FINAL

FORSCOM

CORRECTIVE ACTION PLAN

3d Inf Div (Mech)

Part A

Former Underground Storage Tank 117
Building 7002
Facility Identification Number: 9-025113*1
Bulk Fuel Facility (HAA-09)
Hunter Army Airfield, Georgia

Prepared for

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT

Contract No. DACA21-95-D-0022
Delivery Order 0051

June 2000

00-108(PPT)/052200

SAIC®

DOCUMENT 6

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List of Abbreviations and Acronyms

ACE	Anderson Columbia Environmental, Inc.
ACL	Alternate Concentration Level
ASTM	American Society for Testing and Materials
ATL	alternate threshold level
BDL	below detection limit
BGS	below ground surface
BLS	below land surface

BTEX	benzene, toluene, ethylbenzene, and xylene
BTL	below threshold level
CAP	Corrective Action Plan
CL	clay
COE	(U.S. Army) Corps of Engineers
CX	Center of Excellence
DOT	U.S. Department of Transportation
DPW	Directorate of Public Works
DQA	data quality assessment
DQCR	Daily Quality Control Report
DQO	date quality objective
DRO	diesel-range organics
EPA	U.S. Environmental Protection Agency
EPD	Environmental Protection Division
FS	Fort Stewart
GA DNR	Georgia Department of Natural Resources
GEL	General Engineering Laboratories
gpm	gallons per minute
GRO	gasoline-range organics
GUST	Georgia Underground Storage Tank
HAAF	Hunter Army Airfield
ID	inside diameter
IDW	investigation-derived waste
IWTP	Industrial Waste Treatment Plant
LCS	laboratory control sample
MCL	maximum contaminant level
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
MPR	Monthly Progress Report
MS	matrix spike
N/A	not applicable
NCO	noncommissioned officer
NRC	no regulatory criteria
OVM	organic vapor meter
PAHs	polynuclear aromatic hydrocarbons
PID	photoionization detector
ppm	parts per million
PVC	polyvinyl chloride
QA	quality assurance
QA/QC	quality assessment/quality control
QAPjP	Quality Assurance Project Plan
QC	quality control
QCSR	Quality Control Summary Report
RBCA	Risk-Based Corrective Action
RCRA	Resource Conservation and Recovery Act
RPD	relative percent difference
SAIC	Science Applications International Corporation
SAS	South Atlantic Savannah (Division)
SC	clayey sand
SC-SM	clayey, silty sand

SM	silty sand
SP-SC	poorly graded, clayey sand
STL	Soil Threshold Level
SW	sand
TBD	to be determined
TCLP	Toxicity Characteristic Leaching Procedure
TOC	total organic carbon
TPH	total petroleum hydrocarbon
UNK	unknown
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
UST	underground storage tank
USTMP	Underground Storage Tank Management Program
VOC	volatile organic compound

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CORRECTIVE ACTION PLAN PART A

Facility Name: Former UST 117, Building 7002 Street Address: Bulk Fuel Facility, Perimeter Road

Facility ID: 9-025113*1 City: HAAF County: Chatham Zip Code: 31406

Latitude: 32°01'45" Longitude: 81°08'40"

Submitted by UST Owner/Operator:
Name: Thomas C. Fry/Environmental Branch
Company: U.S. Army/HQ 3d, Inf. Div. (Mech)
Address: DPW, Building 1137 (Fry)
1550 Frank Cochran Drive
City: Fort Stewart State: Georgia
Zip Code: 31314-4927
Telephone: (912) 767-1078/2010

Prepared by Consultant/Contractor:
Name: C. Allison Bailey
Company: SAIC
Address: P.O. Box 2502
City: Oak Ridge State: TN
Zip Code: 37831
Telephone: (865) 481-8719

I. PLAN CERTIFICATION:

A. UST Owner/Operator Certification

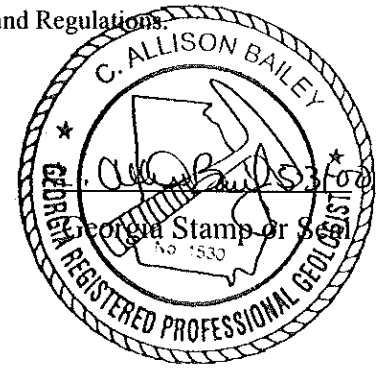
I hereby certify that the information contained in this plan and in all the attachments is true, accurate, and the plan satisfies all criteria and requirements of rule 391-3-15-09 of the Georgia Rules for Underground Storage Tank Management.

Name: Thomas C. Fry
Signature: Thomas C. Fry Date: 06/05/00

B. Registered Professional Engineer or Professional Geologist Certification

I hereby certify that I have directed and supervised the field work and preparation of this plan, in accordance with State Rules and Regulations. As a registered professional geologist and/or professional engineer, I certify that I am a qualified groundwater professional, as defined by the Georgia State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.

Name: C. Allison Bailey, P.G.
Signature: C. Allison Bailey
Date: 5-31-00



Georgia Stamp or Seal

General: READ THE GUIDANCE DOCUMENT FOR CAP PART-A BEFORE COMPLETING THIS FORM. FAILURE TO READ THE GUIDANCE DOCUMENT WILL MOST LIKELY RESULT IN PREPARATION OF AN UNACCEPTABLE REPORT. All text, figures, and tables requested in their respective sections should be prepared strictly in accordance with the Georgia EPD CAP-A guidance document. Please fill out this form as provided. Do not change the size of the fields or alter the placement of each section on each page.

(Appendix I: All Report Figures)
(Appendix II: All Report Tables)

II. INITIAL RESPONSE REPORT

A. Initial Abatement

Were initial abatement actions initiated? YES ____ NO X
If Yes, please summarize. If No, please explain why not.

Actions were not required to abate imminent hazards and/or emergency conditions at the Former Underground Storage Tank (UST) 117, Building 7002 site. Therefore, contaminant migration and release prevention, fire and vapor mitigation, or emergency free product removal were not performed prior to, or during, the closure of UST 117.

B. Free Product Removal

(Table 1: Summary of Free Product Removal – must include Free Product thickness in each well in which it was detected, and volume of product removed)

Free Product Detected? YES ____ NO X
If Yes, please summarize free product recovery efforts.

Continuing free product recovery proposed? YES ____ NO X
If yes, please indicate the method and frequency of removal.

C. Tank History

List current and former UST's operated at site based on owner/operator knowledge consistent with EPA 7530-1 Form). Systems must be illustrated on Figure 2 (Site Plan), as described in section D below.

CURRENT UST SYSTEMS (if applicable)

Tank ID Number	Capacity (gal)	Substance Stored	Age (yrs)	Meets 1998 Upgrade Standards (Yes/No)
N/A	N/A	N/A	N/A	N/A

FORMER UST SYSTEMS (if applicable)

Tank ID Number	Capacity (gal)	Substance Stored	Date Closed In-place
117	550	JP-4 fuel	September 30, 1996

D. Initial Site Characterization

(Figure 1: Vicinity/Location Map)
(Figure 2: Site Plan)

1. Regulated Substance Released (gasoline, diesel, used oil, etc.): JP-4 fuel
Discuss how this determination was made and circumstances of discovery.

Characterization of petroleum-related contamination at the Former UST 117 site, located at the Bulk Fuel Facility (BFF), was initiated during UST system closure activities on September 30, 1996, by Anderson Columbia Environmental, Inc. (ACE). The vertically oriented tank and ancillary piping were purged and closed in place by filling with grout. One soil sample (8102-TK117-S1) was collected from alongside the closed tank at a depth of 5 feet below ground surface (BGS) [Figure 7]. The soil sample was reported to contain benzene at a concentration of 0.013 mg/kg. This exceeds the Georgia Environmental Protection Division (GA EPD) applicable soil threshold level for benzene of 0.005 mg/kg (i.e., Table A, column 1). In addition, total petroleum hydrocarbon (TPH) was reported at a concentration of 163 mg/kg in the soil sample (Tables 5a and 5b).

Other activities conducted at the BFF included the removal of a 2000-gallon, non-regulated bulk storage overflow tank (UST 131) on June 24, 1999, by Earth Tech, Inc. (Earth Tech 1999) and a soil gas survey of the BFF conducted in January 1999 by Science Applications International Corporation (SAIC 1999b). It should also be noted that the BFF is currently being refurbished with activities including upgrading aboveground storage tanks (ASTs) 7007 and 7009 and installing new aboveground fuel pipeline. In addition, Earth Tech, Inc., installed six 2-inch-diameter monitoring wells around AST 7009 as part of the AST upgrade activity (Figure 8) (Earth Tech 2000). Future upgrade activities will include demolition of ASTs 7001 and 7003.

2. Source(s) of Contamination: Unknown; piping leakage or tank overflow suspected.
Discuss how this determination was made.

Although ACE (1996) presented a diagram showing approximate locations of the former UST and associated ancillary piping, a detailed schematic diagram is not available. The major source of contamination at the Former UST 117, Building 7002 site is believed to have been piping leakage or tank overflow.

3. Local Water Resources

(Figure 3: Quadrangle Map - Public and Private drinking water and surface water)
(Appendix III: Water resources survey documentation, including, but not limited to: USGS database search, interview forms, and documentation of field survey)

a. *Site located in high/average* X *OR low* ____ *groundwater pollution susceptibility area?*

b. *Water Supplies within applicable radii?* YES X NO ____
If yes,
i. *Nearest public water supply located within:* 2,712 *feet*

ii. *Nearest down-gradient public water supply located within:* >10,560 *feet*

iii. *Nearest non-public water supply located within:* >10,560 *feet*

iv. *Nearest down-gradient non-public water supply located within:* >10,560 *feet*

c. *Surface Water Bodies and sewers:*

i. *Nearest surface water located within:* 340 *feet*

ii. *Nearest down-gradient surface water located within:* 340 *feet*

iii. *Nearest storm or sanitary sewer located within:* 120 *feet*

iv. *Depth to bottom of sewer at a point nearest the plume:* >5.0 *feet*

4. Impacted Environmental Media

a. *Soil Impacted*
(Table 2: Soil Analysis Results)
(Figure 4: Soil Quality Map)
(Appendix IV: Soil Boring Logs)
(Appendix V: Soil Laboratory Reports)
(Appendix VI: ATL Calculations, if applicable)

Provide a brief discussion of soil sampling.

Soil samples were collected at 2.0-foot intervals during the installation of 31 boreholes (SB-01 through SB-31) (Figure 4). Field headspace gas analyses were performed on each sample to determine organic vapor concentration. Soil samples were selected from each borehole for laboratory chemical analysis of benzene, toluene, ethylbenzene, and xylene (BTEX); TPH gasoline-range organics/diesel-range organics (GROs/DROs); polynuclear aromatic hydrocarbons (PAHs); and geotechnical analysis (Table 2 and Appendix V). In each borehole, one sample was collected from the interval where the highest vapor concentration was recorded or the interval located immediately above the water table if elevated vapor concentrations were not detected. An undisturbed (Shelby-tube) soil sample, SB-GT, was also collected and analyzed to determine vadose zone and aquifer characteristics at the site. In addition to the soil investigation, a total of 9 sediment samples (SD-1 through SD-9) were collected from along Lamar Canal and analyzed for the same parameters as the soil samples (Figure 10). The sediment data are reported on Table 7 and in Appendix V. Refer to Attachment A for complete documentation of the technical approach implemented during this investigation.

i. Soil contamination above applicable threshold levels?

YES _X_ NO _____

If yes, indicate highest concentrations in soil along with locations and depths detected.

The highest concentration of soil contamination was reported for the soil sample collected from boring SB-22 at a depth of 0.0 to 2.0 feet BGS (Table 2a). Benzene was reported at 1.130 mg/kg, toluene at 0.404 mg/kg, ethylbenzene at 13.6 mg/kg, and total xylenes at 74.6 mg/kg. Each of the compounds was reported above its applicable soil threshold level of 0.005 mg/kg, 0.400 mg/kg, 0.370 mg/kg, and 20.0 mg/kg, respectively. Benzene and toluene were also detected in boring SB-20 at concentrations above their applicable soil threshold levels. For the soil samples collected from borings SB-07, SB-09, SB-10, and SB-17, the volatile reporting limits were elevated causing many of the values for the BTEX compounds to be qualified as non-detects although their concentrations were above their applicable soil threshold levels. For evaluation purposes, these data have been considered using a value of less than the detection limit.

ii. ATLs calculated? YES _X_ NO _____

If yes, present ATLs.

ATLs for benzene, toluene, ethylbenzene, and xylene in soil were calculated. The ATL for benzene is 0.387 mg/kg, 12.210 mg/kg for toluene, 61.850 mg/kg for ethylbenzene, and 74.6 mg/kg for xylene. The ATL for benzene was exceeded in soil collected from borings SB-07 and SB-22. The ATLs for ethylbenzene and toluene were not exceeded in any of the soil samples. For xylene, the maximum concentration (74.6 mg/kg in SB-22) is equal to the calculated ATL. Please refer to Appendix VI for the ATL calculations.

iii. If ATLs calculated, is soil contamination above ATLs?

YES _X_ NO _____ N/A _____

b. Groundwater Impacted

(Table 3: Groundwater Analysis Results)
(Figure 5: Groundwater Quality Map)
(Appendix VII: Monitoring Well Details)
(Appendix VIII: Groundwater Laboratory Results)
Provide a brief discussion of groundwater sampling.

At 26 borehole locations, one groundwater sample was collected from a depth interval of approximately 1.0 to 5.0 feet below the water table using a direct-push sampling device (Figure 5). After the water sample was collected, a permanent 1-inch-diameter polyvinyl chloride (PVC) monitoring well was installed in the boring and developed. At 5 borehole locations (SB-17 and SB-20 through SB-23), one groundwater sample was collected through the 10-foot screen. At the vertical profile locations (VP-2 through VP-7), discrete groundwater samples were collected every 5 feet below the water table down to approximately 43 feet BGS [the estimated depth of the Hawthorn confining unit]. Although the Hawthorn was not encountered, the vertical profile was terminated at this depth because of the difficulty experienced during the extraction of groundwater samples. Chemical parameters for groundwater samples submitted for laboratory analysis included BTEX and PAHs (Table 3 and Appendix VIII). Refer to Attachment A for complete documentation of the technical approach for collecting groundwater samples during this investigation.

i. Groundwater contamination above MCLs? YES _X_ NO _____

ii. Groundwater contamination above In-Stream Water Quality Standards?

YES _X_ NO _____

If yes, indicate highest concentrations in groundwater along with the locations.

The highest concentration of contamination was reported in the groundwater sample collected from location SB-22 at a depth of 2.0 to 12.0 feet BGS (Table 3a). Benzene was reported at 553 µg/L, and naphthalene was reported at 101 µg/L. The benzene concentration is above its MCL of 5 µg/L and its In-Stream Water Quality Standard (IWQS) of 71.28 µg/L. Naphthalene does not have a regulatory level; however, this concentration exceeds the risk-based screening level of 6.5 µg/L. For evaluation purposes, an ACL of 634.4 µg/L was calculated for benzene and 57.85 µg/L for naphthalene. Based on the ACL, the maximum benzene concentration at this site is below the ACL. However, the maximum naphthalene concentration exceeds its ACL. Please refer to Appendix VI for the ACL calculations.

c. *Surface Water Impacted?* YES _____ NO X

If Yes, indicate concentration(s) of surface water sample(s) taken from the surface water body/bodies impacted.

A total of 8 surface water samples were collected from Lamar Canal during the investigation (Figure 10). Chemical parameters for the surface water samples submitted for laboratory analysis included BTEX and PAHs (Table 8 and Appendix VIII). Only benzene was detected in one surface water sample (SD-5) at a concentration of 0.17 µg/L. This concentration is well below the IWQS of 71.28 µg/L and the MCL of 5.0 µg/L. Refer to Attachment A for complete documentation of the technical approach used to collect surface water samples.

d. *Point of Withdrawal Impacted?* YES _____ NO X N/A _____

If Yes, indicate concentration(s) of water sample(s) taken from withdrawal point(s).

5. Other Geologic/Hydrogeologic Data

a. *Depth to Groundwater:* 2.72 to 4.60 feet BGS *(Table 4: Groundwater Elevations)*

b. *Groundwater Flow Direction:* Southeast *(Figure 6: Potentiometric Surface Map)*

c. *Hydraulic Gradient:* 0.0035 feet/feet

d. *Geophysical Province:* Coastal Plain

e. *Unique geologic/hydrogeological conditions:* The Hawthorn Formation acts as a confining unit between the surficial and Floridan aquifers.

6. Corrective Action Completed or In-Progress (if applicable)

(Table 5: UST System Closure Sampling)
(Figure 7: UST System Closure Sampling)
(Appendix IX: Contaminated Soil Disposal Manifests)

a. *Underground Storage Tank (UST) System Closure:* N/A _____

If applicable, summarize UST system closure activities conducted.

ACE closed UST 117 in-place on September 30, 1996. The UST piping was drained into the tank, and all remaining contents were subsequently removed using a vacuum truck and/or compressor-driven barrel vacuum device. The piping and the tank were then closed in-place by filling with grout.

b. Excavation and Treatment/Disposal of Backfill Materials and Native Soils

Check one: *No UST removal performed* X
Returned to UST excavation ____
Excavated soils treated or disposed off site ____

If soils were excavated, summarize excavation and treatment/disposal activities:

Former UST 117 was closed in place. No soil was excavated during the closure activities.

7. Site Ranking:
Environmental Site Sensitivity Score: *3250*
(Appendix X: Site Ranking Form)

8. Conclusions and Recommendations
Complete applicable section below, one section only

a. No Further Action Required (if applicable) N/A X
(provide justification)

b. Monitoring Only (if applicable) N/A X
(provide justification)

c. CAP-B (if applicable N/A ____
(provide justification)

The vertical extent of soil contamination was determined during the CAP-Part A investigation; however, the horizontal extent of soil contamination was not determined. At location SB-22, the maximum soil concentrations for benzene (1.13 mg/kg), toluene (0.404 mg/kg), ethylbenzene (13.6 mg/kg), and xylene (74.6 mg/kg) were detected. All of these concentrations were found to exceed their respective soil threshold levels (STLs). Therefore, alternate threshold levels (ATLs) were calculated for each compound. Based on the calculated ATLs, the maximum benzene concentration in soil (1.13 mg/kg) was found to exceed its ATL of 0.3867 mg/kg. For toluene and ethylbenzene, their maximum soil concentrations are well below their respective ATLs of 12.210 mg/kg and 61.850 mg/kg. For xylene, the maximum soil concentration is equal to the calculated ATL of 74.6 mg/kg.

The groundwater sample collected at SB-22 was found to contain the highest concentrations of benzene (553 µg/L), toluene (0.86 µg/L), ethylbenzene (86.7 µg/L), xylene (352 µg/L), and naphthalene (101 µg/L). Of these detected compounds, only benzene was found to exceed its respective maximum contaminant level (MCL) of 5.0 µg/L and the In-stream Water Quality Standard (IWQS) of 71.28 µg/L. Naphthalene does not have a regulatory level; however, the maximum concentration exceeds the risk-based screening level of 6.5 µg/L. Alternate concentration levels (ACLs) were calculated for both of these compounds. Based on the calculated ACLs, the maximum benzene concentration in groundwater does not exceed its ACL of 634 µg/L. However, the maximum naphthalene concentration in groundwater exceeded its ACL of 57.85 µg/L. As a conservative measure, a comprehensive round of groundwater sampling is recommended to confirm the site conditions and validate the fate and transport modeling. The vertical extent of groundwater contamination was determined during the CAP-Part A investigation; therefore, further investigation of the vertical extent of groundwater contamination is not warranted.

III. MONITORING ONLY PLAN (if applicable): N/A X

A. Monitoring points

B. Period/Frequency of monitoring and reporting

C. Monitoring Parameters

D. Milestone Schedule

E. Scenarios for site closure or CAP-Part B

IV. SITE INVESTIGATION PLAN (if applicable): N/A _____

(Figure 8: Proposed additional boring/monitoring well location)

A. Proposed Investigation of Horizontal and Vertical Extent of Contamination In:

1. Soil N/A _____

Seven shallow soil borings will be installed as part of the CAP-Part B investigation for the purpose of collecting soil samples only to delineate the horizontal extent of contamination around location SB-7 and SB-22 (Figure 8). In addition, three shallow, 1-inch monitoring wells will be installed that will also require soil sampling for the CAP-Part B investigation. One soil sample will be collected from each boring and analyzed for BTEX, PAHs, and TPH-DRO and TPH-GRO. The soil samples will be collected from the 2.0-foot sample interval with the highest headspace reading or from the sample interval above the soil/water interface if no contamination is observed. It is also recommended that two additional sediment samples be collected from Lamar Canal near former sampling location SD-03 to investigate the area where the storm drain discharges into Lamar Canal. The samples will be analyzed for BTEX, PAHs, and TPH-DRO, and TPH-GRO. Analytical results from the soil samples collected from the CAP-Part B investigation borings located in the area of highest contamination will be used to supercede previous analytical data for the purpose of the site ranking form.

2. Groundwater

a. Free Product N/A__X__

b. Dissolved phase NA_____

Three shallow, 1-inch monitoring wells will be installed along the southern border of the Bulk Fuel Facility outside the fence and south of AST 7003 as part of the CAP-Part B investigation (Figure 8). The proposed locations are: (1) at the location of VP-04, (2) downgradient of MW-22, and (3) cross-gradient of MW-22. These wells will be installed to ensure groundwater monitoring locations exist downgradient of the area of highest soil and groundwater contamination The shallow wells will be screened across the water table with 3 to 5 feet of screen above the water table in order to detect the presence of free product. All monitoring wells will be completed flush with the ground surface.

One groundwater sample will be collected from each of the three new monitoring wells. In addition, one sample will be collected from each of the 31 monitoring wells completed during the CAP-Part A investigation and from each of the six 2-inch-diameter monitoring wells installed by Earth Tech, Inc. (Figure 8). Each groundwater sample will be analyzed for BTEX and PAHs.

3. Surface Water N/A _____

Surface water samples were collected during the CAP-Part A investigation (Tables 8a and 8b and Appendix VIII). The analytical results indicate that the surface water in Lamar Canal is not being contaminated by the Former UST 117 site or the Bulk Fuel Facility. Therefore, additional surface water sampling activities are not recommended for the CAP-Part B investigation.

B. Proposed Investigation of Vadose Zone And Aquifer Characteristics:

During the CAP-Part A investigation, vadose zone characteristics at the Former UST 117, Building 7002 site were determined by collecting an undisturbed (Shelby-tube) soil sample (SB-GT), which was analyzed for geotechnical parameters. The geotechnical results are presented in Appendix VI, Table VI-A. Therefore, further investigation of the vadose zone is not being proposed. However, in-situ permeability tests are recommended to address the aquifer characteristics. Therefore, slug tests are proposed to be conducted in two of the 2-inch-diameter wells located around AST 7009.

V. PUBLIC NOTICE

(Figure 9. Tax Map)
(Appendix XI: Copies of public notification letters & certified return receipts or newspaper notice if approved)

Former UST 117, Building 7002, Facility ID: 9-025113*1, is located within the confines of HAAF, which is part of the Fort Stewart Military Reservation, a federally owned facility. All of the property contiguous to the site is owned by the U.S. Government. The Fort Stewart Directorate of Public Works has complied with the public notice requirements defined by Georgia Department of Natural Resources (GA DNR) guidance by publishing an announcement in the local newspaper over a period of 2 weeks. Publication of this announcement has been completed simultaneously with the submittal of this CAP-Part A report for review by the GA DNR EPD Underground Storage Tank Management Program (USTMP). A copy of the newspaper announcement used for public notification is presented in Appendix XI.

VI. CLAIM FOR REIMBURSEMENT (for GUST Trust Fund sites only): N/A X

(Appendix XII: GUST Trust Fund Reimbursement Application and Claim for reimbursement)

HAAF is a federally owned facility and has funded the investigation for the Former UST 117, Building 7002 site, Facility ID: 9-025113*1, using Environmental Restoration Account funds. Application for Georgia Underground Storage Tank Trust Fund reimbursement is not being pursued at this time.

APPENDIX II

REPORT TABLES

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Former UST 117, Building 7002
Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

TABLE 1. FREE PRODUCT REMOVAL

Monitoring Well Number: NA				
Date of Measurement	Groundwater Elev. (ft MSL)	Product Thickness (ft)	Corrected Water Elev. (ft MSL)	Product Removed (gal)
			TOTAL	NONE[1]

NOTE: MSL - mean sea level.
[1]Free Product was not found.

Former UST 117, Building 7002
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TABLE 2a: SOIL ANALYTICAL RESULTS[1]
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX[4] (mg/kg)	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)
SB-01	BF0111	4.7 to 6.7	12/01/99	0.0006 J	0.0029 =	0.0010 U	0.0029 U	0.0035	2.0 U	0.124 U
SB-02	BF0211	6.0 to 8.0	12/01/99	0.0011 =	0.001 U	0.001 U	0.003 U	0.0011	1.4 U	0.122 U
SB-03	BF0311	6.0 to 8.0	12/01/99	0.0011 U	0.0025 =	0.0011 U	0.0033 U	0.0025	1.2 U	0.119 U
SB-04	BF0411	8.0 to 9.1	12/03/99	0.001 U	0.0010 J	0.001 U	0.003 U	0.0010	2.7 UJ	0.122 U
SB-07	BF0711[5]	1.5 to 3.0	12/02/99	**<1.350**	**<1.350**	**<1.350**	<4.040	<8.09	74.0	2.33
SB-09	BF0911[5]	0.55 to 2.0	12/03/99	**<0.110**	<0.110	<0.110	<0.331	<0.661	11.2 J	27.2 =
SB-10	BF1011[5]	2.0 to 3.5	12/02/99	**<0.164**	<0.164	0.333 =	0.400 J	<1.061	136 =	290 =
SB-11	BF1111	1.0 to 3.0	12/02/99	0.001 J	0.001 J	0.0014 U	0.0044 U	0.002	0.77 U	0.112 U
SB-12	BF1211	0.5 to 2.5	12/04/99	0.0005 J	0.0007 J	0.0008 J	0.001 J	0.003	0.51 UJ	0.197 =
SB-13	BF1311	7.0 to 8.9	11/30/99	0.0006 J	0.001 J	0.0011 U	0.0033 U	0.0016	1.1 U	0.07 =
SB-14	BF1411	0.5 to 2.5	12/01/99	0.0045 =	0.0009 J	0.0008 J	0.0006 J	0.0068	6.5 =	0.592 =
SB-17	BF1711[5]	2.0 to 4.0	12/03/99	**<0.105**	<0.105	**0.792** =	5.9 =	6.902	87.4 =	223.0 =
SB-18	BF1811	4.1 to 6.1	12/01/99	0.0011 U	0.0009 J	0.0011 U	0.0034 U	0.009	1.8 U	0.121 U
Soil Threshold Levels[2]				0.005	0.400	0.370	20.0	NRC	NRC	NRC
Alternate Threshold Levels[3]				0.387	12.210	61.850	74.6	NRC	NRC	NRC

NOTE: [1]Only the samples with detected BTEX concentrations are listed on the table. A complete summary of the soil analytical data is provided on Table V-A, Appendix V.
[2]Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 1).
[3]Refer to Appendix VI for the Alternate Threshold Level calculations.
[4]The total value reported represents the sum of all detected compounds. A total is not reported if all the compounds are below the laboratory detection limits.
[5]Volatile reporting levels were not achieved in the sample due to the inherently high concentrations of petroleum products (TPH-DRO/TPH-GRO) in the sample. Therefore, the concentrations are reported as less than the elevated detection limits instead of as non-detects.
[6]Analytical data from the duplicate sample collected from SB-20 were used for evaluation purposes because the volatile reporting levels for the primary sample were not achieved.

BDL - Below detection limit; volatile organic compounds were not detected above the laboratory detection limit.
BGS - Below ground surface.
BTEX - Benzene, toluene, ethylbenzene, and xylene.
NRC - No regulatory criteria.
TPH-DRO - Total petroleum hydrocarbon–diesel-range organics.
TPH-GRO - Total petroleum hydrocarbon–gasoline-range organics.

Laboratory Qualifiers
U - Indicates the compound was not detected at the concentration reported.
J - Indicates the value for the compound is an estimated value.
UJ - Indicates the compound was not detected at the reported concentration and the concentration was estimated.
= - Indicates that the compound was detected at the concentration reported.
Bold values exceed the applicable standard.

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TABLE 2a: SOIL ANALYTICAL RESULTS[1] (continued)
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX[4] (mg/kg)	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)
SB-19	BF1911	6.0 to 8.0	11/30/99	0.0006 J	0.0044 =	0.001 U	0.003 U	0.005	1.6 U	0.120 U
SB-20	BF2013[6]	2.0 to 4.0	12/05/99	**0.0382 J**	0.100 U	**0.645 =**	4.480 =	5.1632	425 =	2450 =
SB-22	BF2211	0.0 to 2.0	12/05/99	**1.130 =**	**0.404 =**	**13.6 J**	**74.6 J**	89.734	3420 =	4520 J
SB-23	BF2311	2.0 to 4.0	12/04/99	0.001 U	0.001 U	0.001 U	0.003 U	BDL	2.1 UJ	0.132 =
SB-24	BF2411	4.0 to 6.0	12/02/99	0.008 J	0.0054 =	0.0012 U	0.0036 U	0.0134	7.7 J	0.180 =
SB-25	BF2511	5.6 to 7.6	12/02/99	0.0009 J	0.0025 =	0.0012 U	0.0035 U	0.0034	1.4 U	0.305 =
SB-27	BF2711	5.0 to 7.0	01/11/99	0.0012 U	0.0011 J	0.0012 U	0.0037 U	BDL	2.0 U	0.211 =
SB-28	BF2811	2.0 to 2.8	01/11/99	0.0014 U	0.0005 J	0.0009 J	0.0043 U	0.0014	2.5 U	1.690 =
SB-29	BF2911	4.0 to 5.7	01/11/99	0.0009 J	0.0015 =	0.0006 J	0.279 =	0.282	2.6 U	0.871 =
SB-30	BF3011	4.0 to 5.9	01/11/99	0.0011 U	0.0011 U	0.0011 U	0.0033 U	BDL	1.9 U	0.0939 J
SB-31	BF3111	4.0 to 5.7	01/11/99	0.0015 U	0.0015 U	0.0015 U	0.0044 U	BDL	1.5 U	0.297 =
Soil Threshold Levels[2]				0.005	0.400	0.370	20.0	NRC	NRC	NRC
Alternate Threshold Levels[3]				0.387	12.210	61.850	74.6	NRC	NRC	NRC

NOTE: [1]Only the samples with detected BTEX concentrations are listed on the table. A complete summary of the soil analytical data is provided on Table V-A, Appendix V.
[2]Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 1).
[3]Refer to Appendix VI for the Alternate Threshold Level calculations.
[4]The total value reported represents the sum of all detected compounds. A total is not reported if all the compounds are below the laboratory detection limits.
[5]Volatile reporting levels were not achieved in the sample due to the inherently high concentrations of petroleum products (TPH-DRO/TPH-GRO) in the sample. Therefore, the concentrations are reported as less than the elevated detection limits instead of as non-detects.
[6]Analytical data from the duplicate sample collected from SB-20 were used for evaluation purposes because the volatile reporting levels for the primary sample were not achieved.

BDL - Below detection limit; volatile organic compounds were not detected above the laboratory detection limit.
BGS - Below ground surface.
BTEX - Benzene, toluene, ethylbenzene, and xylene.
NRC - No regulatory criteria.
TPH-DRO - Total petroleum hydrocarbon–diesel-range organics.
TPH-GRO - Total petroleum hydrocarbon–gasoline-range organics

Laboratory Qualifiers
U - Indicates the compound was not detected at the concentration reported.
J - Indicates the value for the compound is an estimated value.
UJ - Indicates the compound was not detected at the reported concentration and the concentration was estimated.
= - Indicates that the compound was detected at the concentration reported.
Bold values exceed the applicable standard.

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TABLE 2b: SOIL ANALYTICAL RESULTS[1]
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (mg/kg)				Total PAHs[3] (mg/kg)
				Benzo(b)fluoranthene	Benzo(k)fluoranthene	Fluoranthene	Naphthalene	
SB-07	BF0711	1.5 to 3.0	12/02/99	BDL	BDL	BDL	0.0841 =	0.0841
SB-10	BF1011	2.0 to 3.5	12/02/99	BDL	BDL	BDL	0.268 =	0.268
SB-15	BF1511	1.5 to 3.5	12/02/99	0.0404 =	0.136 =	BDL	BDL	0.176
SB-17	BF1711	2.0 to 4.0	12/03/99	BDL	BDL	BDL	0.350=	0.350
SB-20	BF2013[4]	2.0 to 4.0	12/05/99	BDL	BDL	BDL	0.681 =	0.681
SB-22	BF2211	0.0 to 2.0	12/05/99	BDL	BDL	0.154 =	14.2 =	14.354
Applicable Standards[2]				0.820	1.6	NA	NA	NRC

NOTES: [1]Only the samples with detected PAH concentrations are listed on the table. A complete summary of the soil analytical data is provided on Table V-A, Appendix V.
[2]Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 1).
[3]The total value reported represents the sum of all detected compounds.
[4]Analytical data from the duplicate sample collected from SB-20 were used for evaluation purposes because the volatile reporting levels for the primary sample were not achieved.

BDL - Below detection limit; PAH compounds were not detected above the laboratory detection limit.
BGS - Below ground surface.
NA - Not applicable; the health-based threshold level exceeds the expected soil concentration under free-product conditions.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.

Laboratory Qualifiers
= - Indicates that the compound was detected at the concentration reported.

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TABLE 3a: GROUNDWATER ANALYTICAL RESULTS[1]
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX[4] (µg/L)
MW-04	BF0412	8.5 to 12.5	12/03/99	1.0 U	0.33 J	1.0 U	3.0 U	0.33
MW-05	BF0512	8.0 to 12.0	12/03/99	1.0 U	0.51 J	1.0 U	3.0 U	0.51
MW-07	BF0712	6.5 to 10.5	12/02/99	1.0 U	1.0 U	4.4 =	2.1 J	6.5
MW-09	BF0912	8.5 to 12.5	12/03/99	1.0 UJ	0.42 J	1.4 =	3.0 U	1.82
MW-10	BF1012	6.0 to 10.0	12/02/99	4.8 =	0.53 J	9.5 =	3.8 =	18.63
MW-12	BF1212	8.0 to 12.0	12/04/99	1.0 UJ	0.36 J	1.0 UJ	3.0 UJ	0.36
MW-15	BF1512	6.0 to 10.0	12/02/99	1.0 U	1.0 U	1.0 U	1.3 J	1.3
MW-17	BF1712	3.04 to 12.50	12/08/99	0.44 J	1.0 U	2.0 =	14.2 =	16.64
MW-20	BF2012	2.2 to 11.70	12/07/99	0.60 J	1.0 U	3.1 =	21.0 =	24.70
MW-21	BF2112	3.4 to 12.9	12/07/99	**130 =**	2.8 =	14.7 =	710 =	857.50
MW-22	BF2212	2.43 to 11.9	12/07/99	**553 =**	0.86 J	86.7 =	352 =	992.56
MW-23	BF2312	2.73 to 12.19	12/07/99	1.1 =	1.0 U	0.48 J	1.4 J	2.98
MW-29	BF2912	5.7 to 10.7	01/11/99	1.0 UJ	0.40 J	1.0 UJ	376 J	376.4
Maximum Contaminant Level[2]				5	1,000	700	10,000	NRC
Alternate Concentration Level[3]				634.4	NA	NA	NA	NRC

NOTE: [1]Only the samples with detected BTEX concentrations are listed on the table. A complete summary of the groundwater analytical data is provided on Table VIII-A, Appendix VIII.
[2]U.S. Environmental Protection Agency maximum contaminant level.
[3]Refer to Appendix VI for the Alternate Concentration Level (ACL) calculations.
[4]The total value reported represents the sum of all detected compounds.

BGS - Below ground surface.
BTEX - Benzene, toluene, ethylbenzene, and xylene.
NA - Not applicable; ACL not calculated.
NRC - No regulatory criteria.

Laboratory Qualifiers
U - Indicates the compound was not detected at the concentration reported.
J - Indicates the value for the compound is an estimated value.
UJ - Indicates the compound was not detected at the reported concentration and the concentration was estimated.
= - Indicates the compound was detected at the concentration reported.
Bold values exceed the applicable standard.

Former UST 117, Building 7002
Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

TABLE 3a: GROUNDWATER ANALYTICAL RESULTS[1] (continued)
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX[4] (µg/L)
VP-2	BFV212	12.0 to 17.0	12/04/99	1.0 U	0.42 J	1.0 U	3.0 U	0.42
VP-2	BFV232	22.0 to 27.0	12/04/99	1.0 U	0.30 J	1.0 U	3.0 U	0.30
VP-2	BFV242	27.0 to 32.0	12/04/99	0.22 J	0.40 J	1.0 U	3.0 U	0.62
VP-2	BFV252	32.0 to 37.0	12/04/99	1.0 U	0.36 J	1.0 U	3.0 U	0.36
VP-2	BFV262	37.0 to 42.0	12/04/99	1.0 U	0.35 J	1.0 U	3.0 U	0.35
VP-3	BFV312	12.0 to 17.0	12/05/99	1.0 U	0.33 J	1.0 U	3.0 U	0.33
VP-3	BFV322	17.0 to 22.0	12/05/99	1.0 U	0.80 J	1.0 U	3.0 U	0.80
VP-3	BFV332	22.0 to 27.0	12/05/99	1.0 U	0.31 J	1.0 U	3.0 U	0.31
VP-3	BFV342	27.0 to 32.0	12/05/99	1.0 U	0.37 J	1.0 U	3.0 U	0.37
VP-3	BFV352	32.0 to 37.0	12/05/99	1.0 UJ	0.28 J	1.0 UJ	3.0 UJ	0.28
VP-3	BFV362	37.0 to 42.0	12/05/99	1.0 UJ	0.28 J	1.0 UJ	3.0 UJ	0.28
VP-4	BFV412	13.0 to 18.0	12/04/99	**81.8 =**	0.42 J	1.0 U	31.5 =	113.72
VP-4	BFV422	18.0 to 23.0	12/04/99	1.4 =	0.44 J	1.0 U	0.36 J	2.20
VP-4	BFV432	23.0 to 28.0	12/04/99	0.60 J	0.70 J	0.22 J	3.0 U	1.52
VP-4	BFV442	28.0 to 33.0	12/04/99	0.29 J	0.42 J	0.16 J	3.0 UJ	0.87
VP-4	BFV452	33.0 to 38.0	12/04/99	0.24 J	1.0 U	1.0 U	3.0 U	0.24
VP-4	BFV462	38.0 to 43.0	12/04/99	0.21 J	0.79 J	1.0 U	3.0 U	1.0
VP-5	BFV532	22.5 to 27.5	12/02/99	1.0 UJ	0.51 J	1.0 UJ	3.0 UJ	0.51
VP-5	BFV552	32.5 to 37.5	12/02/99	1.0 U	0.58 J	1.0 U	3.0 U	0.58
VP-6	BFV612	13.0 to 18.0	12/03/99	4.4 J	0.56 J	0.44 J	2.7 J	8.1
VP-6	BFV622	18.0 to 23.0	12/03/99	0.26 J	0.46 J	0.11 J	3.0 UJ	0.83
VP-6	BFV632	23.0 to 28.0	12/03/99	1.0 U	0.43 J	1.0 UJ	3.0 UJ	0.43
VP-6	BFV642	28.0 to 33.0	12/03/99	1.0 UJ	0.45 J	1.0 UJ	3.0 UJ	0.45
VP-6	BFV652	33.0 to 38.0	12/03/99	1.0 UJ	0.47 J	0.16 J	3.0 UJ	0.63
VP-6	BFV662	38.0 to 43.0	12/03/99	1.0 UJ	0.44 J	0.15 J	3.0 UJ	0.59
VP-7	BFV712	12.0 to 17.0	12/04/99	1.0 UJ	0.60 J	0.10 J	0.33 J	1.03
VP-7	BFV722	17.0 to 22.0	12/04/99	1.0 UJ	0.35 J	1.0 UJ	3.0 UJ	0.35
VP-7	BFV732	22.0 to 27.0	12/04/99	0.23 J	0.70 J	0.12 J	3.0 UJ	1.05
VP-7	BFV742	27.0 to 32.0	12/04/99	0.31 J	0.58 J	1.0 UJ	3.0 UJ	0.89
VP-7	BFV752	32.0 to 37.0	12/04/99	0.25 J	0.74 J	0.12 J	3.0 UJ	1.11
VP-7	BFV762	37.0 to 42.0	12/04/99	1.0 U	0.56 J	0.15 J	3.0 U	0.71
Maximum Contaminant Level[2]				5	1,000	700	10,000	NRC
Alternate Concentration Level[3]				634.4	NA	NA	NA	NRC

NOTE: [1]Only the samples with detected BTEX concentrations are listed on the table. A complete summary of the groundwater analytical data is provided on Table VIII-A, Appendix VIII.
[2]U.S. Environmental Protection Agency maximum contaminant level.
[3]Refer to Appendix VI for the Alternate Concentration Level (ACL) calculations.
[4]The total value reported represents the sum of all detected compounds.

BGS - Below ground surface.
BTEX - Benzene, toluene, ethylbenzene, and xylene.
NA - Not applicable; ACL not calculated.
NRC - No regulatory criteria.

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

Former UST 117, Building 7002
Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

TABLE 3b: GROUNDWATER ANALYTICAL RESULTS[1]
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (µg/L)				Total PAHs[5] (µg/L)
				Naphthalene	BDL[4]	BDL[4]	BDL[4]	
MW-07	BF0712	6.5 to 10.5	12/02/99	5.8 =				5.8
MW-10	BF1012	6.0 to 10.0	12/02/99	41.20=				41.20
MW-20	BF2012	2.2 to 11.70	12/07/99	2.0 =				2.0
MW-21	BF2112	3.4 to 12.9	12/07/99	18.30 =				18.30
MW-22	BF2212	2.43 to 11.93	12/07/99	101 =				101.0
Maximum Contaminant Level[2]				NRC				NRC
Alternate Concentration Level[3]				57.85				NRC

NOTE: [1]Only the samples with detected PAH concentrations are listed on the table. A complete summary of the groundwater analytical data is provided on Table VIII-A, Appendix VIII.
[2]U.S. Environmental Protection Agency maximum contaminant level.
[3]Refer to Appendix VI for the Alternate Concentration Level calculations.
[4]BDL - Below detection limit; PAH compounds were not detected above the laboratory detection limit. Refer to Appendix VIII, Table VIII-A, for complete list of PAH results.
[5]The total value reported represents the sum of all detected compounds.

BGS - Below ground surface.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.

Laboratory Qualifiers
= - Indicates the compound was detected at the concentration reported.

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Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

TABLE 4: GROUNDWATER ELEVATIONS

Well Number	Date Measured	Ground Surface Elev. (ft MSL)	Top of Casing Elev. (ft MSL)	Depth of Screened Interval (ft BGS)	Depth of Free Product (ft BTOC)	Water Depth (ft BTOC)	Product Thickness (ft)	Specific Gravity Adjustment	Corrected Groundwater Elev. (ft MSL)
MW-1	01-14-00	15.8	15.47	3.5 to 12.5	N/A	4.05	N/A	N/A	11.42
MW-2	01-14-00	16.5	16.24	3.5 to 13.0	N/A	4.04	N/A	N/A	12.20
MW-3	01-14-00	16.7	16.39	3.6 to 13.1	N/A	3.76	N/A	N/A	12.63
MW-4	01-14-00	17.3	17.11	2.8 to 12.3	N/A	4.79	N/A	N/A	12.32
MW-5	01-14-00	17.2	16.99	2.9 to 12.4	N/A	4.59	N/A	N/A	12.40
MW-6	01-14-00	17.2	16.8	2.7 to 12.2	N/A	4.54	N/A	N/A	12.26
MW-7	01-14-00	16.9	16.74	2.9 to 12.4	N/A	4.46	N/A	N/A	12.28
MW-8	01-14-00	16.8	16.4	2.3 to 11.8	N/A	3.86	N/A	N/A	12.54
MW-9	01-14-00	16.8	16.6	2.9 to 12.4	N/A	4.67	N/A	N/A	11.93
MW-10	01-14-00	15.6	15.33	2.3 to 11.8	N/A	3.70	N/A	N/A	11.63
MW-11	01-14-00	15.9	15.42	2.3 to 11.8	N/A	3.84	N/A	N/A	11.58
MW-12	01-14-00	16.6	16.35	3.0 to 12.5	N/A	4.65	N/A	N/A	11.70
MW-13	01-14-00	14.0	13.72	2.3 to 11.8	N/A	3.60	N/A	N/A	10.12
MW-14	01-14-00	15.5	15.26	2.8 to 12.3	N/A	4.30	N/A	N/A	10.96
MW-15	01-14-00	15.3	15.01	2.5 to 12.0	N/A	3.63	N/A	N/A	11.38
MW-16	01-14-00	12.8	12.61	2.7 to 12.2	N/A	4.16	N/A	N/A	8.45
MW-17	01-14-00	13.5	13.15	3.0 to 12.5	N/A	3.07	N/A	N/A	10.08
MW-18	01-14-00	13.4	12.99	3.4 to 12.9	N/A	3.40	N/A	N/A	9.59
MW-19	01-14-00	13.8	13.88	2.0 to 11.5	N/A	3.90	N/A	N/A	9.98
MW-20	01-14-00	15.0	14.79	2.2 to 11.7	N/A	3.74	N/A	N/A	11.05
MW-21	01-14-00	14.6	14.34	3.4 to 12.9	N/A	3.45	N/A	N/A	10.89
MW-22	01-14-00	14.9	14.6	2.4 to 11.9	N/A	3.47	N/A	N/A	11.13
MW-23	01-14-00	14.9	14.74	2.7 to 12.2	N/A	3.59	N/A	N/A	11.15
MW-24	01-14-00	14.1	14.0	3.2 to 12.7	N/A	2.95	N/A	N/A	11.05
MW-25	01-14-00	13.8	13.6	3.6 to 13.1	N/A	3.49	N/A	N/A	10.11
MW-26	01-14-00	13.8	13.62	2.4 to 11.9	N/A	2.26	N/A	N/A	11.36
MW-27	01-14-00	14.9	17.9	2.5 to 12.0	N/A	6.70	N/A	N/A	11.20
MW-28	01-14-00	15.3	15.49	2.0 to 11.5	N/A	4.38	N/A	N/A	11.11
MW-29	01-14-00	14.7	14.49	2.0 to 11.5	N/A	3.33	N/A	N/A	11.16
MW-30	01-14-00	14.6	14.19	1.9 to 11.4	N/A	3.31	N/A	N/A	10.88
MW-31	01-14-00	14.8	14.46	1.5 to 11.0	N/A	3.59	N/A	N/A	10.87

NOTE: BGS - Below ground surface.
BTOC - Below top of casing.
MSL - Mean sea level.
N/A - Not applicable.

