FORM I Science Applications 08-APR-1998 SA

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

HG4101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA008S

Matrix: (soil/water) SOIL Lab Sample ID: 9804218-08

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 4D10049

Level: (low/med) LOW Date Received: 04/08/98

% Moisture: 8 decanted: (Y/N) N Date Extracted: 04/10/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/22/98

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	1.2	B	U FØ1, FØ7

FORM I SV

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HG4101RE

Lab Name: GENERAL ENGINEERING LABOR Contract: NA
Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA00[illegible]
Matrix: (soil/water) SOIL Lab Sample ID: 9804218-[illegible]
Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1F2012
Level: (low/med) LOW Date Received: 04/08/98
% Moisture: not dec. 8 Date Analyzed: 04/21/98
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	85.6	J	J Aϕ3

USL

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG4101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA008S

Matrix: (soil/water) SOIL Lab Sample ID: 9804218-08

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 1Q114

Level: (low/med) LOW Date Received: 04/08/98

% Moisture: 8 decanted: (Y/N) N Date Extracted: 04/09/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/20/98

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	360	U
91-58-7	2-chloronaphthalene	360	U
208-96-8	acenaphthylene	360	U
83-32-9	acenaphthene	360	U
86-73-7	fluorene	360	U
85-01-8	phenanthrene	360	U
120-12-7	anthracene	360	U
206-44-0	fluoranthene	360	U
129-00-0	pyrene	360	U
56-55-3	benzo(a)anthracene	360	U
218-01-9	chrysene	360	U
205-99-2	benzo(b)fluoranthene	360	U
207-08-9	benzo(k)fluoranthene	360	U
50-32-8	benzo(a)pyrene	360	U
193-39-5	indeno(1,2,3-cd)pyrene	360	U
53-70-3	dibenz(a,h)anthracene	360	U
191-24-2	benzo(g,h,i)perylene	360	U

U

FORM I SV-1 OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HG7101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA022S

Matrix: (soil/water) SOIL Lab Sample ID: 9804494-17

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2G7026

Level: (low/med) LOW Date Received: 04/22/98

% Moisture: not dec. 8 Date Analyzed: 05/04/98

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/KG	Q	
71-43-2	Benzene	2.2	U	U
108-88-3	Toluene	34.4		=
100-41-4	Ethylbenzene	2.2	U	U
1330-20-7	Xylenes (total)	6.5	U	U

FORM I VOA

FORM 1 Science Applications22-APR-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

HG7101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA022S

Matrix: (soil/water) SOIL Lab Sample ID: 9804494-17

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5A3006

Level: (low/med) LOW Date Received: 04/22/98

% Moisture: 8 decanted: (Y/N) N Date Extracted:04/29/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/05/98

Injection Volume: 1.0(uL) Dilution Factor: 60.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics	200	B

= FØ1, FØ8

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG7101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA022S

Matrix: (soil/water) SOIL Lab Sample ID: 9804494-17

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1H1022

Level: (low/med) LOW Date Received: 04/22/98

% Moisture: not dec. 8 Date Analyzed: 05/04/98

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____	543	U	U

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HG7101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA022S

Matrix: (soil/water) SOIL Lab Sample ID: 9804494-17

Sample wt/vol: 30.4 (g/mL) G Lab File ID: 4R407

Level: (low/med) LOW Date Received: 04/22/98

% Moisture: 8 decanted: (Y/N) N Date Extracted: 04/24/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/30/98

Injection Volume: 1.0(uL) Dilution Factor: 4.0

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	1430	U
91-58-7	2-chloronaphthalene	1430	U
208-96-8	acenaphthylene	1430	U
83-32-9	acenaphthene	1430	U
86-73-7	fluorene	1430	U
85-01-8	phenanthrene	1430	U
120-12-7	anthracene	1430	U
206-44-0	fluoranthene	1430	U
129-00-0	pyrene	1430	U
56-55-3	benzo(a)anthracene	1430	U
218-01-9	chrysene	1430	U
205-99-2	benzo(b)fluoranthene	1430	U
207-08-9	benzo(k)fluoranthene	1430	U
50-32-8	benzo(a)pyrene	1430	U
193-39-5	indeno(1,2,3-cd)pyrene	1430	U
53-70-3	dibenz(a,h)anthracene	1430	U
191-24-2	benzo(g,h,i)perylene	1430	U

U

FORM I SV-1 OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG7111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA022S

Matrix: (soil/water) SOIL Lab Sample ID: 9804494-18

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2G7027

Level: (low/med) LOW Date Received: 04/22/98

% Moisture: not dec. 8 Date Analyzed: 05/04/98

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/KG	Q	
71-43-2	Benzene	2.2	U	V = U U
108-88-3	Toluene	15.0		
100-41-4	Ethylbenzene	2.2	U	
1330-20-7	Xylenes (total)	6.5	U	

FORM I VOA

FORM 1 Science Applications22-APR-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

HG7111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA022S

Matrix: (soil/water) SOIL Lab Sample ID: 9804494-18

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5A3007

Level: (low/med) LOW Date Received: 04/22/98

% Moisture: 8 decanted: (Y/N) N Date Extracted:04/29/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/05/98

Injection Volume: 1.0(uL) Dilution Factor: 10.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	71.7	B	= FØ1, FØ8

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG7111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA022S

Matrix: (soil/water) SOIL Lab Sample ID: 9804494-18

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1H205

Level: (low/med) LOW Date Received: 04/22/98

% Moisture: not dec. 8 Date Analyzed: 05/05/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 2.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	1090	U	V

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG7111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA022S

Matrix: (soil/water) SOIL Lab Sample ID: 9804494-18

Sample wt/vol: 30.5 (g/mL) G Lab File ID: 4R408

Level: (low/med) LOW Date Received: 04/22/98

% Moisture: 8 decanted: (Y/N) N Date Extracted: 04/24/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/30/98

Injection Volume: 1.0(uL) Dilution Factor: 4.0

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	1420	U
91-58-7	2-chloronaphthalene	1420	U
208-96-8	acenaphthylene	1420	U
83-32-9	acenaphthene	1420	U
86-73-7	fluorene	1420	U
85-01-8	phenanthrene	1420	U
120-12-7	anthracene	1420	U
206-44-0	fluoranthene	1420	U
129-00-0	pyrene	1420	U
56-55-3	benzo(a)anthracene	1420	U
218-01-9	chrysene	1420	U
205-99-2	benzo(b)fluoranthene	1420	U
207-08-9	benzo(k)fluoranthene	1420	U
50-32-8	benzo(a)pyrene	1420	U
193-39-5	indeno(1,2,3-cd)pyrene	1420	U
53-70-3	dibenz(a,h)anthracene	1420	U
191-24-2	benzo(g,h,i)perylene	1420	U

U

FORM I SV-1 OLM03.0

DATA VALIDATION
COPY

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Lorene Rollins
Project Description: Hunter Army Airfield Site

cc: SAIC00398 Report Date: April 22, 1998 Page 1 of 1

Sample ID	: HG6400
Lab ID	: 9804218-18
Matrix	: Soil
Date Collected	: 04/07/98
Date Received	: 04/08/98
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
TOTAL ORGANIC CARBON (TOC)		950 = F01, F08	24.1	100	mg/kg	1.0	LS	04/17/98	1341	120173	1

M = Method	Method-Description
M 1	SW846 9060 modified

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (803) 769-7391.

