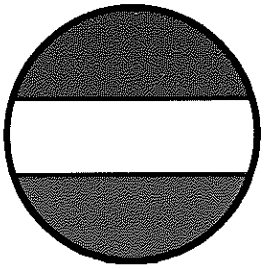
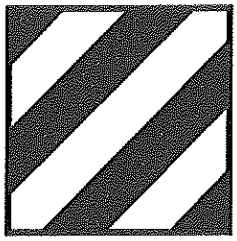


FORSCOM

Final Interim Removal
Action Report



3d Inf Div (Mech)

Former Underground Storage Tanks 118X-123X
Facility ID #9-000653
Former Building 133
at
Hunter Army Airfield, Georgia

August 2001

Prepared for:
ADVANCED INFRASTRUCTURE MANAGEMENT TECHNOLOGIES
Oak Ridge, Tennessee 37831-7606
Managed by
BWXT Y-12, L.L.C.
For the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-00OR22800

Prepared by:
Earth Tech, Inc.
117A Broadway Avenue
Oak Ridge, Tennessee 37830

DOCUMENT 3

FORMER UNDERGROUND STORAGE TANKS 118X-123X
FACILITY ID #9-000653
FORMER BUILDING 133
at
HUNTER ARMY AIRFIELD, GEORGIA

FINAL INTERIM REMOVAL ACTION REPORT

Prepared for:
Advanced Infrastructure Management Technologies
Oak Ridge, Tennessee 37831-7606
managed by
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U.S. DEPARTMENT OF ENERGY
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Prepared by:
Earth Tech, Inc.
117A Broadway Avenue
Oak Ridge, Tennessee 37830

August 2001

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FORMER UNDERGROUND STORAGE TANKS 118X-123X
FACILITY ID #9-000653
FORMER BUILDING 133
INTERIM REMOVAL ACTION

1. INTRODUCTION

This Field Report documents the Interim Removal Action (IRA) conducted by Earth Tech, Inc. (Earth Tech) from March 13 until June 1, 2001 at the former location of Underground Storage Tanks (USTs) 118X-123X, Former Building 133, Facility ID #9-000653 at Hunter Army Airfield (HAAF), Georgia. The IRA included the removal of 1070.52 tons of soil; two wells, one monitoring well (PX-1) and one recovery well (PX-1R); and ten product delineation points (AB-D1 through AB-D10) associated with previous and on-going investigation and remediation activities at Former Building 133.

2. SITE LOCATION AND HISTORY

Former Building 133, Facility ID #9-000653, located in the northwest portion of Hunter Army Airfield, served as a gas station. Six underground storage tanks (USTs) containing gasoline, diesel fuel, and waste oil were removed in 1995. Soil contaminated with petroleum hydrocarbons and free product and contaminated groundwater were removed from the site. In 1995 Metcalf & Eddy advanced ten hand-auger borings and installed six groundwater monitoring wells in proximity to the removed tanks to assess the extent of petroleum hydrocarbons in the subsurface. The results of the investigation were summarized in a Completion Report submitted to the U.S. Army Corps of Engineers in November 1995. The Completion Report also contained a recommendation for quarterly sampling of the nine groundwater monitoring wells (133MW-01 through 133MW-06, PX-6, PX-8, and PX-15) to assess potential residual contaminant migration. Quarterly sampling of these nine wells was initiated in 1996. The fifth quarterly report contained a recommendation for installing two additional wells: one as a monitoring well for quarterly sampling (133MW-07) and one as a recovery well (PX-1R) to aid in removing free product in conjunction with existing well PX-1. In 1998, 133MW-03 was destroyed during razing activities at the adjacent Building 901 site. Sampling of monitoring wells PX-6 and PX-8 was discontinued beginning with the ninth quarterly monitoring event (April 1998) based on the recommendation of the final Annual Summary Report (M&E 1998) and historical data indicating nondetectable levels of petroleum hydrocarbons. No further quarterly monitoring of PX-15 was recommended in the Third Annual Monitoring Only Report (M&E 1999); X-15 had shown no change in benzene concentration (nondetect) for the preceding 12 quarters. In May 1999, ten product delineation points were installed around PX-1R to determine the extent of free product, and the results were summarized in the Fourth Annual Monitoring Only Report (SAIC 2000). The recommendations of the Fourth Annual Monitoring Only Report were to sample seven wells (133MW-01, 133MW-02, 133MW-04, 133MW-05, 133MW-06, 133MW-07, and

PX-1) on a semiannual basis; analyze the groundwater samples for benzene, toluene, ethylbenzene, and xylenes (BTEX); and install a product recovery system in PX-1R.

During the investigation in 1995, the soil sample collected from well PX-1, which had been used in the Site Ranking Form through the Third Annual Monitoring Only Report (M&E 1999), contained the highest concentrations of BTEX and polynuclear aromatic hydrocarbons (PAHs). However, because the PX-1 soil data were 5 years old, Fort Stewart installed an additional soil boring (AB-08) adjacent to PX-1 in February 2000, and one soil sample was collected from the boring and analyzed for BTEX and PAHs. The analytical results from AB-08 were presented in the Fourth Annual Monitoring Only Report (SAIC 2000) and are being used to supercede the previous analytical data in the Site Ranking Form.

As part of the Fourth Annual Monitoring Only Report (SAIC 2000), fate and transport modeling was conducted, and site-specific alternate concentration limits (ACLs) were proposed. The fate and transport modeling results were revised based on the concentrations observed over the previous 12 months in well PX-1 (SAIC, 2001).

As part of the Fifth Annual Monitoring Only Report (SAIC 2001), fate and transport modeling was conducted, and a revised site-specific ACL for benzene in groundwater was proposed. The fate and transport modeling results indicated that termination conditions described in the Fourth Annual Monitoring Only Report had not been met.

3. SOIL REMOVAL ACTIVITIES

Soil was excavated to an irregularly shaped area measuring approximately 80 feet on the north and south walls, 65 feet on the west wall, and 30 feet on the east wall. The site was undercut to a depth of 5 to 7 feet below ground surface (bgs). All excavated soil (1070.52 tons) was transported for disposal at US Liquids of Georgia. A copy of the disposal ticket for the soil is located in Appendix A. Photodocumentation of site activities is located in Appendix B.

The majority of the soil (838.54 tons) was excavated during the period of March 13-21, 2001. Due to high analytical results for screening sample AB9111, an additional 232 tons was excavated from the north wall on April 17, 2001. Excavation activities were limited to the north by the existing underground sewer line.

During excavation activities one groundwater monitoring well (PX-1), one free product recovery well (PX-1R), and ten product delineation points (AB-D1, AB-D2, AB-D3, AB-D4, AB-D5, AB-D6, AB-D7, AB-D8, AB-D9, and AB-D10) were removed. These were installed to conduct previous and on-going investigation and remediation activities at the site. The approximate locations of the former monitoring wells are illustrated on the soil excavation map (Figure 3-1).