Former UST 117, Building 7002
Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

TABLE 5a: UST SYSTEM CLOSURE[1] - SOIL ANALYTICAL RESULTS
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Depth (ft BGS)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH (mg/kg)
8102-TK117-S1	5.0	09/30/96	**0.013**	0.0026	0.0065	0.0052	0.0273	163
Applicable Standards[2]			0.005	0.400	0.370	20.0	NRC	NRC

TABLE 5b: UST SYSTEM CLOSURE[1] - SOIL ANALYTICAL RESULTS
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (mg/kg)				Total PAHs (mg/kg)
			BDL	BDL	BDL	BDL	
8102-TK117-S1	5.0	09/30/96					BDL
Applicable Standards[2]							

NOTE: [1]Underground storage tank system closure performed by Anderson Columbia Environmental, Inc. (1997).
[2]Georgia Department of Natural Resources Applicable Soil Threshold Levels (i.e., Table A, column 1).

BDL - Below detection limit; PAH compounds were not detected above the laboratory detection limit.
BGS - Below ground surface.
BTEX - Benzene, toluene, ethylbenzene, and xylene.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
TPH - Total petroleum hydrocarbon.

Bold values exceed the applicable standard.

Former UST 117, Building 7002
Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

TABLE 6a: UST SYSTEM CLOSURE[1] - GROUNDWATER ANALYTICAL RESULTS
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Depth (ft BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
N/A							
Applicable Standards[2]			5	1,000	700	10,000	NRC

TABLE 6b: UST SYSTEM CLOSURE[1] - GROUNDWATER ANALYTICAL RESULTS
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (µg/L)			Total PAHs (µg/L)
N/A						
Applicable Standards[2]						

NOTE: [1]Underground storage tank system closure performed by Anderson Columbia Environmental, Inc. (1997).
[2]U.S. Environmental Protection Agency maximum contaminant levels.

BGS - Below ground surface.
BTEX - Benzene, toluene, ethylbenzene, and xylene.
N/A - Not applicable. Groundwater sample not collected.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.

Former UST 117, Building 7002
Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

TABLE 7a: SEDIMENT ANALYTICAL RESULTS[1]
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX[3] (mg/kg)	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)
SD-2	BF0218	0.0 to 0.5	12/06/99	0.0019 U	0.0123 =	0.0019 U	0.0057 U	0.123	9.2 =	0.184 UJ
SD-3	BF0318[4]	0.0 to 0.5	12/06/99	**<0.154**	**2.810** =	<0.154	<0.463	<3.581	5.4 UJ	0.173 U
SD-4	BF0418	0.0 to 0.5	12/06/99	0.0014 U	0.0402 J	0.0014 U	0.0042 U	0.0402	3.0 UJ	0.136 U
SD-5	BF0518	0.0 to 0.5	12/06/99	0.0012 UJ	0.0043 =	0.0012 U	0.0036 U	0.0043	5.4 UJ	0.134 U
SD-6	BF 0618	0.0 to 0.5	12/07/99	0.0016U	0.00042 J	0.0016 U	0.0048 U	0.00042	9.2 J	0.232 =
SD-8	BF0818	0.0 to 0.5	12/07/99	0.0012 UJ	0.00036 J	0.0012 UJ	0.0037 UJ	0.00036	1.5 UJ	0.160 =
SD-9	BF0918	0.0 to 0.5	12/07/99	0.0013 U	0.00058 J	0.0013 U	0.0038 U	0.00058	3.6 UJ	0.137 U
Applicable Standards[2]				0.005	0.400	0.370	20	NRC	NRC	NRC

NOTE: [1]Only the samples with detected concentrations are listed on the table. A complete summary of the sediment analytical data is provided on Table V-B, Appendix V.
[2]Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 1).
[3]The total value reported represents the sum of all detected compounds.
[4]Volatile detection limits were not achieved in the sample due to the elevated toluene concentration. Therefore, the volatile concentrations are reported as less than the elevated detection limit instead of as non-detects.

BGS - Below ground surface.
BTEX - Benzene, toluene, ethylbenzene, and xylene.
NRC - No regulatory criteria.
TPH-DRO - Total petroleum hydrocarbon–diesel-range organics.
TPH-GRO - Total petroleum hydrocarbon–gasoline-range organics.

Laboratory Qualifiers
U - Indicates the compound was not detected at the concentration reported.
J - Indicates the value for the compound is an estimated value.
UJ - Indicates the compound was not detected at the reported concentration and the concentration was estimated.
= - Indicates the compound was detected at the concentration reported.
Bold values exceed the applicable standard.

TABLE 7b: SEDIMENT ANALYTICAL RESULTS[1]
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (mg/kg)								Total PAHs[3] (mg/kg)
				Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Chrysene	Fluoran-thene	Fluorene	Phenan-threne	Pyrene	
SD-2	BF0218	0.0 to 0.5	12/06/99	0.0612 U	0.0612 U	0.0612 U	0.0612 U	0.0612 U	0.107 =	0.0612 U	0.0941 =	0.1111
SD-9	BF0918	0.0 to 0.5	12/07/99	0.336 =	0.282 =	0.474 =	0.422 =	0.645 =	0.0438 U	0.0625 =	0.736 =	2.9575
Applicable Standards[2]				NA	0.660	0.820	0.660	NA	NA	NA	NA	NRC

NOTE: [1]Only the samples with detected PAH concentrations are listed on the table. A complete summary of the sediment analytical data is provided on Table V-B, Appendix V.
[2]Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 1).
[3]The total value reported represents the sum of all detected compounds.

BGS - Below ground surface.
NA - Not applicable; the health-based threshold level exceeds the expected soil concentration under free-product conditions.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.

Laboratory Qualifiers
U - Indicates the compound was not detected at the concentration reported.
= - Indicates the compound was detected at the concentration reported.

Former UST 117, Building 7002
Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

TABLE 8a: SURFACE WATER ANALYTICAL RESULTS[1]
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX[3] (µg/L)
SD-02	BF0217	NA	12/06/99	0.17 J	1.0 U	1.0 U	3.0 U	0.17 J
Applicable Standards[2]				71.28	200,000	28,718	NRC	NRC

TABLE 8b: SURFACE WATER ANALYTICAL RESULTS[1]
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (µg/L)				Total PAHs[3] (µg/L)
				BDL[4]	BDL[4]	BDL[4]	BDL[4]	
								BDL[4]
Applicable Standards[2]								

NOTE: [1]Only the samples with detected concentrations are listed on the table. A complete summary of surface water analytical data is provided on Table VIII-B, Appendix VIII.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).
[3]The total value reported represents the sum of all detected compounds.
[4]BDL - Below detection limit; PAH compounds were not detected above the laboratory detection limit. Refer to Appendix VIII, Table VIII-B, for complete list of PAH results.

BGS - Below ground surface.
BTEX - Benzene, toluene, ethylbenzene, and xylene.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.

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

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APPENDIX III

WATER RESOURCES SURVEY DOCUMENTATION

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WATER RESOURCES SURVEY DOCUMENTATION

1.0 LOCAL WATER RESOURCES

As required by the Georgia Department of Natural Resources (GA DNR) Underground Storage Tank (UST) Corrective Action Plan (CAP)-Part A Guidance (GA DNR 1998b), a water resource survey documenting information for public and non-public water supply wells, surface water bodies, underground utilities, and potential receptors was conducted at Hunter Army Airfield (HAAF) in April, May, and June 1998 for previous Former UST CAP-Part A Investigations and in May 1999 for this CAP-Part A Investigation. The information presented in this section provides the supporting documentation for Section II.D.3 of the CAP-Part A form.

1.1 WATER SUPPLY WELL SURVEY

The water supply well survey was conducted using the following GA DNR guidelines/requirements:

- HAAF is located in an area of average or higher groundwater pollution susceptibility (GA DNR 1976).
- Locate all public supply wells, as defined by the GA DNR, that exist within 2 miles of the investigation sites.
- Locate all non-public supply wells that exist within 0.5 miles of the investigation sites.
- Locate all supply wells nearest the investigation sites.
- Locate all wells downgradient of the investigation sites.

The required survey was accomplished by obtaining information from the Fort Stewart Directorate of Public Works (FS DPW) and the City of Savannah Bureau of Water Operations, performing a field survey, and conducting a U.S. Geological Survey (USGS) database search. A summary of the information obtained during the survey is provided in the following sections.

1.1.1 Fort Stewart Directorate of Public Works Survey Summary

According to the FS DPW, nine water supply wells are located within the confines of the HAAF area (Figures 3a and 3b, Appendix I). These wells have the potential to provide up to 3,890 gallons per minute (gpm) of water to occupants of the HAAF installation. The FS DPW was unable to provide documentation listing the companies responsible for well installation, and drillers' logs showing as-built information and subsurface geologic data. Information concerning such documentation was requested from several water well drilling companies in the Chatham County area; however, data were procured with very limited success. The FS DPW provided well locations, pump rates, treatment methods, casing depths, and total depths for eight of the nine wells located at HAAF (Table III-A). However, documentation of subsurface geology based on HAAF drill logs remains extremely limited. Therefore, other references providing deep-well

information were used to document the subsurface geology and aquifer characteristics beneath the HAAF area. Refer to Appendix X, Section 1.0, for further geologic discussion.

Wells 1 and 2, both public water supply wells located in the cantonment area of HAAF, constitute the main water supply system at the HAAF installation. Well 1, located at Building 711 on the corner of Moore Road and Douglas Street, is a 12-inch-diameter well with a 100-hp turbine pump serving a 100,000-gallon elevated storage tank (Tank 1) through 10-inch lines. Water from Well 1 is injected with hydrofluosilic acid and chlorine gas solution at the well house. Well 2, located at Building 1205 on the corner of Neal Street and Strachan Road, is a 12-inch-diameter well with a 100-hp turbine pump serving a 200,000-gallon elevated tank (Tank 2) through 10-inch lines. Water from Well 2 is also injected with hydrofluosilic acid and chlorine gas solution at the well house. Wells 1 and 2 provide water to a 500,000-gallon elevated storage tank (Tank 3) located on Middleground Road behind noncommissioned officer (NCO) family housing. This tank provides potable water to 694 service connections, which are used by an average of at least 5,000 individuals year-round.

Wells 3, 4A, and 7 are public supply wells located outside the cantonment area of HAAF. Well 3, located at Building 8455, is a 4.0-inch-diameter well with a 1.0-hp electric submersible pump serving a 1,000-gallon hydropneumatic storage tank through 1.5-inch galvanized steel lines. Water from Well 3 is treated with calcium hypochlorite solution and is consumed by approximately 25 people during daytime hours, year-round. Well 4A, located at Building 8581 at the 117th Air National Guard Facility, is a 4.0-inch-diameter well. Pumpage is accomplished with a 0.75-hp turbine pump with 80 gpm capacity. Well 4A provides water for approximately 50 people per day year-round. Well 7 is located at Building 8703 on the Forest River, west of Rio Road. Well 7 is a 4.0-inch well with a 3.0-hp submersible pump serving a 5,000-gallon hydropneumatic tank through 2.0-inch galvanized steel lines. Well 7 serves approximately 500 people on a part-time basis. Sanitary protection for Wells 3, 4A, and 7 is provided by a pump motor block, concrete slab, sealed well head, and screened casing vent.

Based on the GA DNR criteria of serving potable water to less than 25 occupants per day and having less than 15 service connections, wells 5, 8, and 9 are classified as non-public supply wells (Figure 3b, Appendix I). Pump rates, casing depths, bore depths, treatment methods, and storage tank information are provided in Table III-A.

Well 10 is a non-potable water source (Figure 3b, Appendix I). Water from Well 10 is used for the cleaning of military equipment at a wash-rack facility. Additional information including capacity, borehole depth, and casing depth is not available.

1.1.2 City of Savannah Bureau of Water Operations Survey Summary

The locations of supply wells found outside the boundary of HAAF that are within 2 miles of one or more of the CAP-Part A investigation sites are shown on Figure 3b, Appendix I. These wells include 25, 15, 27, 14, 23, 6, and 9. Data concerning casing depths, borehole depths, casing sizes, and capacities are listed in Table III-B. The City of Savannah Bureau of Water Operations was unable to provide drill logs or as-built well information.

1.1.3 U.S. Geological Survey Summary

Chatham County encompasses three watersheds: Lower Savannah, Lower Ogeechee, and Ogeechee Coastal (EPA 1998). The HAAF installation is located within the Ogeechee Coastal watershed which covers 1,477 square miles; includes 18 rivers and streams, including the Little Ogeechee River which borders the south western portion of HAAF; and contains land usage areas

classified as 2 percent urban, 67 percent forest, and 24 percent agricultural. Water use survey data for the watershed estimate that the area has a total population of 200,000 with domestic, industrial, and commercial water supplies mainly derived from groundwater sources (USGS 1990). Domestic water supply data show that a population of 144,000 receives public-supplied water from groundwater sources, 48,000 receive water from self-supplied groundwater sources, and 8,000 from public-supplied surface water sources. The water use survey also reports that two industrial facilities within the watershed are self-supplied with water obtained from groundwater sources. The survey also notes that a total of five wastewater facilities are located in the area with three reported as public wastewater treatment facilities.

1.2 SURFACE WATER BODIES

Surface water(s) in the State of Georgia, as defined by *Rules and Regulations for Water Quality Control, Chapter 391-3-6* (GA DNR 1998a), shall mean any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs producing 100,000 gallons per day, and all other bodies of surface water, natural or artificial, lying within or forming a part of the boundaries of the State which are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation The surface water body survey was conducted using the following GA DNR guidelines/requirements:

- surface water bodies that exist within 1 mile of the investigation sites,
- all surface water bodies nearest the investigation sites if these bodies lie outside the 1-mile radius of concern,
- all surface water bodies downgradient of the investigation sites, and
- the storm and sanitary sewers adjacent to investigation sites.

The locations of surface water bodies at HAAF were obtained from USGS aerial photographs, USGS topographic maps, and from maps provided by the FS DPW. Storm and sanitary sewer location maps, storm sewer invert elevations, and storm sewer and culvert construction details were provided by the FS DPW and the City of Savannah Bureau of Water and Sewer Planning (1998).

Surface water bodies at HAAF include Hallstrom Lake, Lamar Canal, Buckhalter Canal, Springfield Canal, Pond 29 located northwest of Buildings 336 and 232, and an unnamed pond located along the southeast boundary of the HAAF installation (Figure 3b, Appendix I). Several unnamed drainage ditches exist throughout HAAF. Most of these ditches drain southwest into the Little Ogeechee River, which is part of the Lower Ogeechee watershed. The remaining drainage ditches located on the east side of the HAAF installation flow east and eventually drain into the Vernon River, which is located southeast of the HAAF installation.

Surface water bodies at HAAF and adjacent areas are not used as public water supplies. The ponds and lakes are perennial, whereas most of the drainage canals and ditches are intermittent. Most of the drainage canals and ditches are at least partially enclosed in culverts.

1.3 POTENTIAL RECEPTOR SURVEY SUMMARY OF THE FORMER UST 117, BUILDING 7002 SITE

A field potential receptor survey was conducted for the Former UST 117, Building 7002 site on May 5, 1999. The site and adjacent areas were surveyed for locations of surface water bodies, utility lines, and basements. Basements do not exist in the buildings at the Bulk Fuel Facility or adjacent to the site. Additional information, provided by the FS DPW, was used to determine the location of the nearest public and non-public water supply wells and downgradient surface water bodies not located during the field survey.

1.3.1 Water Supply Wells Near the Former UST 117, Building 7002 Site

HAAF Well 1, located at Building 711 at the corner of Moore Road and Douglas Street, is located approximately 2,700 feet east–northeast (cross-gradient) from the Former UST 117, Building 7002 site (Figure 3a, Appendix I). Well 1 is part of the main public water supply system at HAAF. This system supplies water to 7,500 persons through 525 service connections. As part of the long-term monitoring program for the Former Building 710 site, Well 1 is being sampled on a quarterly basis. Based on the groundwater flow direction and the estimated nature and extent of petroleum-related groundwater contamination at the site, there is no indication that Well 1 has been impacted (Figure 3b, Appendix I).

There are four other public water supply wells located within the 2-mile radius: PWS Well 4A, PWS Well 3, PWS Well 2, and PWS 25; however, none of these wells is located downgradient from the Former UST 117, Building 7002 site.

1.3.2 Surface Water Bodies Near the Former UST 117, Building 7002 Site

Lamar Canal is located approximately 180 feet south–southeast (downgradient) from the nearest point (southern fenced border) of the Bulk Fuel Facility and approximately 340 feet from the area of highest groundwater and soil contamination (SB-22) detected during the CAP-Part A Investigation. Lamar Canal drains the northwestern portion of HAAF and flows southwest into the Little Ogeechee (Forrest River), which is part of the Lower Ogeechee watershed.

Surface water sampling of Lamar Canal was conducted in May 1999 as part of the soil gas survey investigation for the Bulk Fuel Facility (SAIC 1999b) and in December 1999 as part of this CAP-Part A investigation (Figure 10, Appendix I). The results of these sampling efforts indicate that the surface water in Lamar Canal has not been impacted by the Former UST 117, Building 7002 site or the Bulk Fuel Facility (Tables 8a and 8b, Appendix II and Appendix VIII). Please refer to Attachment A for a discussion of the surface water technical approach and sampling results.

A series of storm drains and catch basins are located along the southern border of the Bulk Fuel Facility and are used to drain the bermed area around each of the five aboveground storage tanks (Figure 2, Appendix I). One of the storm drains is located approximately 120 feet from the area of greatest soil and groundwater contamination (SB-22). The invert elevation is unknown; however, based on the shallow depth to the water table (2.72 to 4.6 feet BGS), it is assumed that the storm drain is below the water table. Therefore, the storm drain is considered as a preferential pathway.

TABLES

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TABLE III-A. WATER SUPPLY WELL INFORMATION PROVIDED BY THE FORT STEWART/HAAF DPW

Building	Well ID	Year Drilled	Bore Depth	Casing Depth	Pump Rate (gpm)	Number of Service Connections	Population	Public or Non-Public Supply
711	1	1941	550	250	1,300	525	7,500	Public
1205	2	1941	600	250	1,300	525	7,500	Public
8455	3	1951	360	40	30	2	25	Public
8581	4A	Unk	300	92	80	10	50	Public
8641	5	1955	380	85	30	Unk	Unk	Non-public
8703	7	1980	450	330	70	8	500	Public
8632	8	1956	370	255	80	5	Unk	Non-public
8654	9	Unk	600	255	1,000	Unk	Unk	Non-public
8464	10	Unk	Unk	Unk	Unk	N/A	N/A	Non-public

NOTE: DPW - Directorate of Public Works.
gpm - Gallons per minute.
HAAF - Hunter Army Airfield.
N/A - Not applicable.
Unk - Unknown.

TABLE III-B. WATER SUPPLY WELL INFORMATION PROVIDED BY THE CITY OF SAVANNAH BUREAU OF WATER OPERATIONS

Well ID	Year Drilled	Bore Depth (feet)	Casing Depth (feet	Pump Rate (gpm)	Number of Service Connections	Population[1]	Public or Non-Public Supply[1]
1	Unk	1,006	300	1,362	Unk	Unk	Public
6	Unk	750	240	1,500	Unk	Unk	Public
9	Unk	710	267	2,700	Unk	Unk	Public
13	Unk	1,000	270	2,200	Unk	Unk	Public
14	Unk	800	338	571	Unk	Unk	Public
15	Unk	414	252	1,000	Unk	Unk	Public
23	Unk	639	320	1,056	Unk	Unk	Public
25	Unk	540	287	1,120	Unk	Unk	Public
27	Unk	550	321	1,468	Unk	Unk	Public
42	Unk	550	260	2,100	Unk	Unk	Public

NOTE: gpm - Gallons per minute.
Unk - Unknown.
[1]All wells are part of the same public water supply system serving the population of the City of Savannah.

APPENDIX IV

SOIL BORING LOGS

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	HOLE NUMBER: SB-01/MW-01
	DISTRICT: Savannah	SHEET 1 of 3

4

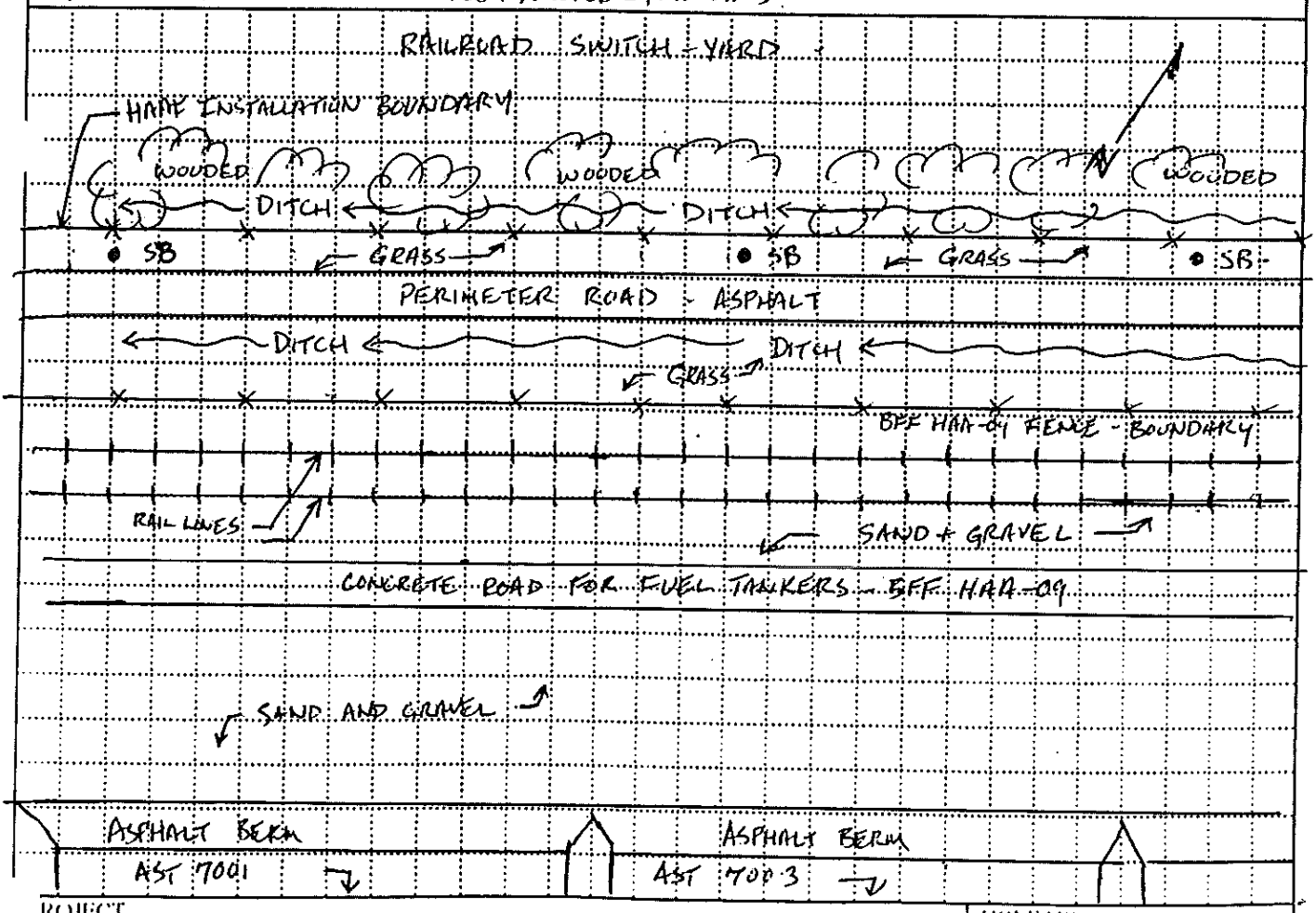
3. PROJECT: BAP-PART A BFF HAA-09, HAAF	4. LOCATION: BULK FUEL FACILITY
5. NAME OF DRILLER: Al Root.	6. MANUFACTURERS DESIGNATION OF DRILL: GEOPROBE 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 1-IN O.D., 3.5 LENGTH STEEL SCREEN · 2.25-IN OD. STEEL CASING FOR WELL INSTALLATION 4.0 FT LENGTH, 2 IN O.D MACROCORE	8. HOLE LOCATION: SB-01
	9. SURFACE ELEVATION: TBD by Surveyor
	10. DATE STARTED: 12/01/99 — 11. DATE COMPLETED: 12/01/99
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 6.7 FT BGS TO SATURATED ZONE
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 4.65 FT BGS (20 minutes) used to determine PVC screen depth
14. TOTAL DEPTH OF HOLE: 13.0 FEET	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA.

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
BFB11	BFB111	N/A	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS: SOIL / WATER	VOC BTEX	SVOC GRO / DRO	OTHER (SPECIFY) PAH	OTHER (SPECIFY) PAH/DRO	OTHER (SPECIFY) TOC	21. TOTAL CORE RECOVERY %
BFB111 / BFB112	1 / 1	1 / 0	0 / 1	1 / 0	1 / 0	81

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
monitoring well	NA.	✓ MW-1	NA	Mitchell Hall

LOCATION SKETCH/COMMENTS — ✕—✕—✕ FENCE — ● SOIL BORING LOCATION MW/SB-1, MW/SB-2, MW SB-3 — SCALE: 1 INCH = 100 FEET



PROJECT	HOLE NO
CAP-A, BFF HAA-09, HAAF	SB-01/MW-01

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP-PART A, BFF HAA-01, HAA-F | INSPECTOR: Peter Ritcher | HOLE NUMBER: SB-01/MW-01 | SHEET: 2 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) ppm	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0	OL-OH - ORGANIC RICH SAND (FINE TO MEDIUM) MOIST, VERY DARK BROWN	BZ: 0.0 FS: 0.0 HS: 0.0	N/A	N/A	START 1255 STOP: 1257 RUN 4.0 RECOVERY: 2.5
	1	- - - - GRADATIONAL CONTACT OL/OH ORGANIC SAND W/SP FINE GRAINED, INTERBEDDED WITH POORLY GRADED SAND WITH SILT, 10YR6/3 SOFT				
	2	- - GRADATIONAL CONT. WELL GRADED SAND WITH SILT, MOIST 10YR6/3 (pale brown) SOFT				
	3	NO RECOVERY	N/A	N/A	N/A	
	4	CH - SANDY FAT CLAY, MEDIUM PLASTICITY MOTTLED BRNNISH YELLOW, PALE BROWN & LIGHT GRAY, FIRM	BZ: 0.0 FS: 0.0 HS: 0.0	~~N/A~~ mH BF@111 mH BF@111 GEOTECH SAMPLE 4.0-6.0 ~~1320~~ MH ~~1315~~ mHH ~~1310~~ mHH 1315	N/A BF@111 SOIL SAMPLE 4.7-6.7 1310	START: 1258 STOP: 1300 RUN: 4.0 RECOVERY: 4.0
	5					
	6		FS: 0.0 HS: 0.0	N/A		
		- - - SATURATED ZONE (6.7)				
	7	SW - WELL GRADED, FINE GRAINED SAND (~5% SILT); 5% opaques WET, SOFT	N/A	N/A	BF@112 GROUNDWATER 6.7-11.7 1325	
	8	SOIL NOT COLLECTED FOR DESCRIPTION	BZ: 0.0	N/A		START: 1315 STOP: 1320 RUN: N/A RECOV: N/A STEEL SCREEN PUSHED TO 11.7 FT FOR GROUNDWATER SAMPLING
	9					
	10.0					

PROJECT: CAP-A, BFF HAA-09, HAA-F | HOLE NO: SB-01/MW-01

DRILLING LOG

PROJECT: CAP-A, BFF HAA-09, HAAF | INSPECTOR: R Schaffhausen | HOLE DESIGNATION: SB-01/MW-01 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GLOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	10.0	SOIL NOT COLLECTED FOR DESCRIPTION	N/A	N/A	BFB112 cont'd	SEE PREVIOUS PAGE
	11.0					TIME / WATER TRIGGER BZ0 / 4.95 FT BGS. 1345 / 4.65 FT BGS
	12.0		BZ = 0.0	N/A	N/A	START: 1345 STOP: 1347 PUSH DEPTH OF BOREHOLE TO 13.0 feet to begin well installation
	13.0	TD = 13.0				

GSHH 12/01/99

PROJECT: CAP-PART A, BFF HAA-09, HAAF | HOLE NO: SB-01/MW-01

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HTRW DRILLING LOG

1 COMPANY NAME: SAIC -	2 DRILL SUBCONTRACTOR: SAIC - Middletown PA	DISTRICT: USACE - SAVANAH
		HOLE NUMBER: SB-02/MW-02
		SHEET 1 OF 3 SHEETS

3 PROJECT: CAP-PART A	4 LOCATION: BULK FUEL FACILITY, HAA-09, HAAF
5 NAME OF DRILLER: Al Root	6 MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 1-IN O.D., 3.5 FT LENGTH STEEL SCREEN · 2.25 IN STEEL O.D. CASING FOR WELL INSTILLATION, 4-FT LENGTH 2-IN O.D. MACROCORE	8 HOLE LOCATION: SB-02/MW-02
	9 SURFACE ELEVATION: TBD By Surveyor
	10 DATE STARTED: 12/01/99 — 11 DATE COMPLETED: 12/01/99
12 OVERBURDEN THICKNESS: N/A	15 DEPTH GROUNDWATER ENCOUNTERED: 8.0 FT BGS (SATURATED ZONE)
13 DEPTH DRILLED INTO ROCK: N/A	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 5.5 FT BGS (10 Minutes);
14 TOTAL DEPTH OF HOLE: 13.5	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 4.95 FT BGS (1 hour) Well completed

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
BF0211	✓	NA	NA

20 SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21 TOTAL CORE RECOVERY
BF0211 / BF0212	1 / 2	1 / 2	SVOC 1 / 0	TPH-GRO 1 / 0	NA	94 %

22 DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23 SIGNATURE OF INSPECTOR
MW-02	NA	✓	NA	Richard Hall

LOCATION SKETCH/COMMENTS: SEE PAGE 6 OF LOGBOOK #7 SCALE: NA

SEE PAGE 6 OF LOGBOOK #7

PROJECT	HOLE NO
CAP-A, BFF HAA-09, HAAF, GA	SB-02/MW-02

ENG FORM 5056-R, AUG 94

(Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP-A, BFF-HAA-09, HAAF | INSPECTOR: Mitchell Hall | HOLE NUMBER: SB-02/MW-02 | SHEET: 2 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (PPM) (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0	OL/OH SANDY ORGANIC SOIL, MOIST, 10YR2/2 very dark brown, soft	BZ=0.0 FS=0.0 HS=	N/A	N/A	START: 1015 STOP: 1020 RUN: 4.0 FT RECOVERY: 3.3FT
	1.0	---- GRADATIONAL CONTACT SW-SM WELL GRADED SAND WITH SILT, FINE GRAINED		BF0211 1.3-3.3 GEOTECH SAMPLE 1035		
	2.0		FS=0.0 HS		N/A	
	3.0					
		NO RECOVERY	N/A	N/A		
	4.0	CH - SANDY, FAT CLAY, ~~SOFT~~ FIRM, MEDIUM PLASTICITY, MOIST, MOTTLED BROWNISH YELLOW, PALE BROWN & LIGHT GRAY	FS: 0.0 HS: BZ: 0.0	N/A	N/A	START: 1023 STOP: 1028 RUN: 4.0 RECOVERY: 4.0
	5.0					
	6.0	---- GRADATIONAL CONTACT CH - SANDY, SILTY CLAY TO ~~GLAYEY SAND~~ SANDY SILT (SP) 1201 SOFT, MOIST LIGHT GRAY 10YR7/2	FS=0.0 HS=	N/A	BF0211 6-8 FT SOIL SAMPLE 1030	
	7.0					
	8.0	---- SATURATED ZONE SP-SM POORLY GRADED SAND (F. GRAIN) WITH SILT, WET, SOFT	BZ=0.0	N/A	~~NAF~~ BF0212 8.0-13.0 FT 1100	START: 1030 STOP: 1035 RUN: 4.0 RECOVERY: 4.0
	9.0	---- SHARP CONTACT CH - SANDY FAT CLAY LENSE, 10YR 4/1 DARK GRAY, VERY PLASTIC, WET				
	10.0					

PROJECT: CAP-A, BFF HAA-09, HAAF | HOLE NO: SB-02/MW-02

DRILLING LOG

PROJECT: CAP A, BFF-HAA 09, HAAF | INSPECTOR: Mitchell Hirst | HOLE NUMBER: SB-02/MW-02 | SHEET: 3 of 3

18

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) (ppm)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11	SAME AS ABOVE - - - - SHARP CONTACT SW - WELL GRADED FINE SAND (UPPER LIMIT) WITH 5-10% MEDIUM GRAINED SAND (LOWER limit), SOFT WET 5% HEAVY MINERALS (OPAQUES) S	NA	N/A	BF0212 8.0-13.0 FT 1100	See previous page
	12	SOIL NOT COLLECTED FOR DESCRIPTION	BZ = 0.0	N/A	N/A	START: 1050 STOP: 1055 RUN: NA RECOVERY: N/A STEEL SCREEN PUSH TO 13.0 FT TOTAL BOREHOLE DEPTH 13.5 FOR well INSTALLATION
	13	TD = 13.5				
	14					

10.0 11.0 12.0 13.0 14.0

MHH 12-01-99

PROJECT: CAP-A, BFF HAA-09, HAAF | HOLE NO: SB-02/MW-02

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HTRW DRILLING LOG

1 COMPANY NAME: SAIC	2 DRILL SUBCONTRACTOR: SAIC	DISTRICT: USACE - Savannah
		HOLE NUMBER: SB-03
		SHEET 1 OF SHEETS 3

3 PROJECT: CAP - PART A	4 LOCATION: BULK FUEL FACILITY, HAA-09, HAAF
5 NAME OF DRILLER: Al Root	6 MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 1-IN O.D. 3.5 FT LENGTH STEEL SCREEN; 2.25 IN O.D. STEEL CASING FOR WELL INSTALLATION 4.0 FT LENGTH, 2-IN O.D. MACROCORE	8 HOLE LOCATION: Next to Perimeter Road
	9 SURFACE ELEVATION: TBD by Surveyor
	10 DATE STARTED: 12/01/99 — 11 DATE COMPLETED: 12/01/99
12 OVERBURDEN THICKNESS: NA	15 DEPTH GROUNDWATER ENCOUNTERED: 8.0 FT BGS TO SATURATED ZONE
13 DEPTH DRILLED INTO ROCK: NA	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 5.3 FT BGS (30 minutes) 4.6 FT BGS AFTER WELL SET.
14 TOTAL DEPTH OF HOLE: 13 FEET	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
BF0311	✓	NA	NA

20 SAMPLES FOR CHEMICAL ANALYSIS	BTEX	PAHs	OTHER (SPECIFY) TPH-DRO	OTHER (SPECIFY) TPH-GRO	OTHER (SPECIFY)	21 TOTAL CORE RECOVERY %
BF0311 / BF0312	1 / 2	1 / 2	1 / 0	1 / 0	NA	91

22 DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23 SIGNATURE OF INSPECTOR
MW-03	NA	✓	NA	Robert Hall

LOCATION SKETCH/COMMENTS: SEE PAGE 6 OF LOGBOOK #7 SCALE: NA

SEE PAGE 6 OF LOGBOOK #7

PROJECT	HOLE NO
CAP - PART A, BFF HAA-09, HAAF	SB-03

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP - PART A BFF | INSPECTOR: Michael Hall | HOLE NUMBER: SB-3 / MW-3 | SHEET: 2 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0.0	ORGANIC RICH (OH) FINE GRAINED QUARTZ SAND, MOIST, SOFT very dark brown.	BZ: 0.0 FS: 0.0 HS: 0.0	N/A	NA	START: 0800 STOP: 0805 RUN: 4.0 FT RECOVERY: 2.9 FT
	1.0					
	2.0	SW MOIST, FINE-GRAINED, WELL SORTED SAND 10YR 7/2 (light gray)	FS: 0.0 HS: 0.0	NA	NA	
	3.0	FAT, SILTY SANDY CLAY, MOIST, SOFT. MOTTLED brownish yellow + pale brown				
		NO RECOVERY				
	4.0	SANDY CLAY, FIRM MOIST, MEDIUM PLASTICITY. MOTTLED brownish yellow + pale brown	BZ: 0.0 FS: 0.0 HS: 0.0	4.0-6.0 Geotech Sample 0816 BF0311	N/A	START: 0810 STOP: 0815 RUN: 4.0 FT RECOV: 4.0 FT
	5.0					
	6.0	GRADATIONAL CONTACT				
		SANDY SILT FIRM, MOIST, LOW PLASTICITY, LIGHT GRAY 10YR 7/2	FS: 0.0 HS: 0.0	N/A	BF0311 6-8.0 0820 SOIL SAMPLE	
	7.0	GRADATIONAL CONT				
		SILTY SAND, FIRM MOIST, V. LOW PLASTICITY, LIGHT GRAY SAND FRACTION WELL SORTED FINE GRAINED.				
	8.0	SATURATED ZONE				
		VERY FINE-GRAINED WELL SORTED SAND WITH SILT, LIGHT GRAY, SOFT.	BZ: 0.0 FS: N/A HS: NA.	N/A	BF0312 8.0-13.0 WATER SAMPLE 0905	START: 0817 STOP: 0820 RUN: 4.0 RECOV: 4.0
	9.0	~~SATURATED ZONE SAME AS ABOVE BUT WET~~ with 8/01/99				
	10.0					

PROJECT: CAP - PART A, BFF HAA-09, HAAF | HOLE NO: SB-03 / MW-03

DRILLING LOG

PROJECT: CAP A BFF HAA-09 HAAF | INSPECTOR: M.T. Hall | HOLE NUMBER: SB-03/MW-03 | SHEET: 3 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		SAME AS ABOVE	N/A	N/A	BF0312 8.0-13.0 WATER SAMPLE 0905	SEE PREVIOUS PAGE
		SOIL NOT SAMPLED FOR DESCRIPTION TD = 13.0	N/A	N/A		START: 0850 STOP: 0855 RUN: RECOV: N/A PUSH STEEL SCREEN TO 13 FT PULLED OUTER SLEEVE UP 5 feet

10.0
11
12.0
13.0

mgl/ht
12/01/93

PROJECT: CAP A, BFF HAA-09, HAAF | HOLE NO: SB-03 / MW-03

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HTRW DRILLING LOG	DISTRICT Savannah Corp's	HOLE NUMBER SB-4
1. COMPANY NAME SAIC	2. DRILL SUBCONTRACTOR SAIC Middletown	SHEET 1 of 3

3. PROJECT HAAF Bulk Fuel Facility	4. LOCATION Bulk fuel Facility in Rd
5. NAME OF DRILLER John Haselhoff	6. MANUFACTURER'S DESIGNATION OF DRILL Geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4' x 2¼" Macrocore barrels w/ Acetate liners 2½" well casing sch. 40 PVC	8. HOLE LOCATION See Map
	9. SURFACE ELEVATION 17.3 ft AMSL
	10. DATE STARTED 12/3/99 — 11. DATE COMPLETED 12/3/99
12. OVERBURDEN THICKNESS greater than T.D.	15. DEPTH GROUNDWATER ENCOUNTERED Top of Saturated Zone @ 9.1' BGS.
13. DEPTH DRILLED INTO ROCK NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED after we pierced clay zone @ 9.1 - WL up to 5.5' BGS
14. TOTAL DEPTH OF HOLE 13.0' BGS	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES	DISTURBED X	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	~~METALS~~	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	TPH-GRO/MOIST,	PAH, TAH, TRO	PAH	—	

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		—		Robert Bonnett

LOCATION SKETCH/COMMENTS — SCALE:

See page 47 for this log

PROJECT	HOLE NO.
HAAF BFF HAA-09	SB-4

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: HAAF - BFF | INSPECTOR: Heather L Smith | HOLE NUMBER: SB-4 | SHEET: 2 of 3 | 98

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GLOTT. CH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		Concrete core	overcore			START 1255 FINISH 1300 RUN 4.0 REC 2.8 LOSS 1.3 •7 from concrete in Rd
	1.0	(SC) Clayey Sand fine gr. sand slightly moist firm to hard, nonplastic 10YR 3/1 Very dk. grey	ϕ			
	2.0	(SC) clayey Sand beginning to be mottled w/ (color change) 10YR 4/6 dk yellowish brn.	ϕ			
		(SC) clayey Sand (color change)	ϕ			
	3.0	as above but now predominantly 10YR 4/6 dk yellowish brown	ϕ			headspace ϕ.7-3.5' BGS = ϕ.6 ppm
		Loss				
	4.0	(SC) Clayey Sand (color change) nonplastic fine gr sand soft → firm slightly moist 5Y 4/4 olive	ϕ			START 300 FINISH 305 RUN 4.0 REC 4.0 LOSS ϕ (WL after hole to 12.6' BGS.)
	5.0	(CL) - Lean Clay firm to hard, dense high plasticity, moist trace fine gr Sand 5Y 3/1 Very dk grey mottled w/ 2.5YR 4/4 olive brown (<10% mottling)	ϕ			
	6.0		ϕ			headspace 4'-6' BGS @ϕ.1 ppm
	7.0	dashed line	ϕ			headspace 6'-8' BGS @ϕ.1 ppm
		(CL) - Lean clay (w/ trace sand) firm mottled color grey 10YR 5/1 w/ 10YR 4/6 dk yellowish brown (<30% mottling)	ϕ			
	8.0	(SC) Clayey Sand fine gr sand, firm to hard. slightly moist low plasticity	ϕ	HS 12-3-99	B.0-9.1	Analytical Sample # BF0411 @1310
	9.0	10YR 3/1 Very dark grey	ϕ			START FINISH RUN 4.0 REC 3.0 LOSS 1.0
		(SM) Silty Sand - med. gr Sand SATURATED ZONE, soft, nonplastic 10YR 6/1 grey	ϕ	HS 12-3-99	B.5-12.5	Water Sampling #BF0412 @1320
	10.0	(SC) Clayey Sand fine gr sand, firm moist → slightly moist 10YR 4/6 dk yellowish brown	ϕ			headspace 8-10' BGS 1.2 ppm

PROJECT: HAAF - BFF | HOLE NO: SB-04

DRILLING LOG

PROJECT: HAAF - BFF | INSPECTOR: Heather L Smith | HOLE NUMBER: SB-4 | SHEET: 3 of 3

99

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11.0	(SM) Silty Sand w/ TRACE clay fine → med gr. QTZ sand (Wet) 5Y 8/1 white		Geotech Sample 10-11' BGS #BFØ411	water Sampling Screened 8½12½ #BFØ412	
		Loss				
	12.0	Bottom of coring		#S 12-3-95	#S 12-3-95	Bottom of Run 3
		Did not collect core				
	13.0					B.O.B. 13.0' BGS
	14.0					

Heather L Smith 12/03/95

PROJECT: HAAF - Bulk Fuel Facility | HOLE NO: SB-4

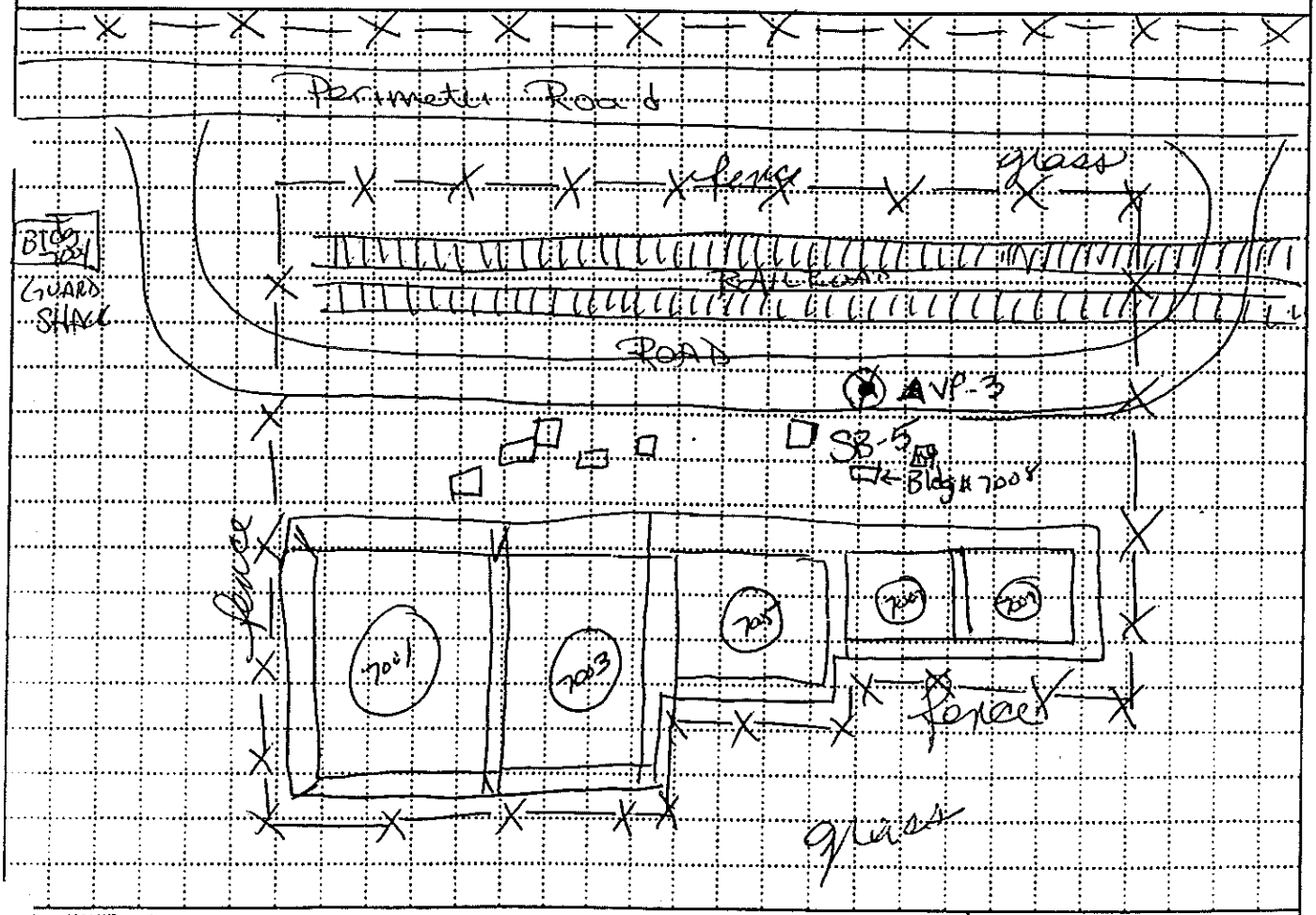
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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC - Middletown	HOLE NUMBER: SB-05
	DISTRICT: Savannah Corps	SHEET 1 OF 3 SHEETS