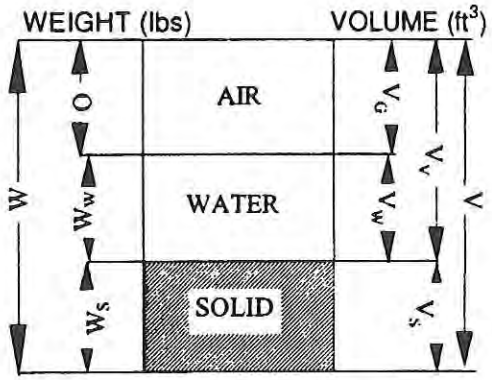
Reviewed By

203

SPECIFIC GRAVITY AND POROSITY

PROJECT: Hunter Air Force Base
LOCATION OF PROJECT: CAP Part A
DESCRIPTION OF SOIL: Tan Clayey Sand
TESTED BY: BV-CA

JOB NO.: 98064
SAMPLE NO.: HG6400
DEPTH OF SAMPLE: 0-2 ft.
DATE OF TESTING: 4/27/98



W = 0.97317
$W_W = W - W_S$ = 0.09494
$W_S = Y_d * V$ = 0.8782

V = 0.01144
$V_W = W_W/Y_W$ = 0.0015
$V_S = W_S/G_S * Y_W$ = 0.0053
$V_G = V - (V_S + V_W)$ = 0.00465
$V_V = V_G + V_W$ = 0.0062

MEASUREMENTS OF TUBE/CAN

HEIGHT= 17.9 cm
DIAMETER= 4.8 cm

CALCULATED VOLUME OF TUBE/CAN

V= 323.91 cm^3
0.01144 ft^3

WT. OF TUBE/CAN + WET SOIL= 689.80 g
WEIGHT OF TUBE/CAN= 248.37 g
WEIGHT OF WET SOIL= 441.43 g
W = 0.97317 lb

MOISTURE CONTENT

M_{CWS} = 24.86 g
M_{CDS} = 23.90 g
M_W = 0.96 g
M_C = 15.02 g
M_S = 8.88 g
w = 10.8 %

Wet Density, $Y_m = W / V$

Dry Density, $Y_d = W_s / V$ or $Y_d = Y_m / (1+ w)$

double check	$Y_d = Y_m / (1+ w)$
$Y_d = W_s / V$	Y_m= 85.06 lbs/ft^3
Y_d= 76.76 lbs/ft^3	Y_d= 76.76 lbs/ft^3

Void Ratio, $e = V_V/V_S$
e = 1.1714

Porosity, $n = V_V / V$
n = 0.54

Specific Gravity = 2.67

Degree of Saturation, $S = V_W/V_V$
S = 0.2464

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Geotechnical Laboratories

PERMEABILITY TEST ANALYSIS (ASTM D5084)

Project : Hunter AFB

Location of Project : Cap Part A

Description of Soil : Tan Clayey Sand

Job # : 98064
Date of Testing: 5/22-26/98
Tested by: BV-CA
Boring # :
Sample # : HG6400
Sample Depth : 0-2 ft.

Sample Type (**Undisturbed** or Remolded)
Standard Proctor:
Maximim Dry Density: _____ *pcf*
Optimum Moisture Content: _____ %

% Sample Compaction: _____ %
Sample Dry Density: _____ *pcf*
Sample Moisture Content: _____ %
Sample Wet Density: _____ *pcf*

Sample Permeation:

De-Aired Water
% Saturation: 96 %
Cell Pressure: 60 *psi*
Lower Pressure: 56 *psi*
Upper Pressure: 55 *psi*
Gradient: 9.26

Sample Dimensions		
	Before	After
Length (cm)	7.60	6.80
Diameter (cm)	4.70	4.70
Water Content (%)	10.3	24.2
Weight (g)	223.9	250.17

Constant Head Calculation:

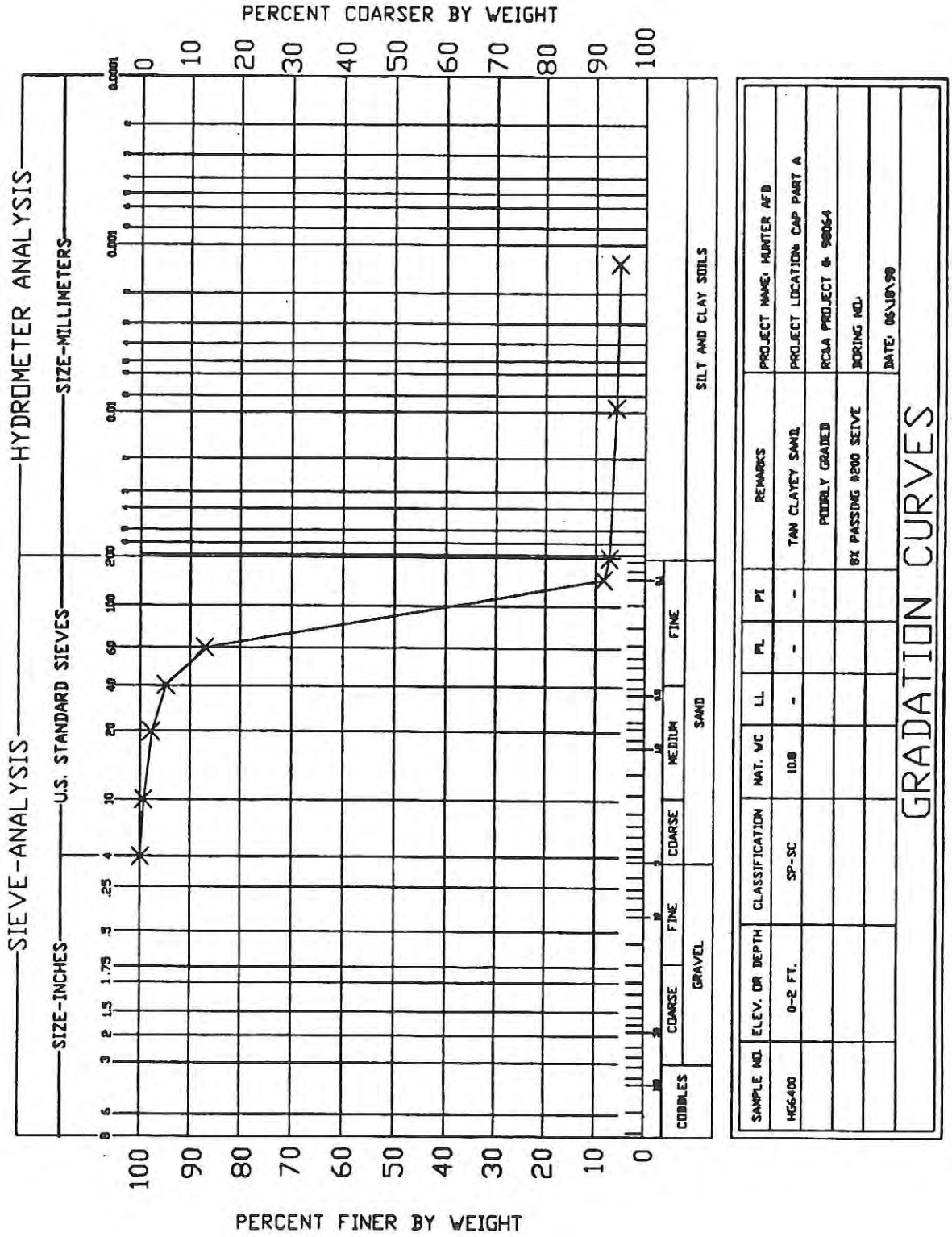
$$K = [V(t_1,t_2)\ LR_T]/[P_B A t]\ (cm/sec)$$

$V(t_1,t_2)$ = Volume of flow from t_1 to t_2 (cm^2)
L = Length of Sample = 7.60 cm
A = Area of Sample = 17.35 cm^2
t = $t_2 - t_1$ (sec)
P_B = Bias Pressure = 1 psi x 70.37 cm/psi $_{(cm - H2O)}$: 70.37 cm
R_T = Temperature correction = 0.931

t_2 (sec)	t_1 (sec)	$(t_2 - t_1)$ (sec)	V (cm^3)	$[LR_T]/[P_B A]$ (cm^2)	K (cm/sec)
20	15	5	1.1	5.80E-03	1.28E-03
25	20	5	1	5.80E-03	1.16E-03
30	25	5	1	5.80E-03	1.16E-03
35	30	5	1	5.80E-03	1.16E-03

K_{avg} = 1.19E-03 cm/sec

CATLIN Engineers and Scientists
Geotechnical Laboratories



SAMPLE NO.	ELEV. OR DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	REMARKS	PROJECT NAME: HUNTER AFB
HS6400	0-2 FT.	SP-SC	10.8	-	-	-	TAN CLAYEY SAND	PROJECT LOCATION: CAP PART A
							POORLY GRADED	RCRA PROJECT #: 98064
							8% PASSING #200 SIEVE	BORING NO.:
								DATE: 06/08/98

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project Hunter AAFB Job No. #98064

Location of Project Cap Part A Sample No. HG 6400

Description of Soil _____ Depth of Sample 0-2 Boring No. ____

Tested By BV. Date of Testing 4/30/98

Sample preparation procedures outlined in ASTM D421 and D2217.

Nominal diameter of largest particle — Approximate minimum Wt. of sample, g

Nominal diameter of largest particle	Approximate minimum Wt. of sample, g
No. 10 sieve	200
No. 4 sieve	500
3/4 in.	1500

P-57

Weight of sample used, M_{ss} = 391.40 g

M_{can}	M_{cds}	M_c	M_w	M_s	w %	M_{ss}	M_s
	511.30	120.20	391.10				

Sieve analysis and grain shape

Sieve no.	Diam. (mm)	Wt. retained	% retained	Σ % retained	% passing
3"					
2"					
1 1/2 "					
3/4"					
3/8"					
#4		—	—		
#10		1.32	0.34	BV ~~1.66~~ 0.34	99.66
#20		6.54	1.68	BV ~~3.34~~ 2.02	97.98
#40		9.86	2.53	BV ~~5.87~~ 4.55	95.45
#60		31.65	8.12	BV ~~13.99~~ 12.67	87.33
#140		326.50	83.73	96.40	3.60
#200		7.50	1.92	98.32	1.68
pan		6.60	1.69	100.01	0
		390.41			

% retained = (Wt. retained/W_s) · 100

% passing = 100 - Σ % retained.

APPENDIX VI

ALTERNATE THRESHOLD LEVEL (ATL) CALCULATIONS

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Calculations of alternate threshold levels are not indicated for the Underground Storage Tank 112, Facility ID: 9-025108 site because soil concentrations did not exceed the Georgia Environmental Protection Division (GA EPD) applicable soil threshold levels (i.e., Table A, column 1). However, the geotechnical data collected during the Corrective Action Plan-Part A investigation are presented in Table VI-A.

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TABLES

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UST 112, Building 8464
Hunter Army Airfield
Chatham County, Facility ID: 9-025108

TABLE VI-A. GEOTECHNICAL PARAMETERS

Building ID	Tank ID	Facility ID	Sample ID	Sample Depth	Classification	Moisture Content (%)	Total Organic Carbon (%)	Specific Gravity	Porosity, n	Permeability (cm/s)	Gravel (wt %)	Sand (wt %)	Mud (wt %)
8464	112	9-025108	G6400	0.0-2.0	SP-SC	10.8	0.095	2.67	0.54	1.2E-3	0.3	91.7	8.0

NOTE: SP-SC = Poorly graded, clayey sand.
UST = Underground storage tank.

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APPENDIX VII

MONITORING WELL DETAILS

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Monitoring wells were not installed as part of the Corrective Action Plan-Part A investigation. Temporary piezometers were installed at the Underground Storage Tank 112, Building 8464, Facility ID: 9-025108 site. Refer to Appendix IV for temporary piezometer installation details.