Nine screening samples were taken during excavation activities. All screening samples were analyzed for benzene using Encore™ samplers. The screening sample locations are illustrated on the screening sample location map (Figure 3-2). Table 3-1 summarizes the sample number, date, location and description, and results for each screening sample. Analytical results for the screening samples are located in Appendix C

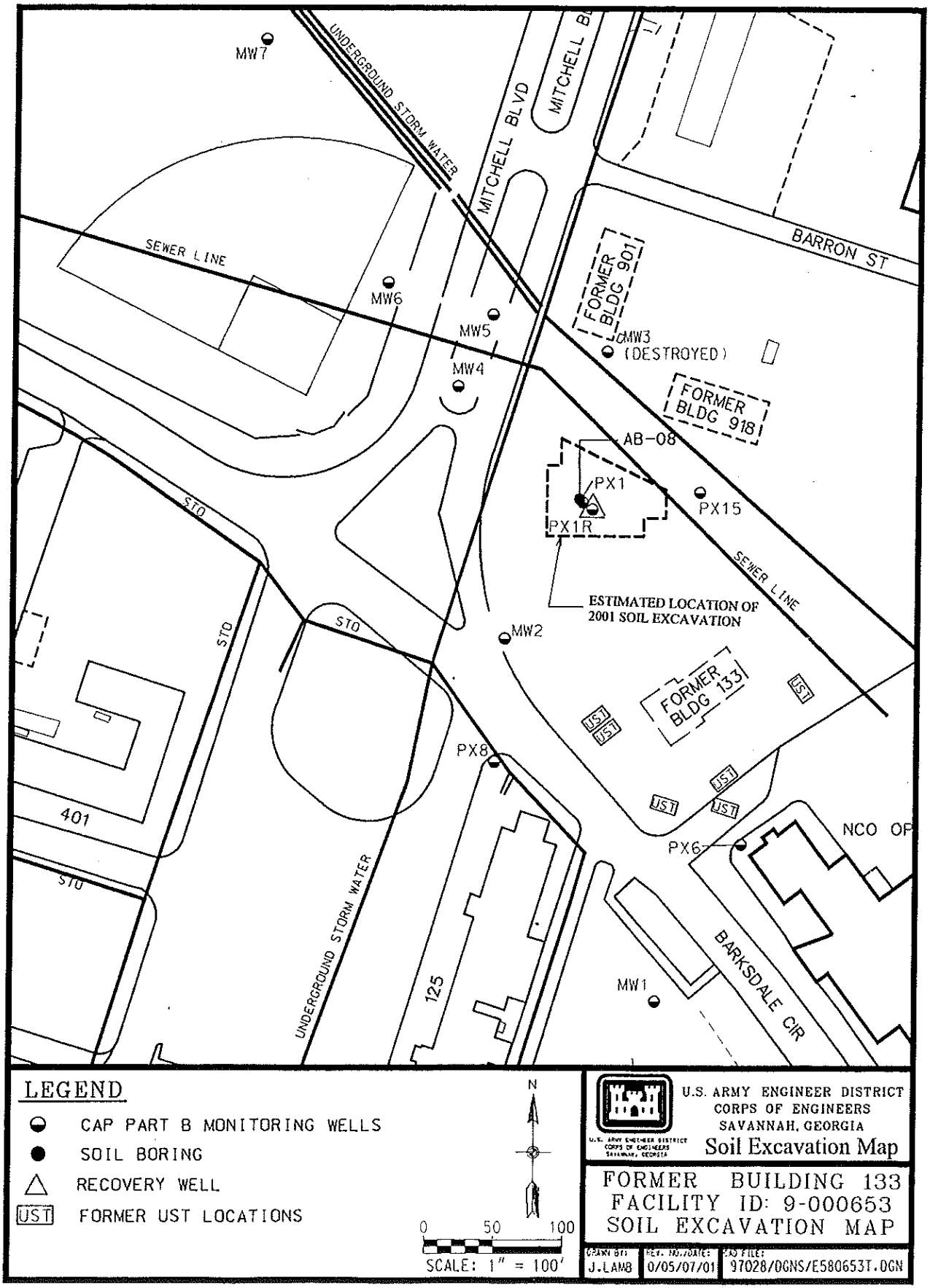
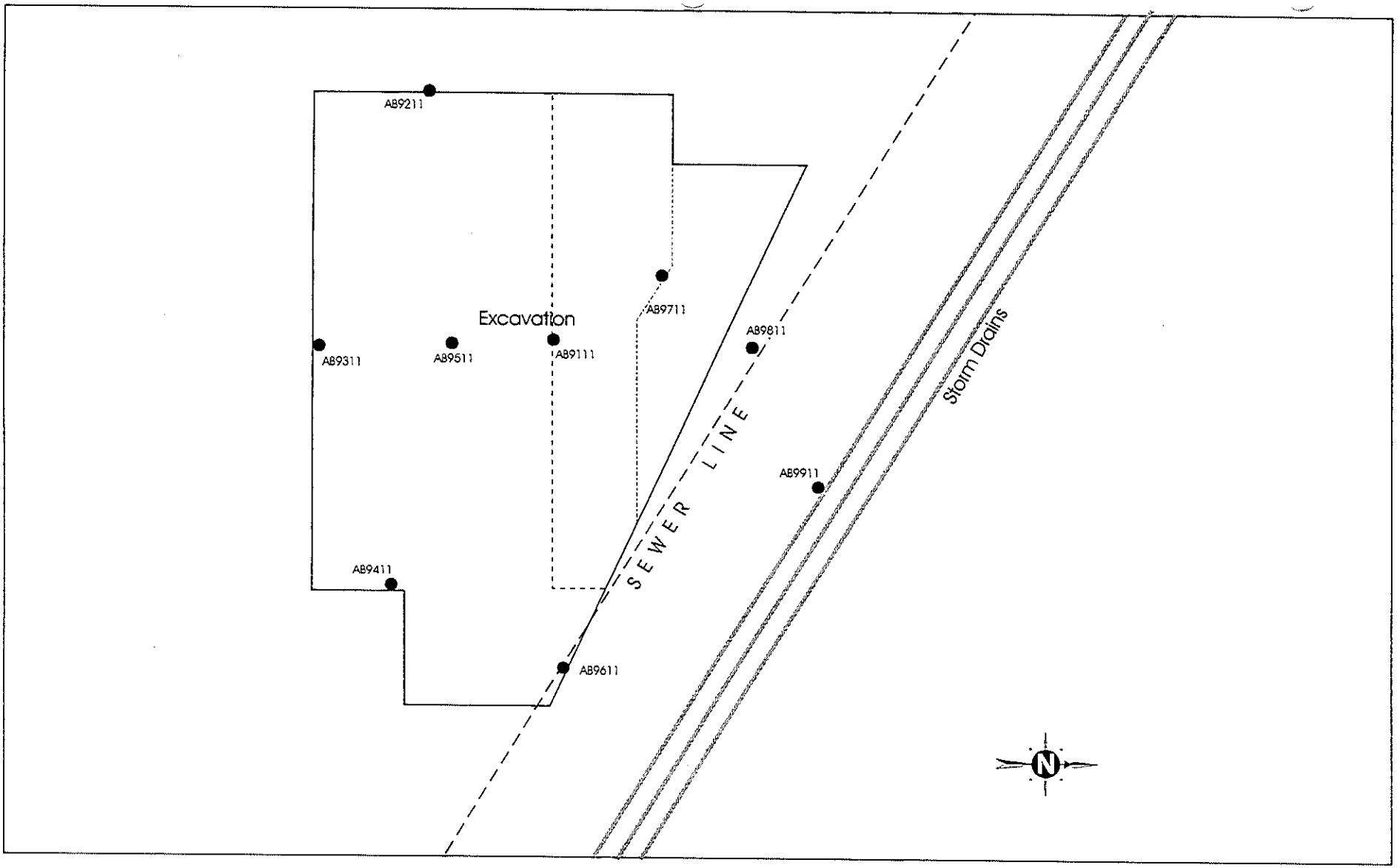