3. PROJECT: HAAF - BFF
4. LOCATION: Bulk Fuel Facility
5. NAME OF DRILLER: John Haselhoff
6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4' x 2¼" Macrocores w/ Acetate liner (core); 2¼" Well setting Rods; Sch 40 PVC - Well Screen / Casing
8. HOLE LOCATION: See map
9. SURFACE ELEVATION:
10. DATE STARTED: 12-3-99
11. DATE COMPLETED: 12-3-99
12. OVERBURDEN THICKNESS: greater than total depth.
13. DEPTH GROUNDWATER ENCOUNTERED: 1st Saturated core @ 7.5' BGS.
14. TOTAL DEPTH OF HOLE: 13.0' BGS
15. DEPTH DRILLED INTO ROCK: NA
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 4.6' BGS ; immed. after well inst.
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):
18. GEOTECHNICAL SAMPLES: #BF0511 — DISTURBED: X — UNDISTURBED:
19. TOTAL NUMBER OF CORE BOXES: NA
20. SAMPLES FOR CHEMICAL ANALYSIS: #BF0511 & #BF0512 — VOC: BTEX — ~~METALS~~: PAH — OTHER (SPECIFY): TPH-GRO-Mo Styr — OTHER (SPECIFY): PAH, TPH-DRO — OTHER (SPECIFY):
21. TOTAL CORE RECOVERY: NA
22. DISPOSITION OF HOLE: — BACKFILLED: — MONITORING WELL: X — OTHER (SPECIFY): —
23. SIGNATURE OF INSPECTOR: Heather L. Smith

LOCATION SKETCH/COMMENTS — SCALE: NONE



PROJECT: HAAF Bulk Fuel Facility
HOLE NO: SB-05

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: HAAF - BFF | INSPECTOR: Heather L Smith | HOLE NUMBER: SB-05 | SHEET: 2 of 3

9

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		Concrete	overcore			START : 1440 FINISH : 1445 RUN : 4.0 REC : 3.4 LOSS : 0.6 0.6 = concrete core
	1.0	SC - Clayey Sand (<20% Sand) med → fine gr. sand, firm → hard, moist, nonplastic, 2.5Y 3/3 dk. olive brown	0 ppm			
			0 ppm			
	2.0	SC - Clayey Sand fine gr sand w/ lean clay mtrl, FIRM → HARD - slightly moist, 2.5Y 3/2 very dk. greyish brown	0 ppm			HEADSPACE 0-2' BGS = 0.7 ppm
	3.0		0 ppm			HEADSPACE 2-4' BGS = 0.2 ppm
		CL - Lean Clay Soft, moist, Dense, high plasticity, trace amt of fine gr. Sand, Color is predominantly 5Y 3/1 Very dk gray w/ <10% Streaking w/ 2.5YR4/4 olive brown until you get to ~7.1' BGS where 2.5YR4/4 staining increases to ~50%	0 ppm			
	4.0		0 ppm			
	5.0		0 ppm		5.5	1445 : START 1450 : FINISH (START use after auditing) 4.0 : RUN 4.0 : REC 0 : LOSS
	6.0		0 ppm	Geotech Sample ID Sample #BF05I1 collected from 5.5-7.5' BGS	Sample ID # BF05I1 @1450	HEADSPACE 4'-6' BGS = 1.0 ppm
	7.0		0 ppm			HEADSPACE 6'-8' BGS 0.9 = 12.3% ppm
		SM - Silty Sand, Soft, nonplastic fine → med gr. Sand. WET Sm. amt of Silt (<20%) Gravel GREENISH GREY	0 ppm		7.5	TOP of Saturated Core
	8.0	Bottom of CORING			8.0	
	9.0	DID NOT CORE HERE			Water Sample #BF05I2 @1500 Sealed 8-12' BGS	START FINISH RUN REC LOSS DID NOT COLLECT CORE
	10.0					

PROJECT: HAAF Bulk Fuel Facility | BOLT NO: SB-05

DRILLING LOG

PROJECT: HAAF, Bulk Fuel Facility | INSPECTOR: Heather L. Smith | BORE NUMBER: SB-05 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11.0	DID NOT COLLECT CORE HERE			Water sampling from 8-12' bgs	
	12.0	DIRECT PUSH TO 13' & INSTALL WELL			12.0	
	13.0					B.O.B. 13.0' bgs
	14.0					

10

10.0 11.0 12.0 13.0 14.0

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	HOLE NUMBER: SB-6
	DISTRICT: Savannah	SHEET 1 of 1

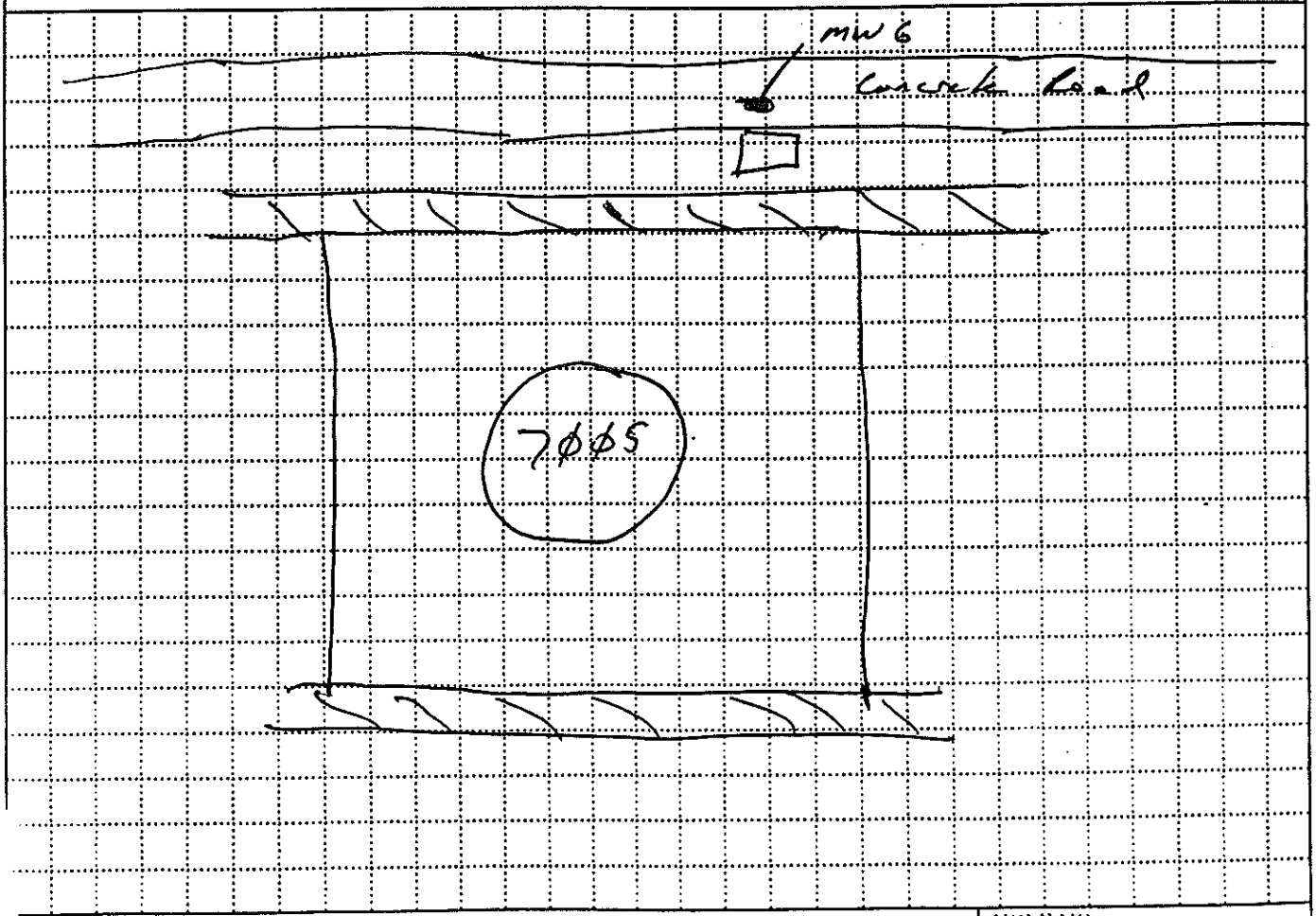
3. PROJECT: BFF HAA-09 CAP Part A	4. LOCATION: Bulk Fuel Facility, HAAF
5. NAME OF DRILLER: John Haselhoff	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4' x 2 1/8" macrocorer rods w/ acetate liners, 4 1/4" OD well building rods, Sch. 40 PVC well screen/riser	8. HOLE LOCATION: SB-6
	9. SURFACE ELEVATION: 17.2 ft AMSL
	10. DATE STARTED: 12/2/99 — 11. DATE COMPLETED: 12/2/99
12. OVERBURDEN THICKNESS: NA	15. DEPTH GROUNDWATER ENCOUNTERED: 3.4 ft bgs (perched) 6.3 ft bgs
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED
14. TOTAL DEPTH OF HOLE: 13' ft bgs	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
	✓		NA

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	✓		GRO, DRO	PAH		100

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		✓		

LOCATION SKETCH/COMMENTS — SCALE: Not to Scale



PROJECT	HOLE NO.
HAAF BFF HAA-09	SB-6

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: HAAF - Bulk Fuel Facility | INSPECTOR: Heather L Smith | HOLE NUMBER: SB-6 | SHEET: 2 of 6.8

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		CONCRETE ROAD	over core ∅			START: 1430 FINISH: 1435 RUN: 4.∅ REC: 3.5 LOSS: ∅.5 - Concrete
	1.∅	(SM) - Silty Sand fine → med gr sands loose moist, soft 5Y5/1 GREY	∅			
	2.∅	(SC) - Clayey Sand Very HARD, fine gr sand, nonplastic - Due to hardness 10YR 3/1 Very dark grey dry	∅			headspace ∅-2 = 1.4 ppm headspace 2-4 = 1.4 ppm
	3.∅	(SM) Silty Sand - w/ Clay fine gr. sand, HARD → Very HARD 10YR 2/1 BLACK				
	4.∅	(SC) Clayey Sand fine QTZ grains dry, HARD, many colors: GREEN & ORANGE STREAKS ON 5Y6/1 grey nonplastic	∅			START: 1435 FINISH: 1440 RUN: 4.∅ REC: 4.∅ LOSS: ∅
	5.∅	(SC) Clayey Sand fine gr sand, dry firm to hard - dense Lean Clay - low plasticity	∅			Top of static water level
	6.∅		∅			TOP OF STATIC WATER LEVEL AFTER CONFINING LAYER PUNCHED
	7.∅	10YR 3/2 V. dk. greyish brown	∅			headspace 4-8' BGS = ∅.∅ ppm
	8.∅		∅	B.P Water Sample from 8-12' Bail 8.8		START 1440 FINISH 1445 RUN 4.∅ REC 3.∅ LOSS 1.∅
	9.∅	SC - Clayey Sand fine gr. Sand, moist firm to hard, lean clay low plasticity 10YR 3/1 Very dark gray	∅	SAMPLE ID # BF6011 @1450	SAMPLE ID # BF6011 @1450	headspace 8-12' BGS = 2.5 ppm
	10.∅					

HAAF - Bulk Fuel Facility

DRILLING LOG

PROJECT | INSPECTOR Heather Smith | HOLE NUMBER 35-6 | SHEET

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		Same as above				
		(SM) Silty Sand fine gr. Sand well sorted, nonplastic saturated, soft, loose 2.5Y5/1 GREY	Ø.Ø ppm	Geotech Sample Ext.	SAMPLE ID# BF0411 10.4	top of Saturated Core
	11.Ø	Loss			Water Sample ID # BF0412 from 8-12' BGS @ 1500	Headspace 8-12' BGS = 2.5 ppm
	12.Ø	BOTTOM OF CORING				Loss
		NO CORE RECOVERED THIS 1 foot.				PUSH DOWN TO 13.Ø' BGS & Set Well
	13.Ø					T.O.B = 13.Ø' BGS
	14.Ø					

Heather Smith 12/2/95

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC - Middletown	HOLE NUMBER: SB-7
	DISTRICT: Savannah Corp's	SHEET 1 OF 3

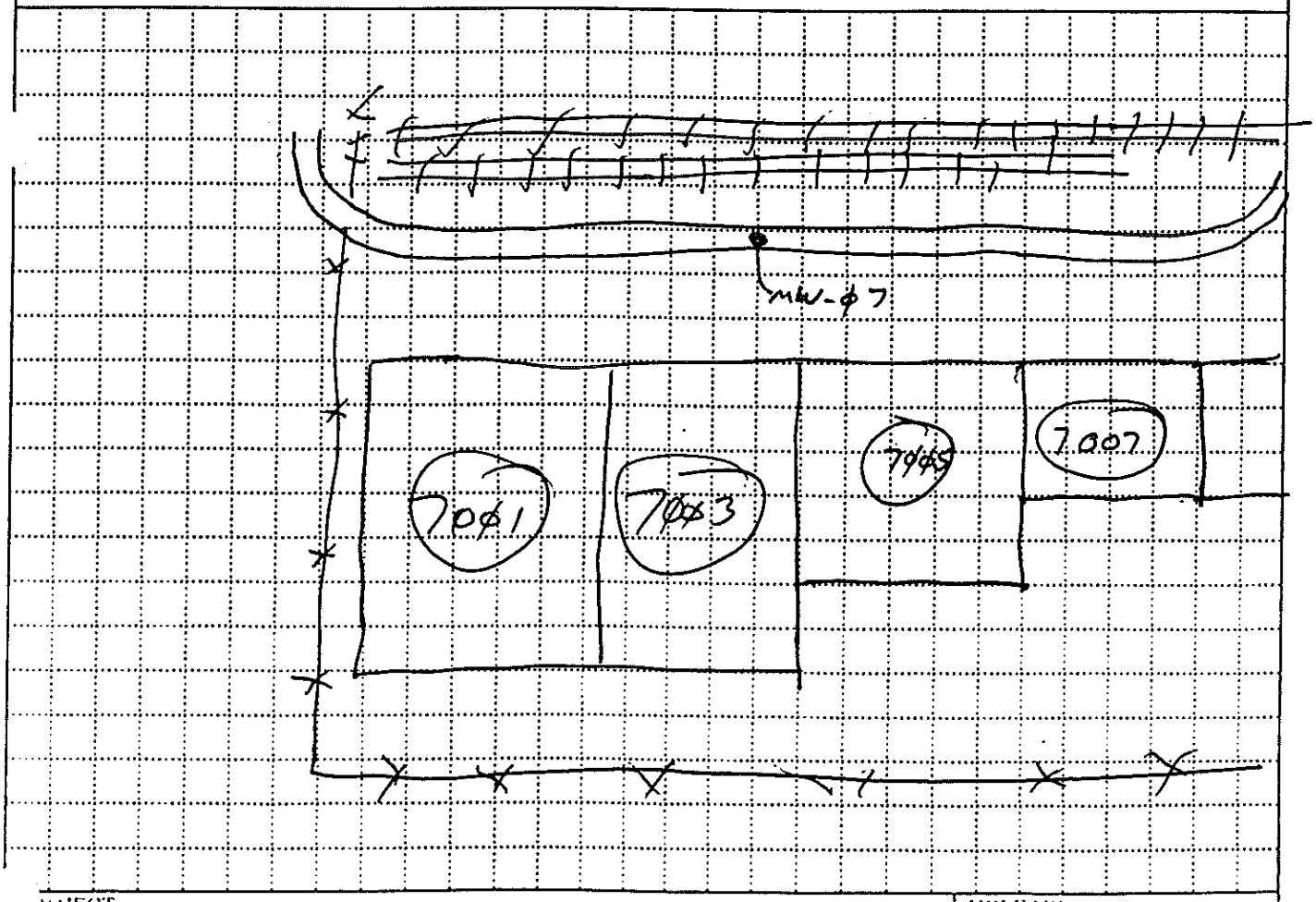
3. PROJECT: HAAF - Bulk Fuel Facility	4. LOCATION: B.F.F.
5. NAME OF DRILLER: John Haselhoff	6. MANUFACTURERS DESIGNATION OF DRILL: geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: S. Steel 4' x 2¼" Macrocore w/ Acetate liner; 4½ Well setting rods - Al. pts. Sch. 40 PVC screen & Casing	8. HOLE LOCATION: See Map
	9. SURFACE ELEVATION:
10. DATE STARTED: 12-02-99	11. DATE COMPLETED: 12-02-99
12. OVERBURDEN THICKNESS: Greater than total depth	13. DEPTH GROUNDWATER ENCOUNTERED: 6.4' BGS = TOP of Saturated zone.
14. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED:
15. TOTAL DEPTH OF HOLE: 13.0' BGS	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
#BF0711	X		NA

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	~~METALS~~	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
#BF0711 & #BF0712	BTEX	PAH	PAH, TPH-DRO	TPH-GRO/Moisture		NA

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	—	X	—	Heather L. Smith

LOCATION SKETCH/COMMENTS — SCALE: Not to scale



PROJECT	HOLE NO
HAAF - Bulk Fuel Facility	SB-7

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT HAAF - Bulk Fuel Facility INSPECTOR Heather Smith HOLE NUMBER SB-07 SHEET 2 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		Concrete	over core			START 1550 FINISH 1555 RUN 4.0 REC 2.5 LOSS 1.5 (1.5 of that is concrete core) Headspace from .5-2.5 10 ppm Headspace 2.5→3.0 is 1644 ppm
	1.0	SC - Clayey Sand fine gr, moist HARD to Very HARD mix dense 10YR2/1 Black	2.5 ppm 6.5 ppm			
		SM - Silty Sand, non plastic soft, loose, dry, fine gr. Sand. 10YR3/3 DK brown	6.5 ppm		1.5	
	2.0	SM Silty Sand fine gr, sand w/ Silt - HARD to firm when moist, Soft when dry, Some fine wood debris 10YR2/1 Black	11.0 ppm 436 ppm 265 ppm		SAMPLE ID # BF0711 @1610	
	3.0	Loss			3.0	Loss
	4.0	SM Silty Sand as above w/ WOOD CHUNKS 10YR2/1 Black	215 ppm 519 ppm			START FINISH RUN 4.0 REC 3.3 Loss 0.7 Static WL @ 6.1 Running WL @ 8' Bgs
	5.0	CL Clean Clay - Moist, Soft, high plasticity TRACE fine sand. 5Y5/2 olive grey w/ 2.5Y 4/4 olive Brown	153 ppm			
		SC Clayey Sand (lower clay content however) Prob. ~ 15-20%) Med → fine gr. sand low plasticity, moist 2.5Y 5/1 GREY w/ 2.5Y 5/4 lt. olive brown	60 ppm 172 ppm 34 ppm			
	6.0			6.4		Headspace from 4.0-4.5 65 ppm 6.4→7.2 1965-579 ppm TOP of Saturated ZONE
		SM - Silty Sand w/ TRACE Lean Clay, Med → fine gr. sand, low plasticity Moist, Wet - Saturated in shoe. 2.5Y5/1 GREY w/ 2.5Y5/4 lt. olive brown	10 ppm 18 ppm	Geotech Samp. ID # BF0711 @1614 7.2	6.5 White sample # BF0712 from discrete zone 6.5 to 10.0 @1630	
	7.0	Loss				Loss
	8.0					
	9.0	Did not collect core after 8.0' Bgs				
	10.0					

PROJECT HAAF - Bulk Fuel Facility HOLE NO SB-07

DRILLING LOG

PROJECT HAAF Bulk Fuel Facility | INSPECTOR Heather L Smith | HOLE NUMBER SB-7 | SHEET 3 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11.0	Did not collect core			Bottom of Analytical Water Sample 10.5 Screened Zone	Direct push to 13.0' to set well
	12.5					
	13.0					B.O.B. 13.0' BGS

Heather L Smith 12/2/99

PROJECT HAAF Bulk Fuel facility | HOLE NO SB-7

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	BORE HOLE NUMBER: SB-08/MW-08
		SHEET 1 OF 3

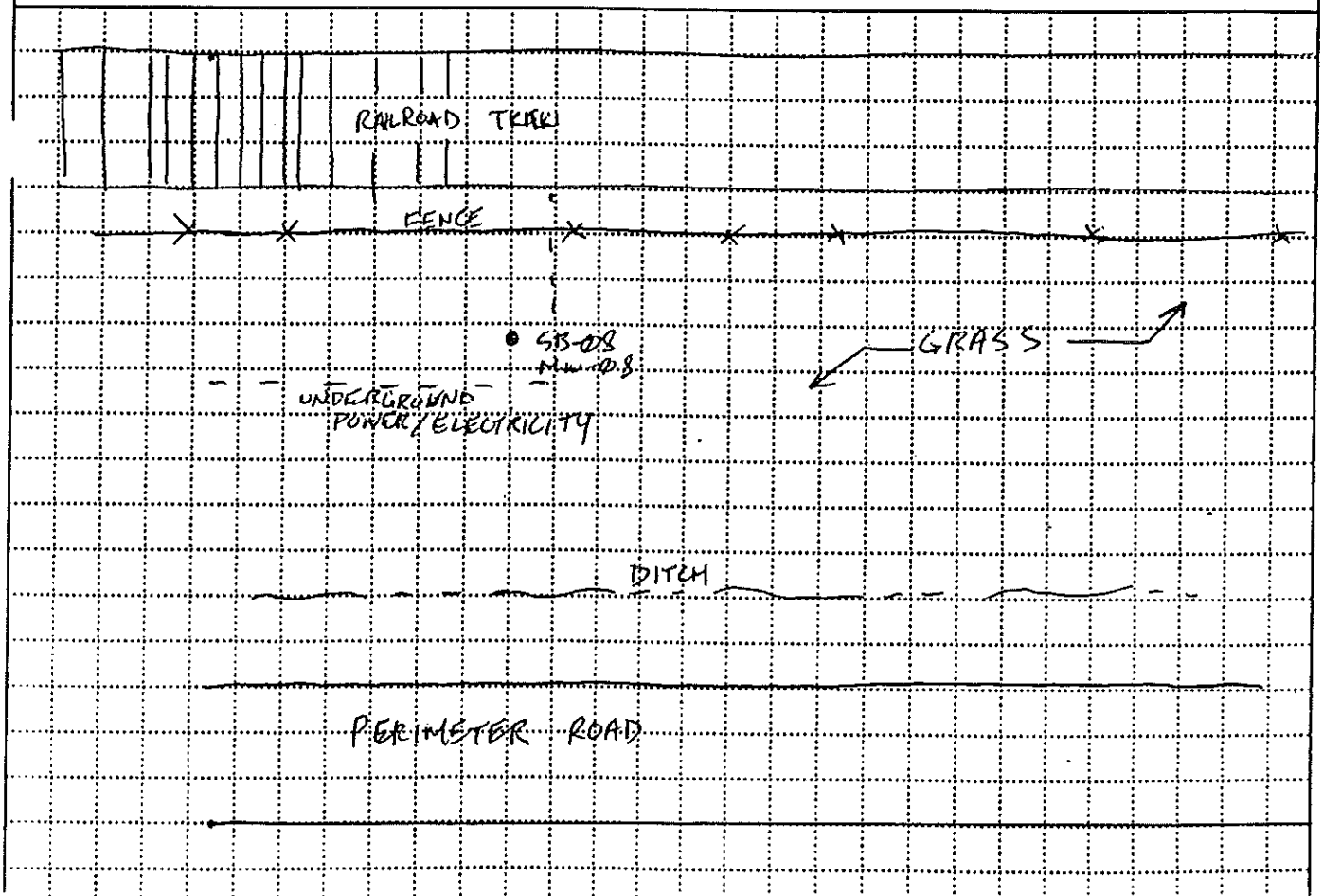
3. PROJECT: CAP. PART A, BFF HAA-09	4. LOCATION: HUNTER AAF
5. NAME OF DRILLER: Al Root	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 3.5 FT LENGTH, 1-IN DIAM STEEL SCREEN, 2.0 INCH ID., 4.0 Long MACROCORE, 2.25 IN I.D. STEEL CASING	8. HOLE LOCATION: SB-08: outside BFF fence
	9. SURFACE ELEVATION: TBD by surveyors
12/03/99	10. DATE STARTED: 12/03/99 — 11. DATE COMPLETED: 12/03/99
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 6.5 feet to perched zone, 10.3 FT SAT. ZONE
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 4.8 Feet to water table at GW collection
14. TOTAL DEPTH OF HOLE: 12.5 FEET BGS	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 5.18 Feet BGS AFTER WELL COMPLETION

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
BFG811	1	N/A	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS: VOC / SVOC	B TEX	METALS	OTHER (SPECIFY) TPH DRO	OTHER (SPECIFY) TPH-GRO	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
BFG811 / BFG812	✓ / ✓	✓ / ✓	✓ / 0	✓ / 0	N/A	90

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
				Mitchell Hall

LOCATION SKETCH/COMMENTS: • SB-08/MW-08 LOCATION — SCALE: 1" = 12'



PROJECT	HOLE NO
CAP-A, BFF HAA-09, HAAF	SB-08, MW-08

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: BFF HAA-09, HAAF | INSPECTOR: Mitchell Hall | HOLE NO: ~~SB-08~~/MW-08 | SHEET: 2 of 3

SOIL (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) ppm	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0	OL/OH - TOP SOIL - ORGANIC RICH SAND AND GRASS	BZ: 0.0 FS: 0.0 HS: 0.2	N/A	N/A	START: 1130 STOP: 1133 RUN: 4.0 FT RECOVERY: 3.1 FT
	1	SP-SM POORLY SAND WITH SILT MEDIUM GRAINED, DARK YELLOWISH BROWN GRADATIONAL CONTACT SP-SM INTERBEDDED ORGANIC RICH SAND (POORLY SORTED MEDIUM TO FINE GRAINED) 10YR 2/2 V. DARK BROWN, MOIST AND POORLY SORTED (MEDIUM GR) QUARTZ SAND, LESS ORGANICS, MOIST 10YR 6/2 LIGHT BROWNISH GRAY (ROOT CASTS REDDISH BROWN			BFQ811 SOIL SAMPLE 1.1-3.1 FT BGS 1135	
	2	GRAD. CONTACT				
	3	SP-SM - ORGANIC RICH MEDIUM TO FINE SAND MOIST 10YR 2/2 VERY DARK BROWN.	FS: 0.0 HS: 1.4	N/A		
		NO RECOVERY	N/A		N/A	
	4	SAME AS ABOVE	BZ: 0.0 FS: 0.0 HS ~~0.0~~ 1.3	BFQ811 GEOTECH SAMPLE 4.0-6.0 FT BGS MH 12/03/99 1155	~~BFQ11~~ ~~GEOTECH SAMPLE~~ ~~4.0-6.0 FT BGS~~ ~~1150~~ MH 12/03/99	START: 1135 STOP 1145 RUN: 4.0 FT RECOV: 4.0 FT
	5	GRAD. CONT. CH - FAT CLAY WITH SAND, MODERATE PLASTICITY, MOIST, INCREASING FINE TO MEDIUM SAND WITH DEPTH. 10YR 3/1 VERY DARK GRAY MOTTLED WITH 10YR 5/6 yellowish Brown				
	6		FS: 0.0 HS: 0.5	N/A	N/A	
		PERCHED ZONE SW - Fine grained, well sorted Quartz sand light grey, wet. (5% organics			BFQ812 6.5-11.5 FT BGS GROUNDWATER SAMPLE 1215	
	7	SHARP CONT CH - ~~FAT~~ CLAY WITH SAND, MODERATE PLAST. MOIST, 10GY 4/1 (DARK GREENISH GREY) MOTTLED WITH 10YR 5/6 YELLOWISH BROWN				
		GRAD. CONT SW - Fine grained PERCHED ZONE well sorted sand wet, GREY				
	8	SHARP CONT ~~CH~~ CL - ~~FAT~~ LEAN CLAY, MOIST, WITH SAND 10GY 4/1 (DARK GREENISH GREY MOTTLED W/ 10YR 5/6 yellowish brown	BZ: 0.0 FS: 0.0 HS: 1.0	N/A		START: 1150 STOP: 1155 RUN: 4.0 FT RECOV: 3.6 FT
	9					
	10	GRAD. CONT CH - FAT CLAY, MOIST, SEE NEXT PAGE				

PROJECT: CAP-A BFF HAA-01, HAAF | HOLE NO: SB-08/MW-08

DRILLING LOG

PROJECT: CAP-PART A, BFF-HAA-09, HAAF | INSPECTOR: Mitchell Hall | HOLE NUMBER: SB-08/MW-08 | SHEET: 3 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	10	10GY4/1 DARK GREENISH GREY HIGH PLAST.	N/A	NA	BFB812 WATER SAMPLE CONT'D	SEE PREVIOUS PAGE FOR SOIL MACROCORE RETRIEVAL TIME AND RECOVERY
		— — — GRAD. CONT — — — ▽ SATURATED ZONE				
		SW - Moderately to well sorted, wet quartz sand mostly 10YR5/1 (grey) with some glauconite? 10GY4/1 Dark Greenish gray.				GROUNDWATER SAMPLE COLLECTION: START: 1200 STOP: 1210 PUSHED STEEL SCREEN TO 11.5; PULLED UP 1.5 FT FOR SAMPLE COLLECTION 6.5–11.5 FT BGS
	11					
		NO RECOVERY	N/A	N/A	N/A	
	12	SOIL NOT COLLECTED				TIME / WATER TAG 1225 / 4.8 FT BGS.
		TD = 12.5 Ft.				START: 1230 STOP 1235 PUSHED STEEL CASING TO 12.5 FOR WELL INSTALLATION
	13					

MHK 12/03/99

PROJECT: CAP-PART A, BFF HAA-09, HAAF | HOLE NO: SB-08/MW-08

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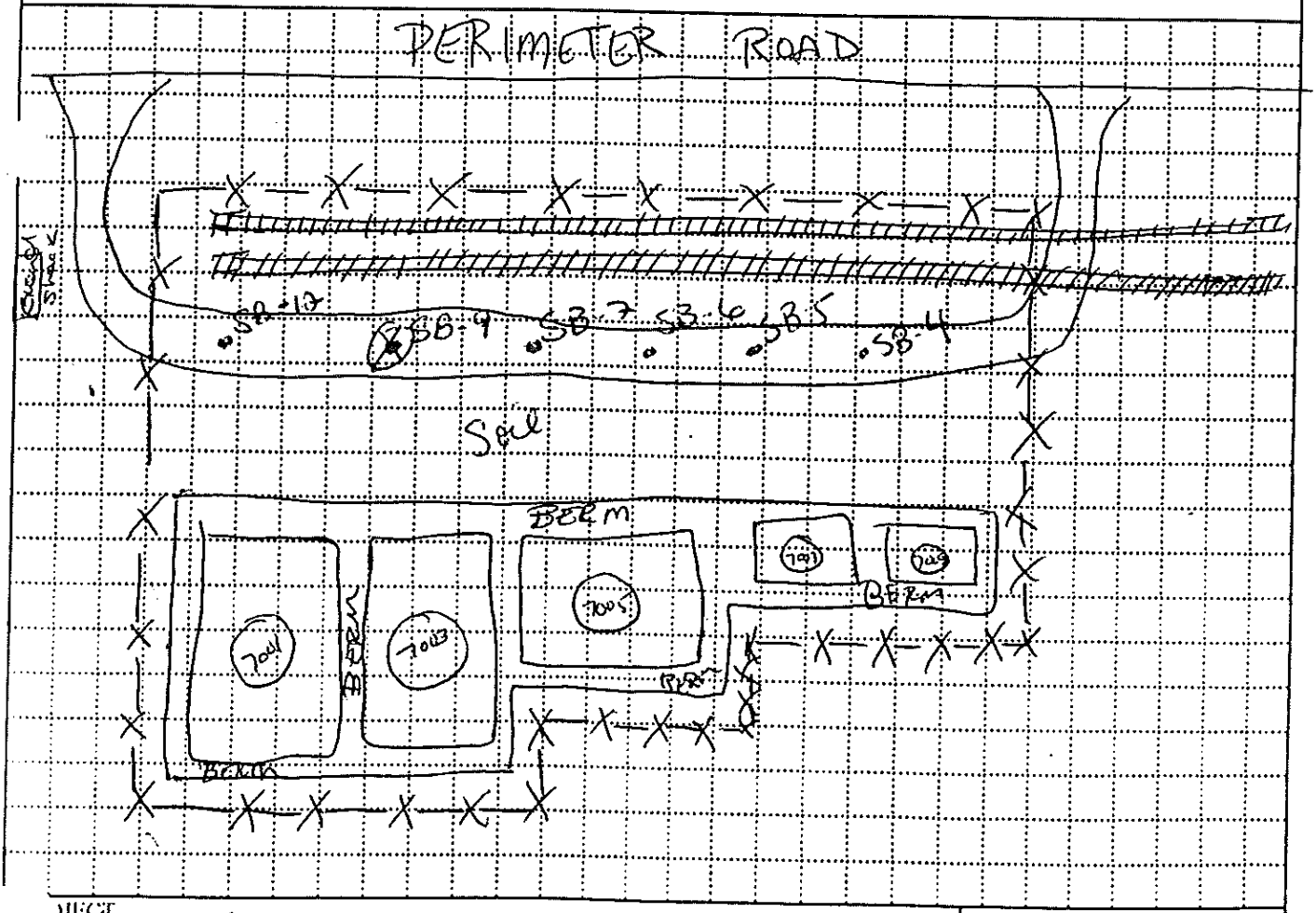
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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILLING CONTRACTOR: SAIC - Middletown	HOLE NUMBER: SB-9
	DISTRICT: Savannah Corp's	SHEET 1 OF 3 SHEETS

3. PROJECT: HAAF - Bulk Fuel Facility
4. LOCATION: BFF - inside gate
5. NAME OF DRILLER: John Haselhoff
6. MANUFACTURERS DESIGNATION OF DRILL: geoprobe 54ΦΦ
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4⅛" well diameter Rod; 4' x 4¼" Macrocore barrel (STAINLESS) w/ acetate liner - STAINLESS screen/tube sampler; Sch 40 PVC well screen & casing
8. HOLE LOCATION: see map
9. SURFACE ELEVATION:
10. DATE STARTED: 12/3/99
11. DATE COMPLETED: 12/3/99
12. OVERBURDEN THICKNESS: greater than total depth
13. DEPTH DRILLED INTO ROCK: NA
14. TOTAL DEPTH OF HOLE: 13' BGS
15. DEPTH GROUNDWATER ENCOUNTERED: Saturated core @ 9.Φ' BGS
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: WL @ 5.5' BGS imm. after well inst.
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):
18. GEOTECHNICAL SAMPLES: # BF0911 — DISTURBED: X — UNDISTURBED:
19. TOTAL NUMBER OF CORE BOXES: NA
20. SAMPLES FOR CHEMICAL ANALYSIS: # BF0911 & BF0912 — VOC: BTEX — METALS: PAH — OTHER (SPECIFY): TPH-GRO/Moist — OTHER (SPECIFY): PAH, TPH-DRO — OTHER (SPECIFY):
21. TOTAL CORE RECOVERY: N.A.
22. DISPOSITION OF HOLE: BACKFILLED: — MONITORING WELL: X — OTHER (SPECIFY):
23. SIGNATURE OF INSPECTOR: Heather L. Smeed

LOCATION SKETCH/COMMENTS — SCALE: NONE



PROJECT: HAAF - Bulk Fuel Facility — HOLE NO: SB-9

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: HAAF, BFF | INSPECTOR: Heather Smith | HOLE NUMBER: SB-09 | SHEET: 2 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		CONCRETE	Overcore			START: 1620
		(SC) Clayey Sand f. gr. Sand, dry, hard to firm 10YR2/1 BLACK	189 ppm			FINISH: 1625
	1.0	(SC) Clayey Sand, fine gr Sand, dry → slightly moist hard → firm 10YR 4/4 DK yellowish BROWN	76.3 ppm		Soil Sample ID # BF0911 @1635'	RUN: 4.0
		(SM) Silty Sand fine gr sand. Soft, loose, moist → slightly moist, nonplastic	39.4 ppm			REC: 3.45
	2.0	5Y7/1 Lt. grey	38.1 ppm		2.0' BGS	LOSS: .55 (CONCRETE CORE)
			10.5 ppm			Appears to have PRODUCT IN 1st 3-6" of soil (0.55' → 1.0' BGS)
		(CL) Lean Clay w/ TRACE fine gr. sand, moist, med. plasticity, Soft to firm 2.5Y3/1 DK. grey	3.1 ppm			
	3.0		2.6 ppm			HEADSPACE 0.55-2.0 is 104 ppm
		(SC) Clayey Sand fine gr Sand ? Lean Clay Slightly moist to moist Soft (Little clay ~30%) low plasticity Mottled colors - 2.5Y 3/1 V. dk. grey 2.5Y 4/4 olive Brown	5.3 ppm			HEADSPACE 2.0-4.0 3.9 ppm.
			0.7 ppm			
	4.0		9.8 (TB 13.3%) ppm			
			1.9 (TB 13.3%) ppm			START: 1625
	5.0	(SC) Clayey Sand fine gr. Sand, moist lean clay, low plasticity, homogeneous 2.5Y6/1 GRAY	0.0 (TB 12.3%) ppm			FINISH: 1630
			0.0 (TB 12.3%) ppm			RUN: 4.0
						REC: 4.0
						LOSS: 0
						(STATIC WL (mmon after well inst).
	6.0	(CL) Lean Clay w/ TRACE FINE SAND	0.5 (TB 12.3%) ppm			HEADSPACE FROM 4'-6' BGS = 13.3 ppm
		Dense, firm, moist med plasticity - Plasticity increases w/ slight moisture additin.	0.0 (TB 12.3%) ppm	7.0		
	7.0	COLORS are 2.5Y5/1 GRAY & 10YR 5/8 Yellowish brown	0.4 9.8 1.8 (TB 11.3%) ppm	Geotech Sample BF0911 8.0 @ 1635		HEADSPACE FROM 6'-8' BGS is 5.3 ppm
	8.0	Slightly moist				
		(SC) - Clayey Sand Very Clayey 10YR5/1 GREY fine gr. sand, w/ lean clay firm, med plasticity, moist to wet	0.0 ppm		8.5	START 1430
	9.0		0.0			FINISH 1635
		(SM) - Silty Sand SATURATED - fine → med. grained sand, Soft, loose 10YR5/1 GREY	0.0		Water Sample Screened ZONE 8.5-12.5'	RUN 4.0
						REC 3.4 SATURATED POINT
	10.0	See next pg.				LOSS 0.6
						HEADSPACE FROM 8-10' BGS is 3.4 ppm

PROJECT: HAAF, Bulk Fuel Facility | HOLE NO: SB-9

DRILLING LOG

PROJECT: HAAF, BFF | INSPECTOR: Heather L Smith | HOLE NUMBER: BSB-09 | SHEET: 3 of 3 | 39

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECHNICAL OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		(SC)- Clayey Sand Med→fine gr Sand w/ lean clay, moist 2.5Y4/1 DARK GRAY Mottled w/ 2.5Y5/6 (Light Olive Brown)	Φ.Φ ppm		Screened Bore Water Samp ID# BFΦ912 @1645 12.5'	HEADSPACE 10-11.4'BGS is 3.2ppm
11.Φ		(SM)- Silty Sand Soft, Wet, fine gr Sand, homogeneous. nonplastic 5Y5/1 GRAY	Φ.Φ ppm			
		Loss				Loss
12.Φ		DID NOT COLLECT CORE HERE				DIRECT PUSH TO 13.Φ' INSTALL WELL
13.Φ						B.O.B = 13.Φ' BGS

Heather L Smith 12/Φ3/95

PROJECT: HAAF, Bulk Fuel Facility | HOLE NO: SB-Φ9

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HTRW DRILLING LOG

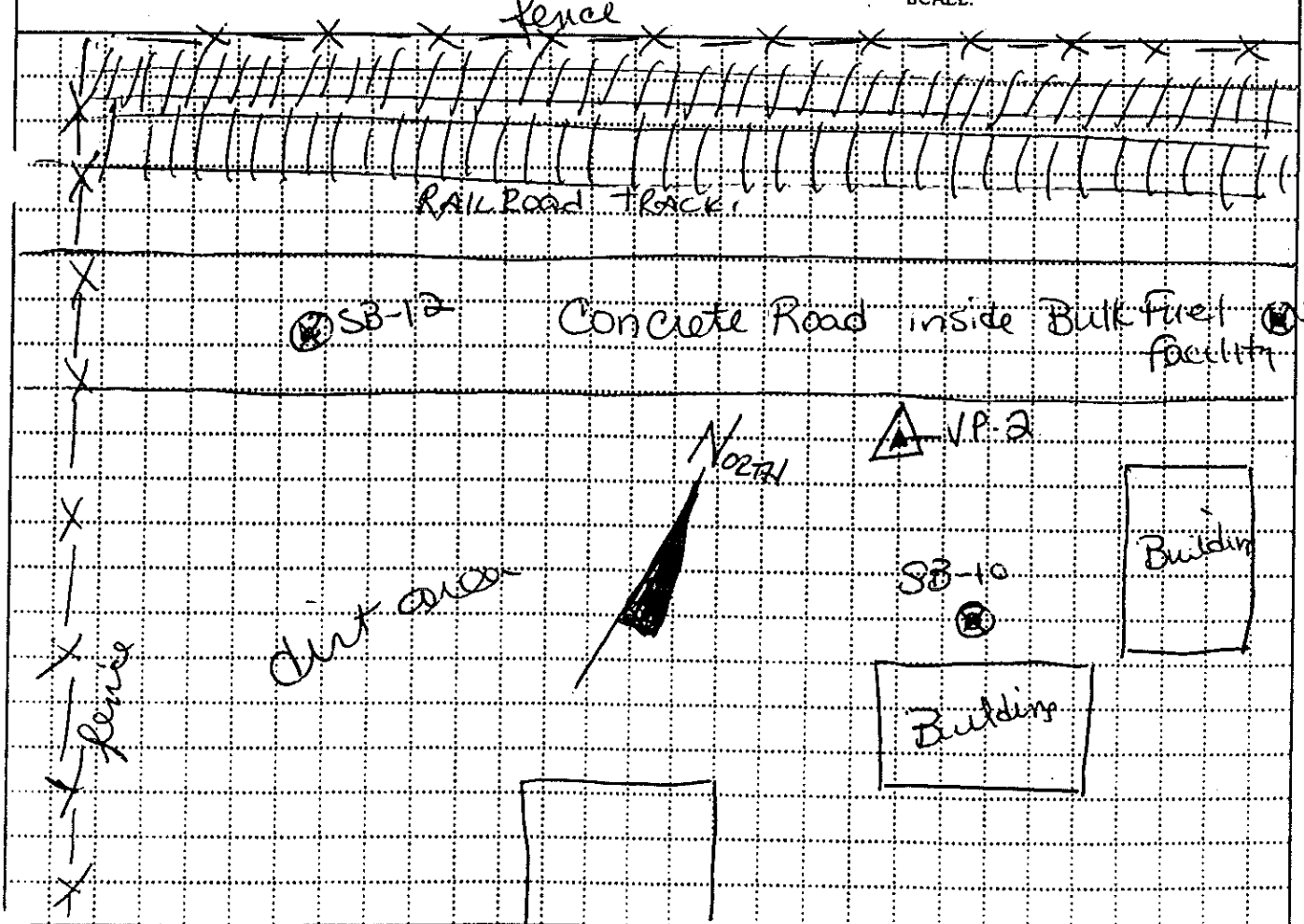
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC - Middletown	BOH NUMBER: SB-10
3. PROJECT: HAAF - BFF	4. LOCATION: Bulk Fuel Facility	SHEET 1 OF 3
5. NAME OF DRILLER: John Haselhoff	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 11 x 8¼" Macrocore w/ acetate liners; 2¼" well setting rods. Sch 40 PVC screen	8. HOLE LOCATION: See map
	9. SURFACE ELEVATION:
	10. DATE STARTED: 12/02/99 — 11. DATE COMPLETED: 12/02/99
12. OVERBURDEN THICKNESS: Greater than total depth	13. DEPTH GROUNDWATER ENCOUNTERED: CORE SATURATED @ 6.2
14. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: after noted to 8' WL @ 4.3' BGS
14. TOTAL DEPTH OF HOLE: 12.5	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): after well set STATIC WL 4.46' BGS