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APPENDIX VIII

GROUNDWATER LABORATORY RESULTS

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UST 112, Building 8464
Hunter Army Airfield
Chatham County, Facility ID: 9-025108

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

Location Sample ID Date Collected Depth (ft BGS)	Applicable Standards[1]	G-1 HG1200 04/06/98 3.0 to 7.0	G-2 HG2200 04/06/98 3.0 to 7.0	G-3 HG3200 04/06/98 3.0 to 7.0	G-4 HG4200 04/06/98 3.0 to 7.0	G-5 HG5301 04/07/98 6.0 to 10.0
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	2 U	2 U	2 U	2 U	2 U
Toluene	1,000	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	700	2 U	2 U	2 U	2 U	2 U
Xylenes	10,000	6 U	6 U	6 U	6 U	6 U
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Acenaphthene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Acenaphthylene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Anthracene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Benzo(a)anthracene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Benzo(a)pyrene	0.2	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Benzo(b)fluoranthene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Benzo(g,h,i)perylene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Benzo(k)fluoranthene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Chrysene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Dibenzo(a,h)anthracene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Fluoranthene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Fluorene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Indeno(1,2,3-cd)pyrene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Naphthalene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Phenanthrene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 U
Pyrene	NRC	10.1 U	10.3 U	10.9 U	10.1 U	10.6 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.

UST 112, Building 8464
Hunter Army Airfield
Chatham County, Facility ID: 9-025108

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

Location Sample ID Date Collected Depth (ft BGS)	Applicable Standards[1]	G-5 HG5302 04/07/98 16.0 to 20.0	G-5 HG5303 04/07/98 26.0 to 30.0	G-5 HG5304 04/07/98 36.0 to 40.0	G-5 HG5305 04/07/98 42.0 to 46.0	G-7 HG7200 04/22/98 5.0 to 9.0
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	2 U	2 U	2 U	2 U	2 U
Toluene	1,000	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	700	2 U	2 U	2 U	2 U	2 U
Xylenes	10,000	6 U	6 U	6 U	6 U	6 U
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Acenaphthene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Acenaphthylene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Anthracene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Benzo(a)anthracene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Benzo(a)pyrene	0.2	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Benzo(b)fluoranthene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Benzo(g,h,i)perylene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Benzo(k)fluoranthene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Chrysene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Dibenzo(a,h)anthracene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Fluoranthene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Fluorene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Indeno(1,2,3-cd)pyrene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Naphthalene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Phenanthrene	NRC	10.3 U	10.5 U	11.1 U	10.5 U	10.3 U
Pyrene	NRC	10.3 U	10.5 U	11.1 U	10.5 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.

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800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: 40898A

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
HTB0006	4/7/98	0800	water	X					2	NA	ASTM TYPE II DI
HN12001	4/6/98	1305	water	X					2	NA	NA
HN22002	4/6/98	1400	water	X					2	NA	NA
HG12003	4/6/98	1500	water	X					2	NA	NA
HG22004	4/6/98	1520	water	X					2	NA	NA
HG32005	4/6/98	1550	water	X					2	NA	NA
HG42006	4/6/98	1615	water	X					2	NA	NA
HG53001	4/7/98	0805	water	X					2	NA	NA
HG53002	4/7/98	0820	water	X					2	NA	NA
HG53003	4/7/98	0845	water	X					2	NA	NA
HG53004	4/7/98	0910	water	X					2	NA	NA
HG53005	4/7/98	1010	water	X					2	NA	NA
HN42007	4/3/98	1325	water	X					2	NA	NA

REQUESTED PARAMETERS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Mitchell Hall	4/8/98 1330		4-8-98
COMPANY NAME: SAIC		COMPANY NAME:	1630
RECEIVED BY: Cooler	Date/Time 4/8/98 1330	RELINQUISHED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	
RELINQUISHED BY:	Date/Time 4/8/98 1630	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 26

Cooler ID: 63

Cooler Temperature: 4°C

FEDEX NUMBER: NA

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CHAIN OF CUSTODY RECORD

COC NO.: 40798 B

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
HN120Φ	4/6/98	1305	water		X				2	NA	9804129-12
HN220Φ	4/6/98	1400	water		X				2	NA	14
HG120Φ	4/6/98	1500	water		X				2	NA	15
HG220Φ	4/6/98	1520	water		X				2	NA	16
HG320Φ	4/6/98	1550	water		X				2	NA	17
HG420Φ	4/6/98	1615	water		X				2	NA	18
									2	~~NA~~	~~MH~~ 4/7/98

REQUESTED PARAMETERS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 12	Cooler Temperature: 4°C
Mitchell Hall	4/7/98 ~~1400~~ 1330		4.7.98	Cooler ID: 558	FEDEX NUMBER: NA
COMPANY NAME: SAIC		COMPANY NAME: GEL	1645		
RECEIVED BY:	Date/Time 4-7-98 1335	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			
RELINQUISHED BY:	Date/Time 4-7-98 1645	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			

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CHAIN OF CUSTODY RECORD

COC NO.: 4Ø798A2

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

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	DRP	GRO	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
HG53Ø1	4/7/98	Ø8Ø5	water		X				2	NA	980429-98 Vert. Prof. 10 ft
HG53Ø2	4/7/98	Ø82Ø	water		X				2	NA	980429-98 Vert. Prof. 20 ft
HG53Ø3	4/7/98	Ø845	water		X				2	NA	980429-98 Vert. Prof. 30 ft
HG53Ø4	4/7/98	Ø91Ø	water		X				2	NA	980429-98 Vert. Prof. 40 ft
HG53Ø5	4/7/98	1Ø1Ø	water		X				2	NA	980429-98 Vert. Prof. 50 ft

RELINQUISHED BY: Mitchell Hall	Date/Time 4/7/98 1535	RECEIVED BY:	Date/Time 4-7-98 1645	TOTAL NUMBER OF CONTAINERS: 1Ø	Cooler Temperature: 4 °C	
COMPANY NAME: SAIC		COMPANY NAME: GEL		Cooler ID: #34	FEDEX NUMBER: NA	
RECEIVED BY:	Date/Time 4-7-98 1335	RELINQUISHED BY:	Date/Time			
COMPANY NAME:		COMPANY NAME:				
RELINQUISHED BY:	Date/Time 4-7-98 1645	RECEIVED BY:	Date/Time			
COMPANY NAME:		COMPANY NAME:				