MW7
UNDERGROUND STORM WATER
MITCHELL BLVD
MITCHELL BL
BARRON ST
SEWER LINE
MW6
MW5
MW4
FORMER BLDG 901
MW3 (DESTROYED)
FORMER BLDG 918
AB-08
PX1
PX1R
PX15
SEWER LINE
STO
STO
STO
ESTIMATED LOCATION OF 2001 SOIL EXCAVATION
MW2
FORMER BLDG 133
UST
PX8
401
STO
UNDERGROUND STORM WATER
125
PX6
NCO OF
BARKSDALE CIR
MW1
LEGEND
CAP PART B MONITORING WELLS
SOIL BORING
RECOVERY WELL
UST FORMER UST LOCATIONS
N
0 50 100
SCALE: 1" = 100'
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA
Soil Excavation Map
FORMER BUILDING 133
FACILITY ID: 9-000653
SOIL EXCAVATION MAP
J.LAMB
0/05/07/01
97028/DGNS/E580653T.DGN

Figure 3-1



EXPLANATION

- Soil Screening Sample Location
- Northern excavation boundry as of 3/21/01
- Northern excavation boundry as of 3/14/01

1 INCH = 20 FEET

0 10 20 Feet

133Bira.cdr

Screening Sample Location Map
Former USTs 118X-123X
Former Building 133
Facility ID # 9-000653
HAAF, Georgia

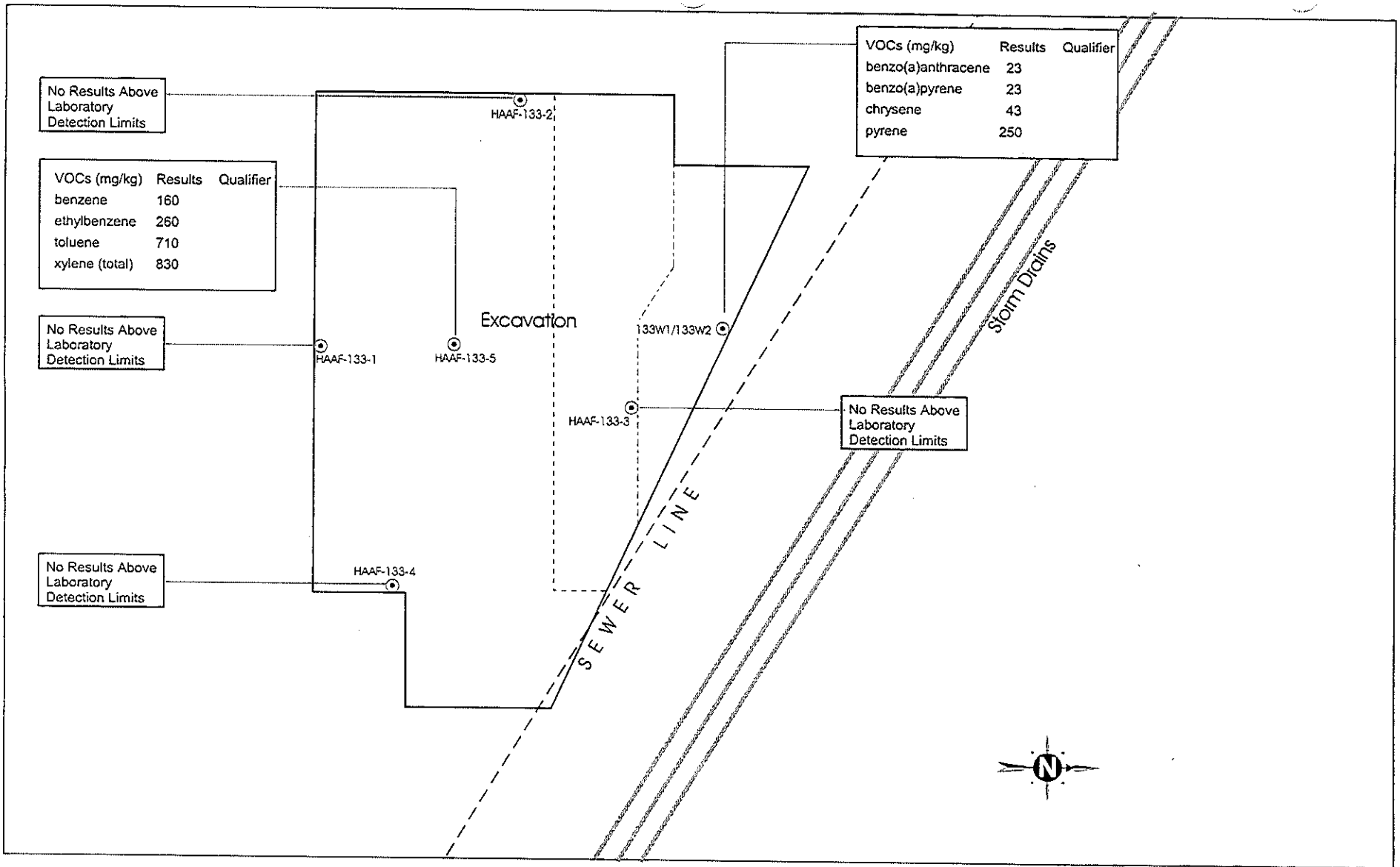
Figure 3-2

Table 3.1 Screening Results

Sample Number	Date	Location and Description	Benzene Results (µg/kg)
AB9111	03/14/2001	From the north wall, 5 ft bgs	74200
AB9211	03/14/2001	From the west wall, 5 ft bgs	1.0
AB9311	03/14/2001	From the south wall, 5 ft bgs	1.2
AB9411	03/14/2001	From the east wall, 5 ft bgs	1.1
AB9511	03/14/2001	From the floor in the middle of the excavation, 6 ft bgs	157000
AB9611	03/14/2001	From the northeast corner wall, 3 ft bgs, approximately 1 ft north of the sewer line	1.1
AB9711	03/16/2001	From the north wall, 5 ft bgs, approximately 30 ft east of the northwest corner	1.1
AB9811	03/16/2001	From a hand auger, 5 ft bgs, approximately 15 ft north of the excavation and 40 ft east of the northwest corner	1090
AB9911	03/16/2001	From a hand auger, 5 ft bgs immediately south of the underground storm sewer lines, approximately 60 ft east of the northwest corner	1.1

Confirmatory samples were taken following excavation activities (see Section 4). All samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) and polynuclear aromatic hydrocarbons (PAHs). Five soil samples (HAAF-133-1 through HAAF-133-5) were collected on March 21, 2001. Four samples were from the walls (HAAF-133-1, HAAF-133-2, HAAF-133-3, HAAF-133-4) and one from the floor (HAAF-133-5). One soil sample (133W1/133W2) was collected on April 17, 2001 after additional excavation. The sample locations were approved by SAIC personnel, and are indicated on the confirmation sample location map (Figure 3-3).

The site was completely backfilled on April 19, 2001. Approximately 406 tons of gravel, 574 tons of clay dirt, and 300 cubic yards of sand were used to backfill the excavation. The area was then over-seeded on April 23, 2001.



Confirmation Sample Location Map
Former USTs 118X-123X
Former Building 133
Facility ID # 9-000653
HAAF, Georgia

Figure 3-3

4. CONFIRMATION SAMPLING

Samples for SVOCs were collected and placed directly into the appropriate sampling containers provided by the laboratory. Samples for BTEX were collected using the EnCore™ sampler. The samples were placed on ice in a cooler and shipped under chain-of-custody to Southwest Laboratory of Oklahoma located in Broken Arrow, Oklahoma. The laboratory stipulation is presented in Table 4.1

Table 4.1 Laboratory Stipulation

Laboratory	Southwest Laboratory of Oklahoma
Accreditor	NELAC Accrediting Authority
Accreditation ID	E87376
Scope	SDWA – Radiochemistry CWA – General Chemistry, Volatile Organics, Extractable Organics, Radiochemistry RCRA/CERCLA – Metals, General Chemistry, Volatile Organics, Extractable Organics, Pesticides, Herbicides, PCB's, Radiochemistry CAA – Volatile Organics, Extractable Organics
Effective	January 24, 2001
Expires	June 30, 2001

Information pertaining to the soil sampling is presented in Table 4.2. The table includes sample name, sample date, and sample collection depth.