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
BF1011	X	—	NA

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
~~BF1011~~, BF1013, BF1012, ~~BF1014~~	BTEX	✓	PAH	TPH-GRO/MOIST.	PAH, TPH-DRO	NA

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	—	X	—	Walter L Smith

LOCATION SKETCH/COMMENTS — SCALE:



PROJECT: HAAF - BFF — HOLE NO: SB-10

ENG FORM 5056-R, AUG 94 — (Proponent CECW-EG)

DRILLING LOG

PROJECT: HAAF BFF | INSPECTOR: Heather L Smith | BORE NUMBER: SB-10 | SHEET: 2 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0.0	(SM) Silty Sand w/ GRAVEL, fine, med & Cs. gr Sand w/ GRAVEL, Loose, soft (FILL) 2.5Y5/2 GREYISH BROWN	8.5 ppm (overcore)			START: 0800 FINISH: 0805 RUN 4.0 REC 3.5 LOSS 0.5
	1.0	(SM) Silty Sand (as above except color change) TRACE GRAVEL, 2.5Y3/1 Very dk. grey	14. ppm 8 ppm			
	1.4	(SM) Silty Sand w/ trace Lean clay in lenses every 6" or so. Clay Lenses ≤2" thick. Sand is med → fine gr. PREDOMINANTLY FINE GRAINED Soft, Slightly moist, nonplastic SAND is HOMOGENEOUS. (QTZ grains) 2.5Y5/1 GREY	200 ppm 873 ppm 1200 ppm		2.0 SAMPLE ID # BF1011 DUPLICATE ID # BF1013 @0815 SOIL SAMPLE 3.5	HEADSPACE from 0-1.5' BGS = 110 (composite) HEADSPACE from 1.5-3.5' BGS = 801 ppm (composite)
	3.0	(CL) Lean Clay w/ SAND, f. gr. Sand (~35-40%) Moist, Soft to Firm high plasticity	1857 ppm			
	3.3	(CL) Lean Clay w/ trace Sand (f. gr.) Soft, Moist high plasticity 2.5Y5/1 GREY w/ 2.5Y4/3 Olive Brn.				
	3.5	Loss estimated contact				Loss
	4.0	(SM) Silty Sand w/ trace Lean clay, fine → med grains, SMELLY, Soft, (low) non plastic Main color is 2.5Y5/1 GREY mottled w/ 10YR4/6 dk ~~Yellowish~~ brown	783 ppm			Water upto ~4.3 → after probing 4.0'
	5.0	(SM) Silty Sand As BELOW, JUST Slight color variation - mottled w/ 10YR4/3 Below	33 ppm	5.0 SAMPLE ID # BF1011 @0830 6.0		START 0820 FINISH 0825 RUN 4.0 REC 4.0 LOSS 0 STATIC WL @ 4.46 ft 21 installation
	5.3	(SM) Silty Sand, Med → fine gr. Sand soft to firm, homogeneous moist → wet, nonplastic 2.5Y5/1 Gray	151 ppm			
	6.0		15 ppm		@ 6.0 WATER SAMPLE SCREENED ZONE FROM 6.0 TO 10.0' BGS	(HEADSPACE FROM 5'-6' is ~400 ppm) TOP of Saturated Core
	6.5	(SM) Silty Sand - AS above except main color of 2.5Y5/1 GREY is mottled w/ 10YR4/3 Brown	4.5 ppm			
	6.8	(CL) Lean clay 10YR4/1 dk grey moist, high plasticity, soft → firm STREAKED w/ GREEN & RED				
	7.1	(SM) Silty Sand Size between med → fine gr. Sand, wet Soft, Subrounded homogeneous QTZ grains, nonplastic 10YR4/1 dk grey	4.4 ppm 4.5 ppm		DUPLICATE WATER SAMPLE ID # BF1014 WATER SAMP ID # BF1013 SAMPLED for: BTEX (1 of 15) & PAH (1 of 16 Analytes)	Bottom of CORING
	8.0	DID NOT COLLECT CORE BELOW 8.0' BGS				
	9.0					
	10.0					

PROJECT: HAAF ~~DS~~ Bulk Fuel Facility | BORE NO: SB-10

DRILLING LOG

PROJECT	INSPECTOR	BORE NUMBER	9
HAAF - BFF	Heather L Smith	SB-10	
		SHEET 3 of 3	

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11.0	NO CORE COLLECTED FOR SAMPLING				RAN MACROCORE DIRECTLY DOWN TO 12.5' BGS.
	12.0					
	13.0					B.O.B = 12.5' BGS

Heather L Smith 12/02/09

PROJECT HAAF - Bulk Fuel Facility

BORE NO SB-10

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC - Middletown	BOH. NUMBER: SB-11
	DISTRICT: Savannah Corps	SHEET 1 of 3 SHEETS

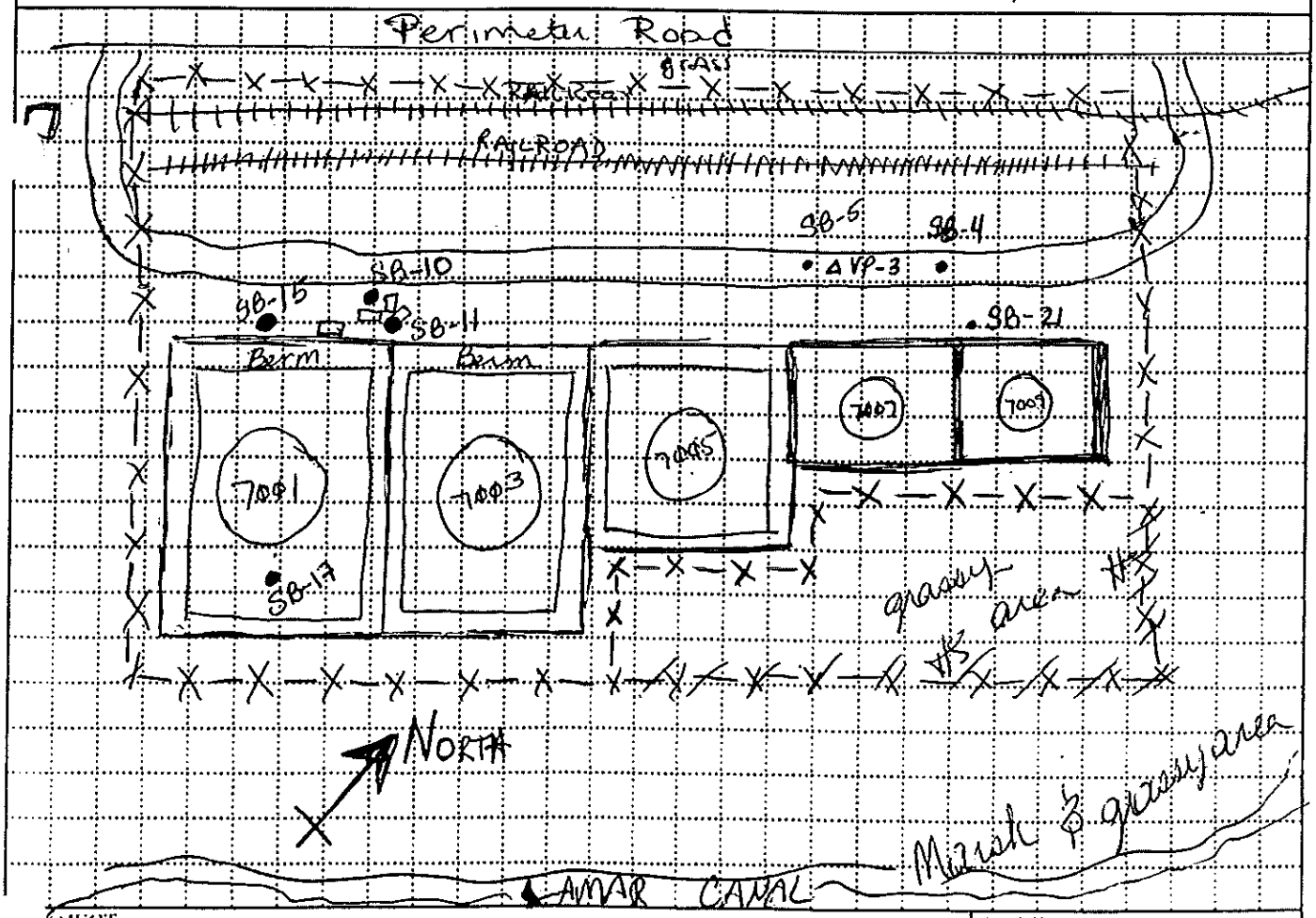
3. PROJECT: HAAF BFF	4. LOCATION: Bulk Fuel Facility (inside fence)
5. NAME OF DRILLER: John Hasselhoff	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4' x 2¼" Macrocore rods w/ acetate liners; 4½" Well building rods Sch 40 PVC Well/Screen mtn.	8. HOLE LOCATION: See Map
	9. SURFACE ELEVATION:
	10. DATE STARTED: 12-02-99 — 11. DATE COMPLETED: 12-02-99
12. OVERBURDEN THICKNESS: Greater than T.D.	15. DEPTH GROUNDWATER ENCOUNTERED: 3.30 TOP of 1st Saturated Perch Zone
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 6.30' TOP of 2nd Saturated Core
14. TOTAL DEPTH OF HOLE: 12.5' BGS	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 4.66' BGS = Static WL, after well installed

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
# BF1111	X		NA

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	~~METALS~~	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
# BF1111 BF1112	BTEX	PAH	TPH-GRO/Moist.	PAH, TPH-DRO ←		NA

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	—	X	—	Kathleen L Smith

LOCATION SKETCH/COMMENTS — SCALE: NONE



OBJECT	HOLE NO
HAAF Bulk Fuel Facility	SB-11

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: HAAF, BFF | INSPECTOR: Heather L Smith | BORE NUMBER: SB-11 | SHEET: 2 of 3 | 48

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GLOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		~~SM Silty Sand w/ GRAVEL~~	7.4 ppm			START : 0945
		SC Clayey Sand w/ GRAVEL, Silt, FIRM, low plasticity (FILL) Fine → Cs. grains; low MANY MOTTLED COLORS 2.5Y4/1 DK grey w/ 2.5Y2.5/1 BLACK 10YR4/3 BROWN	8.3 ppm			FINISH : 0945
	1.0				1.0	RUN : 4.0
		SM - Silty Sand w/ TRACE CLAY Slightly moist med → fine gr Sand - predom. fine gr. ; Soft non plastic 10YR 7/1 lt. grey w/ 10YR5/4 yellowish brown	8.8 ppm		SAMPLE ID # BF1111	REC : 3.6
			15.8 ppm			LOSS : 0.4
	2.0					1.0
						Headspace 1.5-2.5' BGS CAB ~~9.4 ppm~~ 20.3 ppm
			13.2 ppm			2.0
		SM - Silty Sand - fine gr Soft to firm non plastic, Slightly moist 2.5Y4/1 DARK GREY				
		SM - Silty Sand - fine gr Sand, Soft, non plastic, moist to wet 10YR4/3 BROWN	5.1 ppm		@0950	
	3.0				3.0	3.0
			7.3 ppm			CORE IS SATURATED (Perch ZONE ONLY)
		SM - Silty Sand - fine gr. Soft, Saturated 2.5Y6/3 lt. yellowish brown.				SHOE IS WET
		Loss	0 at very bottom of Run			
	4.0			4.0		4.0
		SM - Silty Sand fine gr Sand, high Silt content, Soft nonplastic Slightly moist 2.5Y 3/2 Very dk greyish brown.	0 ppm	SAMPLE ID# BF1111 @0950		START : 0945
			0 ppm			FINISH : 1000
						RUN : 4.0
						REC : 3.7
						LOSS : 0.3
	5.0			5.0		5.0
		SC - Clayey Sand med → fine gr. Sand; firm low plasticity - Lean clay predom. fine gr. sand. DRY → Slightly moist 5Y6/3 Pale olive w/ 10YR5/6 yellowish brown	0 ppm			STATIC WL @ this well built
						* DRY → Slightly moist confining zone
	6.0		0 ppm		6.0	6.0
						top of saturated ZONE #2
		SM - Silty Sand med → fine gr. Sand Soft, nonplastic, Some iron staining, QTZ grains WET 5Y6/3 PALE OLIVE	0 ppm		Water sample from screened zone 6.0-10.0' BGS	
	7.0					7.0
		SM - Silty Sand SAME AS ABOVE, but mottled w/ 10YR5/6 yellowish brown. (ribboned color throughout)	0 ppm			
		Loss				
	8.0					8.0
		STOPPED CORING @ 8.0' BGS				PUSHED DOWN & SET 1" WELL
					Sample ID # BF1112	NO CORE COLLECTED
						9.0
						10.0

PROJECT: HAAF Bulk Fuel Facility | BORE NO: SB-11

DRILLING LOG

PROJECT HAAF, Buck Fuel Facility INSPECTOR Heather L Smith

BORE NUMBER SB-11

SHEET 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11.0	Did not collect core from this depth				PUSHED from 8.0'BGS
	12.0					
	13.0					B.O.B. 12.5' BGS
	14.0					

Heather L Smith 12/10/2009

PROJECT HAAF - Buck Fuel HOLE NO

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HTRW DRILLING LOG	DISTRICT: Savannah Corp's	HOLE NUMBER: SB-12
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC - Middletown	SHEET 1 OF 3

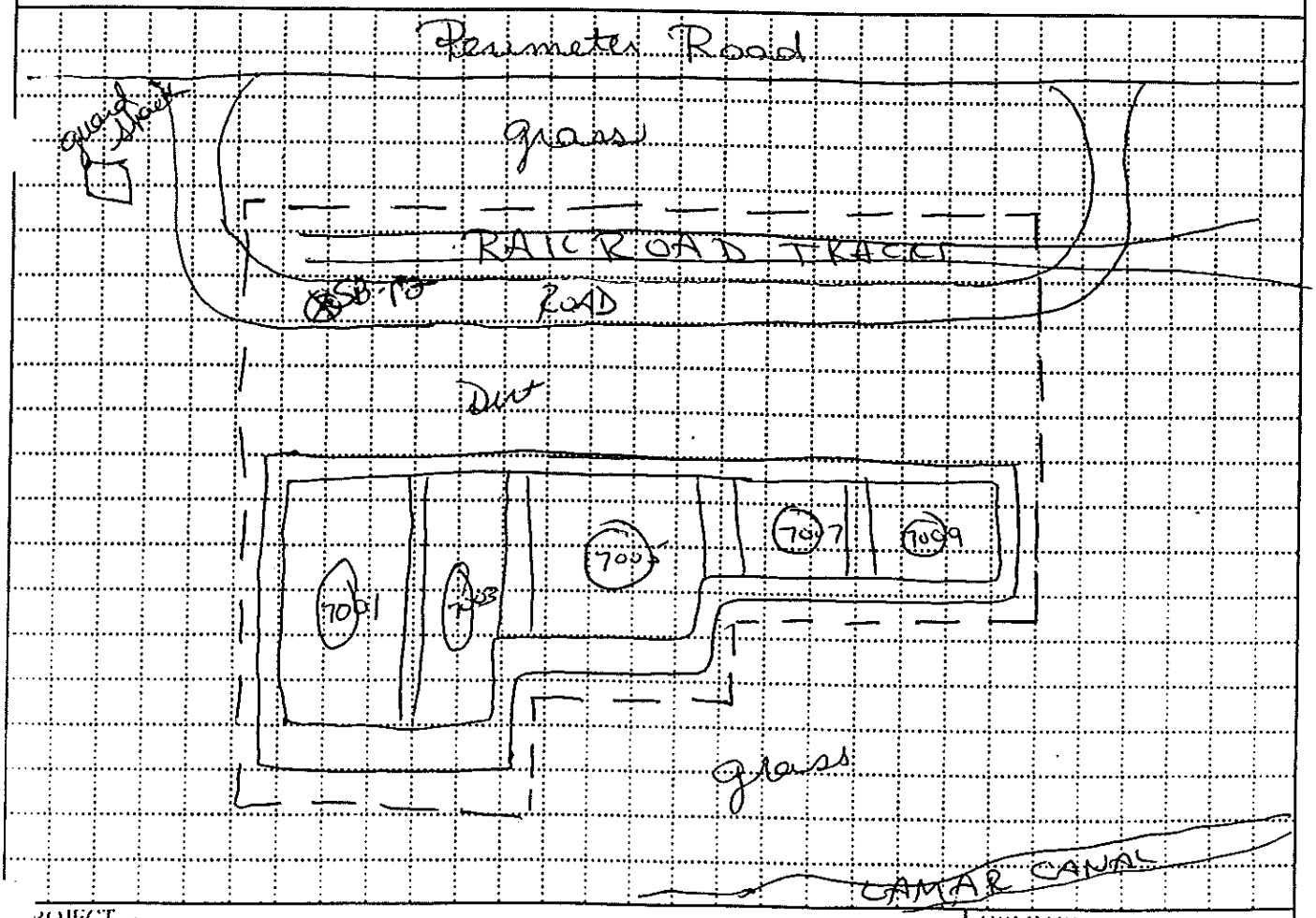
3. PROJECT: HAAF - BFF	4. LOCATION: Buck Fuel
5. NAME OF DRILLER: John Haseltoff	6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4' x 2¼" Macrocore sampler w/ acetate liner; 4¼ 2¼" well installation Rods. Schedule 40 PVC well casing & Screen	8. HOLE LOCATION: See map
	9. SURFACE ELEVATION:
	10. DATE STARTED: 12-04-99 / 11. DATE COMPLETED: 12-04-99
12. OVERBURDEN THICKNESS: Greater than total depth	15. DEPTH GROUNDWATER ENCOUNTERED: SATURATED CORE @ 7.6' BGS
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: STATIC after well installed = 5.45' BGS
14. TOTAL DEPTH OF HOLE: 13.0' BGS	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
#BF1211	X	—	NA

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	~~METALS~~	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
#BF1211 3BF1211	BTEX	PAH	PAH, TPH-DRO	TPH-GRO-Moisture		NA

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	—	X	—	Heather L Smith

LOCATION SKETCH/COMMENTS — SCALE: NONE



PROJECT: HAAF - Bulk Fuel Facility — HOLE NO: SB-12

ENG FORM 5056-R, AUG 94 — (Proponent CECW-EG)

DRILLING LOG

PROJECT: HAAF, Bulk Fuel Facility | INSPECTOR: Heather L Smith | HOLE NUMBER: SB-12 | SHEET: 2 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		Concrete	overcore	HCS S-Ø 12.3.99		START: 0805
			8.Ø ppm		0.55' BGS	FINISH: 0810
	1.Ø	(SC) Clayey Sand Soft, low plasticity fine grained sand w/silt. DRY, COLOR: 10YR3/1 very dk grey	9.5 ppm	HCS S-S 12.3.99	Soil Sample ID # BF1211	RUN: 4.Ø
			1.2 ppm	HCS S-D 12.3.99		REC: 4.Ø
	2.Ø		Ø.9 ppm	HCS S-9 12.3.99 @0815 GEOTECH SAMPLE FROM Ø.5'-2.5' BGS # BF1211	@ 0820	LOSS: Ø - Ø.55 is concrete
						HEADSPACE - Ø'-2' BGS is 11.3 ppm
	3.Ø	(CL) - Lean Clay, slightly moist ~~Soft~~ med → low plasticity 10YR 4/1 to GREY	Ø.7 ppm	HCS Ø.7 12.3.99 3.Ø' BGS	2.5' BGS	HEADSPACE - 2'-4' BGS is 2.9 ppm
			Ø.Ø ppm	Geotek 12.3.99		
	4.Ø	Mottled w/ 2.5Y4/3 olive brown TRACE amt of fine gr. Sand.	7.4 ppm	4.Ø BGS		START: 0810
		Sm - Silty Sand, fine gr. Soft, slightly moist 10YR3/2 v. dk. grayish brown	8.5 ppm			FINISH: 0815
	5.4	(SC) Clayey Sand - (high clay content) lean clay - med plasticity, fine gr. sand. soft, moist 10YR 4/1 dk grey mottled w/ 2.5YH13 Olive Brown	2.5 ppm			RUN: 4.Ø
						REC: 4.Ø
						LOSS: Ø
	6.Ø		Ø.7 ppm			HEADSPACE 4'-6' BGS is 5.4 ppm
						HEADSPACE 6'-8' BGS is 2.3 ppm
	7.Ø		Ø.5 ppm			STARTED TO GET WET SOIL @ 7.6' BGS
	8.Ø	(Sm) Silty Sand - Well Sorted med → fine gr. Sand Saturated Soft loose	Ø.1 ppm		8.Ø' BGS	★ SATURATED IN SHOE ONLY
		Bottom of Core @ 8' BGS			water sample ID # BF1212 @ 0830	RUN WATER SAMPLER 8-12'
	9.Ø					
	10.Ø					

PROJECT: HAAF - Bulk Fuel Facility | HOLE NO: SB-12

DRILLING LOG

PROJECT: HAAF- Bulk Fuel Facility | INSPECTOR: Heather L Smith | HOLE NO: SB-12 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GLOVE/CH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11.0	Did not collect core here			Water sampling ID# BF1212 @0830	
	12.0					
	13.0					B.O.B = 13.0' Bgs
	14.0					

Heather L Smith 12-4-97

PROJECT: HAAF- Bulk Fuel Facility | HOLE NO: SB-12

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HTRW DRILLING LOG

DISTRICT: Savannah		HOLE NUMBER: SB 13/MW-13
1. COMPANY NAME: SAIC - Oak Ridge TN	2. DRILL SUBCONTRACTOR: SAIC - Middletown PA	SHEET 1 OF 3

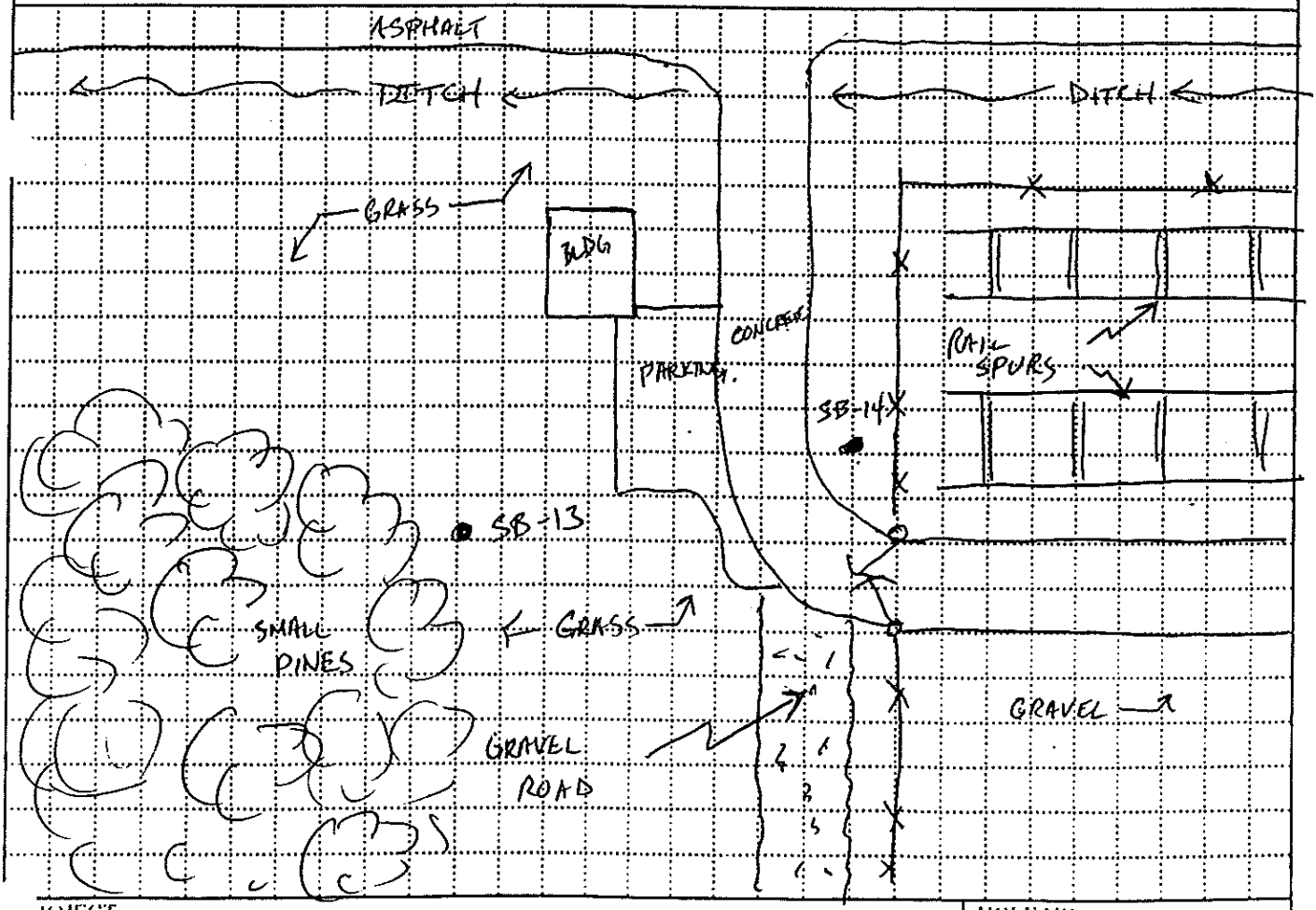
3. PROJECT: CAP - PART A, BULK FUEL FACILITY	4. LOCATION: BFF HAA-09, HAAF
5. NAME OF DRILLER: Al Root	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 1-IN OD, 3.5 LENGTH STEEL SCREEN. 2.25 IN OD STEEL CASING FOR WELL INSTALLATION 4.0 FT LENGTH, 2 IN OD. MACROCORE	8. HOLE LOCATION: SB-13
	9. SURFACE ELEVATION: TBD by Surveyor.
	10. DATE STARTED: 11-30-99 / 11. DATE COMPLETED: 11/30/99
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 4.9 FT BGS.
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 5.2 FT BGS
14. TOTAL DEPTH OF HOLE: 16.5 FT BGS.	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
BF13 11			NA

20. SAMPLES FOR CHEMICAL ANALYSIS	BTEX	GRO/S	OTHER (SPECIFY) PAH	OTHER (SPECIFY) PAH/PEST	OTHER (SPECIFY) TOC	21. TOTAL CORE RECOVERY %
BF13 11 / BF13 12	1/1	1/0	0/1	1/0	1/0	80

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
MONITORING WELL		MW-13		Richard Hall

LOCATION SKETCH/COMMENTS — ~~X~~ FENCE — SCALE:



PROJECT: CAP - PART A, BULK FUEL FACILITY — HOLE NO: SB-13 / MW-13.

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP - PARTA BFF | INSPECTOR: M. Hall | HOLE NUMBER: SB-13/MW-13 | SHEET: 2 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) PPM	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		MOIST, ORGANIC RICH MEDIUM SAND, SYI 7.5YR 4/0 Dark Grey	BZ: 0.0 FS: 0.0 HS: 0.0	N/A	N/A	START: 1053 STOP: 1055 RUN: 4.0 RECOVERY: 1.6
	1.0	- - - GRADATIONAL CONTACT MOIST, CLAYEY SAND 5YR 4/1 Dark Grey (clay 30%) Medium Plasticity				
	2.0	NO RECOVERY	FS: ~~0.0~~ 1.30 HS: N/A	N/A	N/A	
	4.0	SAME AS ABOVE	BZ: 0.0 FS: 0.0 HS: 0.2	N/A	N/A	START: 1100 STOP: 1105 RUN: 4.0 REC: 4.0
	5.0			5.0 - 7.0 GEOTECH SAMPLE 1110		
	6.0		FS: 0.0 HS: 1.9			
	7.0	- - - - - CONTACT/SHARP MOIST, MED. PLASTICITY SANDY CLAY, BLUISH GREEN CH - FAT CLAY W/ SAND., HOMOGENEOUS, FIRM		N/A	7.0-8.0 BF1311 1115	
	8.0	SAME AS ABOVE WITH 5% SHELL PARTICLES MOIST. SOFT, 10YR5/1 GRAY	BZ: 0.0 FS: 0.0 HS: 3.8	N/A	11-30 BF1311	START: 1110 STOP: 1115 RUN: 4.0 REC. 4.0
	9.0	- - - - - CONTACT SATURATED ZONE CLAYEY, POORLY SORTED SAND, 10YR5/1 GRAY			N/A	
	10.0					

DRILLING LOG

PROJECT: CAP A, BFF HAA-09.
INSPECTOR: [illegible]
HOLE NUMBER: SB-13
SHEET: 3 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GLOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	10.0	SAME AS ABOVE	FS: 0.0 HS: N/A	N/A	N/A	SEE PREV. PAGE
	11.0	- - - CONTACT / GRADATIONAL VERY SOFT, WET SILTY SAND (MEDIUM GRAINED MODERATELY SORTED SAND)				
	12.0	NOT SAMPLED FOR SOIL DESCRIPTION	N/A	N/A	N/A	START. 1140 STOP. 1145 RUN: 4.5
	13.0				12.5-16.5 BFI312 WATER SAMPLE 1155	
	14.0		N/A	N/A		USING 1 INCH O.D. STEEL SCREEN FOR WATER SAMPLE COLLECTION
	15.0					WATER TAGGED AT ~4.9 FT BGS
	16.0					1120: WATER TAGGED AT 4.65 1125: 5.2 FT BGS
		TD=16.5				

mHH 11/30/95

PROJECT: CAP A, BFF HAA-09, HAA[illegible]
HOLE NO: SB-13

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HTRW DRILLING LOG

1 COMPANY NAME: SAIC	2 DRILL SUBCONTRACTOR: SAIC	DISTRICT: SAVANNAH
		HOLE NUMBER: SB-14
		SHEET 3 OF 3 SHEETS

3 PROJECT: CAP-PARTA, BFFHAA-09

4 LOCATION: HAAF, GA.

5 NAME OF DRILLER: Al Root

6 MANUFACTURERS DESIGNATION OF DRILL: GEOPROBE 5400

7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 1 IN OD, 3.5 LENGTH STEEL SCREEN, 2.25 IN STEEL CASING FOR WELL INSTALLATION 4.0 LENGTH, 2-IN OD MACRO CORE

8 HOLE LOCATION: SB-14

9 SURFACE ELEVATION: TBD By Surveyor

10 DATE STARTED: 12/01/99

11 DATE COMPLETED: 12/01/99

12 OVERBURDEN THICKNESS: N/A

13 DEPTH GROUNDWATER ENCOUNTERED: 7.2 FT BGS TO SATURATED ZONE

13 DEPTH DRILLED INTO ROCK: N/A

16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 4.8 FT BGS (40 minutes after pushing steel screen) LEVEL USED FOR WELL INSTALL

14 TOTAL DEPTH OF HOLE: 13.0

17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 4.86 FT BGS IMMEDIATELY AFTER WELL INSTALLATION

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
	BF1411		NA

20 SAMPLES FOR CHEMICAL ANALYSIS	BTEX	METALS	OTHER (SPECIFY) PAH	OTHER (SPECIFY) PAH/PCB	OTHER (SPECIFY) TOC	21 TOTAL CORE RECOVERY %
BF1411 / BF1412	1/1	1/0	0/1	1/0	1/0	81

22 DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23 SIGNATURE OF INSPECTOR
MON. WELL	NA	MW-14	NA	Mitchell Hall

LOCATION SKETCH/COMMENTS: N/A SCALE: N/A

SEE PAGE 17 OF LOGBOOK #8

PROJECT	HOLE NO
CAP A, BFFHAA-09, HAAF	SB-14

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP-A, BFF HAA-09, HAAF | INSPECTOR: Mitchell Hall | HOLE NO: SB-14/MW-14 | SHEET: 2 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	1.0	CL - LEAN CLAY WITH SAND, MOIST, FIRM, 7.5YR5/6 STRONG BROWN & BROWN 7.5YR5/2	BZ: 0.0 FS: 0.0 HS: 0.7	N/A	N/A	START: 1430 STOP: 1432 RUN: 4.0 FT RECOV: 2.5 FT
		- - - SHARP CONTACT - - -				
		OH/OL - ORGANIC SOIL WITH SAND SOFT, MOIST, FINE GRAINED 10YR 3/1 VERY DARK GRAY			BF1411 0.5-2.5 1435	
	2.0				~~N/A~~	
	3.0	No RECOVERY	N/A	N/A	N/A	
	4.0	CH - FAT CLAY w/SILT MOIST, FIRM, MED. TO HIGH PLASTICITY 10YR 4/1 VERY DARK GREY TO BLUISH GREY	BZ: 0.0 FS: 0.0 HS: 0.0	N/A	N/A	START 1434 STOP: 1436 RUN: 4.0 FT RECOV: 4.0 FT
	5.0			BF1411 Geotech 5.2-7.2 1440	~~BF0~~ ~~NAH 12/04~~ BF1411 5.2-7.2 1440	
		- - - GRADATIONAL				
		~~CH - FAT 12/04~~				
	6.0	SP-SM POORLY GRADED SAND WITH CLAY, WOOD FRAGMENTS, MOIST FIRM. 10YR4/1 VERY DARK GRAY & 10YR6/1 LIGHT GRAY	FS: 0.0 HS: 0.0		SAMPLE DISCARDED DUE TO HIGHER HEADSPACE IN 0.5 TO 2.5 FT	
	7.0	~~- - - SHARP~~ GRADATIONAL CONTACT 7.2				
		SATURATED ZONE				
		SW - WELL GRADED, MEDIUM GRAINED QUARTZ SAND, SOFT WET 10YR 7/1 LIGHT GREY		NA	~~N/A~~ BF1412 7.2-12.2 1505	
	8.0		BZ: 0.6	NA		START: 1440 STOP: 1445 RUN: N/A REC: N/A STEEL SCREEN PUSHED TO 12.2 FT BGS FOR GROUNDWATER SAMPLE COLLECTION
		SOIL NOT COLLECTED FOR DESCRIPTION			BF1412 WATER SAMPLE 1505	
	9.0					
	10.0					

PROJECT: CAP-A, BFF HAA-09 HAAF | HOLE NO: SB-14/MW-14

DRILLING LOG

PROJECT: CAP-A, BFF HAA-09, HAAF | INSPECTOR: [illegible] | BOREHOLE NUMBER: SB-14/MW-14 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		SOIL NOT COLLECTED	N/A	N/A	BF14121 CONT'D	SEE PREVIOUS PAGE
	11					
			N/A	N/A		TIME/WATER THC 1525 / 4.8 FT BGS
	12					
					N/A	START: 1530 STOP: 1535 PUSH STEEL CASING FOR MONITORING WELL PLACEMENT 10.3
	13	TD = 13.0 FTBGS				

10.0 11.0 12.0 13.0

M. Hk 12/01/99

PROJECT: CAP-A, BFF HAA-09, HAAF | BOREHOLE NO: SB-14/MW-14

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC - Middletown	HOLE NUMBER: SB-15
	DISTRICT: Savannah Corps	SHEET 1 of 3

3. PROJECT: HAAF - Bulk Fuel Facility
4. LOCATION: BFF
5. NAME OF DRILLER: John Hasselhoff
6. MANUFACTURER'S DESIGNATION OF DRILL: geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4' x 2¼" macrocore rods w/ acetate liners; 4½o 2½" well building rods schedule 40 PVC, Screen/well mat'l
8. HOLE LOCATION: See map
9. SURFACE ELEVATION:
10. DATE STARTED: 12/02/99
11. DATE COMPLETED: 12/02/99
12. OVERBURDEN THICKNESS: Greater than total Depth
13. DEPTH GROUNDWATER ENCOUNTERED: 3.3' BGS Top of 1st Perch Zone
13. DEPTH DRILLED INTO ROCK: NA
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 6.9' BGS top of water table
14. TOTAL DEPTH OF HOLE: 13.0' BGS
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 4.35' BGS = STATIC WL after well built

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
#BF1511	X	—	NA

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	~~METALS~~	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
#BF1511 BBF1512	BTEX	PAH	TPH-GRO/Moist.	PAH, TPH-DRO	—	N/A

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	—	X	—	Heather J Smith

LOCATION SKETCH/COMMENTS — SCALE:

See map on page 47 of this logbook

PROJECT	HOLE NO
HAAF - Bulk Fuel Facility	SB-15

DRILLING LOG

PROJECT: HAAF - Bulk Fuel Facility | INSPECTOR: Heather Smith | HOLE NUMBER: SB-15 | SHEET: 2 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GLOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		(SM) Silty Sand w/ TRACE GRAVEL @ SURFACE FINE GRAINED - DRY, Loose Soft nonplastic 10YR 5/4 GREY	DRY CORE Øppm			START: 1101 FINISH: 1110 RUN: 4' REC: 3.7 Loss: Ø.3 Headspace Ø-2' 2.1 ppm
1.Ø		(SM) Silty Sand fine grained, some medium (~20%) grains TRACE CLAY soft, Slightly moist loose 10YR 6/4 Lt. yellowish brown w/ 10YR 5/4 yellowish brown	Øppm		1.5	
2.Ø		(CL) Lean Clay w/ SAND (~30%) Sand is fine grained Clay is firm, low plasticity 10YR 4/1 Dark Grey 10YR 4/6 DK. yellowish brown.	Øppm		SAMPLE ID # BF1511 @1125	Headspace 2.4 2.9 ppm
3.Ø		(SP) Poorly graded - (well sorted) SAND (WET → SATURATED)	Øppm		3.5	TOP of Very Saturated Perch ZONE
4.Ø		Loss fine grained Sand - homogeneous QTZ grains 10YR 7/1 LT. GREY PERCH ZONE	Øppm			START 1115 FINISH 1120 RUN 4.Ø REC 4.Ø Loss Ø STATIC WATER LEVEL (DRY CONFINING LAYER BRWN WATER ZONE) Headspace 4-6' BGS Ø.5 ppm
5.Ø		(SC) ~~Sandy Clay~~ Clayey Sand Sand is fine → med. grained clay is lean low plasticity due to high sand content. firm, Slightly moist to dry 2.5Y 5/6 lt olive brown ~~to~~ & 2.5Y 6/3 Lt Yellowish Brown	Øppm			
6.Ø			Øppm		Water sample collected 6.Ø-1Ø.Ø' BGS BF1512 @1140	
7.Ø		(SM) - Silty Sand. homogeneous, fine Sand QTZ grains, trace silt Soft, wet, nonplastic 5Y 6/2 Lt. olive grey	Øppm	7.Ø Sample ID # BF1511 8.Ø @1145		Headspace 6-8' BGS Ø.8 ppm top of G.W.
8.Ø		STOPPED CORING @ 8.Ø' BGS				
						9.Ø
						10.Ø

PROJECT: HAAF BFF | HOLE NO: SB-15

DRILLING LOG

HOLE NUMBER SB-15

PROJECT HAAF BFF

INSPECTOR Heather Smith

SHEET 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GLOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11.0	NO CORE TAKEN				PUSHED DOWN TO T.D. of 13.0' BGS ? Set well.
	12.0					
	13.0					B.O.B = 13.0' BGS

Heather Smith 12/02/97

PROJECT HAAF - Bulk Fuel Facility

HOLE NO SB-15

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	DISTRICT: Savannah; HOLE NUMBER: SB-16/MW-16; SHEET 1 OF 3

3. PROJECT: CAP A BFF HAA-09, HAAF

4. LOCATION: HAAF

5. NAME OF DRILLER: Al Root

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 1 IN OD 3.5 FT LENGTH STEEL SCREEN, 2.25 IN STEEL CASING FOR WELL INSTALL, 4.0 FT LENGTH, 2-IN OD. MACROCORE.

8. HOLE LOCATION: SB-16

9. SURFACE ELEVATION: TBD by Surveyor

10. DATE STARTED: 12/02/99

11. DATE COMPLETED: 12/02/99

12. OVERBURDEN THICKNESS: N/A

13. DEPTH DRILLED INTO ROCK: N/A

14. TOTAL DEPTH OF HOLE: 12.5 FEET

15. DEPTH GROUNDWATER ENCOUNTERED: 6.3 FT BGS TO SATURATED ZONE

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 4.9 FT 10 minutes after water sample collect

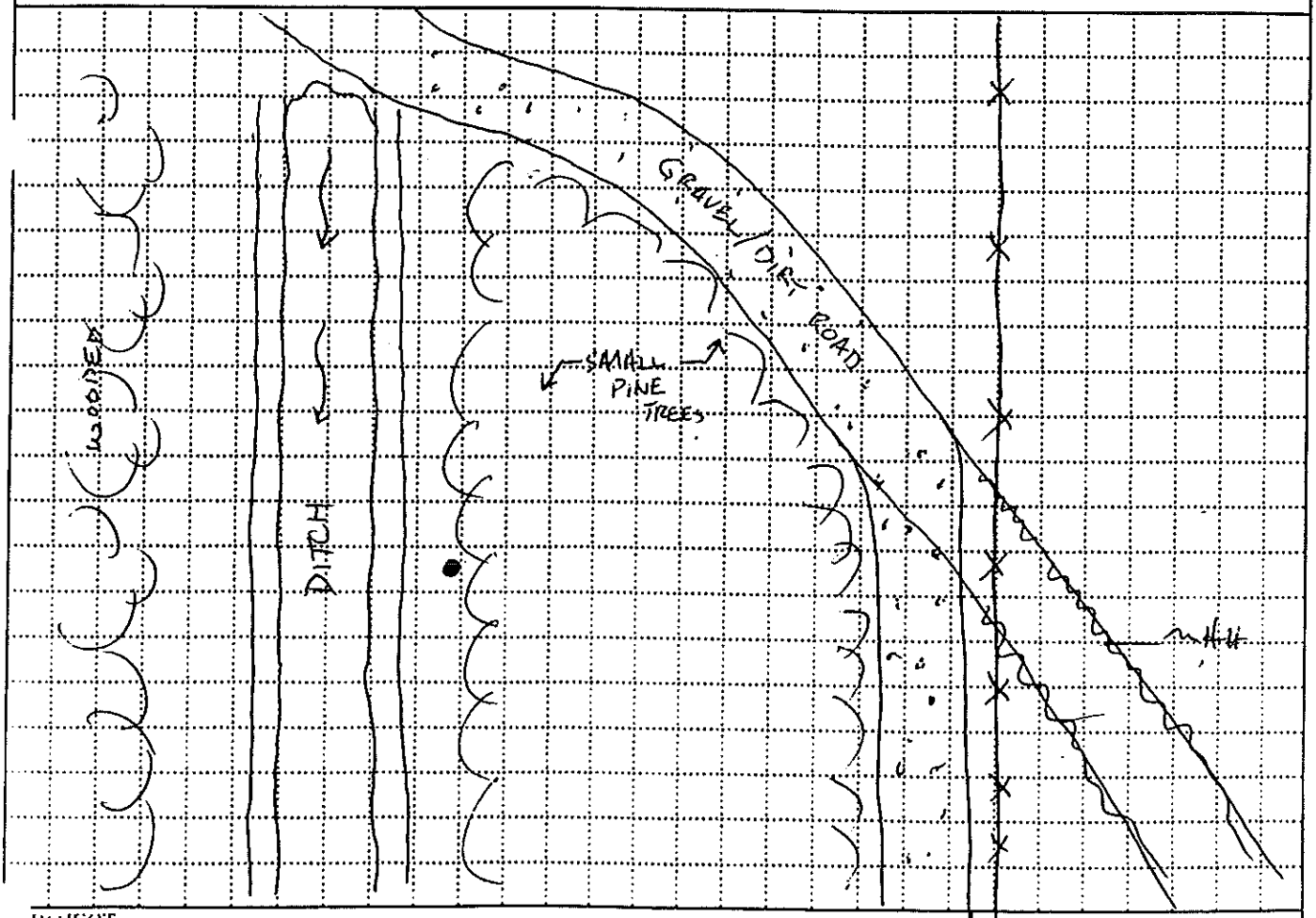
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 4.88 FT BGS AFTER WELL INST.

