J. W., 1969. *Stratigraphy and Economic Geology of the Eastern Chatham County Phosphate Deposit,* Department of Mines and Mining, Division of Conservation, Georgia Geologic Survey, Bulletin 82.

Fort Stewart Directorate of Public Works (FS DPW), 1998. *Personal communication with Fort Stewart DPW Personnel.*

Georgia Department of Natural Resources (GA DNR), 1976. *Geologic Map of Georgia,* Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey (reprinted 1997).

GA DNR, 1998a. *Rules and Regulations for Water Quality Control,* Chapter 391-3-6, Department of Natural Resources, Environmental Protection Division.

GA DNR, 1998b. *Underground Storage Tank Corrective Action Plan-Part A Guidance,* Department of Natural Resources, Environmental Protection Division.

Herrick, S. M., 1961. *Wells Logs of the Coastal Plain of Georgia,* Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey.

Huddlestun, P. F., 1988. *A Revision of the Lithostratigraphic Units of the Coastal Plain of Georgia, The Miocene through Holocene,* Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey, Bulletin 104.

Miller, J. A., 1990. *Groundwater Atlas of the United States, Segment 6,* U.S. Department of the Interior, U.S. Geological Survey, Hydrologic Inventory Atlas 730G, 28 pp.

Science Applications International Corporation (SAIC), 1995. *Data Validation Guidelines for Analytical Data,* Quality Assurance Technical Procedure TP-DM-300-7, Revision 1.

SAIC, 1998. *Sampling and Analysis Plan for the Corrective Action Plan-Part A Investigations for Former Underground Storage Tanks at Hunter Army Airfield, Georgia,* U.S. Army Corps of Engineers, Savannah District, Contract No. DACA21-95-D-0022, Delivery Order 0019.

SAIC, *Sampling and Analysis Plan for the CAP A Investigation for former UST*, Hunter Army Airfield, Georgia, March 1998.

Trent, V. P., 1992. *Groundwater Pollution Susceptibility Map of Georgia,* Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey, Hydrologic Atlas 20.

United States Geological Survey (USGS), 1990. *Water Use for the Ogeechee Coastal Watershed.*

Wilkes, R. L., Johnson, J. H., Stoner, H. T., and Bacon, D. D., 1974. *Soil Survey of Bryan and Chatham Counties, Georgia,* U.S. Department of Agriculture Soil Conservation Service, 71 pp.