Table 4.2 Confirmatory Sampling Information

Confirmatory Sample Name	Confirmatory Sample Date	Confirmatory Sample Collection Depth (feet bgs)
HAAF-133-1	March 21, 2001	4
HAAF-133-2	March 21, 2001	4
HAAF-133-3	March 21, 2001	3
HAAF-133-4	March 21, 2001	3
HAAF-133-5	March 21, 2001	6.5
133W1/133W2	April 17, 2001	4

The results for the six soil confirmation samples are summarized in Table 4.3. In addition, Table 4.3 compares the validated sample results to the Petroleum Constituents and Soil Threshold Levels as stated in Table B, Column 1 of 391-3-15-.09 of the Rules of Georgia Department of Natural Resources Environmental Protection Division UST Management (GA EPD) regulations. The complete validated data set is included in Appendix D.

5. CONCLUSIONS AND RECOMMENDATIONS

1070.52 tons of contaminated soil was removed at the former location of USTs 118X-123X, Former Building 133, Facility ID #9-000653. The soil was disposed of at US Liquids of Georgia. The confirmatory samples collected after overexcavation indicated benzene contamination above the GA EPD soil threshold level (Table B, Column 1) in HAAF-133-5. All other results were below their appropriate soil threshold levels. Additional sampling will be conducted by Science Application International Corporation (SAIC), and an Annual Monitoring Only report will be submitted to GA EPD USTMP in May 2002. This report will provide recommendations for future activities (i.e., No Further Action Required or continued monitoring) at Building 133, Facility ID #9-000653.

In addition, Fort Stewart/Hunter Army Airfield will conduct vertical profile sampling in and around the site to confirm or deny that the present site conditions impact only the surficial aquifer (i.e., <20 feet bgs).

6. REFERENCES

Metcalf & Eddy, Inc. (M&E) 1995. *Final Completion Report, Building 133, EPD Facility ID #9-000653.*

M&E 1997. *Final Annual Summary Report. September 1995 through October 1996. Former Building 133, EPD Facility ID #9-000653.*

M&E 1998. *Final Annual Summary Report. October 1996 through November 1997. Former Building 133, EPD Facility ID #9-000653.*

M&E May, 1999. *Third Annual Monitoring Only Report for Former USTs 118-123. Facility ID #9-000653. Former Building 133. Hunter Army Airfield, Georgia.*

Science Applications International Corporation (SAIC), May 2000. *Fourth Annual Monitoring Only Report for Former Underground Storage Tanks 118X-123X. Facility ID #9-000653. Former Building 133, Hunter Army Airfield, Georgia.*

SAIC, May 2001. *Fifth Annual Monitoring Only Report for Former Underground Storage Tanks 118X-123X. Facility ID #9-000653. Former Building 133, Hunter Army Airfield, Georgia.*

Table 4.3 Summary of Analytes Detected in Soil

Analyte	STLs [a] (µg/kg)	HAAF-133-1 (µg/kg)		HAAF-133-2 (µg/kg)		HAAF-133-3 (µg/kg)		HAAF-133-4 (µg/kg)		HAAF-133-5 (µg/kg)		133W1/133W2 (µg/kg)	
		results	qualifiers	results	qualifiers	results	qualifiers	results	qualifiers	results	qualifiers	results	qualifiers
VOCs													
benzene	17												
ethylbenzene	18000									160			
toluene	115000									260			
xylene (total)	700000									710			
										830			
SVOCs													
benzo(a)anthracene	660											23	
benzo(a)pyrene	660											23	
chrysene	660											43	
pyrene	NA											250	

[a] = Threshold levels for soil as stated in the Table B, Column 1 of 391-3-15-.09 of the Rules of Georgia Department of Natural Resources Environmental Protection Division UST Management regulations.
NA = Not applicable. The health-based threshold level exceeds the expected soil concentration under free product condition.

APPENDIX A

SOIL DISPOSAL TICKET

EARTHTECH/HUNTER ARMY AIRFIELD

SHIPMENT DATE	MANIFEST NUMBER	WASTE TYPE	TONS
4/25/01	85954	SOIL	15.43
4/25/01	85968	SOIL	16.74
4/25/01	85993	SOIL	12.82
3/28/01	82708	SOIL	17.50
3/28/01	82732	SOIL	18.80
3/28/01	82769	SOIL	17.41
3/28/01	82807	SOIL	17.47
3/28/01	82831	SOIL	13.04
3/28/01	82861	SOIL	18.17
4/25/01	85960	SOIL	17.69
4/25/01	85974	SOIL	17.46
4/25/01	85963	SOIL	17.74
4/25/01	85984	SOIL	18.23
4/25/01	85958	SOIL	18.01
4/25/01	85978	SOIL	17.13
4/25/01	85964	SOIL	22.36
4/25/01	85987	SOIL	21.76
3/28/01	82682	SOIL	16.34
3/28/01	82705	SOIL	16.43
3/28/01	82731	SOIL	16.20
3/28/01	82762	SOIL	16.51
3/28/01	82787	SOIL	17.14
3/28/01	82812	SOIL	14.97
3/28/01	82838	SOIL	13.62
3/28/01	82866	SOIL	13.51
4/25/01	85957	SOIL	18.32
4/25/01	85975	SOIL	18.32
3/28/01	82691	SOIL	16.48
3/28/01	82711	SOIL	18.01
3/28/01	82736	SOIL	17.74
3/28/01	82761	SOIL	19.59
3/28/01	82781	SOIL	19.01
3/28/01	82806	SOIL	17.45
3/28/01	82827	SOIL	16.42
3/28/01	82852	SOIL	15.22
3/28/01	82696	SOIL	14.26
3/28/01	82723	SOIL	16.88
3/28/01	82763	SOIL	17.57
3/28/01	82788	SOIL	15.99
3/28/01	82813	SOIL	12.32
3/28/01	82839	SOIL	11.66
3/28/01	82867	SOIL	14.04
3/28/01	82690	SOIL	18.40
3/28/01	82713	SOIL	19.51
3/28/01	82739	SOIL	20.03
3/28/01	82764	SOIL	20.22

3/28/01	82799	SOIL	16.59
3/28/01	82826	SOIL	14.64
3/28/01	82850	SOIL	15.36
3/28/01	82687	SOIL	17.44
3/28/01	82710	SOIL	20.11
3/28/01	82738	SOIL	15.92
3/28/01	82791	SOIL	20.01
3/28/01	82821	SOIL	19.49
3/28/01	82847	SOIL	15.88
3/28/01	82872	SOIL	13.08
3/28/01	82679	SOIL	15.94
3/28/01	82702	SOIL	15.34
3/28/01	82749	SOIL	16.64
3/28/01	82776	SOIL	17.03
3/28/01	82793	SOIL	16.97
3/28/01	82816	SOIL	14.54
3/28/01	82841	SOIL	13.44
3/28/01	82862	SOIL	12.21

APPENDIX B

PHOTOTDOCUMENTATION

Facility ID #9-000653: Former Building 133 Site at the beginning of the Interim Removal Action.

Facility ID #9-000653: Removal of contaminated soil at the Former Building 133 Site, view to the southwest.

Facility ID #9-000653: Part of excavation area at the Former Building 133 Site, view to the west.

Facility ID #9-000653: Former Building 133 Site after restoration.