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
BF1611	✓	NA	NA

20. SAMPLES FOR CHEMICAL ANALYSIS	BTEX	METALS	OTHER (SPECIFY) TPH-DRO	OTHER (SPECIFY) TPH-GRO	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
BF1611 / BF1612	1 / 2	1 / 2	1 / 0	1 / 0	NA.	75 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Monitoring well		MW-16		

LOCATION SKETCH/COMMENTS ● MW-16 LOCATION SCALE:



PROJECT: CAP - PART A, BFF HAA-09, HAAF

HOLE NO: SB-16 / MW-16

ENG FORM 5056-R, AUG 94

(Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP - PART A, BFF HAA-09, HAAF | INSPECTOR: Hubbell Hall | HOLE NUMBER: SB-16/MW-16 | SHEET: 2 of

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) (ppm)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0.0	OL-OH, MOIST ORGANIC RICH MEDIUM SAND 7.5YR4/1 MEDIUM	BZ: 0.0 FS: 0.0 HS: 0.0	BF1611 0.0-2.0 FT 1500 GEOTECH SAMPLE	N/A	START: 1440 STOP: 1445 RUN: 4.0 FT RECOVERY: 2.0 FT
	1.0	CH - MOIST, SANDY CLAY, ORGANIC RICH 5YR4/1 DARK GREY MODERATE PLASTICITY				
	2.0		N/A	N/A	N/A	
	3.0	NO RECOVERY				
	4.0	SAME AS ABOVE MORE SAND	BZ: 0.0 FS: 0.0 HS: 0.0	N/A	BF1611 4.3-6.3 FT SOIL SAMPLE 1455	START: 1446 STOP: 1450 RUN: 4.0 RECOVERY: 4.0
	5.0					
	6.0	SHARP CONTACT SW - WELL GRADED FINE GRAINED QUARTZ SAND LIGHT GREY 6.3 FT SATURATED ZONE	N/A	N/A	BF1612 6.3-11.3 FT GROUNDWATER SAMPLE 1520	
	7.0	GRADATIONAL CONT. SW & CH INTERBEDDED WELL SORTED MEDIUM SAND WITH LAMINATIONS OF FAT CLAY (10YR5/1) GRAY				
	8.0	NO SOIL COLLECTED FOR DESCRIPTION	N/A	N/A		START 1500 STOP: 1505 RUN: N/A RECOVERY: N/A PUSHED STEEL SCREEN TO 11.3 FT FOR GROUNDWATER SAMPLE COLLECTION
	9.0					
	10.0					

DRILLING LOG

PROJECT: CAP A, BFF HAA-09, HAAF | INSPECTOR: Mitchell Hall | HOLE NUMBER: SB-16/MW-16 | SHEET: 3 of 3

BLOW (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11.0	SOIL NOT COLLECTED	N/A	N/A	BF1612	SEE PREVIOUS PAGE TIME/WATER TAG, 1530 4.9 FT BGS
	12.0	TD = 12.5				1535: START 1540: STOP STEEL CASING PUSHED TO 12.5 FT BGS FOR MON. WELL INSTALLATION.
	13.0					

mH 12/02/99

PROJECT: CAP PART A, BFF HAA-09, HAAF | HOLE NO: SB-16/MW-16

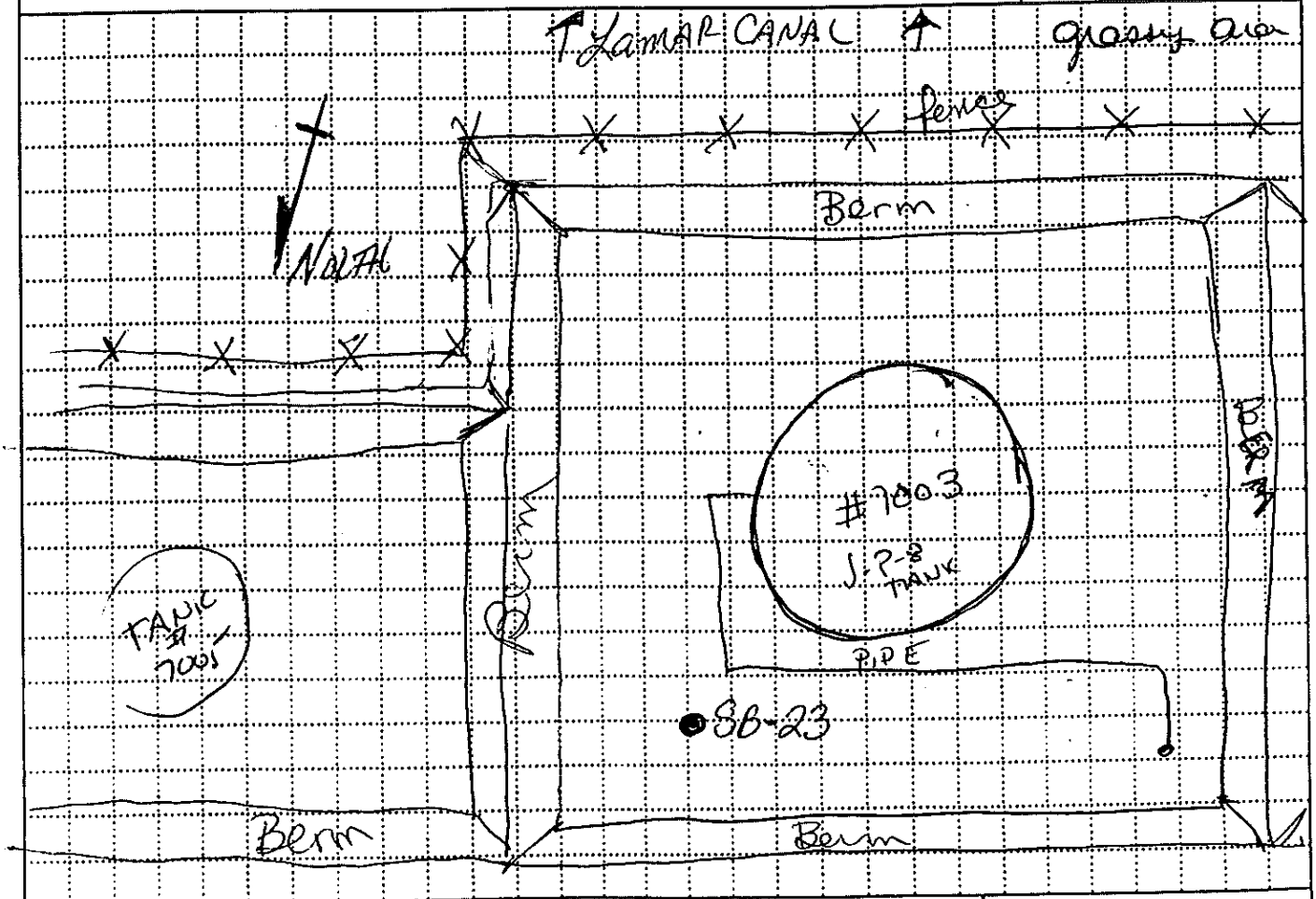
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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DISTRICT: Savannah Corps	HOLE NUMBER: SB-23
	3. DRILL SUBCONTRACTOR: SAIC - Middletown	SHEET 1 OF 3
4. PROJECT: HAAF, Bulk Fuel Facility	5. LOCATION: HAAF by TANK # 7003 in BFF	
6. NAME OF DRILLER: Ken Swain	7. MANUFACTURERS DESIGNATION OF DRILL: hand augar	
8. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 2¼" hand augar w/ 4' extension rods & handle S.S. bowls & spoons	8. HOLE LOCATION: see map	
	9. SURFACE ELEVATION:	
	10. DATE STARTED: 12/4/99	11. DATE COMPLETED: 12/4/99
12. OVERBURDEN THICKNESS: greater than total depth	15. DEPTH GROUNDWATER ENCOUNTERED: 3.9' BGS - 1st Saturated zone	
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: ~3.9' BGS - 2nd Saturated zone	
14. TOTAL DEPTH OF HOLE: 12'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 3.77' BGS = TOP of water on 12/7/99	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
#BF2311	X		NA			
20. SAMPLES FOR CHEMICAL ANALYSIS	**VOC**	**~~METALS~~ PAH**	**OTHER (SPECIFY)**	**OTHER (SPECIFY)**	**OTHER (SPECIFY)**	**21. TOTAL CORE RECOVERY %**
#BF2311, #BF2310	BTEX	PAH	TPH-GRO, Moist	PAH, TPH-DRO	—	NA
22. DISPOSITION OF HOLE	**BACKFILLED**	**MONITORING WELL**	**OTHER (SPECIFY)**	**23. SIGNATURE OF INSPECTOR**		
1" Well	—	X	—	Heather L Smith		

LOCATION SKETCH/COMMENTS — SCALE: NONE



PROJECT: HAAF - Bulk Fuel Facility — HOLE NO: SB-23

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: HAAF - Bulk Fuel Facility | INSPECTOR: Heather L Smith | HOLE NUMBER: SB-17 | SHEET: 2 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	1.0	(SC) - Clayey Sand fine grained sands lean clay mtrl. med/low plasticity due to high sand content Soft to firm 2.5Y 3/2 V. dk. greyish brown 2.5Y 4/4 olive brown	0-2' BGS headspace 6.7 to 3 ppm	Geotech Sample from 0-2' BGS #BF1711 @0925		HAND augering this well w/ 2¼" hand augar Contacts are rough estimates
	2.0	Begin to see glauconitic sand layers (5GY 4/1 DK GREENISH GREY) (green sands) at a depth of ~ 1.7' BGS)	2.0' BGS			
	3.0	(SC) Clayey Sand (as above) w/ color change (thin clay layers Then thin sand layers Then thin sandy clay layers then clayey sand)	2-4' BGS headspace 1394 ppm		SAMPLE ID # BF1711 @0925	VERY Strong Smell
	4.0		4.0' BGS			TOP of water (possible perch) zone Wet zone
	5.0	(SM) - Silty Sand fine grained sand Slightly moist Soft non plastic Slight greenish color 5GY 6/1 greenish grey	4'-6' BGS headspace 237 ppm			Soil is dry to Slightly moist Again
	6.0		6.0' BGS			SATURATED CORE throughout TOP of water @ ~ 5.5
		gradually got clayeyer				
	7.0	(SC) - Clayey Sand SATURATED → wet Sand is fine gr. Med/low plasticity Wet lean clay, soft 5GY 5/1 greenish grey				
	8.0		8.0' BGS			
	9.0	(SC) - SATURATED (cont) Clayey Sand no plasticity - due to wetness, Sand, Soft (soupy wet)				
	10.0					

PROJECT: HAAF - Bulk Fuel Facility | HOLE NO: SB-17

DRILLING LOG

PROJECT: HAAF - BOF | INSPECTOR: Heather Smith | HOLE NO: SB-17 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GLOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	10.0	Saturated				
	11.0	WOOD DEBRIS 3' STEMS APPEAR @ ~ 12'BGS. SC - Clayey Sand				
	12.0					B.O.B. 12.8' BGS

10.0 11.0 12.0

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	BOH NUMBER: SB-18
	DISTRICT: Savannah	SHEET 1 OF 3

3. PROJECT: CAP PART A

4. LOCATION: BFF HAA-09, HAAF, GA

5. NAME OF DRILLER: Al Root

6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe 5400

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 1 IN OD, 3 STRENGTH STEEL SCREEN, 2.25 IN OD STEEL CASING FOR WELL INSTALLATION, 4.0 FT LENGTH 2-IN DIAMETER MACROCORE FOR SOIL SAMPLE COLLECTION

8. HOLE LOCATION: SB-18

9. SURFACE ELEVATION: TBD by surveyor.

10. DATE STARTED: 12/1/99

11. DATE COMPLETED: 12/1/99

12. OVERBURDEN THICKNESS: NA

13. DEPTH DRILLED INTO ROCK: NA

14. TOTAL DEPTH OF HOLE: 13.5 FT

15. DEPTH GROUNDWATER ENCOUNTERED: 6.1 Ft BGS TO SATURATED ZONE

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 4.7 Ft BGS TO STATIC WATE

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 4.32 FT BGS (10 minutes after well installation)

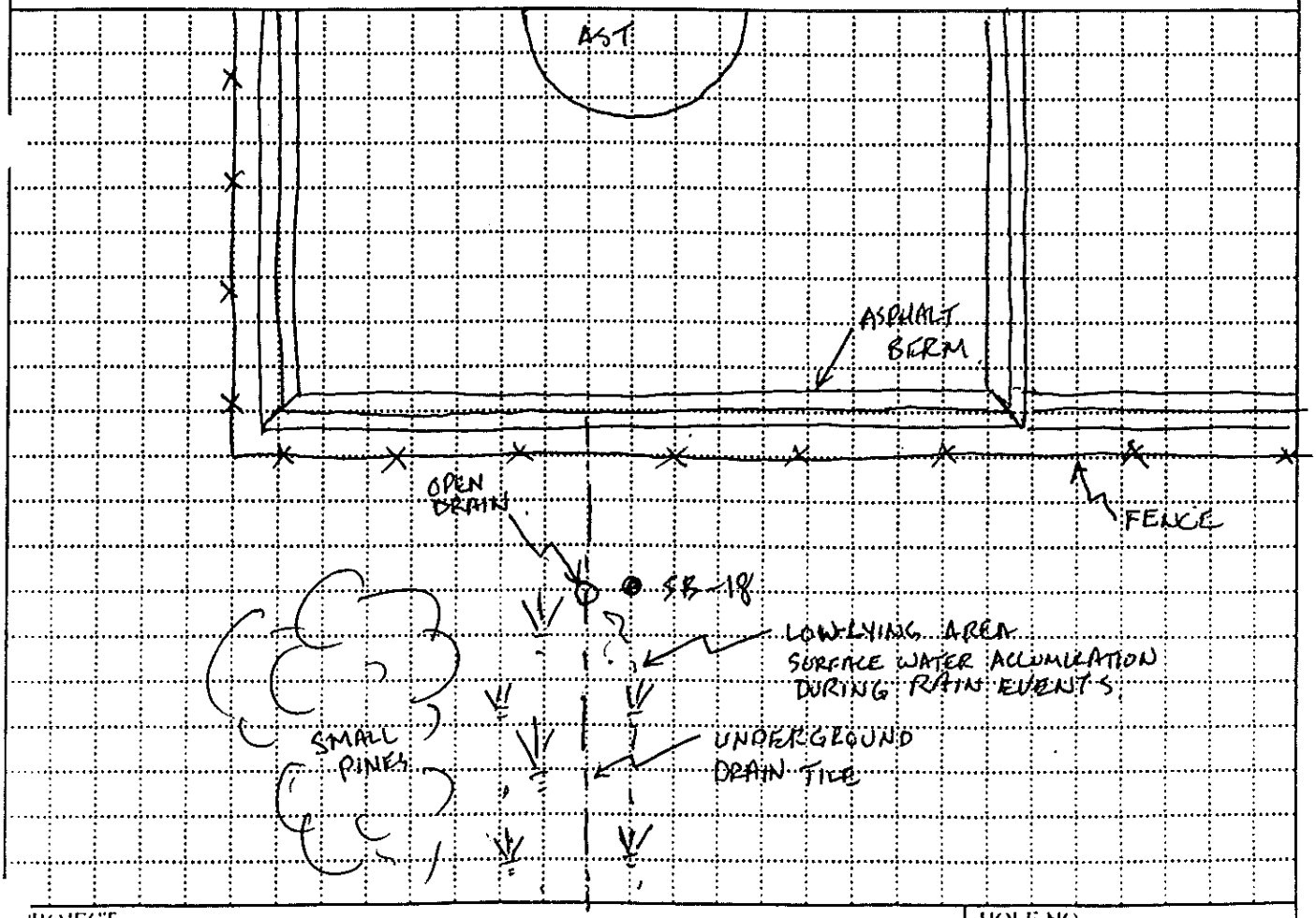
18. GEOTECHNICAL SAMPLES: BFIB11 — DISTURBED: ✓ — UNDISTURBED:

19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	BTEX VOC	METALS	OTHER (SPECIFY) GRO	OTHER (SPECIFY) PAH/TPHD	OTHER (SPECIFY) TOC	21. TOTAL CORE RECOVERY %
BFIB11 / BFIB12	1 / 1	0 / 1	1/0	1/0	1/0	83

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
MONITORING WELL		MW-18		

LOCATION SKETCH/COMMENTS ● SB-18 / MW-18 SCALE: 1" = ~80'



PROJECT: CAP - PART A, BFF HAA-09, HUNTER AAF, GA

HOLE NO: SB-18.

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP A, BFF HAA-09, HAAF | INSPECTOR: Michael Hart | HOLE NUMBER: SB-18/MW-18 | SHEET: 2 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) (ppm)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0	OH/OL - ORGANIC SOIL WITH SAND, MOIST SOFT, ~~7.5YR 5/6~~ N/A ~~STRONG BROWN~~ N/A 10YR 3/1 VERY DARK GREY	BZ: 0.0 ppm FS: 0.0 HS: 0.0	N/A	N/A	START 1600 STOP: 1603 RUN: 4.0 FT RECOVERY: 3.0 FT
	1			BF1811 1.0-3.0 GEOTECH SAMPLE 1615		
	2		FS: 0.0 HS: 0.0		N/A	
	3	NO RECOVERY	N/A	N/A		
	4	SAME AS ABOVE	BZ: 0.0 FS: 0.0 HS: 0.0	N/A	BF1811 4.1-6.1 FT BGS 1610 SOIL SAMPLE	START: 1605 STOP: 1608 RUN: 4.0 FT RECOVERY: 4.0 FT
	5	---- SHARP CONTACT SW - WELL GRADED FINE-GRAINED SAND W/ SILT SOFT, WET 7.5 YR 5/0 GREY				
	6	--- SATURATED ZONE ▽	N/A	N/A	BF1812 6.1-11.1 FT 1620	
	7	SAME SOIL DESCRIPTION AS ABOVE				
	8	SOIL NOT COLLECTED FOR DESCRIPTION	BZ: 0.0	N/A		START: 1610 STOP: 1615 RUN: N/A PUSHED STEEL SCREEN FOR GROUNDWATER SAMPLING TO 11.1 FT BGS
	9					
	10					

PROJECT: CAP - PART A, BFF HAA-09, HAAF | HOLE NO: SB-18

DRILLING LOG

PROJECT: CAP A, BFF HAA-09 HAAF | INSPECTOR: Mitchell Hall | HOLE NUMBER: SB-18 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	10.0	SOIL NOT COLLECTED	N/A	N/A	BF1812 CONT'D	SEE PREVIOUS PAGE
	11.6					TIME / WATER THG 1640 4.7 FT BGS.
	12.6					START: 1645 STOP: 1650 PUSHED STEEL CASING TO 13.5 FT FOR MONITORING WELL INSTALLATION
	13.6	TD = 13.5 FT BGS				
	14.0					

AH 12/1/99

PROJECT: CAP-A, BFF HAA-09, HAAF, GA | HOLE NO: SB-18

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC - Oak Ridge, TN	2. DRILL SUBCONTRACTOR: SAIC - Middletown PA	DISTRICT: Savannah
		HOLE NUMBER: SB-19/MW-19
		SHEET 1 of 3

3. PROJECT: CAP - Part A, BFF, HAAF

4. LOCATION: HAAF - Bulk Fuel Facility

5. NAME OF DRILLER: Al Root

6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 5400

7. SIZES AND TYPE OF DRILLING AND SAMPLING EQUIPMENT: 0.2 FT O.D STEEL MACROCORE, 4.0 FT LENGTH → 1 INCH O.D. STEEL SLOTTED SCREED, 1 INCH O.D. PUSH RODS

8. HOLE LOCATION: SB-19

9. SURFACE ELEVATION: TBD by Surveyor

10. DATE STARTED: 11/30/99

11. DATE COMPLETED: 11/30/99

12. OVERBURDEN THICKNESS: N/A

13. DEPTH DRILLED INTO ROCK: N/A

14. TOTAL DEPTH OF HOLE: 13.6 FEET BGS.

15. DEPTH GROUNDWATER ENCOUNTERED: 8.1 FT BGS (SATURATED ZONE)

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 4.15 FT BGS (~~1600~~) (1.25 hours)

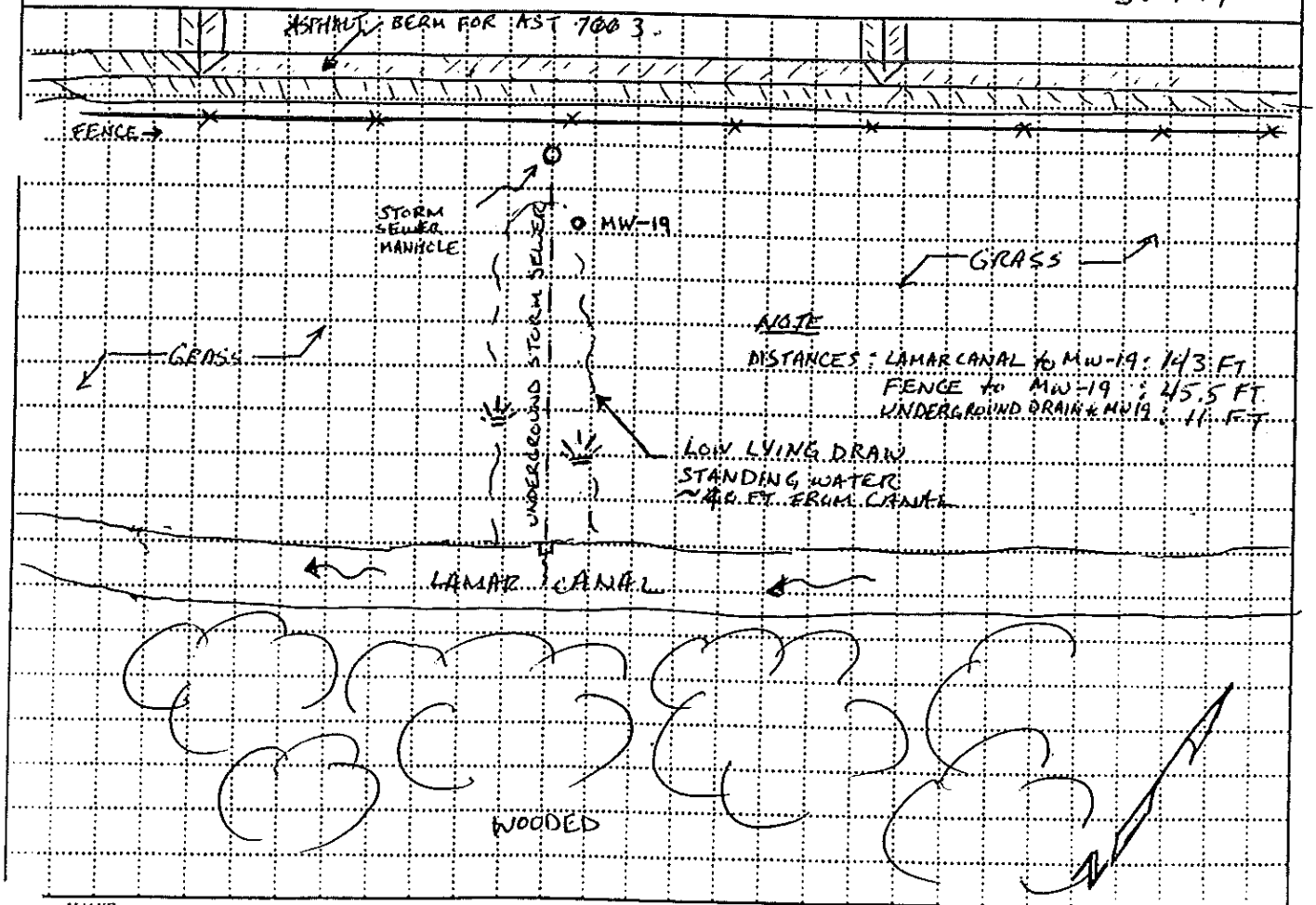
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): None.

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
			N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	~~PAH~~ ~~VOC~~ BTEX	TPH ~~METALS~~	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
BF1911, BF1912	1 ✓ 1	1 ✓ 0	1 ✓ 1	N/A	N/A	

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
MONITORING WELL		✓		

LOCATION SKETCH/COMMENTS: LOCATION OF SB-19/MW-19 SCALE: 1" = ~80 FEET



PROJECT	HOLE NO
CAP - Part A, Bulk Fuel Facility HAA-09, HAAF	SB-19/MW-19

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP II, BFF HAA-09, HAAF | INSPECTOR: Mitchell Hall | HOLE NUMBER: SB-19/MW-19 | SHEET: 2 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) ppm	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0.0	OH - ORGANIC RICH FINE SAND (TOP SOIL)	BZ: 0.0 FS: 0.0 HS: 0.0	N/A	N/A	START 1410 STOP: 1415 RUN. 4.0 FT RECOVERY: 2.0 FT
	1.0					
		WOOD FRAGMENTS - - - CONTACT CLAYEY SAND, MOIST, SOFT.				
	2.0		No RECOVERY	N/A	N/A	
		NO RECOVERY				
	3.0					
	4.0	MOIST, SOFT, MEDIUM GRAINED, SILTY SAND 10YR 7/1 (LIGHT GRAY) HOMOGENEOUS STRUCTURE SW-SM (WELL SORTED)	BZ: 0.0 FS: 0.0 HS: 0.0	4.0-6.0 GEOTECH SAMPLE 1430	N/A	START: 1418 STOP: 1421 RUN. 4.0 RECOV: 4.0
	5.0					
	6.0		FS. 0.0 HS: 0.0	N/A	6.0-8.0 SOIL SAMPLE 1420	
	7.0					
	8.0	- - - SATURATED ZONE WET, WELL SORTED, FINE GRAINED SAND (SW) 10YR 6/1 - GRAY	BZ: 0.0 FS: N/A HS: N/A	N/A	~~NHK~~ ~~11/30/93~~ 8.0-13.0 WATER SAMPLE BFI912	START: ~~STOP~~ 1425 STOP: 1430 RUN: 4.0 RECOVERY. 3.0
	9.0					
	10.0					
	20.0					

PROJECT: CAP - PART A, BULK FUEL FACILITY, HAA-09 | HOLE NO: SB-19/MW-19

DRILLING LOG

PROJECT: CAP, BFF HAA-09, HAAF | INSPECTOR: L. H. Faul | HOLE NUMBER: SB-19 / MW-19 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	10.0	SAME AS ABOVE	N/A	N/A	~~N/A~~ BF1912 8.0-13.0	SEE PREVIOUS PAGE
	11	NO RECOVERY				TIME WATER TAG/FT BG 1440 4.38 1600 4.15
	12	SOIL NOT COLLECTED	BZ: 0.0 ~~N/A~~ 11/30/95	N/A	8.0-13.0 BF1912 WATER SAMPLE 1450	START: 1440 STOP: 1445 RUN: 5.0 FT STEEL SCREEN FOR WATER SAMPLE COLLECTION
	13	TD=13.0				
	14					
	15.0					

~~N/A~~ 11-30-95

PROJECT: CAP-PART A, BFF HAA-09, HAAF | HOLE NO: SB-19 / MW-19

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	HOLE NUMBER: SB-20
	DISTRICT: Savannah	SHEET 1 OF 3

3. PROJECT: CAP - PART A

4. LOCATION: BFF HAA-09, HUNTER AAF

5. NAME OF DRILLER: AA - Well installed using Hand Augers

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Auger Buckets 8-INCH Length 2.25 IN O.D. 4.6 FT Length Extensions

8. HOLE LOCATION: Near AST 7003

9. SURFACE ELEVATION: TBD by Surveyor

10. DATE STARTED: 12/05/99

11. DATE COMPLETED: 12/05/99

12. OVERBURDEN THICKNESS: NA

13. DEPTH DRILLED INTO ROCK: NA

14. TOTAL DEPTH OF HOLE: 12.0 FT

15. DEPTH GROUNDWATER ENCOUNTERED: 4.1 FT BGS TO TOP OF SATURATED ZONE

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
BF20II	✓	NA	NA

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	~~METALS~~	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
BF20II / ~~BF20DUP~~	BTEX	PAH	TPH-GRO	TPH-DRO	NA	100

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
MONITORING WELL	NA	MW-20	NA	Mitchell Hall

LOCATION SKETCH/COMMENTS: SEE SKETCH MAP FOR SB-21

SCALE: SEE SKETCH MAP FOR SB-21

SEE P. 27 OF LOGBOOK #9

PROJECT	HOLE NO
CAP-PART A, BFF HAA-09, HAAF	SB-20

ENG FORM 5056-R, AUG 94

(Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP A HAA-09 BFF, HAAF | INSPECTOR: Mitchell Hall | HOLE NUMBER: SB-20 / MW-20 | SHEET: 2 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		GRAVEL AND SAND	BZ: 0.0 FS: 0.0 HS: 22.8	BF2011 GEOTECH SAMPLE 0-2 feet 12/05/13 10/0	N/A	START: 1540 STOP: 1550 RUN: 2.0 FT RECOVERY: 2.0 FT
1		SP-SM · POORLY GRADED SAND (FINE TO MEDIUM GRAINED) WITH SILT MOIST, SILT CONTENT IS ORGANIC RICH (POSSIBLE PETROLEUM STAINING) [10YR3/1 VERY DARK GREY MOTTLED WITH 10YR7/2 LIGHT GREY; SAND GRAINS SUBANGULAR	FS: 8.2 HS: 31.6			1.0 HAND AUGER USED FOR WELL INSTALLATION AND SOIL BORING
2			BZ: 0.0 FS: 3.0 HS: 18.2	~~BF2011 GEOTECH SAMPLE~~ 12/05/13	BF2011 SOIL SAMPLE 2.0-4.0 FT BGS 1605	START: 1552 STOP: 1600 RUN: 2.0 FT RECOVERY: 2.0 FT 2.0
3		MODERATE TO STRONG PETROLEUM ODOR	FS: 290 HS: 920	N/A	BF2013 DUPLICATE SAMPLE 2.0-4.0 FT BGS 1605	3.0
		WET (PERCHED ZONE) — — — GRADATIONAL CONT.				
4		CH · FAT CLAY WITH SAND AND SILT, MOIST, STRONG PETROLEUM ODOR MOTTLED: SAME AT 3.5-4.5 FT IN SB-22	FS: 959 HS: >20000			4.0
		SHARP CONT.	BZ: 0.0 FS 200 HS: 55.3	NA	NA	START: 1618 STOP: 1630 RUN: 2.0 FEET RECOVERY: 2.0 FEET
5		SP-SM: POORLY GRADED SAND (V. FINE TO MEDIUM GRAINED SAND WITH SILT AND CLAY N5/1 (gray) MOTTLED WITH 10GY4/1 DARK GREENISH GREY. ROOT CASTS COMMON	FS: NA HS: NA			5.0
		TOP OF SATURATED ZONE				
6		— — — GRADATIONAL CONT. —	~~N/A~~	NA	NA	6.0
7		SP/SM POORLY GRADED SAND (FINE TO MEDIUM GRAINED) WITH SILT AND CLAY, WET LOW PLASTICITY, MOTTLED 10GY5/1 (DARK GREENISH GREY) AND 10GY7/1 (LIGHT GREENISH GREY)	BZ: 0.0			START: 1631 STOP: 1645 RUN: 2.0 FT RECOVERY: 2.0 FT. 7.0
		— — — GRADATIONAL CONT.				
8		SW - WELL GRADED FINE GRAINED SAND WITH 2-5% SILT, WET, 10GY5/1 GREENISH GREY	BZ: 0.0	NA	NA	START: 1646 STOP: 1710 RUN: 4.0 FT RECOVERY: 4.0 FT 8.0
9						WELL INSTALLED AT 1715. 9.0
10						

PROJECT: CAP A, BFF HAA-09, HAAF | HOLE NO: SB-20 / MW-20

DRILLING LOG

PROJECT: CAP A, BFF HAA-09, HHAF | INSPECTOR: [illegible] | HOLE NUMBER: SB-20/MW-20 | SHEET: 3 of 3

FROM (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		SAME AS ABOVE	BZ = 0.0	NA	NA	SEE PREVIOUS PAGE
	11		NA	NA	NA	
	12	TD = 12.0 feet				

MHH
12/05/09

PROJECT: CAP-A, BFF HAA-09, HHAF | HOLE NO: SB-20/MW-20

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HTRW DRILLING LOG

1 COMPANY NAME: SAIC	2 DRILL SUBCONTRACTOR: SAIC	HOLE NUMBER: SB-21/MW-21
	DISTRICT: USACE - SAVANNAH	SHEET 1 of 3

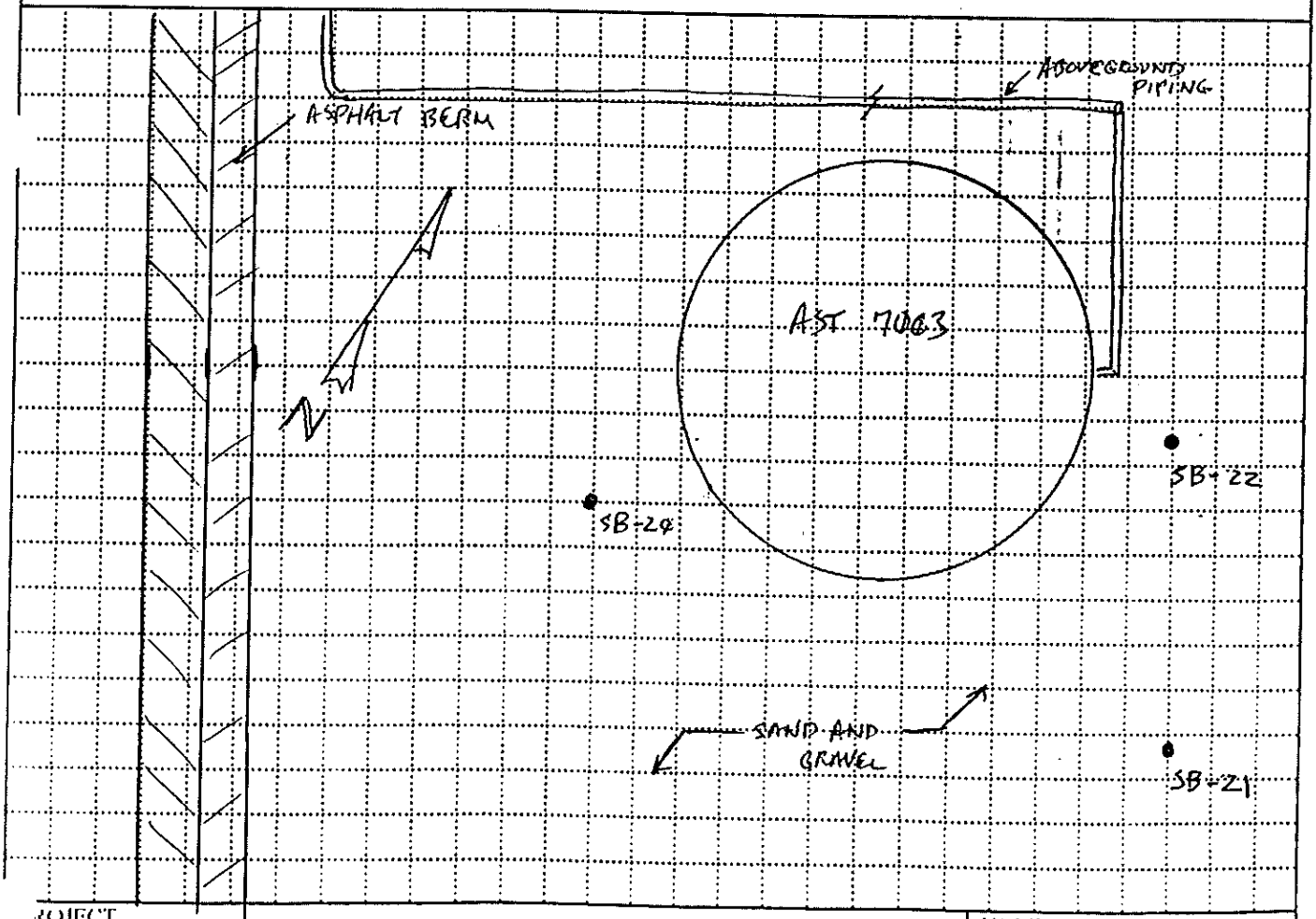
3 PROJECT: CAP - PART A, BFF HAA-09, HAAF	4 LOCATION: HAAF
5 NAME OF DRILLER: K. SWAIN, M. HALL HAND AUGER TEAM	6 MANUFACTURERS DESIGNATION OF DRILL: HAND AUGER
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: AUGER BUCKETS - 8 INCH LENGTH, 2.75 IN OD; 4.0 FT LENGTH EXTENSIONS	8 HOLE LOCATION: NEAR AST # 7003, BFF
MHH 12/05/99	9 SURFACE ELEVATION: TBD by Surveyor
	10 DATE STARTED: 12/05/99 — 11 DATE COMPLETED: 12/05/99
12 OVERBURDEN THICKNESS: N/A	15 DEPTH GROUNDWATER ENCOUNTERED: 6.0 FT TO SATURATION
13 DEPTH DRILLED INTO ROCK: N/A	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14 TOTAL DEPTH OF HOLE: 13.25 FEET BGS	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
BF2111	✓	N/A	N/A

20 SAMPLES FOR CHEMICAL ANALYSIS	VOC BTEX	METALS PAH	OTHER (SPECIFY) TPH-DRO	OTHER (SPECIFY) TPH-GRO	OTHER (SPECIFY)	21 TOTAL CORE RECOVERY %
BF2111 (Soil)	1	1	1	1	N/A	100

22 DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23 SIGNATURE OF INSPECTOR
Monitoring Well		MW-21		

LOCATION SKETCH/COMMENTS — SCALE: 1" = 35'



PROJECT: CAP - PART A, BFF HAA-09, HAAF

HOLE NO: SB-21 - MW-21

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP-A, BFF-HAA-09, HAAF | INSPECTOR: M. Hall | HOLE NUMBER: SB-21/MW-21 | SHEET: 2 of 3

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UNIT (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) (ppm)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	1.6	SP-SM INTERBEDDED ORGANIC RICH SAND (POORLY SORTED MED. to FINE GRAINED ~~10YR6/6~~ V. DARK BROWN WITH POORLY SORTED QUARTZ SAND, LESS ORGANICS, MOIST 10YR 6/2 Light brownish grey	BZ = 0.0 FS = 0.0 HS = 1.6	N/A	NA	START 0840 STOP: 0845 RUN: 2.0 FT RECOVERY: 2.0 FT
	2	PERCHED ZONE (?) — GRADATIONAL CONTACT.				
	3	CH - MOIST, FAT CLAY WITH FINE GRAINED SAND AND SILT, MOIST MODERATE PLASTICITY 10YR4/1 DARK GREY	BZ = 0.0 FS = 0.0 HS = 1.5	N/A	NA	START: 0846 STOP: 0900 RUN: 2.0 FT RECOV: 2.0 FT
	4	— GRADATIONAL CONTACT CH - FAT CLAY w/ SAND, GLAUCONITIC, 10GY4/1 DARK GREENISH GREY, VERY MOIST	BZ = 0.0 FS = 0.0 HS = 5.1	BFZ111 4.0-6.0 FT BGS 0925 GEOTECH SAMPLE	BFZ111 4.0-6.0 FT BGS 0925 SOIL SAMPLE	START: 0905 STOP: 0920 RUN: 2.0 FT REC. 2.0 FT
	5	— GRAD. CONT. SP-SM - POORLY GRADED SILTY SAND, MOIST 10YR4/1 DARK GREY, SOME LIGHT GREY AND LIGHT GREEN				
	6	GRAD. CONT. ▽ SATURATED ZONE SP - POORLY TO MODERATELY GRADED SAND, WET 5GY 6/1 Greenish grey FINE TO MEDIUM GRAINED QUARTZ SAND, 5% silt, 5% opaques.	BZ = 0.0	NA	NA	START: 0930 STOP: 0935 RUN: 2.0 FT REC: 2.0 FT
	7					
	8	SW - WELL GRADED SAND WITH 2-5% SILT, 5% opaques, wet, 2-5% SILT 10GY 5/1 GREENISH GREY ~~SAME AS ABOVE~~	BZ = 0.0	NA	NA	START: 0940 STOP: 0945 RUN 2.0 FT RECOV. 2.0 FT
	9					
	10					

PROJECT: CAP A, BFF HAA-09, HAAF | HOLE NO: SB-21/MW-21

DRILLING LOG

PROJECT: CAP A, BEF HAA-09, HAAF | INSPECTOR: Mr. Hall | HOLE NUMBER: SB-21/MW-21 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11	SAME SOIL DESCRIPTION AS ABOVE	BZ = 0.0	N/A	N/A	START: 0955 STOP: 1015 RUN: 3.25 FT RECOVERY: 3.25 FT
	12			N/A	N/A	INSTALLATION OF WELL AT 1015
	13	TD = 13.25 FT BGS.				
	14					

10.0 11.0 12.0 13.0 14

MWH 12/05/97

PROJECT: CAP A, BEF HAA-09, HAAF. | HOLE NO: SB-21/MW-21

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HTRW DRILLING LOG

1 COMPANY NAME: SAIC	2 DRILL SUBCONTRACTOR: SAIC	DISTRICT: USACE - Savannah
		HOLE NUMBER: SB-22/MW-22
		SHEET 1 OF 3 SHEETS

3 PROJECT: CAP - PART A BFF HAA-09	4 LOCATION: HUNTER ARMY AIRFIELD
5 NAME OF DRILLER: K. SWAIN & M. HALL - AUGER TEAM	6 MANUFACTURERS DESIGNATION OF DRILL: N/A - HAND AUGER USED
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: AUGER BUCKETS - 8 IN LENGTH, 2.25 IN O.D. 4.0 FEET LENGTH EXTENSION RODS	8 HOLE LOCATION: NEAR AST # 7003, BFF
mkH 12/05/99	9 SURFACE ELEVATION: TBD by Surveyor
	10 DATE STARTED: 12/05/99 — 11 DATE COMPLETED: 12/05/99
12 OVERBURDEN THICKNESS: N/A	15 DEPTH GROUNDWATER ENCOUNTERED: 6.0 feet BGS to Saturated zone
13 DEPTH DRILLED INTO ROCK: N/A	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14 TOTAL DEPTH OF HOLE: 13.0 feet bgs	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
BFZ211	✓	N/A	N/A

20 SAMPLES FOR CHEMICAL ANALYSIS	VOC BTEX	METALS PAH	OTHER (SPECIFY) TPH GRO	OTHER (SPECIFY) TPH-DRO	OTHER (SPECIFY)	21 TOTAL CORE RECOVERY %
BFZ211 - Soil	✓	✓	✓	✓	NA	100

22 DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23 SIGNATURE OF INSPECTOR
Monitoring well		MW-22		Mitchell Hall

LOCATION SKETCH/COMMENTS: SEE p.27 of Logbook #9 — SCALE: N/A

SEE p.27 OF LOGBOOK #9

PROJECT	HOLE NO.
CAP - PART A, HAA-09, HAAF	SB-22/MW-22

ENG FORM 5056-R, AUG 94 — (Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP A, BFF-HAA-09, HAAF | INSPECTOR: Mitchell Hall | HOLE NUMBER: SB-22/MW-22 | SHEET: 2 of 3

18

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) (ppm)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	1	SP-SM - POORLY GRADED SAND (FINE TO MEDIUM GRAINED SAND) WITH SILT, MOIST, PETROLEUM STAINED 10YR3/1 VERY DARK GRAY MOTTLED WITH 10YR7/2 LIGHT GREY, SAND GRAINS SUBANGULAR; SILT CONTENT 10%. Abundant Roots and organic material throughout (OL/OH).	BZ: 0.0 FS: 227 HS: >2000	NA	BF2211 0.0-2.0FT 1310 SOIL SAMPLE	START: 1300 STOP: 1305 RUN: 2.0 FT RECOVERY: ~~RE~~ 2.0 FT
	2		FS: 1400 HS: 2000			
			FS: 900 HS: >2000			
			BZ: 0.0 FS: 1190 HS: >2000	NA	NA	START: 1317 STOP: 1325 RUN: 2.0 FT. RECOVERY: 2.0 FT
	3		FS: 450 HS: 860			
			FS: 300 HS: 400			
		GRADATIONAL CONT.				
	4	CH - FAT CLAY WITH SILT (~10%) AND SAND (~15%), MODERATELY PLASTIC MOIST, MOTTLED 10YR4/1 (dark grey) com 10YR3/2 (v. dark greyish brown) and 10YR4/4 DARK YELLOWISH BROWN	FS: 260 HS: 620			
			BZ: 0.0 FS: 100 HS: 400	BF2211 4.0-6.0FT 1345 GEOTECH SAMPLE	NA	START: 1330 STOP: 1340 RUN: 2.0 FT RECOVERY: 2.0 FT
	5	CONTACT				
		CH / SP-SM, FAT CLAY INTERBEDDED WITH POORLY GRADED SILTY SAND, N5/1 (gray) MOTTLED WITH 10GY4/1 dark greenish gray.	FS: 0.0 HS: 5.0			
	6	SATURATED ZONE				
		SP - POORLY GRADED SAND (FINE TO MEDIUM GRAINED) WITH SILT AND CLAY, WET, LOW TO MODERATE PLASTICITY OPAQUES 5%, MOTTLED 10GY5/1 (DARK GREENISH GREY) AND 10GY7/1 (LIGHT GREENISH GREY)	BZ = 0.0 FS = 0.0 HS = N/A	NA	NA	START: 1395 STOP: 1460 RUN: 2.0 FT RECOVERY: 2.0 FT
	7	CONTACT				
	8	SW - WELL GRADED FINE GRAINED SAND WITH 2-5% SILT WET 10GY5/1 GREENISH GREY	BZ: 0.0	NA	NA	START: 1410 STOP: 1450 RUN: 5.0 feet RECOVERY: 5.0 feet
	9					
	10.0					

PROJECT: CAP-A, BFF HAA-09, HAAF | HOLE NO: SB-22/MW-22

DRILLING LOG

PROJECT: CAP A, BFF HAA-09, HAAF	INSPECTOR: [signature]	BOREHOLE NUMBER: SB-22/MW-22	SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11	SAME AS ABOVE WITH LARGE FRAGMENTS OF WOODEN AT 10.5 ft.	BZ = 0.0	NA	NA	SEE PREVIOUS PAGE
	12			NA	NA	
	13	TD = 13.0 FT BGS				