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CHAIN OF CUSTODY RECORD

COC NO.: 42298 B

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
HJ7200	4/20/98	1525	water	X					2	NA	6.0 - 10.0 ft
HJ7210	4/20/98	1525	water	X					2	NA	6.0 - 10.0 ft
HI9200	4/21/98	0855	water	X					2	NA	7.0 - 11.0 ft
HI9210	4/21/98	0855	water	X					2	NA	7.0 - 11.0 ft
~~HI9~~ HIA200	4/21/98	1015	water	X					2	NA	6.0 - 10.0 ft
HIB200	4/21/98	1135	water	X					2	NA	7.0 - 11.0 ft
HG7200	4/22/98	0950	water	X					2	NA	5.0 - 9.0 ft
HL9200	4/22/98	1130	water	X					2	NA	6.0 - 10.0 ft
HTB017	4/22/98	0900	water	X					2	NA	ASTM TYPE I WATER COT 4 7703

9804617-09

MH 4/22/98

RELINQUISHED BY: Mitchell H. Hall	Date/Time 4/22/98 1330	RECEIVED BY: [signature]	Date/Time 4-22-98 1726	TOTAL NUMBER OF CONTAINERS: 18	Cooler Temperature: 4°C
COMPANY NAME: SAIC		COMPANY NAME: GEL		Cooler ID: 538	FEDEX NUMBER: NA
RECEIVED BY: [signature]	Date/Time 4/22/98 1330	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			
RELINQUISHED BY: [signature]	Date/Time 4/22/98 1720	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			

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CHAIN OF CUSTODY RECORD

COC NO.: 422984

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 Road Charleston, SC 29417

PHONE NO: (803) 566-8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	DRP	GRO	TOC	8260	8270	6010	7421	7841	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
HJ72Ø	4/20/98	1525	water		X									2	NA	Dup 6.Ø-10.Ø ft
HIB2ØØ	4/21/98	1135	water		X									2	NA	7.Ø-11.Ø ft
HL92ØØ	4/22/98	1130	water		X									2	NA	6.Ø-10.Ø ft
HG72ØØ	4/22/98	Ø95Ø	water		X									2	NA	5.Ø-9.Ø ft
HIA2ØØ	4/21/98	1Ø15	water		X									2	NA	6.Ø-10.Ø ft

North to South

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 10	Cooler Temperature: 4°C
Mitchell Hall	4/22/98 1339		4-22-98	Cooler ID: 537	FEDEX NUMBER: NA
COMPANY NAME: SAIC		COMPANY NAME:	1720		
RECEIVED BY:	Date/Time 4/22/98	RELINQUISHED BY:	Date/Time		
COMPANY NAME:	1730	COMPANY NAME:			
RELINQUISHED BY:	Date/Time 4/22/98	RECEIVED BY:	Date/Time		
COMPANY NAME:	1720	COMPANY NAME:			

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG1200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA009W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804216-06

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2E309

Level: (low/med) LOW Date Received: 04/08/98

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

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	U
108-88-3	Toluene	2.0	U	
100-41-4	Ethylbenzene	2.0	U	
1330-20-7	Xylenes (total)	6.0	U	

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HGL200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA007W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804129-15

Sample wt/vol: 990.0 (g/mL) ML Lab File ID: 7P226

Level: (low/med) LOW Date Received: 04/07/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted:04/08/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/14/98

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	10.1	U
91-58-7	2-chloronaphthalene	10.1	U
208-96-8	acenaphthylene	10.1	U
83-32-9	acenaphthene	10.1	U
86-73-7	fluorene	10.1	U
85-01-8	phenanthrene	10.1	U
120-12-7	anthracene	10.1	U
206-44-0	fluoranthene	10.1	U
129-00-0	pyrene	10.1	U
56-55-3	benzo(a)anthracene	10.1	U
218-01-9	chrysene	10.1	U
205-99-2	benzo(b)fluoranthene	10.1	U
207-08-9	benzo(k)fluoranthene	10.1	U
50-32-8	benzo(a)pyrene	10.1	U
193-39-5	indeno(1,2,3-cd)pyrene	10.1	U
53-70-3	dibenz(a,h)anthracene	10.1	U
191-24-2	benzo(g,h,i)perylene	10.1	U

FORM I SV-1 OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG2200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA009W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804216-07

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2E3010

Level: (low/med) LOW Date Received: 04/08/98

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

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	U
108-88-3	Toluene	2.0	U	↓
100-41-4	Ethylbenzene	2.0	U	
1330-20-7	Xylenes (total)	6.0	U	

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG2200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA007W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804129-16

Sample wt/vol: 970.0 (g/mL) ML Lab File ID: 7P305

Level: (low/med) LOW Date Received: 04/07/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted:04/08/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/15/98

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

V

FORM I SV-1 OLM03.0

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG3200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA009W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804216-08

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2E3011

Level: (low/med) LOW Date Received: 04/08/98

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

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	U
108-88-3	Toluene	2.0	U	↓
100-41-4	Ethylbenzene	2.0	U	
1330-20-7	Xylenes (total)	6.0	U	

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HG3200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA007W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804129-17

Sample wt/vol: 920.0 (g/mL) ML Lab File ID: 7P306

Level: (low/med) LOW Date Received: 04/07/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted:04/08/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/15/98

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	10.9	U
91-58-7	2-chloronaphthalene	10.9	U
208-96-8	acenaphthylene	10.9	U
83-32-9	acenaphthene	10.9	U
86-73-7	fluorene	10.9	U
85-01-8	phenanthrene	10.9	U
120-12-7	anthracene	10.9	U
206-44-0	fluoranthene	10.9	U
129-00-0	pyrene	10.9	U
56-55-3	benzo(a)anthracene	10.9	U
218-01-9	chrysene	10.9	U
205-99-2	benzo(b)fluoranthene	10.9	U
207-08-9	benzo(k)fluoranthene	10.9	U
50-32-8	benzo(a)pyrene	10.9	U
193-39-5	indeno(1,2,3-cd)pyrene	10.9	U
53-70-3	dibenz(a,h)anthracene	10.9	U
191-24-2	benzo(g,h,i)perylene	10.9	U

FORM I SV-1 OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG4200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA009W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804216-09

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2E3012

Level: (low/med) LOW Date Received: 04/08/98

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

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	U
108-88-3	Toluene	2.0	U	
100-41-4	Ethylbenzene	2.0	U	
1330-20-7	Xylenes (total)	6.0	U	