APPENDIX C

SCREENING ANALYTICAL DATA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AB9111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 39212

Matrix: (soil/water) SOIL Lab Sample ID: 39212001

Sample wt/vol: 5.8 (g/mL) G Lab File ID: 8A516

Level: (low/med) MED Date Received: 03/15/01

% Moisture: not dec. 15 Date Analyzed: 03/16/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 100.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	74200	
108-88-3	Toluene	649000	
100-41-4	Ethylbenzene	192000	
75-00-3	Xylenes (total)	1070000	

DATA VALIDATION COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AB9211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 39212

Matrix: (soil/water) SOIL Lab Sample ID: 39212002

Sample wt/vol: 5.4 (g/mL) G Lab File ID: 8A507

Level: (low/med) LOW Date Received: 03/15/01

% Moisture: not dec. 12 Date Analyzed: 03/16/01

GC Column: DB-624 ID: 0.25 (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	
71-43-2	Benzene	1.0	U	U = U J
108-88-3	Toluene	1.1		
100-41-4	Ethylbenzene	1.0	U	
75-00-3	Xylenes (total)	1.8	J	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AB9311

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 39212

Matrix: (soil/water) SOIL Lab Sample ID: 39212003

Sample wt/vol: 4.8 (g/mL) G Lab File ID: 3A508

Level: (low/med) LOW Date Received: 03/15/01

% Moisture: not dec. 11 Date Analyzed: 03/16/01

GC Column: DB-624 ID: 0.25 (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	
71-43-2	Benzene	1.2	U	U
108-88-3	Toluene	0.73	J	
100-41-4	Ethylbenzene	1.2	U	U
75-00-3	Xylenes (total)	0.96	J	

COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AB9411

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 39212

Matrix: (soil/water) SOIL Lab Sample ID: 39212004

Sample wt/vol: 5.1 (g/mL) G Lab File ID: 8AS09

Level: (low/med) LOW Date Received: 03/15/01

% Moisture: not dec. 12 Date Analyzed: 03/16/01

GC Column: DB-624 ID: 0.25 (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	
71-43-2	Benzene	1.1	U	U
108-88-3	Toluene	1.1	U	U
100-41-4	Ethylbenzene	1.1	U	U
75-00-3	Xylenes (total)	1.0	J	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AB9511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 39212

Matrix: (soil/water) SOIL Lab Sample ID: 39212005

Sample wt/vol: 5.6 (g/mL) G Lab File ID: 8AS13

Level: (low/med) MED Date Received: 03/15/01

% Moisture: not dec. 9 Date Analyzed: 03/16/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 200.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	157000	
108-88-3	Toluene	1080000	
100-41-4	Ethylbenzene	282000	
75-00-3	Xylenes (total)	1580000	

DATA VALIDATION COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AB9611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 39212

Matrix: (soil/water) SOIL Lab Sample ID: 39212006

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 3A437

Level: (low/med) LOW Date Received: 03/15/01

% Moisture: not dec. 9 Date Analyzed: 03/15/01

GC Column: DB-624 ID: 0.25 (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	
71-43-2	Benzene	1.1	J	J
108-88-3	Toluene	9.8		=
100-41-4	Ethylbenzene	2.4		=
75-00-3	Xylenes (total)	14.7		=

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.: B133Ø1

PROJECT NAME: ~~Ft. Stewart USTs D.O #55~~ Hunter Bldg. 173

PROJECT NUMBER: 01-1624-04-2352-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): [signature] (Printed Name): PATRICIA A STOLL

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	PAH, Lead	Dissolved Iron	TPH	TCLP BTEX	TCLP Lead	Moisture Content	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
AB9111	Ø3/14/Ø1	1120	Soil	1							1	2	3921001	24-Hour Turn
AB9211	↓	1125	↓	1							1	2	002	
AB9311		1130		1							1	2	003	
AB9411		1135		1							1	2	004	
AB9511		1140		1							1	2	005	
AB9611	↓	1210	↓	1							1	2	006	

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (803) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
[signature]	Ø3/14/Ø1	[signature]	3/15/01
COMPANY NAME: SAIC	18ØØ	COMPANY NAME: GEL	Ø93Ø
RECEIVED BY: 82Ø6Ø938163Ø2	Date/Time Ø3/14/Ø1	RELINQUISHED BY:	Date/Time
COMPANY NAME: FED EX	18ØØ	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 11

Cooler ID: #1

Cooler Temperature: 4° C

FEDEX NUMBER: 820609381032

51

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AB9711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 39353

Matrix: (soil/water) SOIL Lab Sample ID: 39353001

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 5B112

Level: (low/med) LOW Date Received: 03/17/01

% Moisture: not dec. 9 Date Analyzed: 03/19/01

GC Column: DB-624 ID: 0.25 (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	
71-43-2	Benzene	1.1	U	U
108-88-3	Toluene	1.1	U	U
100-41-4	Ethylbenzene	1.1	U	U
1330-20-7	Xylenes (total)	2.6	J	J

DATA VALIDATION COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AB9811

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 39353

Matrix: (soil/water) SOIL

Lab Sample ID: 39353002

Sample wt/vol: 5.3 (g/mL) G

Lab File ID: 5B108

Level: (low/med) MED

Date Received: 03/17/01

% Moisture: not dec. 18

Date Analyzed: 03/19/01

GC Column: DB-624 ID: 0.25 (mm)

Dilution Factor: 1.0 1:100

Soil Extract Volume: 10000(uL)

Soil Aliquot Volume: 100(uL

Use

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		
71-43-2	Benzene	1090		=
108-88-3	Toluene	50300 ~~48800~~	E D	=
100-41-4	Ethylbenzene	42200 ~~45800~~	E D	=
1330-20-7	Xylenes (total)	32 0000 ~~39000~~	E D	=

DATA VALIDATION COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AB9911

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 39353

Matrix: (soil/water) SOIL Lab Sample ID: 39353003

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 5B113

Level: (low/med) LOW Date Received: 03/17/01

% Moisture: not dec. 17 Date Analyzed: 03/19/01

GC Column: DB-624 ID: 0.25 (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	
71-43-2	Benzene	1.1	U	U
108-88-3	Toluene	1.1	U	U
100-41-4	Ethylbenzene	1.1	U	U
1330-20-7	Xylenes (total)	3.3	U	U

DATA VALIDATION COPY

39353%

Chain of Custody

Project: HAAF Bldg 133
Contact: Patty Stoll (SAIC)
Sampler: David Rosecrance (Earth Tech)

Sample ID	Date	Time	Analysis
AB9711	3/16/01	1640	BTEX / Moisture Content
AB9811	3/16/01	1710	BTEX / Moisture Content
AB9911	3/16/01	1730	BTEX / Moisture Content

Rush 24-hr turn-around-time
Contact Patty Stoll (SAIC) with results
ph: 865-481-8792
page: 800-788-7006
fax: 865-482-7257

Relinquished By	Date	Time	Received By
David Rosecrance	3/16/01	1900	Fed Ex
	3/17/01	1145	Thuslan Chandler

APPENDIX D

CONFIRMATION ANALYTICAL DATA

DATA VALIDATION REASON CODES

Organic, Inorganic, and Radiological Analytical Data

Holding Times

A01 Extraction holding times were exceeded.
A02 Extraction holding times were grossly exceeded.
A03 Analysis holding times were exceeded.
A04 Analysis holding times were grossly exceeded.
A05 Samples were not preserved properly.
A06 Professional judgement was used to qualify the data.

GC/MS Tuning

B01 Mass calibration was in error, even after applying expanded criteria.
B02 Mass calibration was not performed every 12 hours.
B03 Mass calibration did not meet ion abundance criteria.
B04 Professional judgement was used to qualify the data.