MHH 12/05/99

10 11.0 12.0 13.0

PROJECT: CAP-A, BFF HAA-09, BFF

BOREHOLE NO: SB-22/MW-22

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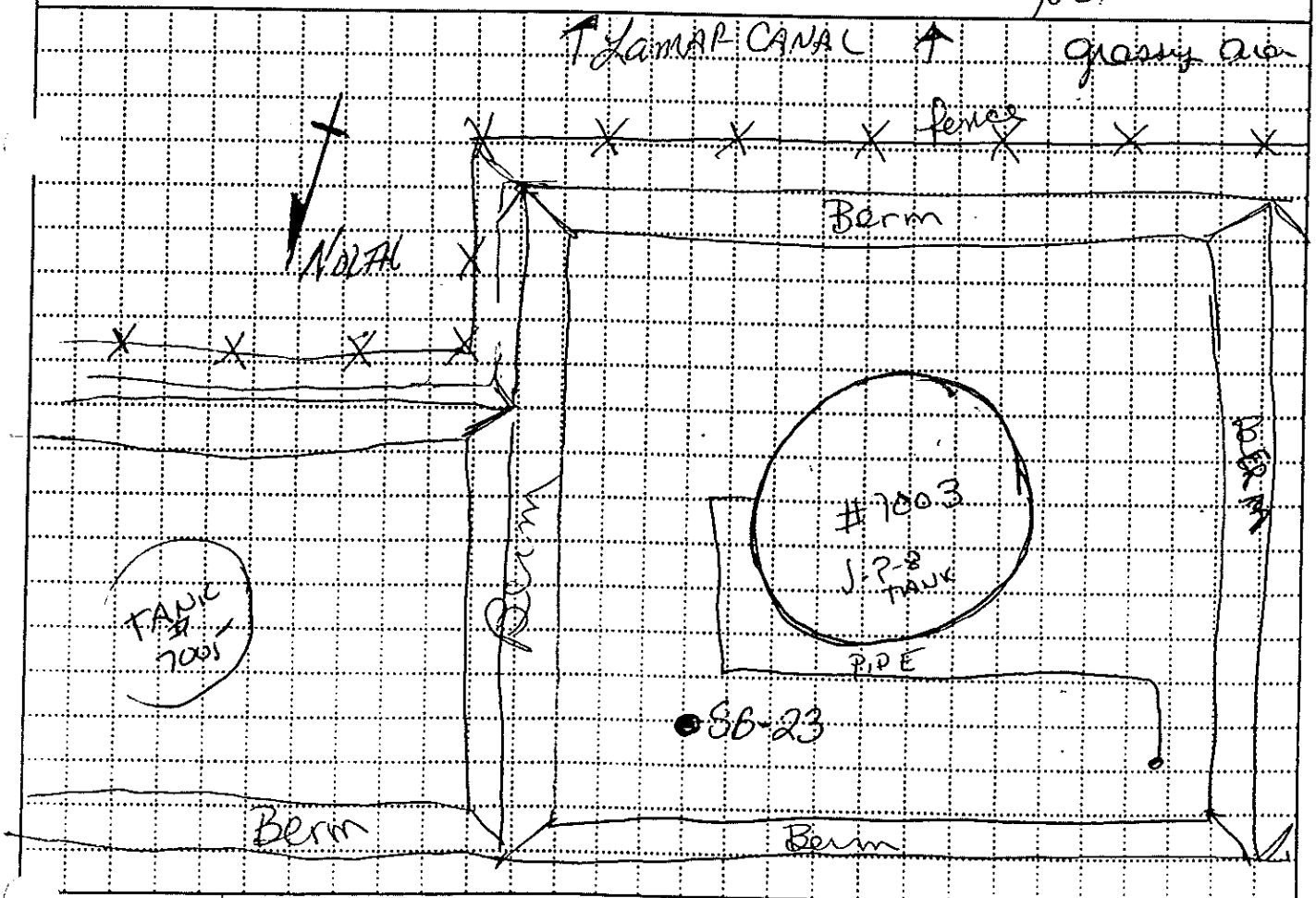
HTRW DRILLING LOG	DISTRICT Savannah Corps	HOLE NUMBER SB-23
1. COMPANY NAME SAIC	2. DRILL SUBCONTRACTOR SAIC. Middletown	SHEET 1 of 3

3. PROJECT HAAF, Buck Fuel Facility	4. LOCATION HAAF by TANK # 7003 in BFF
5. NAME OF DRILLER Ken Swain	6. MANUFACTURERS DESIGNATION OF DRILL hand augar
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2¼" hand augar w/ 4' extension rods & handle S.S. bowls & spoons	8. HOLE LOCATION see map
	9. SURFACE ELEVATION
	10. DATE STARTED 12/4/99 — 11. DATE COMPLETED 12/4/99
12. OVERBURDEN THICKNESS greater than total depth	13. DEPTH GROUNDWATER ENCOUNTERED 3.9' BGS - 1st Saturated zone
13. DEPTH DRILLED INTO ROCK NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 5.9' BGS - 2nd Saturated zone
14. TOTAL DEPTH OF HOLE 12'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) 3.77' BGS = TOP of water on 12/7/99

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
#BF2311	X		NA

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	~~METALS~~ B	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY NA %
#BF2311, #BF2310	BTEX	PAH	TPH-GRO, Moist	PAH, TPH-DRO	—	
22. DISPOSITION OF HOLE	**BACKFILLED**	**MONITORING WELL**	**OTHER (SPECIFY)**	**23. SIGNATURE OF INSPECTOR**		
1" Well	—	X	—	Heather L Smith		

LOCATION SKETCH/COMMENTS — SCALE: NONE



OBJECT	HOLE NO
HAAF - Bulk Fuel Facility	SB-23

ENG FORM 5056-R, AUG 94 — (Proponent CECW-EG)

DRILLING LOG

PROJECT: HAAF - Bulk Fuel facility | INSPECTOR: Heather Smith | HOLE NUMBER: SB-23 | SHEET: 2 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GLOVE CUT SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0.0	(SM) Silty Sand, Soft, dry, TRACE gravel @ Surface fine gr sand. 10YR 3/2 Very dk brown	HEADSPACE 0.0			RUN 2' Intravels w/ hand auger & Composite Sample
	1.0	(SC) Clayey Sand fine grained sand Soft, low plasticity, dry to Slightly moist				
	2.0					Overcore RUNS 0.0 ppm 0-4' BGS
	3.0	(CL) - Lean Clay w/ Sand 10YR 3/2 V. dk. grayish brown w/ 10YR 4/4 dk. yellowish brown OXidized root channels Soft → firm Dense, Moist, Med → high plasticity, fine gr Sand throughout. 10YR 4/1 Dk. grey & 10YR 4/6 Dk yellowish brown	HEADSPACE 1.5 ppm	Sample ID # BF2311 @ 1120	Sample ID # BF2311 @ 1115	
	4.0	(SM) Silty Sand: Saturated, Soft fine gr. nonplastic 10YR 5/1 GREY				1st Water Contact
	5.0	(SC) - Clayey Sand Moist Soft, low → med plasticity, fine → med gr. sands 2.5Y 6/3 lt yellowish brown 2.5Y 5/6 Olive brown				Bottom of Perch Zone; Moist Soil no longer Saturated
	6.0	(SM) Silty Sand Some clay Content (decreases w/ depth) predominantly Fine to med. grain sand, nonplastic				TOP of 2nd Saturated zone
	7.0	Soft, Saturated 5Y 5/1 GREY				
		Began to see woodstems & rootlets (oxidized root channel)				
	8.0	(SM) - Silty Sand decreased silt content fine → med gr sand Saturated NO clay content, nonplastic				
	9.0	Soft 5Y 5/1 GREY				
	10.0					

PROJECT: HAAF Bulk Fuel Facility | HOLE NO: SB-23

DRILLING LOG

PROJECT: HAAF - Buck Fuel Facility | INSPECTOR: Heather L Smith | HOLE NUMBER: SB-23 | SHEET: 3 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11.0	(SM) Silty Sand (as above) (Very saturated)				HAND AUGARING IS VERY DIFFICULT HERE - VERY SATURATED SANDS JUST RUN BACK INTO HOLE
	12.0					
	13.0					
	14.0					

B.O.B. 12.7'bgs

Heather Smith 12/07/95

PROJECT: HAAF - Buck Fuel Facility | HOLE NO: SB-23

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	HOLE NUMBER: SB-24/MW-24
	DISTRICT: Savannah	SHEET 1 OF 3

3. PROJECT: CAP - PART A

4. LOCATION: BFF HAA-09 HAAF

5. NAME OF DRILLER: Al Rout

6. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 5400

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 1.0 INCH O.D. 3.5 FT LENGTH STEEL SCREEN; 2.25 INCH O.D. STEEL CASING FOR WELL INSTALLATION; 4.0 FT LENGTH, 2 INCH OD MACROCORE

8. HOLE LOCATION: SB-24 / MW-24

9. SURFACE ELEVATION: TBD by Surveyor

10. DATE STARTED: 12/02/98

11. DATE COMPLETED: 12/02/98

12. OVERBURDEN THICKNESS: N/A

13. DEPTH GROUNDWATER ENCOUNTERED: 7.5 FEET BGS TO SATURATED ZONE

14. TOTAL DEPTH OF HOLE: 13.5 FT BGS

15. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 4.95 FEET BGS (25 minutes) Depth used to install well screen

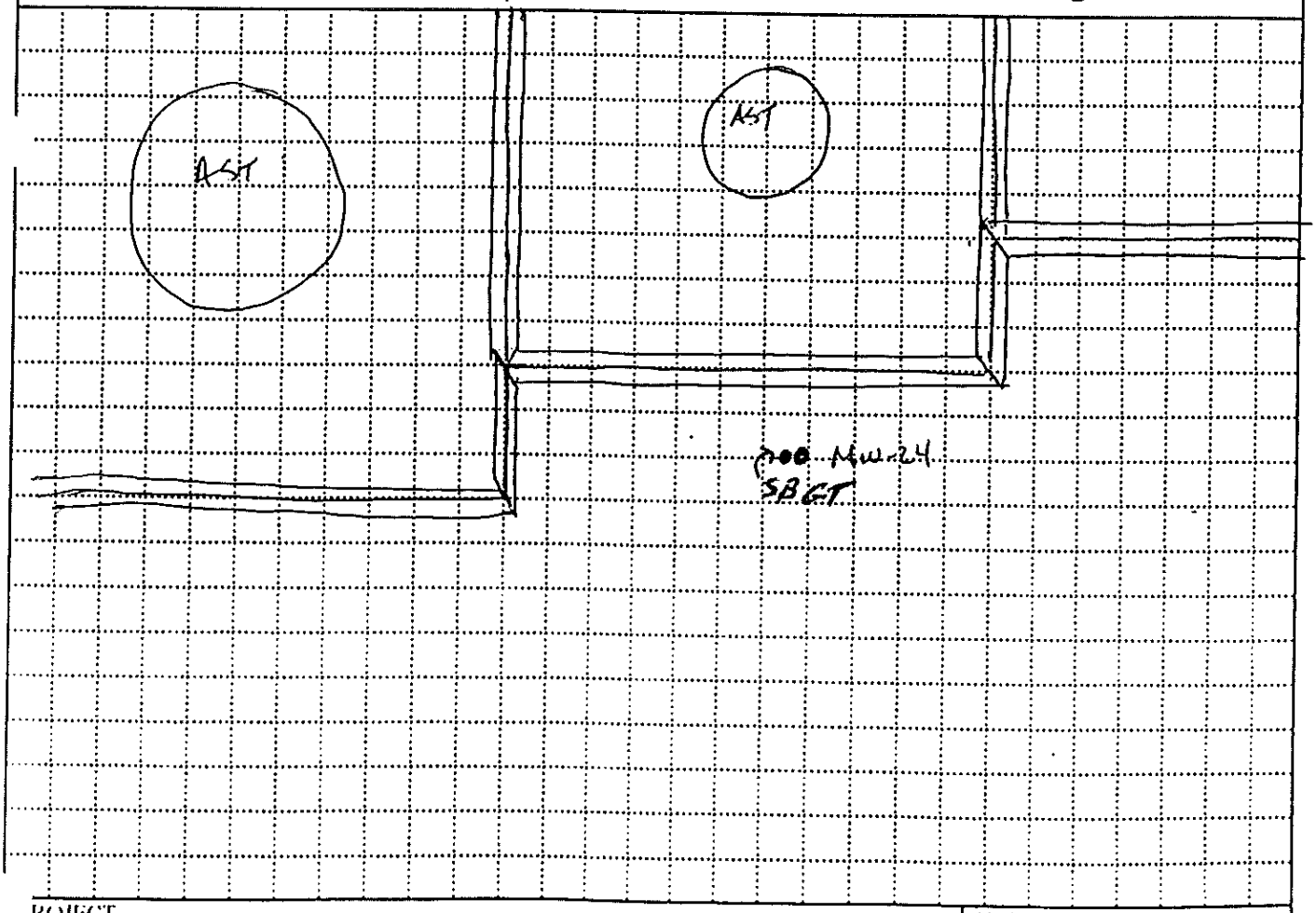
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 4.44 FEET BGS (1 hour)

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
BF2411	✓	N/A	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC BTEX	METALS DRO	OTHER (SPECIFY): TPH-DRO	OTHER (SPECIFY): TPH GRO	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
SOIL WATER BF2411 / BF2412	1 / 1	1 / 1	1 / 0	1 / 0	NA	82.5%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
MW-24		MW-24		Richard Hall

LOCATION SKETCH/COMMENTS: @ MW-24. SCALE: 1" = 60'



PROJECT: CAP - PART A, BFF HAA-09, HAAF

HOLE NO: SB-24 / MW-24

ENG FORM 5056-R, AUG 94

(Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP. PART A BFF HAA-09 | INSPECTOR: Mitchell Ham | HOLE NUMBER: SB-24/MW-24 | SHEET: 2 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) (ppm)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0.0	OL-OH - TOP SOIL/GRASS MOIST, SOFT DARK BROWN	BZ=0.0 FS: 0.0 HS: 2.8	N/A	N/A	START: 1000 STOP: 1003 RUN: 4.0 FT RECOV: 1.9 FT
	1.0	---GRAD. CONT--- CH - FIRM, MOIST FAT CLAY W/ SAND (FINE GRAINED) ORGANIC RICH, MOIST				
	2.0	NO RECOVERY	FS=0 ppm HS: N/A	N/A	N/A	
	3.0					
	4.0	MH - Elastic Silt with sand and clay, very soft, plastic, MOIST 10YR2/2 VERY DARK BROWN	BZ: 0.0 FS: 0.0 HS: 3.3	BF2411 GEOTECH SAMPLE 4.0-6.0 FT BGS 1008	BF2411 SOIL SAMPLE 4.0-6.0 FT BGS 1008	START: 1004 STOP: 1006 RUN: 4.0 RECV: 4.0
	5.0	---GRADATIONAL CONTACT CH/MH FAT CLAY AND SILT FIRM ~~SOFT~~, PLASTICITY HIGH.				
	6.0	SHARP CONTACT SP-SM POORLY SORTED SAND W/ SILT (MEDIUM GRAINED SAND, MOIST 10YR4/6 DARK YELLOWISH BROWN	FS: 0.0 HS: 0.1	N/A	BF2412 WATER SAMPLE 10A5	mHH 12/02/99
	7.0	---GRADATIONAL CONTACT CH - SANDY FAT CLAY MOIST, LOW PLASTICITY, (FINE SAND) 10YR4/2 dark greyish brown				
		SHARP CONTACT SATURATED ZONE			BF2412 WATER SAMPLE 7.5 to 12.5 FT 1045	
	8.0	SW - FINE GRAINED WELL GRADED SAND WET, 95% QUARTZ SUBANGULAR TO SUBROUNDED CLASTS. 10YR 7/2 LIGHT GREY	BZ: 0.0 FS: 0.0	N/A		START: 1007 STOP: 1010 RUN: 4.0 RECV: 4.0
	9.0					
	10.0				SEE NEXT PAGE	

PROJECT: CAP - PART A, BFF HAA-09, HAAF | HOLE NO: SB-24/MW-24

DRILLING LOG

PROJECT: CAP-A, BFF HAA-09, HHAC | INSPECTOR: Mitchell Hart | HOLE NUMBER: SB-24/MW-24 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	10	SAME AS ABOVE	FS = 0 ppm	NA	BF2412 CONT'D	SEE PREVIOUS PAGE
		SHARP CONTACT				
	11	SP-SM & CLAY; POORLY SORTED FINE SAND/SILT INTERBEDDED WITH CLAY ~~LENSES~~ LAMINATIONS LIGHT GRAY AND DARK GREEN (GLAUCONITE) LAYER		NA		
	12	SOIL NOT COLLECTED FOR DESCRIPTION	N/A			START 1030 STOP 1035 PUSHED STEEL SCREEN TO 12.5 FT / WATER COLLECTION
					N/A	START: 1110 STOP: 1115 PUSHED 2.25 INCH O.D. STEEL CASING TO 13.5 FEET FOR WELL PLACEMENT
	13	TD = 13.5 FT BGS				WELL SET AT 1145
	14					

mgHH 12/02/99

PROJECT: CAP-A, BFF HAA-09, HHAF | HOLE NO: SB-24/MW-24

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	DISTRICT: Savannah
		HOLE NUMBER: SB25/MW-25 (47)
		SHEET 1 OF 3

3. PROJECT: CAP- Part A, BFF HHA-09, HHAF

4. LOCATION: Bulk Fuel Facility, Hunter AAF

5. NAME OF DRILLER: Al Root

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 2 inch O.D. SS 4 ft length macrocore; 3.5 ft length, 1 inch O.D. steel screen; 2.25 inch O.D., 4 ft length steel casing for well installation

8. HOLE LOCATION: SB-25

9. SURFACE ELEVATION: TBD by Surveyor

10. DATE STARTED: 12/02/99

11. DATE COMPLETED: 12/02/99

12. OVERBURDEN THICKNESS: N/A

13. DEPTH GROUNDWATER ENCOUNTERED: 7.6 ft BGS to saturated zone

14. TOTAL DEPTH OF HOLE: 13.5 ft BGS.

15. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED (DEPTH USED TO CALCULATE IN SITU K): 5.3 ft BGS after water sample collection

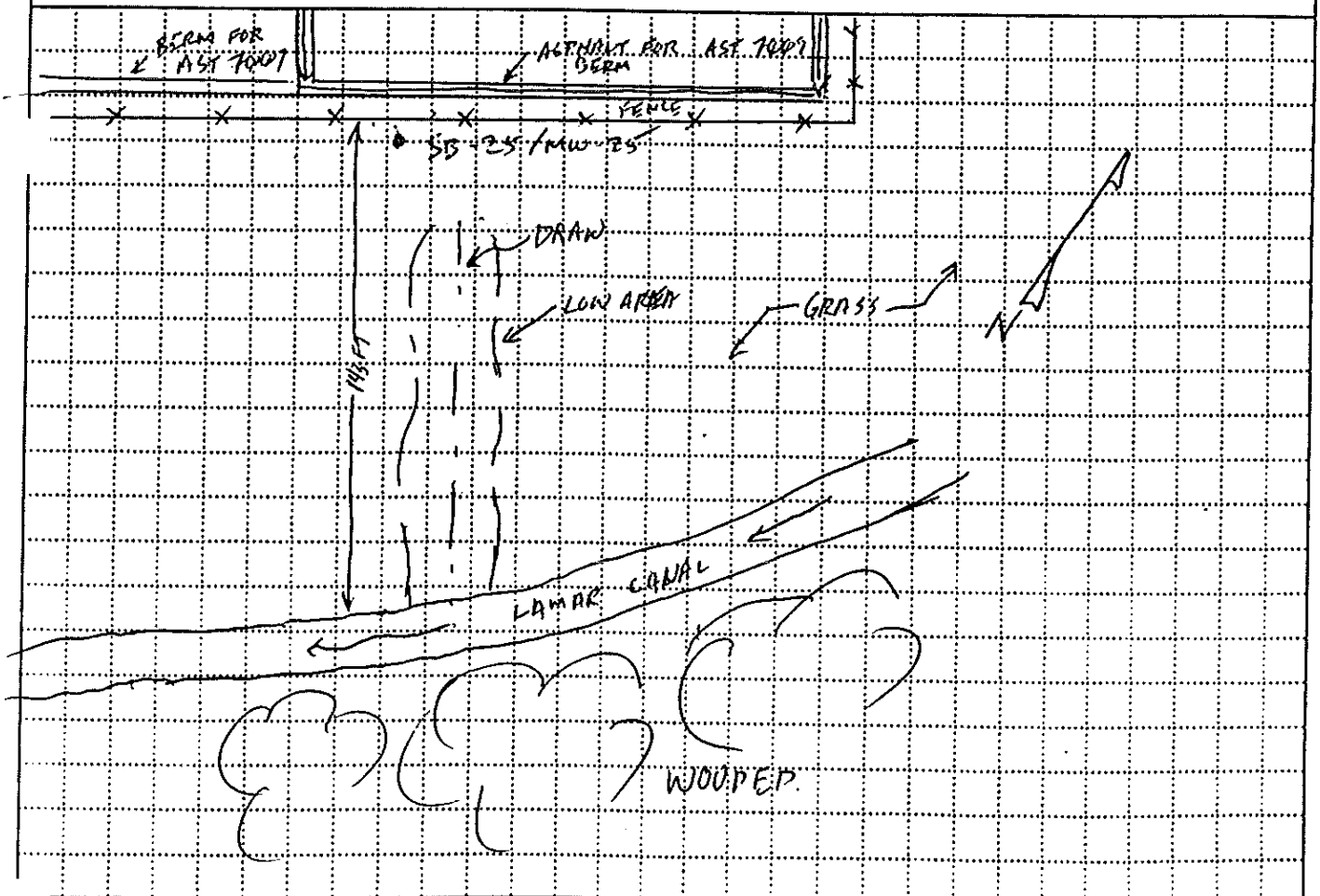
16. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 4.6 ft BGS after well installation.

17. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	18. TOTAL NUMBER OF CORE BOXES
BF25 11	BF25 01	N/A	N/A

19. SAMPLES FOR CHEMICAL ANALYSIS (SOIL / WATER)	BTEX	PHTHALATES	OTHER (SPECIFY) TPH GRO	OTHER (SPECIFY) TPH DRO	OTHER (SPECIFY)	20. TOTAL CORE RECOVERY %
BF25 11 / BF25 12	1 / 1	1 / 0	1 / 0	0 / 1		90%

21. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	22. SIGNATURE OF INSPECTOR
Hunter AAF Well		MW-25		M. H. Hall

LOCATION SKETCH/COMMENTS — SCALE:



PROJECT: BFF, CAP - 4, Hunter Army Airfield

HOLE NO: SB-25 / MW-25

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: CAPH, BFF HAA-09 HAAF | INSPECTOR: Rachael Hall | HOLE NUMBER: SB-25/MW-25 | SHEET: 2 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0	GL - CH, MOIST SOFT ROOTS, AND GRASS, DARK BRN	BZ: 0.0 FS: 0.0 HS: 0.0	N/A	N/A	START: 0758 STOP: 0800 RUN: 4.0. RECOV: 3.2 FT
	1	CH - FIRM TO HARD, MOIST, FAT CLAY WITH SAND, MODERATE PLASTICITY 10YR2/1 black to 10YR 3/3 dark brown ORGANIC RICH				
	2		FS: 0.0 HS: 0.0	N/A	N/A	
	3					
		NO RECOVERY				
	4			BF25AA GEOTECH SAMPLE 3.6-5.6 @825		
		SAME AS ABOVE	BZ: 0.0 FS: 0.0 HS: 0.4		N/A	START: 0803 STOP 0805 RUN: 4.0 FT RECOV: 4.0 FT
	5					
		GRADATIONAL CONTACT				
	6	CH - FIRM, MOIST, FAT CLAY WITH SAND, HIGH PLASTICITY MOTTLED COLOR 10YR 3/3 DARK BROWN & 10YR 5/1 GRAY GRAD. CONT.	FS: 0.0 HS: 0.5	N/A	~~BF25BB~~ 5.6-7.6 FT BGS @816 SOIL SAMPLE BF2511	
	7	CH - SOFT, VERY MOIST, FAT CLAY WITH INCREASING SAND (20% fine grained)				
		SATURATED ZONE				
	8	SP. SM: Poorly sorted sand with silt, wet 7.5YR 5/0 GREY	BZ: 0.0	N/A	~~BF25CC~~ BF2512 7.6-12.6 FT BGS WATER SAMPLE @836	START: 0815 STOP: 0820 PUSHING STEEL SCREEN FOR WATER SAMPLE COLLECTION TO 12.0 FT BGS
	9	SOIL NOT COLLECTED FOR DESCRIPTION.				
	10					

PROJECT: CAP A, BFF HAA-09, HAAF | HOLE NO: SB-25/MW-25

DRILLING LOG

PROJECT: CAP-A, BFF-HHA-09, HAAF | INSPECTOR: Zebulon Hill | HOLE NUMBER: SB-25/MW-25 | SHEET: 3 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	10.0	SOIL NOT COLLECTED FOR DESCRIPTION	N/A	N/A	BF25 12' CONT'D	SEE PREVIOUS PAGE
	11					
	11.0					
	12		N/A	N/A		TIME / WATER TAG @ 1040 5.3 FT BGS
	12.0					
	13		BZ = 0.0	N/A		START: 0905 STOP: @ 910 PUSH 2.25 INCH STEEL CASING TO 13.5 FEET BGS
	13.0	TD: 13.5				
	14					
	14.0					

MHH 12/02/99

PROJECT: CAP. PART A, BFF HHA-09, HAAF | HOLE NO: SB-25/MW-25

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	3. DISTRICT: USACE - Savannah
4. HOLE NUMBER: SB-26/MW-26	5. SHEET: 1 of 3	

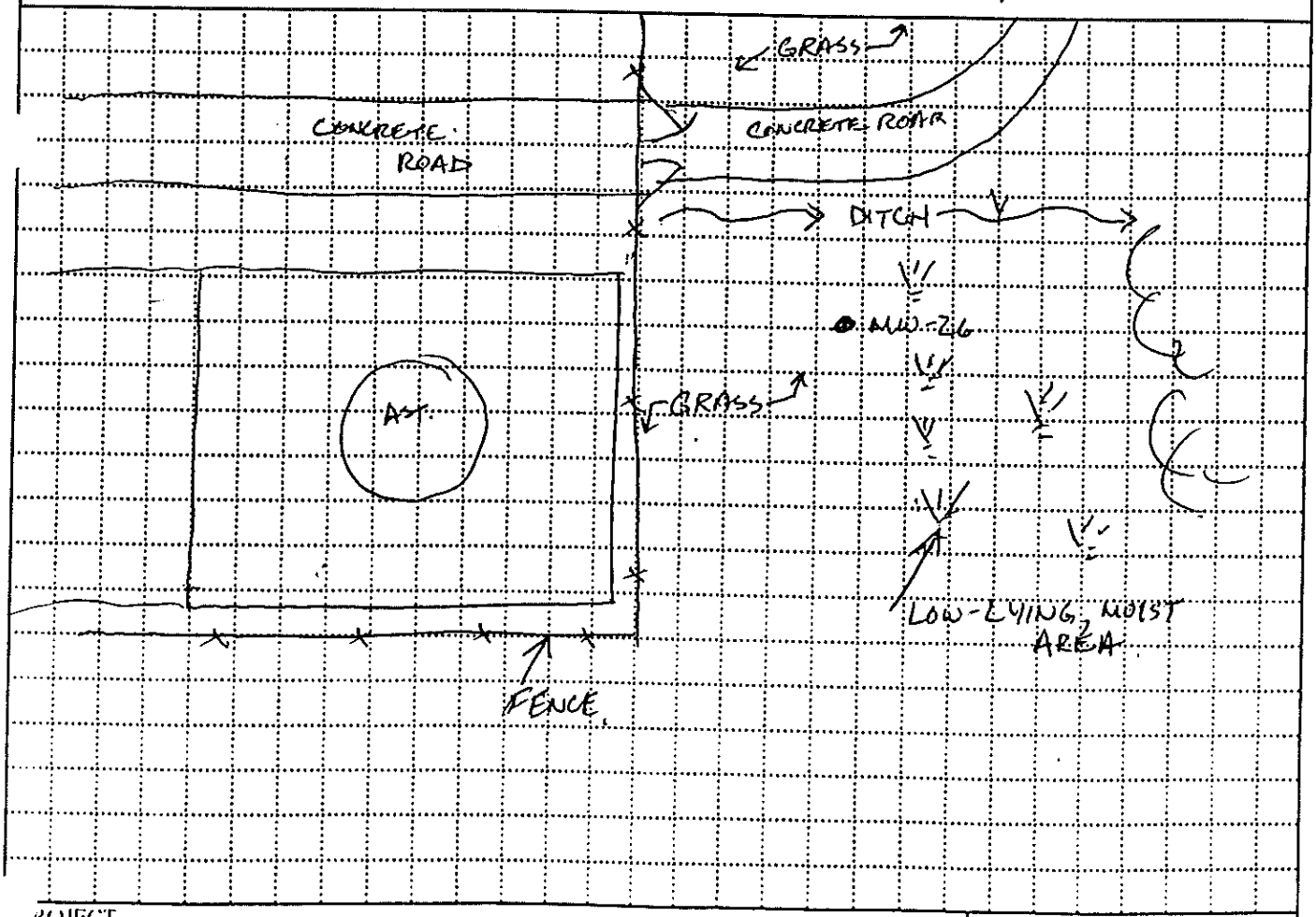
6. PROJECT: CAP - PART A, BFF HAA-09	7. LOCATION: Bulk Fuel Facility HAA-09, HAAF
8. NAME OF DRILLER: M. Root	9. MANUFACTURERS DESIGNATION OF DRILL: GEOPROBE 5400
10. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 3.5 LENGTH 1.0 IN O.D. STEEL SLOTTED SCREEN FOR WATER SAMPLE COLLECTION; 4.0 FT LENGTH; 2 -INCH DIAMETER SOIL MACRCRER	11. HOLE LOCATION: SB-26
	12. SURFACE ELEVATION: TBD by Surveyor
	13. DATE STARTED: 12/02/99 — 14. DATE COMPLETED: 12/02/99
15. OVERBURDEN THICKNESS: N/A	16. DEPTH GROUNDWATER ENCOUNTERED: 7.1 feet BGS to saturated zone
17. DEPTH DRILLED INTO ROCK: N/A	18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 4.3 FT BGS, 35 minutes
19. TOTAL DEPTH OF HOLE: 12.5 feet	20. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —

21. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	22. TOTAL NUMBER OF CORE BOXES
BF2611	✓	NA	NA

23. SAMPLES FOR CHEMICAL ANALYSIS	VOC BTEX	METALS DAH	OTHER (SPECIFY) TPH-DRO	OTHER (SPECIFY) TPH-GRO	OTHER (SPECIFY)	24. TOTAL CORE RECOVERY %
BF2611 / BF2612	1 / 1	1 / 1	1 / ⊗	1 / ⊗	NA	90

25. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	26. SIGNATURE OF INSPECTOR
		MW-26.		Mitchell Hall

LOCATION SKETCH/COMMENTS ⊕ MW-26 SCALE: 1" = ~80'



PROJECT	HOLE NO
CAP - PART A, BFF HAA-09, HUNTER AAF	SB-26

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: CAPA, BFF HAA-09, HAAF | INSPECTOR: Mitchell Hall | BORE/WELL NO: SB-26/MW-26 | SHEET: 2 of 3

LEEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) (ppm)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	1	OL/OH - ORGANIC RICH TOP SOIL, MOIST SOFT - - - - GRADATIONAL CONTACT CH - FIRM, MOIST FAT CLAY W/ SAND (FINE GRAINE) ORGANIC RICH	BZ = 0.0 FS = 0.0 HS = 0.0	N/A	N/A	START: 1242 STOP: 1244 RUN: 4.0 FT RECOVERY: 3.2 FT.
	2		FS = 0.0 HS = 0.8	N/A	BFZ611 1.2-3.2 SOIL SAMPLE 1248	
	3	- - - - - GRADATIONAL CONT MH - ELASTIC SILT; SEE DESCRIPTION BELOW				
	4	NO RECOVERY	N/A		NA	
	5	MH - Elastic Silt w/ Sand and clay, very soft, plastic MOIST 10YR 2/2 VERY DARK BROWN - - - - GRADATIONAL CONT. SP-SM POORLY SAND W/ SILT AND GRAVEL MOIST, (Medium to coarse grained sand.	BZ = 0.0 FS = 0.0 HS = 0.0	BFZ611 4.0-6.0 GEOTECH SAMPLE 1255		START: 1245 STOP: 1247 RUN: 4.0 FT RECOVERY: 4.0 FT
	6	10YR 4/6 Dark yellowish brown.	FS = 0.0 HS = 0.0	NA	N/A	
	7	SHARP CONT. SW/SP FINE GRAINED WELL SORTED SAND INTERBEDDED SATURATED ZONE WITH POORLY SORTED SAND (Fine to medium grained) 10YR 7/2 LIGHT GREY - - - - GRADATIONAL CONT.			BFZ612 7.2-12.2 WATER SAMPLE 1315	
	8	SP-SM & CLAY POORLY SORTED FINE SAND SILT INTERBEDDED WITH CLAY LAMINATIONS LIGHT GRAY AND DARK GREEN, WET	BZ = 0.0	NA		START: 1255 STOP: 1305 PUSHED STEEL SCREEN TO 12.2 FT BGS AND PULLED UP 1.5 FEET FOR GROUNDWATER SAMPLE COLLECTION
	9	SOIL NOT COLLECTED FOR DESCRIPTION.				
	10					

PROJECT: CAP - PART A, BFF - HAA-09, HAAF | BORE/WELL NO: SB-26/MW-26

DRILLING LOG

PROJECT: CAP A, BFF HAA-09, HAAF | INSPECTOR: Richard Hall | HOLE NUMBER: SB-26/MW-26 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) (ppm)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	10	SOIL NOT COLLECTED FOR DESCRIPTION	BZ: 0.0	N/A	BFZ6124 CONT'D	See previous page
	11					
				NA		TIME / WATER TAG GEIS 1336 / 4.85 1340 4.3
	12	TD=			NA	START: 1330 WELL STOP: 1350 INSTALLED
	13					

mHH 12/02/99

PROJECT: CAP A, BFF HAA-09, HAAF | HOLE NO: SB-26/MW-26

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HTRW DRILLING LOG

1 COMPANY NAME: SAIC	DISTRICT: Savannah	HOLE NUMBER: SB-27
2 DRILL SUBCONTRACTOR: SAIC		SHEET 1 OF 3

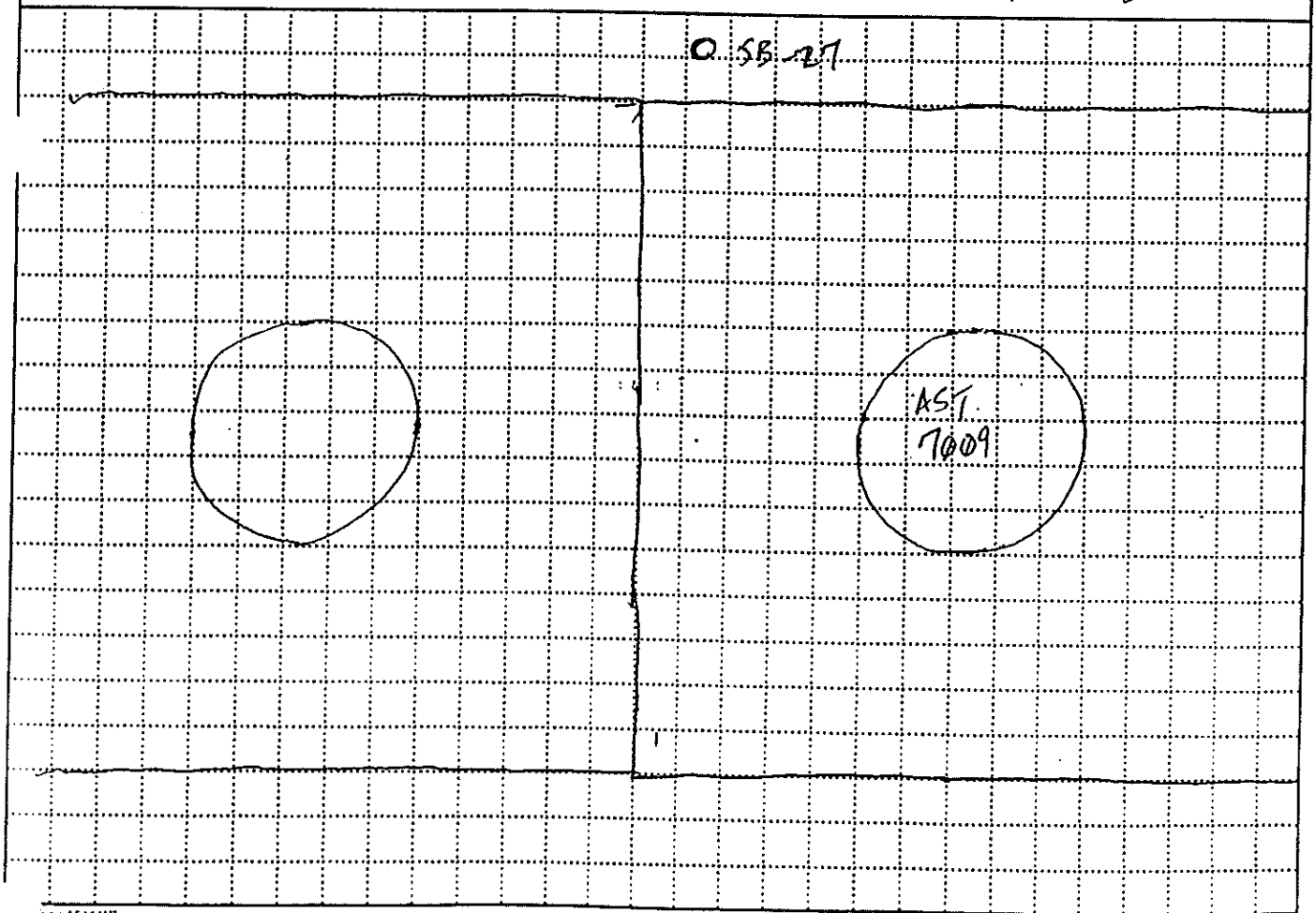
3 PROJECT: CAP - Part A	4 LOCATION: BFF HAA-09, HAAF
5 NAME OF DRILLER: Al Root	6 MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4-IN OD/3.5 LENGTH STEEL SCREEN, 2.25 OID STEEL CASING FOR WELL PLACEMENT 4-FT LENGTH, 2-IN OD MACROCORE	8 HOLE LOCATION: SB-27, OUTSIDE OF BERM AT AST 7009
	9 SURFACE ELEVATION: TBD by Surveyor
	10 DATE STARTED: 1/11/00 — 11 DATE COMPLETED: 1/11/00
12 OVERBURDEN THICKNESS: NA	15 DEPTH GROUNDWATER ENCOUNTERED: 7.0 FT TO SATURATED ZONE
13 DEPTH DRILLED INTO ROCK: NA	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14 TOTAL DEPTH OF HOLE: 12.5 FT	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
BF27 11	✓	NA	NA

20 SAMPLES FOR CHEMICAL ANALYSIS	BTEX	VOA'S	OTHER (SPECIFY) TPH-GRO	OTHER (SPECIFY) TPH-GRO	OTHER (SPECIFY)	21 TOTAL CORE RECOVERY %
BF2711 / BF2712	1 / 1	1 / 2	1 / 0	1 / 0	NA	66

22 DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23 SIGNATURE OF INSPECTOR
MW-27		✓		Richard Hall

LOCATION SKETCH/COMMENTS ● BORING LOCATION — SCALE: 1" = ~32'



PROJECT	HOLE NO
CAP-PART A, BFF HAA-09, HAAF	SB-27

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP: PART A, BFF HAA-09 HAAF | INSPECTOR: Mitch Hall | HOLE NUMBER: SB-27 | SHEET: 2 of

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (ppm) (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0–4	NO RECOVERY	BZ: 0.0	NA	NA	START: 1416 STOP: 1417 RUN: 4.0 FT RECOVERY: 0 FT
	2–4	NO RECOVERY		NA	NA	NO RECOVERY.
	4–6	CH-SP. SANDY FAT CLAY 10YR 2/2 very dark brown and 10YR 3/4 dark yellowish brown moist	BZ: 0.0 FS: 0.0 HS: 0.0	NA	NA	START: 1418 STOP: 1420 RUN: 4.0 FT RECOV: 4.0 FT
	5–7	gradational contact. CH - FAT CLAY, MOIST, GRADING INTO SANDY ~~AT~~ CLAY AT 6.5 FT. GLEY 4/1	FS: 0.0 HS: 0.0	BF2711 1425 5.0-7.0 ~~bar~~ GEOTECH SAMPLE	BF2711 1425 5.0-7.0 SOIL SAMPLE	
	7–8	SW-SP/CH INTERBEDDED WELL GRADED SAND WITH POORLY GRADED SAND AND SILT, WET. 10YR 7/1 (light gray) for well graded sand. and gray for poorly graded sand, some glaveonitic layers present (green).	BZ: 0.0	NA	BF2712 1455 7.0-12.0 FT WATER SAMPLE	START: 1425 SOIL CORE 8-12 STOP: 1428 RUN: 4.0 FT RECOVER: 4.0 FT
	8–10			NA		START: 1445 STEEL STOP: 1455 SCREEN PUSHED TO 12 FEET FOR WATER SAMPLE

PROJECT: CAP- PART A, BFF HAA-09, HAAF | HOLE NO: SB-27

DRILLING LOG

PROJECT: CAP-A, BFF HAA-09, HAAF | INSPECTOR: Mitch Hall | HOLE NUMBER: SB-27 | SHEET: 3 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11	SAME AS ABOVE WITH WOOD FRAGMENT	Bz: 0.0	NA	BFF12 CONT'D	SEE PREVIOUS PAGE
	12	CH- FAT CLAY, WET GREY GLEY 4/1	Bz: 0.0		NA	START: 1525 STOP: 1540 WELL INSTALLED.
		TD = 12.5 ft.				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

MH 1/11/00

PROJECT: CAP-PART A, BFF HAA-09, HAAF | HOLE NO: SB-27

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	HOLE NUMBER: SB-28
	DISTRICT: Savannah	SHEET 1 of 3 SHEETS

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3. PROJECT: CAP - PART A	4. LOCATION: BFF HAA-09, HAAF
5. NAME OF DRILLER: A1 Root	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 1 IN OD, 3.5 LENGTH STEEL SCREEN, 2.25 IN OD STEEL CASING FOR WELL PLACEMENT, 4 FT LENGTH 2 IN O.D. MACROCORE	8. HOLE LOCATION: SB-28, near AST 7005
	9. SURFACE ELEVATION: TBD by Surveyor.
	10. DATE STARTED: 1/11/00 — 11. DATE COMPLETED: 1/11/00
12. OVERBURDEN THICKNESS: NA	15. DEPTH GROUNDWATER ENCOUNTERED: 7.5 Ft BGS TO SATURATED ZONE
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: BF 2811	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
	BF29 11	NA	NA

20. SAMPLES FOR CHEMICAL ANALYSIS	BTEX	HAAF	OTHER (SPECIFY) DPT95	OTHER (SPECIFY) GPRO	OTHER (SPECIFY)	21. TOTAL CORE RECOVERED: 95 %
BF 2811 / BF29 12	1/1	1/0	0/1	1/0	1/0	

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
MONITORING WELL	N/A	SB-28	N/A	Mitchell Hall

LOCATION SKETCH/COMMENTS: N/A — SCALE: N/A

SEE PAGE 36 OF THIS LOGBOOK #7

PROJECT	HOLE NO
CAP-PART A, BFF HAA-09, HAAF	SB-28

DRILLING LOG

PROJECT: CA | INSPECTOR: Mitch Hall | HOLE NO: SB-28 | SHEET: 2 of 3

FLEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) (PPM)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0	CH - FAT CLAY, V. PLASTIC MOIST 10YR 7/4 VERY PALE BROWN	I.Z: 0.4 FS: 0.0 HS: 0.0	NA	NA	START: 1105 STOP: 1110 RUN: 4.0 FT RECOVERY: 2.8 FT
	1	OL-OH - VERY DARK BROWN - ORGANIC RICH POORLY GRADED SAND 10YR 2/2 - SAND IS FINE TO MEDIUM GRAINED			NA	
	2		FS: 0.0 HS: 10.2	NA	BFZ811 1112 2.0-2.8 FT.	← SOIL SAMPLE
	3	NO RECOVERY	NA		NA	BFZ811 collected at 2-2.8 FT DUE TO HIGHEST HEADSPACE READING
	4	SP-SM - VERY DARK BROWN - ORGANIC RICH CLAYEY SILTY SAND VERY MOIST 10YR 2/2	BZ: 0.0 FS: 0.0 HS: 3.9	BFZ811 1120 4.0-6.0 FT. GEOTECH SAMPLE		START: 1110 STOP: 1115 RUN: 4.0 FT. RECOVERY: 4.0 FT
	5				NA	
	6	CH - SANDY FAT CLAY, MOIST HIGH PLASTICITY, 10YR 4/1 (D. GRAY)	FS: 0.0 HS: 3.3	NA		
	7				NA	
	8	▽ SATURATED ZONE SW/SP - INTERBEDDED WELL GRADED AND POORLY GRADED SAND, 5% OPAQUES, 5% SILT WET SOIL NOT COLLECTED	BZ: 0.0	NA	BFZ812 1140 7.5-12.5 FT BGS	START: 1125 STOP: 1135
	9					PUSHING STEEL SCREEN TO 12.5 FT BGS.
	10					

PROJECT: CAP. Part A, BFF HAA-09, HAAF | HOLE NO: SB-28

DRILLING LOG

PROJECT: CAP- PART A | INSPECTOR: Mitch Hall | BORE NUMBER: SB-28 | SHEET: 3 of 3

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ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11	SOIL NOT COLLECTED	BZ: 0.0		BF2812 WATER SAMPLE CONT'D	STEEL SCREEN PUSHED TO 12.5 FOR WATER SAMPLE
	12					START 1150 STOP: 1205 WELL INSTALLED
		TD = 12.5 FT				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

MH 1/11/00

PROJECT: CAP-PART A, BFF HAA-09, HAAF | BORE NO: SB-28

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	HOLE NUMBER: SB-29
	DISTRICT: Savannah	SHEET 1 OF 3

3. PROJECT: CAP- Part A	4. LOCATION: BFF HAA-09, HAAF
5. NAME OF DRILLER: Al Root	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 1-IN O.D., 3.5 FT LENGTH STEEL SCREEN, 2.25 IN OD. STEEL CASING FOR WELL PLACEMENT 4-FT LENGTH, 2.0 I.D. MACROCORE	8. HOLE LOCATION: SB-29, Near AST 7005
	9. SURFACE ELEVATION: TBD by Surveyor
	10. DATE STARTED: 1/11/00 — 11. DATE COMPLETED: 1/11/00
12. OVERBURDEN THICKNESS: NA	15. DEPTH GROUNDWATER ENCOUNTERED: 5.7 FT TO SATURATED ZONE
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 3.5 FT PRIOR TO WELL INSTALLATION
14. TOTAL DEPTH OF HOLE: 12.0 FT BGS	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
BF29 11	BF29 11	BF NA	NA