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HG4200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA007W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804129-18

Sample wt/vol: 990.0 (g/mL) ML Lab File ID: 7P307

Level: (low/med) LOW Date Received: 04/07/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 04/08/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/15/98

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	10.1	U
91-58-7	2-chloronaphthalene	10.1	U
208-96-8	acenaphthylene	10.1	U
83-32-9	acenaphthene	10.1	U
86-73-7	fluorene	10.1	U
85-01-8	phenanthrene	10.1	U
120-12-7	anthracene	10.1	U
206-44-0	fluoranthene	10.1	U
129-00-0	pyrene	10.1	U
56-55-3	benzo(a)anthracene	10.1	U
218-01-9	chrysene	10.1	U
205-99-2	benzo(b)fluoranthene	10.1	U
207-08-9	benzo(k)fluoranthene	10.1	U
50-32-8	benzo(a)pyrene	10.1	U
193-39-5	indeno(1,2,3-cd)pyrene	10.1	U
53-70-3	dibenz(a,h)anthracene	10.1	U
191-24-2	benzo(g,h,i)perylene	10.1	U

V

FORM I SV-1 OLM03.0

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG5301

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA009W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804216-10

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2E3014

Level: (low/med) LOW Date Received: 04/08/98

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

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	U
108-88-3	Toluene	2.0	U	
100-41-4	Ethylbenzene	2.0	U	
1330-20-7	Xylenes (total)	6.0	U	

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HG5301

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA007W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804129-08

Sample wt/vol: 940.0 (g/mL) ML Lab File ID: 7P220

Level: (low/med) LOW Date Received: 04/07/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted:04/08/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/14/98

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	10.6	U
91-58-7	2-chloronaphthalene	10.6	U
208-96-8	acenaphthylene	10.6	U
83-32-9	acenaphthene	10.6	U
86-73-7	fluorene	10.6	U
85-01-8	phenanthrene	10.6	U
120-12-7	anthracene	10.6	U
206-44-0	fluoranthene	10.6	U
129-00-0	pyrene	10.6	U
56-55-3	benzo(a)anthracene	10.6	U
218-01-9	chrysene	10.6	U
205-99-2	benzo(b)fluoranthene	10.6	U
207-08-9	benzo(k)fluoranthene	10.6	U
50-32-8	benzo(a)pyrene	10.6	U
193-39-5	indeno(1,2,3-cd)pyrene	10.6	U
53-70-3	dibenz(a,h)anthracene	10.6	U
191-24-2	benzo(g,h,i)perylene	10.6	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG5302

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA009W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804216-11

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2E3015

Level: (low/med) LOW Date Received: 04/08/98

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

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	u
108-88-3	Toluene	2.0	U	↓
100-41-4	Ethylbenzene	2.0	U	
1330-20-7	Xylenes (total)	6.0	U	

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG5302

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA007W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804129-09

Sample wt/vol: 970.0 (g/mL) ML Lab File ID: 7P221

Level: (low/med) LOW Date Received: 04/07/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted:04/08/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/14/98

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

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HG5303

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA009W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804216-12

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2E3016

Level: (low/med) LOW Date Received: 04/08/98

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

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	U
108-88-3	Toluene	2.0	U	↓
100-41-4	Ethylbenzene	2.0	U	
1330-20-7	Xylenes (total)	6.0	U	

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG5303

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA007W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804129-10

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 72222

Level: (low/med) LOW Date Received: 04/07/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 04/08/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/14/98

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	10.5	U
91-58-7	2-chloronaphthalene	10.5	U
208-96-8	acenaphthylene	10.5	U
83-32-9	acenaphthene	10.5	U
86-73-7	fluorene	10.5	U
85-01-8	phenanthrene	10.5	U
120-12-7	anthracene	10.5	U
206-44-0	fluoranthene	10.5	U
129-00-0	pyrene	10.5	U
56-55-3	benzo(a)anthracene	10.5	U
218-01-9	chrysene	10.5	U
205-99-2	benzo(b)fluoranthene	10.5	U
207-08-9	benzo(k)fluoranthene	10.5	U
50-32-8	benzo(a)pyrene	10.5	U
193-39-5	indeno(1,2,3-cd)pyrene	10.5	U
53-70-3	dibenz(a,h)anthracene	10.5	U
191-24-2	benzo(g,h,i)perylene	10.5	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG5304

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA009W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804216-13

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2E3017

Level: (low/med) LOW Date Received: 04/08/98

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

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	U
108-88-3	Toluene	2.0	U	
100-41-4	Ethylbenzene	2.0	U	
1330-20-7	Xylenes (total)	6.0	U	

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG5304

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA007W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804129-11

Sample wt/vol: 900.0 (g/mL) ML Lab File ID: 7P223

Level: (low/med) LOW Date Received: 04/07/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted:04/08/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/14/98

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	11.1	U
91-58-7	2-chloronaphthalene	11.1	U
208-96-8	acenaphthylene	11.1	U
83-32-9	acenaphthene	11.1	U
86-73-7	fluorene	11.1	U
85-01-8	phenanthrene	11.1	U
120-12-7	anthracene	11.1	U
206-44-0	fluoranthene	11.1	U
129-00-0	pyrene	11.1	U
56-55-3	benzo(a)anthracene	11.1	U
218-01-9	chrysene	11.1	U
205-99-2	benzo(b)fluoranthene	11.1	U
207-08-9	benzo(k)fluoranthene	11.1	U
50-32-8	benzo(a)pyrene	11.1	U
193-39-5	indeno(1,2,3-cd)pyrene	11.1	U
53-70-3	dibenz(a,h)anthracene	11.1	U
191-24-2	benzo(g,h,i)perylene	11.1	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HG5305

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA009W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804216-14

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2E3018

Level: (low/med) LOW Date Received: 04/08/98

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

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

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG5305

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA007W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804129-12

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 7P304

Level: (low/med) LOW Date Received: 04/07/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted:04/08/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 04/15/98

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	10.5	U
91-58-7	2-chloronaphthalene	10.5	U
208-96-8	acenaphthylene	10.5	U
83-32-9	acenaphthene	10.5	U
86-73-7	fluorene	10.5	U
85-01-8	phenanthrene	10.5	U
120-12-7	anthracene	10.5	U
206-44-0	fluoranthene	10.5	U
129-00-0	pyrene	10.5	U
56-55-3	benzo(a)anthracene	10.5	U
218-01-9	chrysene	10.5	U
205-99-2	benzo(b)fluoranthene	10.5	U
207-08-9	benzo(k)fluoranthene	10.5	U
50-32-8	benzo(a)pyrene	10.5	U
193-39-5	indeno(1,2,3-cd)pyrene	10.5	U
53-70-3	dibenz(a,h)anthracene	10.5	U
191-24-2	benzo(g,h,i)perylene	10.5	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
HG7200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA023W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804617-15