Initial/Continuing Calibration - Organics

C01 Initial calibration RRF was <0.05.
C02 Initial calibration RSD was $>30\%$.
C03 Initial calibration sequence was not followed as required.
C04 Continuing calibration RRF was <0.05.
C05 Continuing calibration %D was $>25\%$.
C06 Continuing calibration was not performed at the required frequency.
C07 Resolution criteria were not met.
C08 RPD criteria were not met.
C09 RSD criteria were not met.
C10 Retention time of compounds was outside windows.
C11 Compounds were not adequately resolved.
C12 Breakdown of endrin or DDT was $>20\%$.
C13 Combined breakdown of endrin/DDT was $>30\%$.
C14 Professional judgement was used to qualify the data.

Initial/Continuing Calibration - Inorganics

D01 ICV or CCV were not performed for every analyte.
D02 ICV recovery was above the upper control limit.
D03 ICV recovery was below the lower control limit.
D04 CCV recovery was above the upper control limit.
D05 CCV recovery was below the lower control limit.
D06 Standard curve was not established with the minimum number of standards.
D07 Instrument was not calibrated daily or each time the instrument was set up.
D08 Correlation coefficient was <0.995.
D09 Mid range cyanide standard was not distilled.
D10 Professional judgement was used to qualify the data.

ICP and Furnace Requirements

E01 Interference check sample recovery was outside the control limit.
E02 Duplicate injections were outside the control limit.
E03 Post digestion spike recovery was outside the control limit.
E04 MSA was required but not performed.
E05 MSA correlation coefficient was <0.995.
E06 MSA spikes were not at the correct concentration.
E07 Serial dilution criteria were not met.
E08 Professional judgement was used to qualify the data.

Blanks

F01 Sample data were qualified as a result of the method blank.
F02 Sample data were qualified as a result of the field blank.
F03 Sample data were qualified as a result of the equipment rinsate.
F04 Sample data were qualified as a result of the trip blank.
F05 Gross contamination exists.
F06 Concentration of the contaminant was detected at a level below the CRQL.
F07 Concentration of the contaminant was detected at a level less than the action limit, but greater than the CRQL.
F08 Concentration of the contaminant was detected at a level that exceeds the action level.
F09 No laboratory blanks were analyzed.
F10 Blank had a negative value $>2\times$'s the IDL.
F11 Blanks were not analyzed at required frequency.
F12 Professional judgement was used to qualify the data.

Surrogate/Radiological Chemical Recovery

G01 Surrogate/radiological chemical recovery was above the upper control limit.
G02 Surrogate/radiological chemical recovery was below the lower control limit.
G03 Surrogate recovery was $<10\%$.
G04 Surrogate recovery was zero.
G05 Surrogate/radiological chemical recovery data was not present.
G06 Professional judgement was used to qualify the data.
G07 Radiological chemical recovery was $<20\%$.
G08 Radiological chemical recovery was $>150\%$.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

H01 MS/MSD recovery was above the upper control limit.
H02 MS/MSD recovery was below the lower control limit.
H03 MS/MSD recovery was $<10\%$.
H04 MS/MSD pairs exceed the RPD limit.
H05 No action was taken on MS/MSD results.
H06 Professional judgement was used to qualify the data.
H07 Radiological MS/MSD recovery was $<20\%$.
H08 Radiological MS/MSD recovery was $>160\%$.
H09 Radiological MS/MSD samples were not analyzed at the required frequency.

Matrix Spike

I01 MS recovery was above the upper control limit.
I02 MS recovery was below the lower control limit.
I03 MS recovery was $<30\%$.
I04 No action was taken on MS data.
I05 Professional judgement was used to qualify the data.

Laboratory Duplicate

J01 Duplicate RPD/radiological duplicate error ratio (DER) was outside the control limit.
J02 Duplicate sample results were $>5\times$ the CRDL.
J03 Duplicate sample results were $<5\times$ the CRDL.
J04 Professional judgement was used to qualify the data.
J05 Duplicate was not analyzed at the required frequency.

Internal Area Summary

K01 Area counts were outside the control limits.
K02 Extremely low area counts or performance was exhibited by a major drop off.
K03 IS retention time varied by more than 30 seconds.
K04 Professional judgement was used to qualify the data.

Pesticide Cleanup Checks

L01 10% recovery was obtained during either check.
L02 Recoveries during either check were >120%.
L03 GPC Cleanup recoveries were outside the control limits.
L04 Florisil cartridge cleanup recoveries were outside the control limits.
L05 Professional judgement was used to qualify the data.

Target Compound Identification

M01 Incorrect identifications were made.
M02 Qualitative criteria were not met.
M03 Cross contamination occurred.
M04 Confirmatory analysis was not performed.
M05 No results were provided.
M06 Analysis occurred outside 12 hr GC/MS window.
M07 Professional judgement was used to qualify the data.
M08 The %D between the two pesticide/PCB column checks was >25%.

Compound Quantitation and Reported CRQLs

N01 Quantitation limits were affected by large off-scale peaks.
N02 MDLs reported by the laboratory exceeded corresponding CRQLs.
N03 Professional judgement used to qualify the data.

Tentatively Identified Compounds (TICs)

O01 Compound was suspected laboratory contaminant and was not detected in the blank.
O02 TIC result was not above 10× the level found in the blank.
O03 Professional judgement was used to qualify analytical data.

Laboratory Control Samples (LCSs)

P01 LCS recovery was above upper control limit.
P02 LCS recovery was below lower control limit.
P03 LCS recovery was <50%.
P04 No action was taken on the LCS data.
P05 LCS was not analyzed at required frequency.
P06 Radiological LCS recovery was <50% for aqueous samples; <40% for solid samples.
P07 Radiological LCS recovery was >150% for aqueous samples; >160% for solid samples.
P08 Professional judgement was used to qualify the data.

Field Duplicate

Q01 Field duplicate RPDs were >30% for waters and/or > 50% for soils.
Q02 Radiological field duplicate error ratio (DER) was outside the control limit.
Q03 Duplicate sample results were >5× the CRDL.
Q04 Duplicate sample results were <5× the CRDL.

Radiological Calibration

R01 Efficiency calibration criteria were not met.
R02 Energy calibration criteria were not met.
R03 Resolution calibration criteria were not met.
R04 Background determination criteria were not met.
R05 Quench curve criteria were not met.
R06 Absorption curve criteria were not met.
R07 Plateau curve criteria were not met.
R08 Professional judgement was used to qualify the data.

Radiological Calibration Verification

S01 Efficiency verification criteria were not met.
S02 Energy verification criteria were not met.
S03 Resolution verification criteria were not met.
S04 Background verification criteria were not met.
S05 Cross-talk verification criteria were not met.
S06 Professional judgement was used to qualify the data.

Radionuclide Quantitation

T01 Detection limits were not met.
T02 Analytical uncertainties were not met and/or not reported.
T03 Inappropriate aliquot sizes were used.
T04 Professional judgement was used to qualify the data.

System Performance

V01 High background levels or a shift in the energy calibration were observed.
V02 Extraneous peaks were observed.
V03 Loss of resolution was observed.
V04 Peak-tailing or peak splitting that may result in inaccurate quantitation were observed.
V05 Professional judgement was used to qualify the data.

Laboratory Qualifiers

U — Indicates that the compound was analyzed for but not detected. The sample quantitation limit (SQL) must be corrected for dilution. For a soil/sediment sample, the value must also be corrected for percent moisture.

J — Indicates an estimated value. This qualifier is used either when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the SQL but greater than zero.

N — Indicates presumptive evidence of a compound. This qualifier is used only for TICs, where the identification is based on a mass spectral library search.

P — Used for pesticide/PCB target analytes when there is greater than 25% difference for detected concentrations between the two GC columns.