20. SAMPLES FOR CHEMICAL ANALYSIS	VOA	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
BF2911 / BF2912	BTEX 1 / 2	PAH 1 / 2	TPH-DRO 1 / 0	TPH-GRO 1 / 0	NA	86

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
MW-29	NA	MW-29	NA	Mitchell Hall

LOCATION SKETCH/COMMENTS: N/A — SCALE: N/A

SEE PAGE 36 OF THIS LOGBOOK

PROJECT	HOLE NO
CAP- Part A, BFF HAA-09, HAAF	SB-29

ENG FORM 5056-R, AUG 94 (Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP A, BFF HAA-09, HAAF | INSPECTOR: A. Hall | HOLE NUMBER: SB-29 | SHEET: 2 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0	SP-SM - Poorly graded, fine to medium grained Sand with silt. 10YR6/3 pale brown moist, fill	BZ: 0.0 FS: 0.0 HS: 0.0	NA	NA	START 0930 STOP 0932 RUN: 4.0 FT. RECOVERY: 2.9 FT
	1	OL-OH - VERY DARK BROWN ORGANIC RICH SAND (FINE GRAINED)				
	2	SP-SM - FINE TO MEDIUM GRAINED SILTY SAND 10YR5/4 (yellowish brown)	FS: 15 ppm HS: 51.6	NA	NA	
	3	NO RECOVERY	NA.			
	4	SAME AS ABOVE	BZ: 0.0 FS: 43.5 HS: 59.0	BFZ911 0940 4-5.7	BFZ911 0940 4-5.7	START: 0934 STOP: 0935 RUN: 4.0 FT. RECOVERY: 4.6 FT
	5	OL-OH - VERY DARK BROWN ORGANIC RICH SAND.				
	6	SW - FINE GRAINED WELL GRADED QUARTZ SAND w/ 5% SILT 10YR6/1 GRAY	FS: 0.0 HS: NA	NA	BFZ912 0955 5.7ft 10.7 FT.	
	7					
	8	SOIL NOT COLLECTED	BZ: 0.0	NA		START - 0940 STOP: 0948 RUN: 2.7 STEEL SCREED PUSHED TO 10.7 FT FOR WATER SAMPLE COLLECTION
	9					
	10					

PROJECT: CAP A, BFF HAA-09, HAAF | HOLE NO: SB-29

DRILLING LOG

PROJECT: CAP A BEF HAA-09 HAAF | INSPECTOR: Butch Hall | HOLE NUMBER: SB-29 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULT (D) (ppm)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		See previous page.	BZ: 0.6	NA	BF2912 0955	SEE PREVIOUS PAGE
					NA	START 1030 STOP 1045 WELL INSTALLATION
	12	TD = 12.0 Ft				

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Hall 1/11/00

PROJECT: CAP A, HAA-09, HAAF | HOLE NO: SB-29

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HTRW DRILLING LOG

1 COMPANY NAME: SAIC	2 DRILL SUBCONTRACTOR: SAIC - Middleton.	HOLE NUMBER: SB-30
	DISTRICT: Savannah	SHEET 1 of 3

3 PROJECT: CAP PART A	4 LOCATION: BFF HAA-09
5 NAME OF DRILLER: A1 Root.	6 MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 1-IN OD, 3.5 FT LENGTH STEEL SCREEN 2.25 IN OD STEEL CASING FOR WELL INSTALLATION, 4.0 FT LNGTH 2.0 IN OD MACROCORE	8 HOLE LOCATION: SB-30
	9 SURFACE ELEVATION: TBD By Surveyor
	10 DATE STARTED: 1/11/00 — 11 DATE COMPLETED: 1/11/00
12 OVERBURDEN THICKNESS: N/A	15 DEPTH GROUNDWATER ENCOUNTERED: 5.9 FT BGS TO SATURATED ZONE
13 DEPTH DRILLED INTO ROCK: N/A	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 3.85 FT BGS TO POTENTIOMETRIC SURFACE
14 TOTAL DEPTH OF HOLE: 12.0 FT	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
	✓		N/A

20 SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21 TOTAL CORE RECOVERY %
BF3011 / BF3012	1/1	1/0	PAH 0/1	PAH/TOC 1/0	TOC 1/0	83

22 DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23 SIGNATURE OF INSPECTOR
MONITORING WELL	NA	MW-30	N/A	Michael Hall

LOCATION SKETCH/COMMENTS N/A — SCALE: N/A

SEE PAGE 36 OF THIS LOGBOOK

PROJECT	HOLE NO
CAP PART A, BFF HAA-09, HAAF	SB-30

DRILLING LOG

PROJECT: CAP-A; BFF HAA-09, HAAF | INSPECTOR: Michael Hall | HOLE NUMBER: SB-30 | SHEET: 2 of 3

UNIT (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) ppm	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0	OL-OH ORGANIC RICH SILTY SAND, MOIST 10YR 3/3 dark brown	BZ: 0.0 FS: 0.0 HS: 0.0	NA	NA	START: 0747 STOP: 752 RUN: 4.0 FT RECOVERY: 3.0 FT
	1	SP - wet, clayey poorly graded sand, perched zone due to heavy precipitation the day before. 10YR3/1 very dark gray.		BF3011 0810 GEOTECH 1.0-3.0	NA	
	2		FS: 0.0 HS: 0.0			
	3	NO RECOVERY	NA	NA	NA	
	4	same as above but moist (out of perched zone)	BZ: 0.0 FS. 0.0 HS: 0.0	NA	BF3011 +BF3013 (DUP.) 0805 4.0-5.9	START: 755 STOP: 0800 RUN: 4.0 FT. RECOVERY 3.6 FT
	5	CH - FAT CLAY, MODERATE PLASTICITY WITH SAND MOTTLED 10YR 4/6 + 10YR 7/1 (d.yel. brown + d. gray)				
	6	▽ SW - WELL GRADED SAND, WET FINE GRAINED 10YR 8/1 (white		NA		
		CH/SP - clayey poorly graded sand - 10YR 4/6 (d. yel. brown, wet	BZ: 0.0		BF3012 BF3014 (DUP) WATER SAMPLE 0825 5.9-10.9	
	7	SW - well graded fine grained sand, 5% opaques. subang to subrounded grains, wet. 10YR 6/1 (gray)				
	8	NO RECOVERY		NA		START: 0805 STOP: 0820 RUN:
		SOIL SAMPLE NOT COLLECTED	BZ 0.0.			PUSHED STEEL SCREEN TO 10.9 FEET FOR WATER SAMPLE COLLECTION
	9					
	10					

PROJECT: CAP - PARTA, BFF HAA-09, HAAF | HOLE NO: SB-30

DRILLING LOG

PROJECT: CAP A, BFF HAA-09, | INSPECTOR: Mitch + Hall | HOLE NUMBER: SB-30 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
		See previous page.			BF3012 BF3014 CONT'D ↓	See previous page
	11		BZ-0.0	NA	NA	ST: 0830 ST: 0900 SETTING WELL SCREEN WATER TAGGED AT 3.95 FT.
	12	TD = 12.0 FT				
	13					
	14					
	15					
	16					
	17					

Mitch Hall 1/11/99

PROJECT: CAP A, BFF HAA-09, HAAF | HOLE NO: SB-30

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	DISTRICT: Savannah	HOLE NUMBER: SB-31
2. DRILL SUBCONTRACTOR: SAIC		SHEET 1 OF 3 SHEETS

3. PROJECT: BFF HAA-09, CAP - PART A

4. LOCATION: BULK FUEL FACILITY, HAAF

5. NAME OF DRILLER: Al Root.

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 1-IN OD, 3.5 FT LENGTH STEEL SCREEN 2.25-IN O.D. STEEL CASING FOR WELL INSTALLATION. 4.0 FT LENGTH, 2.0-IN OD MACROCORE

8. HOLE LOCATION: Near AST 7005

9. SURFACE ELEVATION: TBD By SURVEYOR

10. DATE STARTED: 1/10/00

11. DATE COMPLETED: 1/10/00

12. OVERBURDEN THICKNESS: NA

13. DEPTH DRILLED INTO ROCK: NA

14. TOTAL DEPTH OF HOLE: 12.0 ft.

15. DEPTH GROUNDWATER ENCOUNTERED: ~~3.85~~ 5.7 feet BGS to Saturated zone

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 3.85 FT BGS

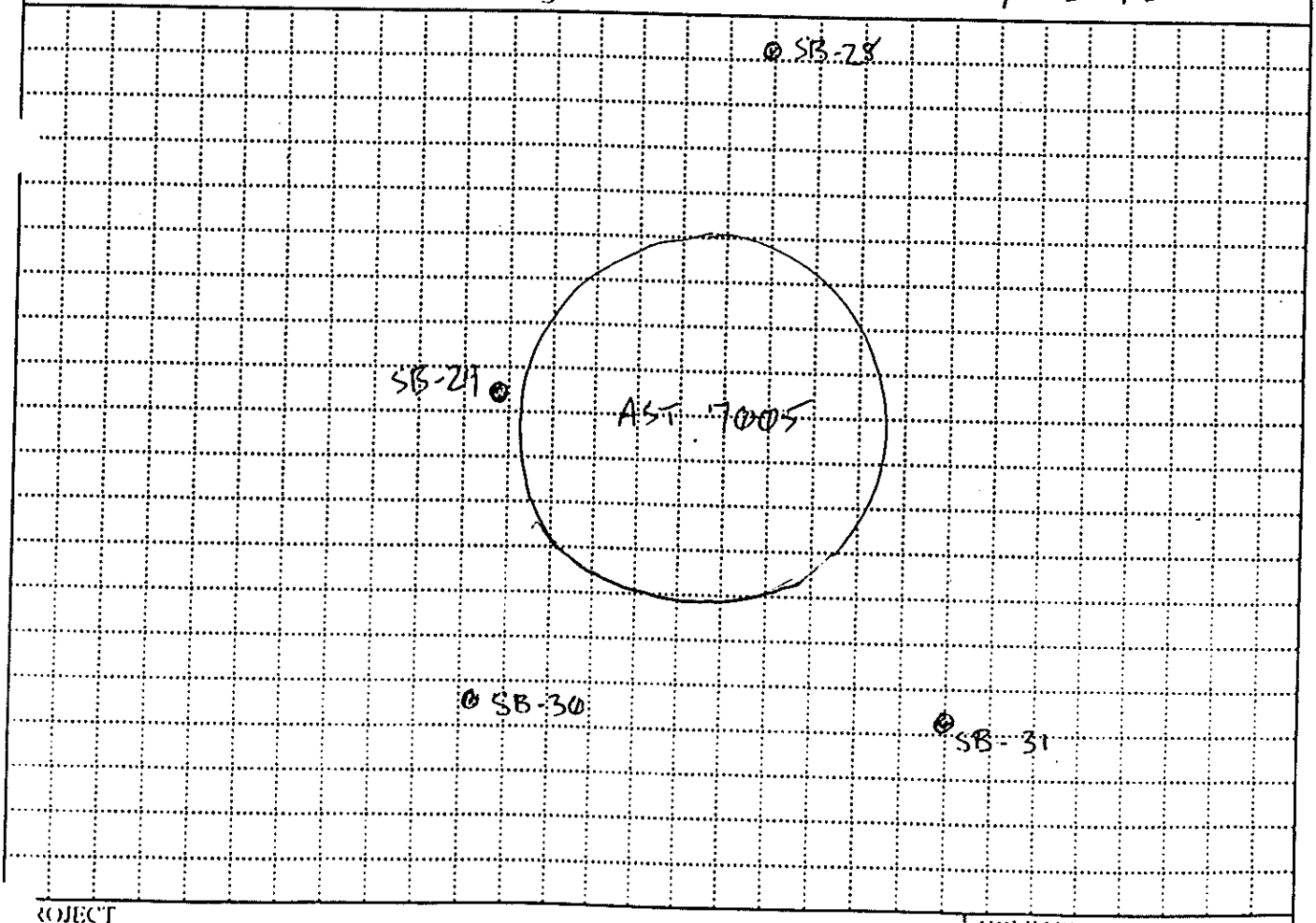
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
	BF3111	NA	NA

20. SAMPLES FOR CHEMICAL ANALYSIS	BTEX	METALS	TPH (GRO)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
BF3111 / BF3112	1/2	1/2	1/0	1/0		50

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
MONITORING WELL	NA	MW-31	NA	Mitchell Hall

LOCATION SKETCH/COMMENTS: ● Soil boring locations. SCALE: 1" ≈ 40'



PROJECT: CAP - PART A, BFF HAA-09, HAAF

HOLE NO: SB-31

ENG FORM 5056-R, AUG 94

(Proponent CECW-EG)

DRILLING LOG

PROJECT: CAP - PART A, BFF HAA-09, HAAF | INSPECTOR: Mitchell Hall | HOLE NUMBER: SB-31 | SHEET: 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11	SOIL NOT COLLECTED FOR DESCRIPTION.	BZ:00	NA	BF3112 CONT'D	SEE PREVIOUS PAGE
					NA	START: 1700 STOP: 1705 RUN: 1.3 to bottom of hole to set well screen. WL. 3.85 - 1710.
	12	TD = 12.0Ft				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

mHH 1/10/00

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PROJECT: CAP - PART A, BFF HAA-09, HAAF | HOLE NO: SB-31

DRILLING LOG

PROJECT: CAP-A - BFF HAA-09 | INSPECTOR: M. H. Hall | HOLE NUMBER: SB-31 | SHEET: 2 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D) (ppm)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
			~~NA~~ BZ: 0.0	NA	NA	START: 1610 STOP: 1612 RUN: 4.0 RECOVERY: 0.0
		NO RECOVERY	NA	NA	NA	NO RECOVERY DUE TO SATURATION OF GROUND
		CH - FAT CLAY WITH SAND, MODERATELY PLASTIC MOIST, 10YR 4/2, DARK GREYISH BROWN.	BZ: 0.0 HS: 0.0 FS: 0.0	BF3111 1620 4-5.7	BF3111 1620 4-5.7	START: 1615 STOP: 1617 RUN: 4.0 RECOVERY: 4.0 ~~FT~~.
		SP-SM - Poorly graded sand with silt and clay 7.5YR 4/6 strong brown MOIST ▽ SATURATED ZONE SP-SM - SAME AS ABOVE WET	FS: 0.0 HS: 0.0	NA	BF3112 5.7-10.7 1640	
		GRADATIONAL CONTACT SP-SW - INTERBEDDED FINE GRAINED QUARTZ SAND, WELL GRADED WET 10YR7/1 (Light grey) with poorly graded sand, same as above.	BZ = 0.0	NA		START: 1620 STOP: 1635 RUN: RECOVERY. NA PUSHED STEEL SCREEN TO 10.7 FT BGS
		NO SOIL COLLECTED FOR DESCRIPTION.				

PROJECT: BFF HAA-09, CAP PART A, HAAF | HOLE NO: SB-31

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APPENDIX V

SOIL LABORATORY REPORTS

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Former UST 117, Building 7002
Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

TABLE V-A. SUMMARY OF SOIL ANALYTICAL RESULTS

Location		SB-01	SB-02	SB-03	SB-04	SB-05	SB-06	SB-07
Sample ID		BF0111	BF0211	BF0311	BF0411	BF0511	BF0611	BF0711[3]
Date Collected	Applicable	12/01/99	12/01/99	12/01/99	12/03/99	12/03/99	12/02/99	12/02/99
Depth (ft BGS)	Standards[1]	4.7 to 6.7	6.0 to 8.0	6.0 to 8.0	8.0 to 9.1	5.5 to 7.5	8.8 to 10.4	1.5 to 3.0
VOCs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	0.005	0.0006 J	0.0011 =	0.0011 U	0.001 U	0.001 U	0.0013 U	**<1.350**
Toluene	0.400	0.0029 =	0.001 U	0.0025 =	0.0010 J	0.001 U	0.0013 U	**<1.350**
Ethylbenzene	0.370	0.0010 U	0.001 U	0.0011 U	0.001 U	0.001 U	0.0013 U	**<1.350**
Xylenes	20.0	0.0029 U	0.003 U	0.0033 U	0.003 U	0.0031 U	0.0038 U	<4.040
TPH-DRO	NRC	2.0 U	1.4 U	1.2 U	2.7 UJ	2.2 UJ	1.2 U	74.0 =
TPH-GRO	NRC	0.124 U	0.122 U	0.119 U	0.122 U	.128 U	0.122 U	2.33 =
PAHs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2-Chloronaphthalene	N/A[2]	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Acenaphthene	N/A[2]	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Acenaphthylene	N/A[2]	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Anthracene	N/A[2]	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Benzo(a)anthracene	N/A[2]	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Benzo(a)pyrene	0.660	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Benzo(b)fluoranthene	0.820	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Benzo(g,h,i)perylene	N/A[2]	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Benzo(k)fluoranthene	1.6	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Chrysene	0.660	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Dibenzo(a,h)anthracene	1.5	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Fluoranthene	N/A[2]	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Fluorene	N/A[2]	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Indeno(1,2,3-cd)pyrene	0.660	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Naphthalene	N/A[2]	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0841 =
Phenanthrene	N/A[2]	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U
Pyrene	N/A[2]	0.0414 U	0.0407 U	0.0396 U	0.0408 U	0.0425 U	0.0408 U	0.0369 U

NOTE: [1]Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 1).
[2]Not applicable; the health-based threshold level exceeds the expected soil concentration under free-product conditions.
[3]Volatile reporting levels were not achieved in the sample due to the inherently high concentrations of petroleum products (TPH-DRO/TPH-GRO) in the sample. Therefore, the concentrations are reported as less than the elevated detection limits.

BGS - Below ground surface.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
TPH-DRO - Total petroleum hydrocarbon–diesel-range organics.
TPH-GRO - Total petroleum hydrocarbon–gasoline-range organics.
VOCs - Volatile organic compounds.
Bold values exceed soil threshold levels.

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

TABLE V-A. SUMMARY OF SOIL ANALYTICAL RESULTS (continued)

Location		SB-08	SB-09	SB-10	SB-10	SB-11	SB-12	SB-13	SB-14
Sample ID		BF0811	BF0911[3]	BF1011[3]	BF1013[4]	BF1111	BF1211	BF1311	BF1411
Date Collected	Applicable	12/03/99	12/03/99	12/02/99	12/02/99	12/02/99	12/04/99	11/30/99	12/01/99
Depth (ft BGS)	Standards[1]	1.1 to 3.1	0.55 to 2.0	2.0 to 3.5	2.0 to 3.5	1.0 to 3.0	0.5 to 2.5	7.0 to 8.9	0.5 to 2.5
VOCs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	0.005	0.001 U	**<0.110**	**<0.164**	**<0.116**	0.001 J	0.0005 J	0.0006 J	0.0045 =
Toluene	0.400	0.001 U	<0.110	<0.164	**<0.116**	0.001 J	0.0007 J	0.001 J	0.0009 J
Ethylbenzene	0.370	0.001 U	<0.110	0.333 =	0.217 =	0.0014 U	0.0008 J	0.0011 U	0.0008 J
Xylenes	20.0	0.0031 U	<0.331	0.400 J	0.318 J	0.0044 U	0.001 J	0.0033 U	0.0006 J
TPH-DRO	NRC	1.4 UJ	11.2 J	136 =	180 =	0.77 U	0.51 UJ	1.1 U	6.5 =
TPH-GRO	NRC	0.114 U	27.2 =	290.0 =	290 =	0.112 U	0.197 =	0.07 =	.592 =
PAHs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2-Chloronaphthalene	N/A[2]	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Acenaphthene	N/A[2]	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Acenaphthylene	N/A[2]	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Anthracene	N/A[2]	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Benzo(a)anthracene	N/A[2]	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Benzo(a)pyrene	0.660	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Benzo(b)fluoranthene	0.820	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Benzo(g,h,i)perylene	N/A[2]	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Benzo(k)fluoranthene	1.6	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Chrysene	0.660	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Dibenzo(a,h)anthracene	1.5	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Fluoranthene	N/A[2]	0.038 UJ	0.0377 U	0.160 U	0.0463 =	0.0375 U	0.038 U	0.041 U	0.0383 U
Fluorene	N/A[2]	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Indeno(1,2,3-cd)pyrene	0.660	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U
Naphthalene	N/A[2]	0.038 UJ	0.0377 U	0.268 =	0.315 =	0.0375 U	0.038 U	0.041 U	0.0383 U
Phenanthrene	N/A[2]	0.038 UJ	0.0377 U	0.160 U	0.0528 =	0.0375 U	0.038 U	0.041 U	0.0383 U
Pyrene	N/A[2]	0.038 UJ	0.0377 U	0.160 U	0.0401 U	0.0375 U	0.038 U	0.041 U	0.0383 U

NOTE: [1]Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels.
[2]Not applicable; the health-based threshold level is exceeded only if free product exists.
[3]Volatile reporting levels were not achieved in the sample due to the inherently high concentrations of petroleum products (TPH-DRO/TPH-GRO) in the sample. Therefore, the concentrations are reported as less than the elevated detection limits.
[4]Duplicate sample.

BGS - Below ground surface.
NRC - No regulatory criteria.
PAH - Polynuclear aromatic hydrocarbon.
TPH-DRO - Total petroleum hydrocarbon–diesel-range organics.
TPH-GRO - Total petroleum hydrocarbon–gasoline-range organics.
VOCs - Volatile organic compounds.
Bold values exceed soil threshold levels.

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

TABLE V-A. SUMMARY OF SOIL ANALYTICAL RESULTS (continued)

Location		SB-15	SB-16	SB-17	SB-18	SB-19	SB-20	SB-20	SB-21
Sample ID		BF1511	BF1611	BF1711[3]	BF1811	BF1911	BF2011[3]	BF2013[4,5]	BF2111
Date Collected	Applicable	12/02/99	12/02/99	12/03/99	12/01/99	11/30/99	12/05/99	12/05/99	12/05/99
Depth (ft BGS)	Standards[1]	1.5 to 3.5	4.3 to 6.3	2.0 to 4.0	6.1 to 11.1	4.1 to 6.1	2.0 to 4.0	2.0 to 4.0	4.0 to 6.0
VOCs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	0.005	0.0013 U	0.001 U	**<0.105**	0.0011 U	0.0006 J	**<0.103**	**0.0382 J**	0.0011 U
Toluene	0.400	0.0013 U	0.001 U	<0.105	0.0009 J	0.0044 =	<0.103	0.100 U	0.0011 U
Ethylbenzene	0.370	0.0013 U	0.001 U	**0.792 =**	0.0011 U	0.001 U	0.851 =	**0.645 =**	0.0011 U
Xylenes	20.0	0.0038 U	0.0031 U	5.9 =	0.0034 U	0.003 U	6.640 =	4.480 =	0.0034 U
TPH-DRO	NRC	0.99 U	0.92 U	87.4 =	1.8 U	1.6 U	205 =	425 =	2.9 U
TPH-GRO	NRC	0.12 U	0.123 U	223.0 =	0.121 U	0.120 U	792.0 J	2450 =	0.129 U
PAHs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2-Chloronaphthalene	N/A[2]	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Acenaphthene	N/A[2]	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Acenaphthylene	N/A[2]	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Anthracene	N/A[2]	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Benzo(a)anthracene	N/A[2]	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Benzo(a)pyrene	0.660	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Benzo(b)fluoranthene	0.820	0.0404 =	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Benzo(g,h,i)perylene	N/A[2]	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Benzo(k)fluoranthene	1.6	0.136 =	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Chrysene	0.660	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Dibenzo(a,h)anthracene	1.5	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Fluoranthene	N/A[2]	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Fluorene	N/A[2]	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Indeno(1,2,3-cd)pyrene	0.660	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Naphthalene	N/A[2]	0.04 U	0.041 U	0.350 =	0.0405 U	0.0399 U	0.451 =	0.681 =	0.0429 U
Phenanthrene	N/A[2]	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U
Pyrene	N/A[2]	0.04 U	0.041 U	0.0396 U	0.0405 U	0.0399 U	0.0406 U	0.0401 U	0.0429 U

NOTE: [1]Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels.
[2]Not applicable; the health-based threshold level is exceeded only if free product exists.
[3]Volatile reporting levels were not achieved in the sample due to the inherently high concentrations of petroleum products (TPH-DRO/TPH-GRO) in the sample. Therefore, the concentrations are reported as less than the elevated detection limits.
[4]Duplicate sample.
[5]Analytical data from the duplicate sample collected from SB-20 were used for evaluation purposes because the volatile reporting levels for the primary sample were not achieved.

BGS - Below ground surface.
NRC - No regulatory criteria.
PAH - Polynuclear aromatic hydrocarbon.
TPH-DRO - Total petroleum hydrocarbon–diesel-range organics.
TPH-GRO - Total petroleum hydrocarbon–gasoline-range organics.
VOCs - Volatile organic compounds.
Bold values exceed soil threshold levels.

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

TABLE V-A. SUMMARY OF SOIL ANALYTICAL RESULTS (continued)

Location		SB-22	SB-23	SB-24	SB-25	SB-26	SB-27	SB-28
Sample ID		BF2211	BF2311	BF2411	BF2511	BF2611	BF2711	BF2811
Date Collected	Applicable	12/05/99	12/04/99	12/02/99	12/02/99	12/02/99	01/11/99	01/11/99
Depth (ft BGS)	Standards[1]	0.0 to 2.0	2.0 to 4.0	4.0 to 6.0	5.6 to 7.6	1.2 to 3.2	5.0 to 7.0	2.0 to 2.8
VOCs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	0.005	**1.130 =**	0.001 U	0.0008 J	0.0009 J	0.0012 U	0.0012 U	0.0014 U
Toluene	0.400	**0.404 =**	0.001 U	0.0054 =	0.0025 =	0.0012 U	0.0011 J	0.0005 J
Ethylbenzene	0.370	**13.6 J**	0.001 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0009 J
Xylenes	20.0	**74.6 J**	0.003 U	0.0036 U	0.0035 U	0.0035 U	0.0037 U	0.0043 U
TPH-DRO	NRC	3420 =	2.1 UJ	7.7 J	1.4 U	0.59 U	2.0 U	2.5 U
TPH-GRO	NRC	4520 J	0.132 =	0.180 =	0.305 =	0.131 U	0.211 =	1.690 =
PAHs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2-Chloronaphthalene	N/A[2]	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Acenaphthene	N/A[2]	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Acenaphthylene	N/A[2]	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Anthracene	N/A[2]	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Benzo(a)anthracene	N/A[2]	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Benzo(a)pyrene	0.660	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Benzo(b)fluoranthene	0.820	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Benzo(g,h,i)perylene	N/A[2]	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Benzo(k)fluoranthene	1.6	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Chrysene	0.660	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Dibenzo(a,h)anthracene	1.5	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Fluoranthene	N/A[2]	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Fluorene	N/A[2]	0.154 =	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Indeno(1,2,3-cd)pyrene	0.660	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Naphthalene	N/A[2]	14.2 =	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Phenanthrene	N/A[2]	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U
Pyrene	N/A[2]	0.0376 U	0.0409 U	0.0413 U	0.0426 U	0.0436 U	0.0424 U	0.0421 U

NOTE: [1]Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels.
[2]Not applicable; the health-based threshold level is exceeded only if free product exists.

BGS - Below ground surface.
NRC - No regulatory criteria.
PAH - Polynuclear aromatic hydrocarbon.
TPH-DRO - Total petroleum hydrocarbon–diesel-range organics.
TPH-GRO - Total petroleum hydrocarbon–gasoline-range organics.
VOCs - Volatile organic compounds.
Bold values exceed soil threshold levels.

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

TABLE V-A. SUMMARY OF SOIL ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Applicable Standards[1]	SB-29 BF2911 01/11/99 4.0 to 5.7	SB-30 BF3011 01/11/99 4.0 to 5.9	SB-30 BF3013[4] 01/11/99 4.0 to 5.9	SB-31 BF3111 01/10/99 4.0 to 5.7
VOCs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	0.005	0.0009 J	0.0011 U	0.0011 U	0.0015 U
Toluene	0.400	0.0015 =	0.0011 U	0.0011 U	0.0015 U
Ethylbenzene	0.370	0.0006 J	0.0011 U	0.0011 U	0.0015 U
Xylenes	20.0	0.279 =	0.0033 U	0.0034 U	0.0044 U
TPH-DRO	NRC	2.6 U	1.9 U	1.9 U	1.5 U
TPH-GRO	NRC	0.871 =	0.0939 J	0.532 =	0.297 =
PAHs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2-Chloronaphthalene	N/A[2]	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Acenaphthene	N/A[2]	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Acenaphthylene	N/A[2]	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Anthracene	N/A[2]	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Benzo(a)anthracene	N/A[2]	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Benzo(a)pyrene	0.660	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Benzo(b)fluoranthene	0.820	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Benzo(g,h,i)perylene	N/A[2]	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Benzo(k)fluoranthene	1.6	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Chrysene	0.660	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Dibenzo(a,h)anthracene	1.5	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Fluoranthene	N/A[2]	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Fluorene	N/A[2]	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Indeno(1,2,3-cd)pyrene	0.660	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Naphthalene	N/A[2]	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Phenanthrene	N/A[2]	0.0445 U	0.0427 U	0.0418 U	0.0418 U
Pyrene	N/A[2]	0.0445 U	0.0427 U	0.0418 U	0.0418 U

NOTE: [1]Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels.
[2]Not applicable; the health-based threshold level is exceeded only if free product exists.
[3]Volatile reporting levels were not achieved in the sample due to the inherently high concentrations of petroleum products (TPH-DRO/TPH-GRO) in the sample. Therefore, the concentrations are reported as less than the elevated detection limits.
[4]Duplicate sample.

BGS - Below ground surface.
NRC - No regulatory criteria.
PAH - Polynuclear aromatic hydrocarbon.
TPH-DRO - Total petroleum hydrocarbon–diesel-range organics.
TPH-GRO - Total petroleum hydrocarbon–gasoline-range organics.
VOCs - Volatile organic compounds.
Bold values exceed soil threshold levels.

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

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SUMMARY TABLE
OF
SEDIMENT ANALYTICAL RESULTS

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Former UST 117, Building 7002
Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

TABLE V-B. SUMMARY OF SEDIMENT ANALYTICAL RESULTS

Location		SD-01	SD-02	SD-03	SD-04	SD-05	SD-05	SD-06
Sample ID		BF0118	BF0218	BF0318[3]	BF0418	BF0518	BF051A[4]	BF0618
Date Collected	Applicable	12/06/99	12/06/99	12/06/99	12/06/99	12/06/99	12/06/99	12/07/99
Depth (ft BGS)	Standards[1]	0.0 to 0.5	0.0 to 0.5	0.0 to 0.5	0.0 to 0.5	0.0 to 0.5	0.0 to 0.5	0.0 to 0.5
VOCs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	0.005	0.0013 UJ	0.0019 U	**<0.154**	0.00140 U	0.0012 U	0.0013 UJ	0.0016 U
Toluene	0.400	0.0013 UJ	0.0123 =	**2.810 =**	0.0402 J	0.0043 =	0.0016 J	0.00042 J
Ethylbenzene	0.370	0.0013 UJ	0.0019 U	<0.154	0.0014 U	0.0012 U	0.0013 UJ	0.0016 U
Xylenes	20.0	0.0040 UJ	0.0057 U	<0.463	0.0042 U	0.0036 U	0.0040 UJ	0.0048 U
TPH-DRO	NRC	3.7 U	9.2 =	5.4 UJ	3.0 UJ	5.4 UJ	30.7 =	9.2 J
TPH-GRO	NRC	0.144 U	0.184 UJ	0.173 U	0.136 U	0.134 U	0.128 U	0.232 =
PAHs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2-Chloronaphthalene	N/A[2]	0.481 U	0.612 U	0.578 U	0.455 U	0.445 U	0.410 U	0.567 U
Acenaphthene	N/A[2]	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Acenaphthylene	N/A[2]	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Anthracene	N/A[2]	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Benzo(a)anthracene	N/A[2]	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Benzo(a)pyrene	0.660	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Benzo(b)fluoranthene	0.820	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Benzo(g,h,i)perylene	N/A[2]	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Benzo(k)fluoranthene	1.6	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Chrysene	0.660	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Dibenzo(a,h)anthracene	1.5	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Fluoranthene	N/A[2]	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Fluorene	N/A[2]	0.0481 U	0.107 =	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Indeno(1,2,3-cd)pyrene	0.660	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Naphthalene	N/A[2]	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Phenanthrene	N/A[2]	0.0481 U	0.0612 U	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U
Pyrene	N/A[2]	0.0481 U	0.0941=	0.0578 U	0.0455 U	0.0455 U	0.0410 U	0.0567 U

NOTE: [1]Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 2).
[2]Not applicable; the health-based threshold level exceeds the expected soil concentration under free-product conditions.
[3]Volatile reporting levels were not achieved in the sample due to the elevated toluene concentration. Therefore, the concentrations are reported as less than the elevated detection limits.
[4]Duplicate sample.

BGS - Below ground surface.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
TPH-DRO - Total petroleum hydrocarbon–diesel-range organics.
TPH-GRO - Total petroleum hydrocarbon–gasoline-range organics.
VOCs - Volatile organic compounds.
Bold values exceed soil threshold levels.

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

TABLE V-B. SUMMARY OF SEDIMENT ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Applicable Standards[1]	SD-07 BF0718 12/07/99 0.0 to 0.5	SD-08 BF0818 12/07/99 0.0 to 0.5	SD-09 BF0918 12/07/99 0.0 to 0.5
VOCs	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	0.005	0.0015 U	0.0012 UJ	0.0013 U
Toluene	0.400	0.0015 U	0.00036 J	0.00058 J
Ethylbenzene	0.370	0.0015 U	0.0012 UJ	0.0013 U
Xylenes	20.0	0.0044 U	0.0037 UJ	0.0038 U
TPH-DRO	NRC	2.1 UJ	1.5 UJ	3.6 UJ
TPH-GRO	NRC	0.165 U	0.160 =	0.137 U
PAHs	mg/kg	mg/kg	mg/kg	mg/kg
2-Chloronaphthalene	N/A[2]	0.550 U	0.484 U	0.438 U
Acenaphthene	N/A[2]	0.0550 U	0.0484 U	0.0438 U
Acenaphthylene	N/A[2]	0.0550 U	0.0484 U	0.0438 U
Anthracene	N/A[2]	0.0550 U	0.0484 U	0.0438 U
Benzo(a)anthracene	N/A[2]	0.0550 U	0.0484 U	0.336 U
Benzo(a)pyrene	0.660	0.0550 U	0.0484 U	0.282 =
Benzo(b)fluoranthene	0.820	0.0550 U	0.0484 U	0.474 =
Benzo(g,h,i)perylene	N/A[2]	0.0550 U	0.0484 U	0.0438 U
Benzo(k)fluoranthene	1.6	0.0550 U	0.0484 U	0.0438 U
Chrysene	0.660	0.0550 U	0.0484 U	0.422 =
Dibenzo(a,h)anthracene	1.5	0.0550 U	0.0484 U	0.0438 U
Fluoranthene	N/A[2]	0.0550 U	0.0484 U	0.645 =
Fluorene	N/A[2]	0.0550 U	0.0484 U	0.0438 U
Indeno(1,2,3-cd)pyrene	0.660	0.0550 U	0.0484 U	0.0438 U
Naphthalene	N/A[2]	0.0550 U	0.0484 U	0.0438 U
Phenanthrene	N/A[2]	0.0550 U	0.0484 U	0.0625 =
Pyrene	N/A[2]	0.0550 U	0.0484 U	0.736 =

NOTE: [1]Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels.
[2]Not applicable; the health-based threshold level is exceeded only if free product exists.
[3]Volatile reporting levels were not achieved in the sample due to the elevated toluene concentration. Therefore, the concentrations are reported as less than the elevated detection limits.
[4]Duplicate sample.

BGS - Below ground surface.
NRC - No regulatory criteria.
PAH - Polynuclear aromatic hydrocarbon.
TPH-DRO - Total petroleum hydrocarbon–diesel-range organics.
TPH-GRO - Total petroleum hydrocarbon–gasoline-range organics.
VOCs - Volatile organic compounds.
Bold values exceed soil threshold levels.

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

CHAIN-OF-CUSTODY RECORDS

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Science Applications International Corporation — An Employee Owned Company

Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4500

CHAIN OF CUSTODY RECORD

COC NO.: BFFCAPA01

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-96-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

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

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX (3x5g Excess-1 Bag)	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF1311	11/30/99	1115	Soil	1	1	1									3	3-8 ppm	7.0-8.9 FT
BF1312	11/30/99	1155	water	2			2								4	N/A	12.5-16.5 FT
BF1911	11/30/99	1420	Soil	1	1	1									3	0.0 ppm	6.0-8.0 FT
BF1912	11/30/99	1450	water	2			2								4	N/A	8.0-13.0 FT
BFTB01	11/30/99	1000	water	2											2	N/A	TRIP BLANK
BF0311	12/01/99	0820	soil	1	1	1									3	0.0 ppm	6.0-8.0 FT
BF0312	12/01/99	0905	water	2			2								4	N/A	8.0-13.0 FT
BF0211	12/01/99	1030	soil	1	1	1									3	0.0 ppm	6.0-8.0 FT
BF0212	12/01/99	1100	water	2			2								4	N/A	8.0-13.0 FT

24-Hour 12/01/99

RELINQUISHED BY:	Date/Time 12/01/99 1145	RECEIVED BY:	Date/Time 12-1-99 1140	TOTAL NUMBER OF CONTAINERS: 30	Cooler Temperature: 4°C (Field)
COMPANY NAME: SAIC		COMPANY NAME: GEL		Cooler ID: #50 and #52	FEDEX NUMBER: N/A TRANSPORTED BY LAB COURIER
RELINQUISHED BY:	Date/Time 12/1/99 1145	RELINQUISHED BY:	Date/Time 12-1-99 1810	Temperature Blanks included in both coolers.	
COMPANY NAME: SAIC		COMPANY NAME: GEL			
RELINQUISHED BY:	Date/Time 12/1/99 1210	RECEIVED BY:	Date/Time 12/1/99 1610		
COMPANY NAME: SAIC		COMPANY NAME: GEL			

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CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature) (Printed Name) Ken Swain

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	REQUESTED PARAMETERS: BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE (Cap/Sg)	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF1812	12/1/99	1620	Water				2								2		
BE1412	12/1/99	1505	Water				2								2		
BE0111	12/1/99	1310	Soil											1	1		
BE0111	12/1/99	1310	Soil	3	1	1									5		
BE1811	12/1/99	1610	Soil	3	1	1									5		

12/02/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: SAIC	12/2/99 1210	COMPANY NAME: GEL	12/2/99 1510
RELINQUISHED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	12-2-99 1210	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: GEL	12-2-99 1510	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 15

Cooler ID: #60

Cooler Temperature: 4°C

FEDEX NUMBER:

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

No #

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature) / (Printed Name): Ken Smith

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF2512	12/2/99	0835	GW				2								2		
BF2412	12/2/99	~~1445~~ 1045	GW				2								2		
BF2511	12/2/99	0810	Soil	3	1	1									5		
BF0112	12/01/99	1325	GW				2								2		
BF1411	12/01/99	1435	Soil	3	1	1									5		
BF2411	12/02/99	1005		3	1	1									5		

RELINQUISHED BY:	Date/Time: 12/02/99 1210	RECEIVED BY: Frances	Date/Time: 12/2/99 1510	TOTAL NUMBER OF CONTAINERS: 21	Cooler Temperature: 4° C
COMPANY NAME: SAIC		COMPANY NAME: GEL		Cooler ID: 7	FEDEX NUMBER:
RELINQUISHED BY:	Date/Time 12-2-99 1210	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			
RELINQUISHED BY:	Date/Time 12-2-99 1510	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			

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CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-96-D-0022, DO # 0061

PROJECT MANAGER: Allison Bailey

Sampler (Signature): [signature] (Printed Name): Ken Swain

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, Moisture	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF1112	12-2-99	1005	GW				2								2		
BF1014	12-2-99	0840	GW				2								2		
BF1012	12-2-99	0840	GW				2								2		
BF1111	12-2-99	0950	Soil	3	1	1									5		
~~BF11~~ BF1011	12-2-99	0815	Soil	3	1	1									5		
BF1013	12-2-99	0815	Soil	3	1	1									5		

12/02/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
[signature]	12/02/99	[signature]	12/2/99
COMPANY NAME: SAIC	1210	COMPANY NAME: GEL	1510
RELINQUISHED BY: [signature]	Date/Time 12-2-99	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	1210	COMPANY NAME:	
RELINQUISHED BY: [signature]	Date/Time 12-2-99	RECEIVED BY:	Date/Time
COMPANY NAME: GEL	1510	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 21

Cooler ID: 589

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Cooler Temperature: 4°C

FEDEX NUMBER: NA

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9900849

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature) (Printed Name)

L. Allison Bailey L. Allison Bailey

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO/MOISTURE Evap. Loss	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	PID ~~OVA~~ SCREENING	OBSERVATIONS COMMENTS, SPECIAL INSTRUCTIONS
BF0711	12-2-99	1610	Soil	3	1	1									5	1644 ppm	1.5-3.0' BLS
BF0611	12-2-99	1450	Soil	3	1	1									5	2.5 ppm	8.8-10.4' BLS
BF1511	12-2-99	1125	Soil	3	1	1									5	2.4 ppm	1.5 to 3.5 BLS
BF0712	12-2-99	1630	Water	2			2								4	2 —	6.5 to 10.5
BF0612	12-2-99	1540	Water	2			2								3	2 —	8.0 to 12.0
BF1512	12-2-99	1140	Water	2			2								4	2 —	6.0 to 10.0

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
L. Allison Bailey	12-3-99 1200	COMPANY NAME: GEL	12/3/99 1505
COMPANY NAME: SAIC			
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	12-3-99 1200	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: GEL	12-3-99 1505	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 27

Cooler ID: ABIt

Cooler Temperature: 4°C

FEDEX NUMBER: NA GEL LAB COURIER

V-19

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Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481 4600

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

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

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX (3x5g Encores)	PAH, TPH-DRO	THP-GRO, MOISTURE Engr Less	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF2611	12-02-99	1248	soil	1	1	1									3	0.8 ppm	1.2 ft - 3.2 ft
BF1611	12-02-99	1455	soil	1	1	1									3	0.0 ppm	4.3 ft - 6.3 ft
BF2612	12-02-99	1315	water				2								2	N/A	7.2 - 12.2 ft
BF1612	12-02-99	1520	water				2								2	N/A	6.3 - 11.3 ft
BF1711	12-03-99	0925	soil	1	1	1									3	680 ppm	2.0 - 4.0 ft

12/03/99

V-20

	Date/Time		Date/Time		
RELINQUISHED BY: Mitchell Hall	12/03/99 1100	RECEIVED BY:	12/03/99 1150	TOTAL NUMBER OF CONTAINERS: 13	Cooler Temperature: Field: 2°C
COMPANY NAME: SAIC		COMPANY NAME: SAIC		Cooler ID: 55	FEDEX NUMBER: N/A SAMPLES
RECEIVED BY:	12/03/99 1100	RELINQUISHED BY:	12-3-99 1525		
COMPANY NAME: SAIC		COMPANY NAME: GEL			
RELINQUISHED BY:	12-3-99 1700	RECEIVED BY:	12/3/99 1525		
COMPANY NAME: GEL		COMPANY NAME: GEL			

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CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature): [signature] (Printed Name): Ken Swain

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
FV612	12/3/99	1415	Water	2			2										9900864013
FV622	12/3/99	1445	water	2			2										9900864014
FV632	12/3/99	1510	water	2			2										9900864015
FV642	12/3/99	1535	water	2			2										9900864016
FV652	12/3/99	1605	water	2													9900865001
FV662	12/3/99	1625	water	2													9900865002
FØ812	12/3/99	1215	water	2													003
FTBØ4	12/3/99	1100	water	2													004
F1212	12/4/99	Ø830	water	2													005
FØ512	12/3/99	1500	water	2													006
FØ912	12/3/99	1645	Water	2													007
FØ412	12/3/99	1320	water	2													008
F1211	12/4/99	Ø820	Soil	3	1	1											9900863007

RELINQUISHED BY: [signature]	Date/Time 12/4/99 1200	RECEIVED BY: [signature]	Date/Time 12/4/99 1400	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature: 4°C
COMPANY NAME: SAIC		COMPANY NAME: GEL		Cooler ID: 13	FEDEX NUMBER:
RECEIVED BY: [signature]	Date/Time 12/4/99 1200	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			
RELINQUISHED BY: [signature]	Date/Time 12/4/99 1400	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			

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Science Applications International Corporation
10 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature): [signature] (Printed Name): Ken Swain

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE, Cyanide	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
SF1711	12-3-99	0925	Soil	3	1	1									5	1394 ppm	990086 3001
SF0412	12-3-99	1320	water				2								2	NA	990086 4001
SF0411	12-3-99	1310	Soil	3	1	1									5	1.2 ppm	990086 3002
SF0912	12-3-99	1645	water				2								2	NA	990086 4002
SF0911	12-3-99	1635	Soil	3	1	1									5	104 ppm	990086 3003
SF0512	12-3-99	1500	water				2								2	NA	990086 4003
SF0511	12-3-99	1450	Soil	3	1	1									5	1.0 ppm	990086 3004

12/4/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
[signature]	12/4/99	[signature]	12/4/99
COMPANY NAME: SAIC	1200	COMPANY NAME: GEL	1400
RECEIVED BY: [signature]	Date/Time 12/4/99	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	1200	COMPANY NAME:	
RELINQUISHED BY: [signature]	Date/Time 12/4/99	RECEIVED BY:	Date/Time
COMPANY NAME: GEL	1400	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 26

Cooler ID: 8

Cooler Temperature: 4°C

FEDEX NUMBER:

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CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature): [signature] (Printed Name): Ken Swain

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF1212	12-4-99	0830	water				2								2		990086 4009
BF0812	12-3-99	1215	water				2								3		990086 4010
BFV662	12-3-99	1625	water				2								1		990086 4011
BFV652	12-3-99	1605	water				2								2		990086 4012
BF0811	12-3-99	1135	Soil	3	1	1									5		990086 3006

KE 12/4/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 13	Cooler Temperature: 4°C
COMPANY NAME: SAIC	12/4/99 1200	COMPANY NAME: GEL	12/4/99 1400	Cooler ID: 838	FEDEX NUMBER:
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL	12/4/99 1200	COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL	12/4/99 1400	COMPANY NAME:			

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Science Applications International Corporation
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CHAIN OF CUSTODY RECORD

COC NO.:

ROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

IOJECT NUMBER: DACA21-95-D-0022, DO # 0051

IOJECT MANAGER: Allison Bailey

mpler (Signature) (Printed Name)

C. Allison Bailey C. Allison Bailey

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556 8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	CVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BFV712	12-4-99	0955	GW	X			2								4 2	NA	990086400
BFV722	12-4-99	1020	GW	X			2								4 2		990086400
BFV732	12-4-99	1045	GW	X			2								4 2		990086400
BFV742	12-4-99	1115	GW	X			2								4 2		990086400
BFV744	12-4-99	1115	GW	X			2								4 2		990086400
BF2311	12-4-99	1115	Soil	3	1	1									5	1.0 ppm	990086300

12/04/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
C. Allison Bailey	12/4/99 1200	Brandi	12/4/99 1400
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	12/4/99 1200	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: GEL	12/4/99 1400	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 15

Cooler ID: 589

Cooler Temperature: 4°C

FEDEX NUMBER:

V-24

Science Applications International Corporation

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

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature) (Printed Name)

Ken Swain

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE, Engr. Lab	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF2111	12/05/99	0925	Soil	3	1	1									5	5.1 ppm	990008001 MS/MSD
BF2013	12/05/99	1605	Soil	3	1	1									5	72 ppm	either 002 or 003
BF2211	12/05/99	1310	Soil	3	1	1									5	72 ppm	003
BF2011	12/05/99	1605	Soil	3	1	1									5	72 ppm	004
BFV762	12/04/99	1205	Water				2								2	NA	990008-16-015
BFV752	12/04/99	1140	Water				2								2		016
BFV262	12/04/99	1715	Water				2								2		017
BFV252	12/04/99	1635	water				2								2		018
BFV462	12/04/99	1110	water				2								2		019
							MS										

RELINQUISHED BY: — Date/Time 12/6/99 1205 — RECEIVED BY: — Date/Time 12/6/99 1515

COMPANY NAME: SAIC — COMPANY NAME: GEL

RELINQUISHED BY: — Date/Time 12-6-99 1700 — RELINQUISHED BY: — Date/Time

COMPANY NAME: GEL — COMPANY NAME:

RELINQUISHED BY: — Date/Time 12-6-99 1515 — RECEIVED BY: — Date/Time

COMPANY NAME: GEL — COMPANY NAME:

TOTAL NUMBER OF CONTAINERS: 30

Cooler ID: #6

Cooler Temperature: 4°C

FEDEX NUMBER:

V-25

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

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

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

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX (Soil Jug Excess)	PAH, TPH-DRO	THP-GRO, MOISTURE (CAP Lab)	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING ppm	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF3111	1/10/00	1620	soil	1	1	1									3	0.0	4.0 - 5.7 SB-30
BF3112	1/10/00	1640	water	2			2								4	0.0	5.7 - 10.7 SB-30
BFTB08	1/10/00	1400	water	2			2								2	N/A	TRIP BLANK
BF3011	1/11/00	0805	soil	1	1	1									3	0.0	4.0 - 5.9 SB-30
BF3012	1/11/00	0825	water	2			2								4	0.0	5.9 - 10.9 SB-30
BF3013	1/11/00	0805	soil	1	1	1									3	0.0	4.0 - 5.9 SB-30
BF3014	1/11/00	0825	water	2			2								4	0.0	5.9 - 10.9 SB-30
BF2911	1/11/00	0940	soil	1	1	1									3	59.0	4.0 - 5.7 SB-29
BF2912	1/11/00	0955	water	2			2								4	0.0	5.7 - 10.7 SB-29
BF2811	1/11/00	1112	soil	1	1	1									3	10.2	2.0 - 2.8 SB-28
BF2812	1/11/00	1140	water	2			2								4	0.0	7.5 - 12.5 SB-28
BF2711	1/11/00	1425	soil	1	1	1									3	0.0	5.0 - 7.0 SB-27
BF2712	1/11/00	1455	water	2			2								4	0.0	7.0 - 12.0 SB-27

TOTAL NUMBER OF CONTAINERS: 44

Cooler Temperature: 3°C (Field)

Cooler ID: 720 and 553

FEDEX NUMBER: NA
COURIER SERVICE PROVIDED BY GEL

RELINQUISHED BY: Mitchell Hall	Date/Time 1/12/00	RECEIVED BY: [illegible]	Date/Time 1/13/00
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RECEIVED BY: [illegible]	Date/Time 1/12/00 1200	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL		COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

- Temperature blanks included in both coolers
- Samples contained in two coolers
- Holding time for BF3111 critical; please preserve all Encore samples today.