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2H1021

Level: (low/med) LOW Date Received: 04/22/98

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

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

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DATA VALIDATION
COPY

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HG7200

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA023W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9804617-07

Sample wt/vol: 970.0 (g/mL) ML Lab File ID: 4R421

Level: (low/med) LOW Date Received: 04/22/98

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/24/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/01/98

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	10.3	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

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APPENDIX IX

CONTAMINATED SOIL DISPOSAL MANIFESTS

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All contaminated soil removed during the entire project [i.e., all underground storage tanks (USTs) removed under contract with Anderson Columbia Environmental, Inc., to include clean and non-clean closures] was tested in accordance with the disposal facility requirements and transported to Kedesh, Inc., Highway 84, Ludowici, GA 31316. The Installation has records of all manifests and weight tickets for this project. However, site-specific information is not available.

I certify that the above information is true and accurate. If the Georgia Environmental Protection Division (GA EPD), Underground Storage Tank Management Program (USTMP), would like copies of all manifests and weight tickets for the numerous UST removal contracts that we have conducted, we will gladly forward copies to the USTMP.

Name: Thomas C. Fry

Title: Chief, Environmental Branch

Signature: Thomas C. Fry

Date: 03/01/99

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APPENDIX X

SITE RANKING FORM

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SITE RANKING FORM

Facility Name: Tank 112, Building 8464 **Ranked by:** C. Allison Bailey

County: Chatham **Facility ID #:** 9-025108 **Date Ranked:** 11/11/98

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 supplemental information 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 non-bedded 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 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 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 Aquifer from the Surficial Aquifer, it is concluded that there is no hydraulic interconnection between UST sites (and associated plumes, if applicable) and water supply withdrawal points (Figure X-A).

1.4 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS AT THE UST 112, BUILDING 8464 SITE

According to Wilkes et al. (1974), the soil common in the area occupied by Building 8464 consists of the Chipley fine sand (Cm). This soil occurs on broad sandy ridges and is moderately

well drained. Chipley soils are low in organic matter content. Permeability is usually rapid, and the available water capacity is low to very low (Wilkes et al. 1974).

During direct-push activities at the UST 112, Building 8464 site, three major sediment types were collected for observation and chemical analysis. These include: (1) native and non-native sandy fill from the former tank pit; (2) poorly graded, tan to grey, fine-to-medium-grained sand with silt; and (3) indurated, greenish grey, phosphatic clayey sand. The latter was collected from 42 feet below ground surface (BGS) which is interpreted to be the depth at which the top of the Hawthorn unit (confining layer) was encountered.

Groundwater was measured at the site at depths ranging from 3.14 to 3.47 feet BGS. Water temperatures recorded during the sampling of groundwater in the vertical profile boring (G-5) ranged from 16.6°C at 10 feet BGS to 19.7°C at 46 feet BGS. The groundwater pH also increased with depth and ranged from 5.45 at 10 feet BGS to 6.23 at 46 feet BGS. Based on the construction of a potentiometric surface map, groundwater is interpreted to flow southwest.

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FIGURES

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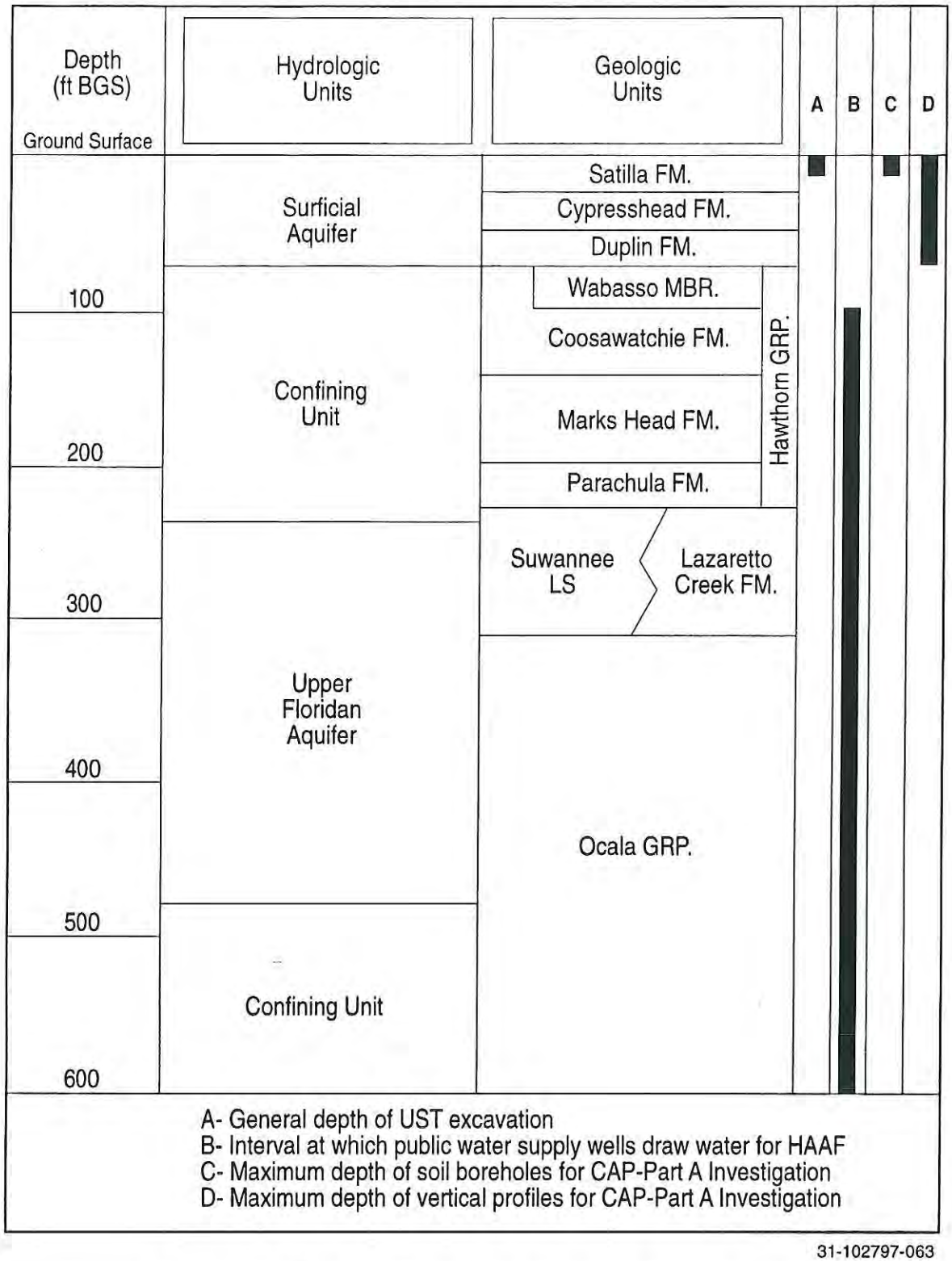