C — Applies to pesticide results where the identification has been confirmed by gas chromatography/mass spectrometry (GC/MS). If GC/MS confirmation was attempted but was unsuccessful, this qualifier is not applied; instead a laboratory-defined qualifier is used.

B — Used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and alerts the data user to take appropriate action. This qualifier is used for TICs as well as for positively identified target compounds.

E — Identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

D — Identifies all compounds identified in an analysis at a secondary dilution factor. This qualifier alerts data users that any discrepancies between the concentrations reported may be due to dilution of the sample or extract.

A — Indicates that a TIC was a suspected aldol-condensation product.

X — Indicates that other specific qualifiers were required to properly define the results. If used, the qualifier must be fully described and such description must be included in the Sample Data Summary Package and SDG narrative.

Validation Qualifiers

U — Indicates that the compound was analyzed for but was not detected above the reported SQL.

UJ — Indicates that the compound was not detected above the reported SQL. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the compound in the sample.

J — Indicates that the compound was positively identified. The associated numerical value is the approximate concentration of the compound in the sample.

N — The analysis indicates the presence of a compound for which there is presumptive evidence to make a "tentative identification."

NJ — Indicates that the analysis indicates the presence of a compound that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

R — Indicates that the sample results for the compound are unusable due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the compound cannot be verified.

= — Indicates that the value has been validated and that the compound has been positively identified and the associated concentration value is accurate.

Data Qualifiers for Inorganic Analytical Data

Laboratory Qualifiers

B — Indicates that the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).

U — Indicates that the analyte was analyzed for but not detected.

E — Used when the reported value was estimated because of the presence of interference.

M — Indicates that the duplicate injection precision was not met.

N — Indicates that the spiked sample recovery was not within control limits.

S — Indicates that the reported value was determined by the method of standard additions (MSA).

W — Used when the post-digestion spike for furnace atomic absorption analysis was not within control limits (85 - 115%), while sample absorbance was less than 50% of spike absorbance.

* — Indicates that the duplicate analysis was not within control limits.

+ — Indicates that the correlation coefficient for the MSA was less than 0.995.

Validation Qualifiers

U — Indicates that the analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ — Indicates that the analyte was not detected above the reported SQL. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

J — Indicates that the analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

R — Indicates that the sample results for the analyte are unusable due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

= — Indicates that the value has been validated and that the analyte has been positively identified and the associated concentration value is accurate.

Data Qualifiers for Radiochemical Analytical Data

Laboratory Qualifiers

< — The numerical value reported was less than the MDA.

N — The sample results were qualified to denote poor spike recovery.

* — The sample results were qualified to denote poor duplicate results.

Validation Qualifiers

U — Indicates that the radionuclide was analyzed for but was not detected above the reported sample quantitation limit.

J — Indicates that the radionuclide was positively identified. The associated numerical value is the approximate concentration of the radionuclide in the sample.

N — The analysis indicates the presence of a radionuclide for which there was presumptive evidence to make a "tentative identification."

DL — The detection limit requirements were not met. The data quality objectives may not be met.

UI — Indicates that there was uncertain identification for gamma spectroscopy. The radionuclide peaks are detected but fail to meet the positive identification criteria.

R — Indicates that the sample results for the radionuclide are unusable due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the radionuclide cannot be verified.

= — Indicates that the value has been validated and that the radionuclide has been positively identified and the associated concentration value is accurate.

Data Qualifiers for Wet Chemistry Analytical Data

Laboratory Qualifiers

U — Indicates that the analyte was analyzed for but was not detected above the reported sample quantitation limit.

J — Indicates that the analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

Validation Qualifiers

U — Indicates that the analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ — Indicates that the analyte was not detected above the reported SQL. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

J — Indicates that the analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

R — Indicates that the sample results for the analyte are unusable due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

= — Indicates that the value has been validated and that the analyte has been positively identified and the associated concentration value is accurate.

Laboratory Sample Type Abbreviations

DL - Sample analyzed at secondary dilution factor

RA - Reanalysis

Site: Hunter Army Airfield Building 133, Facility ID #9-025073

Sample HAAF-133-1

Collection Date: 03/21/2001

Method: SW 8260B UG/KG

Compound	Result	Qualifier Lab	Qualifier Data	Data Validation Code
BENZENE	6	U	U	
ETHYLBENZENE	6	U	U	
TOLUENE	6	U	U	
XYLENE (TOTAL)	6	U	U	

Method: SW 8270C UG/KG

Compound	Result	Qualifier Lab	Qualifier Data	Data Validation Code
2-CHLORONAPHTHALENE	370	U	U	
2-METHYLNAPHTHALENE	370	U	U	
ACENAPHTHENE	370	U	U	
ACENAPHTHYLENE	370	U	U	
ANTHRACENE	370	U	U	
BENZO(A)ANTHRACENE	370	U	U	
BENZO(A)PYRENE	370	U	U	
BENZO(B)FLUORANTHENE	370	U	U	
BENZO(G,H,I)PERYLENE	370	U	U	
BENZO(K)FLUORANTHENE	370	U	U	
CHRYSENE	370	U	U	
DIBENZ(A,H)ANTHRACENE	370	U	U	
FLUORANTHENE	370	U	U	
FLUORENE	370	U	U	
INDENO(1,2,3-CD)PYRENE	370	U	U	
NAPHTHALENE	370	U	U	
PHENANTHRENE	370	U	U	
PYRENE	370	U	U	

Sample HAAF-133-2

Collection Date: 03/21/2001

Method: SW 8260B UG/KG

Compound	Result	Qualifier Lab	Qualifier Data	Data Validation Code
BENZENE	6	U	U	
ETHYLBENZENE	6	U	U	
TOLUENE	6	U	U	
XYLENE (TOTAL)	6	U	U	

Method: SW 8270C UG/KG

Compound	Result	Qualifier Lab	Qualifier Data	Data Validation Code
2-CHLORONAPHTHALENE	390	U	U	

Site: Hunter Army Airfield Building 133, Facility ID #9-025073

2-METHYLNAPHTHALENE	390	U	U
ACENAPHTHENE	390	U	U
ACENAPHTHYLENE	390	U	U
ANTHRACENE	390	U	U
BENZO(A)ANTHRACENE	390	U	U
BENZO(A)PYRENE	390	U	U
BENZO(B)FLUORANTHENE	390	U	U
BENZO(G,H,I)PERYLENE	390	U	U
BENZO(K)FLUORANTHENE	390	U	U
CHRYSENE	390	U	U
DIBENZ(A,H)ANTHRACENE	390	U	U
FLUORANTHENE	390	U	U
FLUORENE	390	U	U
INDENO(1,2,3-CD)PYRENE	390	U	U
NAPHTHALENE	390	U	U
PHENANTHRENE	390	U	U
PYRENE	390	U	U

Sample HAAF-133-3 Collection Date: 03/21/2001

Method: SW 8260B UG/KG

Compound	Result	Qualifier Lab	Qualifier Data	Data Validation Code
BENZENE	6	U	U	
ETHYLBENZENE	6	U	U	
TOLUENE	6	U	U	
XYLENE (TOTAL)	6	U	U	

Method: SW 8270C UG/KG

Compound	Result	Qualifier Lab	Qualifier Data	Data Validation Code
2-CHLORONAPHTHALENE	390	U	U	
2-METHYLNAPHTHALENE	390	U	U	
ACENAPHTHENE	390	U	U	
ACENAPHTHYLENE	390	U	U	
ANTHRACENE	390	U	U	
BENZO(A)ANTHRACENE	390	U	U	
BENZO(A)PYRENE	390	U	U	
BENZO(B)FLUORANTHENE	390	U	U	
BENZO(G,H,I)PERYLENE	390	U	U	
BENZO(K)FLUORANTHENE	390	U	U	
CHRYSENE	390	U	U	
DIBENZ(A,H)ANTHRACENE	390	U	U	
FLUORANTHENE	390	U	U	
FLUORENE	390	U	U	
INDENO(1,2,3-CD)PYRENE	390	U	U	
NAPHTHALENE	390	U	U	