Figure X-A. Generalized Stratigraphy of Chatham County, Georgia

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APPENDIX XI

COPIES OF PUBLIC NOTIFICATION LETTERS AND CERTIFIED RECEIPTS OR NEWSPAPER NOTICE

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Affidavit of Publication
___Savannah Morning News
___Savannah Evening Press

STATE OF GEORGIA
CHATHAM COUNTY

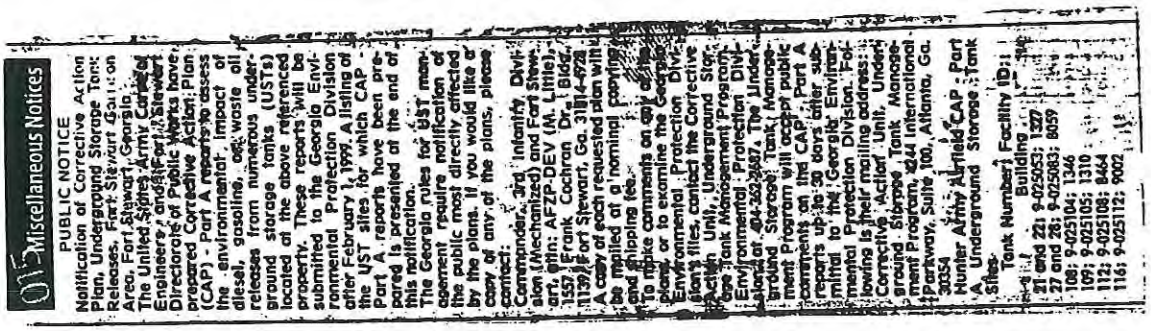
Personnally appeared before me, Joan T. Jenkins, to me known, who being sworn, deposes and says:

That he is the Classified Adv Supv of Southeastern Newspapers Corporation, a Georgia corporation, doing business in Chatham County, Georgia, under the trade name of Savannah Morning News/Savannah Evening Press, a daily newspaper published in said county;

That he is authorized to make affidavits of publication on behalf of said published corporation;

That said newspaper is of general circulation in said county and in the area adjacent thereto;

That he has reviewed the regular editions of the Savannah Morning News/Savannah Evening Press, published on 1-24, 1999, 1-31, 1999, _____, 19___, _____, 19___, and finds that the following Advertisement, to-wit:



015 Miscellaneous Notices

PUBLIC NOTICE
Notification of Corrective Action Plan, Underground Storage Tank Releases, Fort Stewart Garrison Area, Fort Stewart, Georgia.
The United States Army Corps of Engineers, and Fort Stewart Directorate of Public Works have prepared Corrective Action Plan (CAP) - Part A reports to assess the environmental impact of diesel, gasoline, or waste oil releases from numerous underground storage tanks (USTs) located at the above referenced property. These reports will be submitted to the Georgia Environmental Protection Division after February 1, 1999. A listing of the UST sites for which CAP - Part A reports have been prepared is presented at the end of this notification.
The Georgia rules for UST management require notification of the public most directly affected by the plans. If you would like a copy of any of the plans, please contact: 3rd Infantry Division Commander, ATTN: AFZP-DEV (M. Little), 1557 Frank Cochran Dr., Bldg. 1139, Fort Stewart, Ga. 31314-4927. A copy of each requested plan will be mailed at a nominal copying and shipping fee.
To make comments on any of the plans or to examine the Georgia Environmental Protection Division's files, contact the Corrective Action Unit, Underground Storage Tank Management Program, Atlanta, Georgia at 404-362-2687. The Underground Storage Tank Management Program will accept public comments on the CAP - Part A reports up to 30 days after submittal to the Georgia Environmental Protection Division. Following is their mailing address: Corrective Action Unit, Underground Storage Tank Management Program, 4244 International Parkway, Suite 100, Atlanta, Ga. 30354
Hunter Army Airfield CAP - Part A, Underground Storage Tank Sites:
Tank Number/ Facility ID:
Building
21 and 22/ 9-025053; 1327
27 and 28/ 9-025083; 8059
108/ 9-025104; 1346
109/ 9-025105; 1310
112/ 9-025108; 8464
116/ 9-025112; 9002

appeared in each of said editions.

Joan T. Jenkins
(Deponent)

Sworn to and subscribed before me this 2 day of Feb, 1999.

Lillie D. Lang
Notary Public, Chatham County, Georgia

LILLIE D. LANG
Notary Public, Chatham County, Ga.
My Commission Expires Apr. 8, 2001

Form 121 rev.

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APPENDIX XII

GUST TRUST FUND REIMBURSEMENT APPLICATION AND CLAIM FOR REIMBURSEMENT

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The Hunter Army Airfield is a federally owned facility and has funded the investigation for the Underground Storage Tank 112, Building 8464 site, Facility ID: 9-025108, using Environmental Restoration Account funds. Application for Georgia Underground Storage Tank Trust Fund reimbursement is not being pursued at this time.

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ATTACHMENT A

TECHNICAL APPROACH

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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 underground storage tank (UST) and 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. Drilling activities were not 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. The soil core was removed from the protective sleeve 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 that 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, free product layer thickness, 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 indicator 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 measurements to determine the presence of a free product layer were made, if applicable, and 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 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 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 an 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 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

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Anderson Columbia Environmental, Inc. (ACE), 1996. *Closure Report for Diesel Tank 112, Building 8464, Facility ID Number: 9-025108, 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, 1995. *Underground Storage Tank Corrective Action Plan-Part B Guidance,* Department of Natural Resources, Environmental Protection Division.

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.