Site: Hunter Army Airfield Building 133, Facility ID #9-025073

PHENANTHRENE	390	U	U
PYRENE	390	U	U

Sample HAAF-133-4

Collection Date: 03/21/2001

Method: SW 8260B UG/KG

Compound	Result	Qualifier Lab	Qualifier Data	Data Validation Code
BENZENE	7	U	U	
ETHYLBENZENE	7	U	U	
TOLUENE	7	U	U	
XYLENE (TOTAL)	7	U	U	

Method: SW 8270C UG/KG

Compound	Result	Qualifier Lab	Qualifier Data	Data Validation Code
2-CHLORONAPHTHALENE	400	U	U	
2-METHYLNAPHTHALENE	400	U	U	
ACENAPHTHENE	400	U	U	
ACENAPHTHYLENE	400	U	U	
ANTHRACENE	400	U	U	
BENZO(A)ANTHRACENE	400	U	U	
BENZO(A)PYRENE	400	U	U	
BENZO(B)FLUORANTHENE	400	U	U	
BENZO(G,H,I)PERYLENE	400	U	U	
BENZO(K)FLUORANTHENE	400	U	U	
CHRYSENE	400	U	U	
DIBENZ(A,H)ANTHRACENE	400	U	U	
FLUORANTHENE	400	U	U	
FLUORENE	400	U	U	
INDENO(1,2,3-CD)PYRENE	400	U	U	
NAPHTHALENE	400	U	U	
PHENANTHRENE	400	U	U	
PYRENE	400	U	U	

Sample HAAF-133-5

Collection Date: 03/21/2001

Method: SW 8260B UG/KG

Compound	Result	Qualifier Lab	Qualifier Data	Data Validation Code
BENZENE	160			
ETHYLBENZENE	260			
TOLUENE	710	D		
XYLENE (TOTAL)	830	D		

Site: Hunter Army Airfield Building 133, Facility ID #9-025073

Method: SW 8270C UG/KG

Compound	Result	Qualifier Lab	Qualifier Data	Data Validation Code
2-CHLORONAPHTHALENE	420	U	U	
2-METHYLNAPHTHALENE	420	U	U	
ACENAPHTHENE	420	U	U	
ACENAPHTHYLENE	420	U	U	
ANTHRACENE	420	U	U	
BENZO(A)ANTHRACENE	420	U	U	
BENZO(A)PYRENE	420	U	U	
BENZO(B)FLUORANTHENE	420	U	U	
BENZO(G,H,I)PERYLENE	420	U	U	
BENZO(K)FLUORANTHENE	420	U	U	
CHRYSENE	420	U	U	
DIBENZ(A,H)ANTHRACENE	420	U	U	
FLUORANTHENE	420	U	U	
FLUORENE	420	U	U	
INDENO(1,2,3-CD)PYRENE	420	U	U	
NAPHTHALENE	420	U	U	
PHENANTHRENE	420	U	U	
PYRENE	420	U	U	

Sample 133-W1

Collection Date: 04/16/2001

Method: SW 8270C UG/KG

Compound	Result	Qualifier Lab	Qualifier Data	Data Validation Code
2-CHLORONAPHTHALENE	390	U	U	
2-METHYLNAPHTHALENE	390	U	U	
ACENAPHTHENE	390	U	U	
ACENAPHTHYLENE	390	U	U	
ANTHRACENE	390	U	U	
BENZO(A)ANTHRACENE	23	J		
BENZO(A)PYRENE	23	J		
BENZO(B)FLUORANTHENE	390	U	U	
BENZO(G,H,I)PERYLENE	390	U	U	
BENZO(K)FLUORANTHENE	390	U	U	
CHRYSENE	43	J		
DIBENZ(A,H)ANTHRACENE	390	U	U	
FLUORANTHENE	390	U	U	
FLUORENE	390	U	U	
INDENO(1,2,3-CD)PYRENE	390	U	U	
NAPHTHALENE	390	U	U	
PHENANTHRENE	390	U	U	
PYRENE	250	J		

Site: Hunter Army Airfield Building 133, Facility ID #9-025073

Sample 133-W2 Collection Date: 04/16/2001

Method: SW 8260B UG/KG

Compound	Result	Qualifier Lab	Qualifier Data	Data Validation Code
BENZENE	4	U	U	
ETHYLBENZENE	4	U	U	
TOLUENE	4	U	U	
XYLENE (TOTAL)	4	U	U	

CHAIN OF CUSTODY RECORD

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 W. Albany • Broken Arrow, Oklahoma 74012-1421
Office: 918-251-2858 • Fax 918-251-2599

TM

SAMPLING FIRM	CLIENT CONTACT	PHONE NUMBER
Earth Tech	Ms Jean McKee	865-483-9404

P.O. or PROPOSAL NUMBER	PROJECT NAME
437.54 -05	HAAF Bldg 133 MARK OK 706-566-1412 AUGUSTYNIAK 1913

SAMPLER: (Signature)

SAMPLE NO.	DATE	TIME	COMP.	GRAB	Sample Name ~~LOCATION~~	MATRIX	NUMBER OF CONTAINERS	ANALYTICAL TESTS REQUESTED: BTEX (8260)	PAH (8270C)	T.C.L.P. Benzene	REMARKS
	3/21/01	0930A		X	HAAF-133-1	Soil	4	X	X		72-hour TAT
	3/21/01	0945A		X	HAAF-133-2	Soil	4	X	X		
	3/21/01	0958A		X	HAAF-133-3	Soil	4	X	X		
	3/21/01	10:14A		X	HAAF-133-4	Soil	4	X	X		
	3/21/01	11:00A		X	HAAF-133-5	Soil	4	X	X		
	3/21/01	11:15A		X	HAAF-133-5-MS/MSD	Soil	4	X	X		
	3/21/01	10:30A		X	HAAF-133-DISP	Soil	2			X	

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
Ron Augustyniak	3/21	1440	

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
	3-22-01	8:10	

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY: (Signature)

REMARKS:
6.0°C

[SR012-1192-03]

Results To: Jean Mckee fx. 865-481-3834
117 A Broadway Ave.
Oak Ridge TN
37830

1-865-483

CHAIN OF CUSTODY RECORD

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. Albany • Broken Arrow, Oklahoma 74012-1421
Office: 918-251-2878 • Fax 918-251-2519

TM

SAMPLING FIRM	CLIENT CONTACT	PHONE NUMBER
Earth Tech	Jean Mckee	94

P.O. or PROPOSAL NUMBER	PROJECT NAME
	Bldg. 133 / 43754-05.0

SAMPLER: (Signature)

ANALYTICAL TESTS REQUESTED

1.8C

SAMPLE NO.	DATE	TIME	COMP.	GRAB	LOCATION	MATRIX	NUMBER OF CONTAINERS	PAH	BTEX							REMARKS
133W1	4/1/01	0915		✓	Sidewall Exc.	S	1	✓								402. Jar / 24 hr.
133W2	4/1/01	0915		✓	Sidewall Exc.	S	3		✓							Encores /
	4/1/01															
	Rec'd by Laboratory 4/16/01															

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
	4/16	1530	
	4/16/01	08:00	

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
			RECEIVED FOR LABORATORY BY

REMARKS:

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