800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-3600

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP Part A

PROJECT NUMBER: DACA21-95 D 0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature): Michael Hall (Printed Name): M. Hall 12/2/1

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX (Sel. - Surr. Samples)	PAH, TPH-DRO	THP-GRO, MOISTURE EVAP. WTS	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
BF0717	12-7-99	0838	water				N								2	1/4	9900901011
BF0817	12-7-99	0804	water				N								2	↓	012
BF0917	12-6-99	1605	water				N								2		013
BF0919	12.6.99	1605	water				N								2	↓	014
BF0118	12-6-99	1510	SEDIMENT SOIL	1	1	1									3	0.0	9900[illegible]001
BF0218	12.6.99	1450	SEDIMENT SOIL	1	1	1									3		002
BF0318	12-6-99	1430	SEDIMENT SOIL	1	1	1									3		003
BF0418	12-6-99	1535	SEDIMENT	1	1	1									3		004
BF0518	12-6-99	1403	SEDIMENT	1	1	1									3		005
BF0518A	12-6-99	1403	SEDIMENT	1	1	1									3		006
BF0618	12-7-99	0916	SEDIMENT	1	1	1									3		007
BF0718	12-7-99	0842	SEDIMENT	1	1	1									3		008
BF0818	12-7-99	0805	SEDIMENT	1	1	1									3		009
BF0918	12-6-99	1615	SEDIMENT	1	1	1									3		010

RELINQUISHED BY: Michael Hall	Date/Time 12-7-99 1210	RECEIVED BY: [illegible]	Date/Time 12/7/99 1500	TOTAL NUMBER OF CONTAINERS: 38	Cooler Temperature: Field ice 4.0°C
COMPANY NAME: SAIC		COMPANY NAME: GEL		Cooler ID: 8	FEDEX NUMBER: GEL Lab Courier Transporting Samples.
RECEIVED BY: [illegible]	Date/Time 12-7-99 1210	RELINQUISHED BY:	Date/Time	Temp Blank Included	
COMPANY NAME: GEL		COMPANY NAME:			
RELINQUISHED BY: [illegible]	Date/Time 12-7-99 1502	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			

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SOIL ANALYTICAL DATA SHEETS

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841003

Sample wt/vol: 6.4 (g/mL) G Lab File ID: 5N207

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. 19 Date Analyzed: 12/14/99

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	0.55	J	J
108-88-3	Toluene	2.9		=
100-41-4	Ethylbenzene	0.97	U	U
1330-20-7	Xylenes (total)	2.9	U	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BF0111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9911841003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 012F1201

Level: (low/med) LOW DATA VALIDATION Date Received: 12/09/99

% Moisture: 19 decanted: (Y/N) N COPY Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	2.0	JB	((F01,F06

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RF0111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1M506

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. 19 DATA VALIDATION COPY Date Analyzed: 12/10/99

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics_____	124	U	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Y711

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/19/99

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
205-99-2	Benzo(b)fluoranthene	41.4	U
53-70-3	Dibenz(a,h)anthracene	41.4	U
50-32-8	Benzo(a)pyrene	41.4	U
91-20-3	Naphthalene	41.4	U
208-96-8	Acenaphthylene	41.4	U
83-32-9	Acenaphthene	41.4	U
193-39-5	Indeno(1,2,3-cd)pyrene	41.4	U
86-73-7	Fluorene	41.4	U
191-24-2	Benzo(g,h,i)perylene	41.4	U
85-01-8	Phenanthrene	41.4	U
120-12-7	Anthracene	41.4	U
206-44-0	Fluoranthene	41.4	U
129-00-0	Pyrene	41.4	U
56-55-3	Benzo(a)anthracene	41.4	U
218-01-9	Chrysene	41.4	U
91-58-7	2-Chloronaphthalene	41.4	U
207-08-9	Benzo(k)fluoranthene	41.4	U

u

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835004

Sample wt/vol: 6.0 (g/mL) G Lab File ID: 5N118

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: not dec. 18 DATA VALIDATION COPY Date Analyzed: 12/13/99

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	
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

FORM I VOA

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0211

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 010F1001

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/01/99

% Moisture: 18 decanted: (Y/N) N Date Extracted: 12/03/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/03/99

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	1.4	JB	U Fo1/F06

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA0?S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1M407

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: not dec. 18 Date Analyzed: 12/09/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	122	U	U

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0211

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5X418

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: 18 decanted: (Y/N) N Date Extracted: 12/02/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/09/99

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/KG	Q
91-20-3	Naphthalene	40.7	U
91-58-7	2-Chloronaphthalene	40.7	U
208-96-8	Acenaphthylene	40.7	U
83-32-9	Acenaphthene	40.7	U
86-73-7	Fluorene	40.7	U
85-01-8	Phenanthrene	40.7	U
120-12-7	Anthracene	40.7	U
206-44-0	Fluoranthene	40.7	U
129-00-0	Pyrene	40.7	U
56-55-3	Benzo(a)anthracene	40.7	U
218-01-9	Chrysene	40.7	U
205-99-2	Benzo(b)fluoranthene	40.7	U
207-08-9	Benzo(k)fluoranthene	40.7	U
50-32-8	Benzo(a)pyrene	40.7	U
193-39-5	Indeno(1,2,3-cd)pyrene	40.7	U
53-70-3	Dibenz(a,h)anthracene	40.7	U
191-24-2	Benzo(g,h,i)perylene	40.7	U

u

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0311

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835003

Sample wt/vol: 5.4 (g/mL) G Lab File ID: 5N117

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: not dec. 16 DATA VALIDATION Date Analyzed: 12/13/99

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	2.5		
100-41-4	Ethylbenzene	1.1	U	U
1330-20-7	Xylenes (total)	3.3	U	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0311

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 009F0901

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/01/99

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/03/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/03/99

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	JB	U F01,F06

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0311

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1M406

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: not dec. 16 Date Analyzed: 12/09/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	119	U	U

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0311

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5X417

Level: (low/med) LOW DATA VALIDATION Date Received: 12/01/99

% Moisture: 16 decanted: (Y/N) NY Date Extracted: 12/02/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/09/99

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	39.6	U
91-58-7	2-Chloronaphthalene	39.6	U
208-96-8	Acenaphthylene	39.6	U
83-32-9	Acenaphthene	39.6	U
86-73-7	Fluorene	39.6	U
85-01-8	Phenanthrene	39.6	U
120-12-7	Anthracene	39.6	U
206-44-0	Fluoranthene	39.6	U
129-00-0	Pyrene	39.6	U
56-55-3	Benzo(a)anthracene	39.6	U
218-01-9	Chrysene	39.6	U
205-99-2	Benzo(b)fluoranthene	39.6	U
207-08-9	Benzo(k)fluoranthene	39.6	U
50-32-8	Benzo(a)pyrene	39.6	U
193-39-5	Indeno(1,2,3-cd)pyrene	39.6	U
53-70-3	Dibenz(a,h)anthracene	39.6	U
191-24-2	Benzo(g,h,i)perylene	39.6	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFC411

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863002

Sample wt/vol: 6.1 (g/mL) G Lab File ID: 5N329

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: not dec. 18 Date Analyzed: 12/16/99

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
108-88-3	Toluene	0.98	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

EF0411

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 003F0301

DATA VALIDATION COPY

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: 18 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/17/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	2.7	B	LCS F01,F07,80

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0411

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N1018

Level: (Low/med) LOW Date Received: 12/04/99

% Moisture: not dec. 18 Date Analyzed: 12/13/99

DATA VALIDATION COPY

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics	122	U	ul

18

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0411

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Y508

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: 18 decanted: (Y/N) N Date Extracted: 12/10/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	40.8	U
53-70-3	Dibenz(a,h)anthracene	40.8	U
50-32-8	Benzo(a)pyrene	40.8	U
91-20-3	Naphthalene	40.8	U
208-96-8	Acenaphthylene	40.8	U
83-32-9	Acenaphthene	40.8	U
193-39-5	Indeno(1,2,3-cd)pyrene	40.8	U
86-73-7	Fluorene	40.8	U
191-24-2	Benzo(g,h,i)perylene	40.8	U
85-01-8	Phenanthrene	40.8	U
120-12-7	Anthracene	40.8	U
206-44-0	Fluoranthene	40.8	U
129-00-0	Pyrene	40.8	U
56-55-3	Benzo(a)anthracene	40.8	U
218-01-9	Chrysene	40.8	U
91-58-7	2-Chloronaphthalene	40.8	U
207-08-9	Benzo(k)fluoranthene	40.8	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE No.

BP0511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA035

Matrix: (soil/water) SOIL Lab Sample ID: 9900863001

Sample wt/vol: 6.2 (g/mL) G Lab File ID: 5N331

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: not dec. 22 Date Analyzed: 12/16/99

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
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.1	U

FORM I
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF051LRE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 011F1101

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: 22 decanted: (Y/N) N Date Extracted: 01/05/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/05/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

DATA VALIDATION COPY

use

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	2.2	B	UJ F01, F07, H01

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N1020

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: not dec. 22 Date Analyzed: 12/13/99

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics	128	U	U

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Y510

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: 22 decanted: (Y/N) N Date Extracted: 12/10/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	42.5	U
53-70-3	Dibenz(a,h)anthracene	42.5	U
50-32-8	Benzo(a)pyrene	42.5	U
91-20-3	Naphthalene	42.5	U
208-96-8	Acenaphthylene	42.5	U
83-32-9	Acenaphthene	42.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	42.5	U
86-73-7	Fluorene	42.5	U
191-24-2	Benzo(g,h,i)perylene	42.5	U
85-01-8	Phenanthrene	42.5	U
120-12-7	Anthracene	42.5	U
206-44-0	Fluoranthene	42.5	U
129-00-0	Pyrene	42.5	U
56-55-3	Benzo(a)anthracene	42.5	U
218-01-9	Chrysene	42.5	U
91-58-7	2-Chloronaphthalene	42.5	U
207-08-9	Benzo(k)fluoranthene	42.5	U

u

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA065

Matrix: (soil/water) SOIL Lab Sample ID: 9900849002

Sample wt/vol: 4.8 (g/mL) G Lab File ID: 5N324

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. 18 DATA VALIDATION Date Analyzed: 12/15/99

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	1.3	U
108-88-3	Toluene	1.3	U
100-41-4	Ethylbenzene	1.3	U
1330-20-7	Xylenes (total)	3.8	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 048F4801

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: 18 decanted: (Y/N) N Date Extracted:12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

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) MG/KG	Q	
	----------Diesel Range Organics_____	1.2	JB	U FOL,F66

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA085

Matrix: (soil/water) SOIL Lab Sample ID: 9900849002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N205

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. 18 Date Analyzed: 12/14/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	----------Gasoline Range Organics	122	U

FORM I VOA

211

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Y522

Level: (low/med) LOW DATA VALIDATION Date Received: 12/03/99

% Moisture: 18 decanted: (Y/N) N Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	40.8	U
53-70-3	Dibenz(a,h)anthracene	40.8	U
50-32-8	Benzo(a)pyrene	40.8	U
91-20-3	Naphthalene	40.8	U
208-96-8	Acenaphthylene	40.8	U
83-32-9	Acenaphthene	40.8	U
193-39-5	Indeno(1,2,3-cd)pyrene	40.8	U
86-73-7	Fluorene	40.8	U
191-24-2	Benzo(g,h,i)perylene	40.8	U
85-01-8	Phenanthrene	40.8	U
120-12-7	Anthracene	40.8	U
206-44-0	Fluoranthene	40.8	U
129-00-0	Pyrene	40.8	U
56-55-3	Benzo(a)anthracene	40.8	U
218-01-9	Chrysene	40.8	U
91-58-7	2-Chloronaphthalene	40.8	U
207-08-9	Benzo(k)fluoranthene	40.8	U

u

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SF0711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849001

Sample wt/vol: 4.1 (g/mL) G Lab File ID: 5N406

Level: (low/med) MED Date Received: 12/03/99

% Moisture: not dec. 10 DATA VALIDATION COPY Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	1350	U
108-88-3	Toluene	1350	U
100-41-4	Ethylbenzene	1350	U
1330-20-7	Xylenes (total)	4040	U

u

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 009F0901

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: 10 decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

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	74.0	B	= FO1,FC8

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N104

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. 10 Date Analyzed: 12/13/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics_____	2330	_____	=

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Y721

Level: (low/med) LOW DATA VALIDATION Date Received: 12/03/99

% Moisture: 10 decanted: (Y/N) N Date Extracted:12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/19/99

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
205-99-2	Benzo(b)fluoranthene	36.9	U
53-70-3	Dibenz(a,h)anthracene	36.9	U
50-32-8	Benzo(a)pyrene	36.9	U
91-20-3	Naphthalene	84.1	
208-96-8	Acenaphthylene	36.9	U
83-32-9	Acenaphthene	36.9	U
193-39-5	Indeno(1,2,3-cd)pyrene	36.9	U
86-73-7	Fluorene	36.9	U
191-24-2	Benzo(g,h,i)perylene	36.9	U
85-01-8	Phenanthrene	36.9	U
120-12-7	Anthracene	36.9	U
206-44-0	Fluoranthene	36.9	U
129-00-0	Pyrene	36.9	U
56-55-3	Benzo(a)anthracene	36.9	U
218-01-9	Chrysene	36.9	U
91-58-7	2-Chloronaphthalene	36.9	U
207-08-9	Benzo(k)fluoranthene	36.9	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SF0811

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

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

Matrix: (soil/water) SOIL Lab Sample ID: 9900863

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 5N41

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. 12 Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.1	U

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FORM I
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0811RE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 012F1201

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: 12 decanted: (Y/N) N Date Extracted: 01/05/00

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 01/05/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

USE

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics_____	1.4	JB	US F01, F06, A01

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863006

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N1022

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. 12 Date Analyzed: 12/13/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics_____	114	U	U

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFC811RE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900853006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 42406

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: 12 decanted: (Y/N) N Date Extracted: 12/22/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/23/99

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/KG	Q
205-99-2	Benzo(b)fluoranthene	38.0	U
53-70-3	Dibenz(a,h)anthracene	38.0	U
50-32-8	Benzo(a)pyrene	38.0	U
91-20-3	Naphthalene	38.0	U
208-96-8	Acenaphthylene	38.0	U
83-32-9	Acenaphthene	38.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	38.0	U
86-73-7	Fluorene	38.0	U
191-24-2	Benzo(g,h,i)perylene	38.0	U
85-01-8	Phenanthrene	38.0	U
120-12-7	Anthracene	38.0	U
206-44-0	Fluoranthene	38.0	U
129-00-0	Pyrene	38.0	U
56-55-3	Benzo(a)anthracene	38.0	U
218-01-9	Chrysene	38.0	U
91-58-7	2-Chloronaphthalene	38.0	U
207-08-9	Benzo(k)fluoranthene	38.0	U

UJ A01

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0911

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863003

Sample wt/vol: 5.1 (g/mL) G Lab File ID: 5N418

Level: (low/med) MED Date Received: 12/04/99

% Moisture: not dec. 12 Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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	110	U
108-88-3	Toluene	110	U
100-41-4	Ethylbenzene	110	U
1330-20-7	Xylenes (total)	331	U

FORM I
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0911

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 004F0401

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: 12 decanted: (Y/N) N COPY Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

Injection Volume: 1.0(uL) Dilution Factor: 2.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q		
	Diesel Range Organics	11.2	B	J	F01,F08,F10 H

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0911

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863003

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1N2011

Level: (low/med) MED Date Received: 12/04/99

% Moisture: not dec. 12 Date Analyzed: 12/14/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	27200		=

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0911

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Y509

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: 12 decanted: (Y/N) N Date Extracted: 12/10/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	37.7	U
53-70-3	Dibenz(a,h)anthracene	37.7	U
50-32-8	Benzo(a)pyrene	37.7	U
91-20-3	Naphthalene	37.7	U
208-96-8	Acenaphthylene	37.7	U
83-32-9	Acenaphthene	37.7	U
193-39-5	Indeno(1,2,3-cd)pyrene	37.7	U
86-73-7	Fluorene	37.7	U
191-24-2	Benzo(g,h,i)perylene	37.7	U
85-01-8	Phenanthrene	37.7	U
120-12-7	Anthracene	37.7	U
206-44-0	Fluoranthene	37.7	U
129-00-0	Pyrene	37.7	U
56-55-3	Benzo(a)anthracene	37.7	U
218-01-9	Chrysene	37.7	U
91-58-7	2-Chloronaphthalene	37.7	U
207-08-9	Benzo(k)fluoranthene	37.7	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF101?

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841009

Sample wt/vol: 3.7 (g/mL) G Lab File ID: 5N306

Level: (low/med) MED Date Received: 12/02/99

% Moisture: not dec. 17 DATA VALIDATION Date Analyzed: 12/15/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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	164	U	U
108-88-3	Toluene	164	U	U
100-41-4	Ethylbenzene	333		U
1330-20-7	Xylenes (total)	400	J	J

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BF1011

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9911841009

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 007F0701

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/09/99

% Moisture: 17 decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

Injection Volume: 1.0(uL) Dilution Factor: 30.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	136	B	= F08F01

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1011

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841009

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1M607

Level: (low/med) MED DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: not dec. 17 Date Analyzed: 12/11/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 2.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	----------Gasoline Range Organics	290000	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1011

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841009

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Y717

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: 17 decanted: (Y/N) N Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/19/99

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
205-99-2	Benzo(b)fluoranthene	160	U
53-70-3	Dibenz(a,h)anthracene	160	U
50-32-8	Benzo(a)pyrene	160	U
91-20-3	Naphthalene	268	
208-96-8	Acenaphthylene	160	U
83-32-9	Acenaphthene	160	U
193-39-5	Indeno(1,2,3-cd)pyrene	160	U
86-73-7	Fluorene	160	U
191-24-2	Benzo(g,h,i)perylene	160	U
85-01-8	Phenanthrene	160	U
120-12-7	Anthracene	160	U
206-44-0	Fluoranthene	160	U
129-00-0	Pyrene	160	U
56-55-3	Benzo(a)anthracene	160	U
218-01-9	Chrysene	160	U
91-58-7	2-Chloronaphthalene	160	U
207-08-9	Benzo(k)fluoranthene	160	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1013 Duplicate

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841010

Sample wt/vol: 5.2 (g/mL) G Lab File ID: 5N219

Level: (low/med) MED Date Received: 12/02/99

% Moisture: not dec. 17 Date Analyzed: 12/14/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	116	U	U
108-88-3	Toluene	116	U	U
100-41-4	Ethylbenzene	217		
1330-20-7	Xylenes (total)	318	J	J

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BF1013
Duplicate

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9911841010

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 008F0801

Level: (low/med) LOW Date Received: 12/09/99

% Moisture: 17 decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

Injection Volume: 1.0(uL) Dilution Factor: 30.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	180	B	FOIFOS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1013 Duplicate

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841010

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1M608

Level: (low/med) MED DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: not dec. 17 Date Analyzed: 12/11/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 2.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	290000		=

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1013 Duplicate

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841010

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Y719

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: 17 decanted: (Y/N) N Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/19/99

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
205-99-2	Benzo(b)fluoranthene	40.1	U
53-70-3	Dibenz(a,h)anthracene	40.1	U
50-32-8	Benzo(a)pyrene	40.1	U
91-20-3	Naphthalene	315	
208-96-8	Acenaphthylene	40.1	U
83-32-9	Acenaphthene	40.1	U
193-39-5	Indeno(1,2,3-cd)pyrene	40.1	U
86-73-7	Fluorene	40.1	U
191-24-2	Benzo(g,h,i)perylene	40.1	U
85-01-8	Phenanthrene	52.8	
120-12-7	Anthracene	40.1	U
206-44-0	Fluoranthene	46.3	
129-00-0	Pyrene	40.1	U
56-55-3	Benzo(a)anthracene	40.1	U
218-01-9	Chrysene	40.1	U
91-58-7	2-Chloronaphthalene	40.1	U
207-08-9	Benzo(k)fluoranthene	40.1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EF1111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFAC6S

Matrix: (soil/water) SOIL Lab Sample ID: 9909841006

Sample wt/vol: 3.9 (g/mL) G Lab File ID: 5N215

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. 11 Date Analyzed: 12/14/99

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	J	J
108-88-3	Toluene	0.94	J	J
100-41-4	Ethylbenzene	1.4	U	U
1330-20-7	Xylenes (total)	4.4	U	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BF1111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9911841008

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 044F4401

Level: (low/med) LOW Date Received: 12/09/99

% Moisture: 11 decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

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) MG/KG	Q	
	Diesel Range Organics	0.77	JB	U Fa, Fo6

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841008

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1M5011

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: not dec. 11 Date Analyzed: 12/10/99

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics_____	112	U	u

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841008

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Y716

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: 11 decanted: (Y/N) N Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/19/99

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/KG	Q
205-99-2	Benzo(b)fluoranthene	37.5	U
53-70-3	Dibenz(a,h)anthracene	37.5	U
50-32-8	Benzo(a)pyrene	37.5	U
91-20-3	Naphthalene	37.5	U
208-96-8	Acenaphthylene	37.5	U
83-32-9	Acenaphthene	37.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	37.5	U
86-73-7	Fluorene	37.5	U
191-24-2	Benzo(g,h,i)perylene	37.5	U
85-01-8	Phenanthrene	37.5	U
120-12-7	Anthracene	37.5	U
206-44-0	Fluoranthene	37.5	U
129-00-0	Pyrene	37.5	U
56-55-3	Benzo(a)anthracene	37.5	U
218-01-9	Chrysene	37.5	U
91-58-7	2-Chloronaphthalene	37.5	U
207-08-9	Benzo(k)fluoranthene	37.5	U

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FORM I SV-1 OLM03.0

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900963007

Sample wt/vol: 6.2 (g/mL) G Lab File ID: 5N334

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. 12 Date Analyzed: 12/16/99

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	0.54	J
108-88-3	Toluene	0.69	J
100-41-4	Ethylbenzene	0.77	J
1330-20-7	Xylenes (total)	1.0	J

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FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF1211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 027F2701

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: 12 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/16/99

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	0.51	JB

UJ F01,F06,B07

FORM I SV

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

5F1211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863007

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N206

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: not dec. 12 Date Analyzed: 12/14/99

GC Column: RTX-VOLATILES 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
	----------Gasoline Range Organics_____	197	_____

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Y513

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: 12 decanted: (Y/N) N Date Extracted:12/10/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	38.0	U
53-70-3	Dibenz(a,h)anthracene	38.0	U
50-32-8	Benzo(a)pyrene	38.0	U
91-20-3	Naphthalene	38.0	U
208-96-8	Acenaphthylene	38.0	U
83-32-9	Acenaphthene	38.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	38.0	U
86-73-7	Fluorene	38.0	U
191-24-2	Benzo(g,h,i)perylene	38.0	U
85-01-8	Phenanthrene	38.0	U
120-12-7	Anthracene	38.0	U
206-44-0	Fluoranthene	38.0	U
129-00-0	Pyrene	38.0	U
56-55-3	Benzo(a)anthracene	38.0	U
218-01-9	Chrysene	38.0	U
91-58-7	2-Chloronaphthalene	38.0	U
207-08-9	Benzo(k)fluoranthene	38.0	U

FORM I SV-1 OLM03.0

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1311

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835001

Sample wt/vol: 5.6 (g/mL) G Lab File ID: 5N115

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: not dec. 19 DATA VALIDATION Date Analyzed: 12/13/99

GC Column: DB-624 ID: 0.25 (mm) COPY 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	0.56	J	J H02
108-88-3	Toluene	1.0	J	J
100-41-4	Ethylbenzene	1.1	U	U
1330-20-7	Xylenes (total)	3.3	U	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF1311

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 007F0701

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/01/99

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/03/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/03/99

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	1.1	JB	u F01,F06

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1311

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 990083500[illegible]

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1M404

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: not dec. 19 Date Analyzed: 12/09/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	----------Gasoline Range Organics_____	70	____

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1311

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5X415

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/01/99

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/02/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/09/99

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	41.0	U
91-58-7	2-Chloronaphthalene	41.0	U
208-96-8	Acenaphthylene	41.0	U
83-32-9	Acenaphthene	41.0	U
86-73-7	Fluorene	41.0	U
85-01-8	Phenanthrene	41.0	U
120-12-7	Anthracene	41.0	U
206-44-0	Fluoranthene	41.0	U
129-00-0	Pyrene	41.0	U
56-55-3	Benzo(a)anthracene	41.0	U
218-01-9	Chrysene	41.0	U
205-99-2	Benzo(b)fluoranthene	41.0	U
207-08-9	Benzo(k)fluoranthene	41.0	U
50-32-8	Benzo(a)pyrene	41.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	41.0	U
53-70-3	Dibenz(a,h)anthracene	41.0	U
191-24-2	Benzo(g,h,i)perylene	41.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1411

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBPAC06

Matrix: (soil/water) SOIL Lab Sample ID: 9900841006

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 5N213

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. 13 Date Analyzed: 12/14/99

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	4.5	
108-88-3	Toluene	0.91	J
100-41-4	Ethylbenzene	0.85	J
1330-20-7	Xylenes (total)	0.58	J

FORM I VOA

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BF1411

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9911841006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 006F0601

Level: (low/med) LOW Date Received: 12/09/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

Injection Volume: 1.0(uL) Dilution Factor: 2.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics_____	6.5	B

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1411

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841006

Sample wt/vol: 5.0 (g/mL) G Lab File ID: LM509

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: not dec. 13 Date Analyzed: 12/10/99

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics_____	592	_____	=

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1411

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Y714

Level: (low/med) LOW DATA VALIDATION Date Received: 12/02/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/19/99

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
205-99-2	Benzo(b)fluoranthene	38.3	U
53-70-3	Dibenz(a,h)anthracene	38.3	U
50-32-8	Benzo(a)pyrene	38.3	U
91-20-3	Naphthalene	38.3	U
208-96-8	Acenaphthylene	38.3	U
83-32-9	Acenaphthene	38.3	U
193-39-5	Indeno(1,2,3-cd)pyrene	38.3	U
86-73-7	Fluorene	38.3	U
191-24-2	Benzo(g,h,i)perylene	38.3	U
85-01-8	Phenanthrene	38.3	U
120-12-7	Anthracene	38.3	U
206-44-0	Fluoranthene	38.3	U
129-00-0	Pyrene	38.3	U
56-55-3	Benzo(a)anthracene	38.3	U
218-01-9	Chrysene	38.3	U
91-58-7	2-Chloronaphthalene	38.3	U
207-08-9	Benzo(k)fluoranthene	38.3	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849003

Sample wt/vol: 4.7 (g/mL) G Lab File ID: 5N325

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. 17 Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	1.3	U	u
108-88-3	Toluene	1.3	U	↓
100-41-4	Ethylbenzene	1.3	U	
1330-20-7	Xylenes (total)	3.8	U	

FORM I

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF1511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 049F4901

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: 17 decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

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_____	0.99	JB	U F01,F06

FORM I SV

155

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N106

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. 17 Date Analyzed: 12/13/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	120	U	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Z206

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: 17 decanted: (Y/N) N Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/21/99

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
205-99-2	Benzo(b)fluoranthene	40.4	
53-70-3	Dibenz(a,h)anthracene	40.0	U
50-32-8	Benzo(a)pyrene	40.0	U
91-20-3	Naphthalene	40.0	U
208-96-8	Acenaphthylene	40.0	U
83-32-9	Acenaphthene	40.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	40.0	U
86-73-7	Fluorene	40.0	U
191-24-2	Benzo(g,h,i)perylene	40.0	U
85-01-8	Phenanthrene	40.0	U
120-12-7	Anthracene	40.0	U
206-44-0	Fluoranthene	40.0	U
129-00-0	Pyrene	40.0	U
56-55-3	Benzo(a)anthracene	40.0	U
218-01-9	Chrysene	40.0	U
91-58-7	2-Chloronaphthalene	40.0	U
207-08-9	Benzo(k)fluoranthene	136	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA0SS

Matrix: (soil/water) SOIL Lab Sample ID: 9900849005

Sample wt/vol: 5.9 (g/mL) G Lab File ID: SN439

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. 19 Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.1	U

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FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF1611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 052F5201

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

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	0.92	JB	U F01,F06

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849005

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N108

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. 19 Date Analyzed: 12/13/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics_____	123	U	u

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Z105

Level: (low/med) LOW DATA VALIDATION Date Received: 12/03/99

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/20/99

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
205-99-2	Benzo(b)fluoranthene	41.0	U
53-70-3	Dibenz(a,h)anthracene	41.0	U
50-32-8	Benzo(a)pyrene	41.0	U
91-20-3	Naphthalene	41.0	U
208-96-8	Acenaphthylene	41.0	U
83-32-9	Acenaphthene	41.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	41.0	U
86-73-7	Fluorene	41.0	U
191-24-2	Benzo(g,h,i)perylene	41.0	U
85-01-8	Phenanthrene	41.0	U
120-12-7	Anthracene	41.0	U
206-44-0	Fluoranthene	41.0	U
129-00-0	Pyrene	41.0	U
56-55-3	Benzo(a)anthracene	41.0	U
218-01-9	Chrysene	41.0	U
91-58-7	2-Chloronaphthalene	41.0	U
207-08-9	Benzo(k)fluoranthene	41.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFI711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849006

Sample wt/vol: 5.7 (g/mL) G Lab File ID: 5N407

Level: (low/med) MED Date Received: 12/03/99

% Moisture: not dec. 16 Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	105	U	U
108-88-3	Toluene	105	U	U
100-41-4	Ethylbenzene	792		=
1330-20-7	Xylenes (total)	5900		=

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF1711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 010F1001

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

Injection Volume: 1.0(uL) Dilution Factor: 20.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	Diesel Range Organics	87.4	B

F01,F08

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849006

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1N2013

Level: (low/med) MED DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: not dec. 16 Date Analyzed: 12/14/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 5.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	223000		=

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Z106

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/20/99

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
205-99-2	Benzo(b)fluoranthene	39.6	U
53-70-3	Dibenz(a,h)anthracene	39.6	U
50-32-8	Benzo(a)pyrene	39.6	U
91-20-3	Naphthalene	350	
208-96-8	Acenaphthylene	39.6	U
83-32-9	Acenaphthene	39.6	U
193-39-5	Indeno(1,2,3-cd)pyrene	39.6	U
86-73-7	Fluorene	39.6	U
191-24-2	Benzo(g,h,i)perylene	39.6	U
85-01-8	Phenanthrene	39.6	U
120-12-7	Anthracene	39.6	U
206-44-0	Fluoranthene	39.6	U
129-00-0	Pyrene	39.6	U
56-55-3	Benzo(a)anthracene	39.6	U
218-01-9	Chrysene	39.6	U
91-58-7	2-Chloronaphthalene	39.6	U
207-08-9	Benzo(k)fluoranthene	39.6	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFL811

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841038

Sample wt/vol: 5.3 (g/mL) G Lab File ID: BN208

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. 18 Date Analyzed: 12/14/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q	
71-43-2	Benzene	1.1	U	UJ
108-88-3	Toluene	0.91	J	
100-41-4	Ethylbenzene	1.1	U	U
1330-20-7	Xylenes (total)	3.4	U	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BF1811

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9911841004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 039F3901

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/09/99

% Moisture: 18 decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

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_____	1.8	JB	u Fol/F06

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1811

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1M507

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. 18 COPY Date Analyzed: 12/10/99

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics	121	U	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1811

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Y712

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: 18 decanted: (Y/N) N Date Extracted:12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/19/99

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/KG	Q
205-99-2	Benzo(b)fluoranthene	40.5	U
53-70-3	Dibenz(a,h)anthracene	40.5	U
50-32-8	Benzo(a)pyrene	40.5	U
91-20-3	Naphthalene	40.5	U
208-96-8	Acenaphthylene	40.5	U
83-32-9	Acenaphthene	40.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	40.5	U
86-73-7	Fluorene	40.5	U
191-24-2	Benzo(g,h,i)perylene	40.5	U
85-01-8	Phenanthrene	40.5	U
120-12-7	Anthracene	40.5	U
206-44-0	Fluoranthene	40.5	U
129-00-0	Pyrene	40.5	U
56-55-3	Benzo(a)anthracene	40.5	U
218-01-9	Chrysene	40.5	U
91-58-7	2-Chloronaphthalene	40.5	U
207-08-9	Benzo(k)fluoranthene	40.5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1911

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFAC28

Matrix: (soil/water) SOIL Lab Sample ID: 9900835002

Sample wt/vol: 6.0 (g/mL) G Lab File ID: 5N116

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: not dec. 16 DATA VALIDATION COPY Date Analyzed: 12/13/99

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	0.58	J	J
108-88-3	Toluene	4.4		
100-41-4	Ethylbenzene	1.00	U	U
1330-20-7	Xylenes (total)	3.0	U	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF1911

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 008F0801

Level: (low/med) LOW DATA VALIDATION Date Received: 12/01/99

% Moisture: 16 decanted: (Y/N) N GORY Date Extracted: 12/03/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/03/99

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	1.6	JB	u Fo1F06

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1911

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1M405

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: not dec. 16 Date Analyzed: 12/09/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	120	U	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1911

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA02S

Matrix: (soil/water) SOIL Lab Sample ID: 9900835002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5X503

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/01/99

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/02/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

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	39.9	U
91-58-7	2-Chloronaphthalene	39.9	U
208-96-8	Acenaphthylene	39.9	U
83-32-9	Acenaphthene	39.9	U
86-73-7	Fluorene	39.9	U
85-01-8	Phenanthrene	39.9	U
120-12-7	Anthracene	39.9	U
206-44-0	Fluoranthene	39.9	U
129-00-0	Pyrene	39.9	U
56-55-3	Benzo(a)anthracene	39.9	U
218-01-9	Chrysene	39.9	U
205-99-2	Benzo(b)fluoranthene	39.9	U
207-08-9	Benzo(k)fluoranthene	39.9	U
50-32-8	Benzo(a)pyrene	39.9	U
193-39-5	Indeno(1,2,3-cd)pyrene	39.9	U
53-70-3	Dibenz(a,h)anthracene	39.9	U
191-24-2	Benzo(g,h,i)perylene	39.9	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3011

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900880004

Sample wt/vol: 5.9 (g/mL) G Lab File ID: 5N419

Level: (low/med) MED Date Received: 12/06/99

% Moisture: not dec. 18 Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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	103	U	U
108-88-3	Toluene	103	U	U
100-41-4	Ethylbenzene	851		=
1330-20-7	Xylenes (total)	6640		=

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF2011

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900880004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 007F0701

Level: (low/med) LOW DATA VALIDATION Date Received: 12/06/99

% Moisture: 18 decanted: (Y/N) N COPY Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

Injection Volume: 1.0(uL) Dilution Factor: 40.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics	205	B

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2011

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900880004

Sample wt/vol: 10.0 (g/mL) G Lab File ID: IN2019

Level: (low/med) MED Date Received: 12/06/99

% Moisture: not dec. 18 Date Analyzed: 12/14/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 10.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	792000		J Gol

DATA VALIDATION COPY

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2011

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900880004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Z105

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: 18 decanted: (Y/N) N Date Extracted: 12/10/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/20/99

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/KG	Q
205-99-2	Benzo(b)fluoranthene	40.6	U
53-70-3	Dibenz(a,h)anthracene	40.6	U
50-32-8	Benzo(a)pyrene	40.6	U
91-20-3	Naphthalene	451	
208-96-8	Acenaphthylene	40.6	U
83-32-9	Acenaphthene	40.6	U
193-39-5	Indeno(1,2,3-cd)pyrene	40.6	U
86-73-7	Fluorene	40.6	U
191-24-2	Benzo(g,h,i)perylene	40.6	U
85-01-8	Phenanthrene	40.6	U
120-12-7	Anthracene	40.6	U
206-44-0	Fluoranthene	40.6	U
129-00-0	Pyrene	40.6	U
56-55-3	Benzo(a)anthracene	40.6	U
218-01-9	Chrysene	40.6	U
91-58-7	2-Chloronaphthalene	40.6	U
207-08-9	Benzo(k)fluoranthene	40.6	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2013 Duplicate

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA155

Matrix: (soil/water) SOIL Lab Sample ID: 9900880002

Sample wt/vol: 6.0 (g/mL) G Lab File ID: 5N414

Level: (low/med) MED DATA VALIDATION Date Received: 12/06/99

% Moisture: not dec. 17 Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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	38.2	J	J
108-88-3	Toluene	100	U	U
100-41-4	Ethylbenzene	645		
1330-20-7	Xylenes (total)	4480		

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF2013
Duplicate

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900880002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 005F0501

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: 17 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

Injection Volume: 1.0(uL) Dilution Factor: 70.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	425	B	=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2013 Duplicate

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900880002

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1N2016

Level: (low/med) MED Date Received: 12/06/99

% Moisture: not dec. 17 Date Analyzed: 12/14/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 50.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	----------Gasoline Range Organics	2450000	

DATA VALIDATION COPY

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2013 Duplicate

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900880002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Y515

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: 17 decanted: (Y/N) N Date Extracted: 12/10/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	40.1	U
53-70-3	Dibenz(a,h)anthracene	40.1	U
50-32-8	Benzo(a)pyrene	40.1	U
91-20-3	Naphthalene	681	
208-96-8	Acenaphthylene	40.1	U
83-32-9	Acenaphthene	40.1	U
193-39-5	Indeno(1,2,3-cd)pyrene	40.1	U
86-73-7	Fluorene	40.1	U
191-24-2	Benzo(g,h,i)perylene	40.1	U
85-01-8	Phenanthrene	40.1	U
120-12-7	Anthracene	40.1	U
206-44-0	Fluoranthene	40.1	U
129-00-0	Pyrene	40.1	U
56-55-3	Benzo(a)anthracene	40.1	U
218-01-9	Chrysene	40.1	U
91-58-7	2-Chloronaphthalene	40.1	U
207-08-9	Benzo(k)fluoranthene	40.1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA155

Matrix: (soil/water) SOIL Lab Sample ID: 9900880001

Sample wt/vol: 5.7 (g/mL) G Lab File ID: 5N412

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. 22 Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	1.1	U
108-88-3	Toluene	1.1	U
100-41-4	Ethylbenzene	1.1	U
1330 20-7	Xylenes (total)	3.4	U

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FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF2111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900850001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 028F2801

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: 22 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/16/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	Diesel Range Organics	2.9	B

uL Fob F07

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900680001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N207

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. 22 Date Analyzed: 12/14/99

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics	129	J	u

DATA VALIDATION COPY

FORM I VOA

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900330001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Z220

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: 22 decanted: (Y/N) N Date Extracted: 12/10/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/21/99

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/KG	Q
205-99-2	Benzo(b)fluoranthene	42.9	U
53-70-3	Dibenz(a,h)anthracene	42.9	U
50-32-8	Benzo(a)pyrene	42.9	U
91-20-3	Naphthalene	42.9	U
208-96-8	Acenaphthylene	42.9	U
83-32-9	Acenaphthene	42.9	U
193-39-5	Indeno(1,2,3-cd)pyrene	42.9	U
86-73-7	Fluorene	42.9	U
191-24-2	Benzo(g,h,i)perylene	42.9	U
85-01-8	Phenanthrene	42.9	U
120-12-7	Anthracene	42.9	U
206-44-0	Fluoranthene	42.9	U
129-00-0	Pyrene	42.9	U
56-55-3	Benzo(a)anthracene	42.9	U
218-01-9	Chrysene	42.9	U
91-58-7	2-Chloronaphthalene	42.9	U
207-08-9	Benzo(k)fluoranthene	42.9	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900880003

Sample wt/vol: 5.7 (g/mL) G Lab File ID: 5N415

Level: (low/med) MED Date Received: 12/06/99

% Moisture: not dec. 11 DATA VALIDATION COPY Date Analyzed: 12/16/99 VSO

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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	1130	U	U G01
108-88-3	Toluene	404	U	U G01
100-41-4	Ethylbenzene	13600 ~~11800~~	E D	
1330-20-7	Xylenes (total)	74600 ~~63700~~	E D	

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF2211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900880003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 006F0601

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: 11 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

Injection Volume: 1.0(uL) Dilution Factor: 1000.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics	3420	B

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900880003

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1N2018

Level: (low/med) MED Date Received: 12/06/99

% Moisture: not dec. 11 Date Analyzed: 12/14/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 50.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	----------Gasoline Range Organics	4520000	J 601

DATA VALIDATION COPY

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA15S

Matrix: (soil/water) SOIL Lab Sample ID: 9900880003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Y516

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: 11 decanted: (Y/N) N Date Extracted: 12/10/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/18/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0 use

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
205-99-2	Benzo(b)fluoranthene	37.6	U
53-70-3	Dibenz(a,h)anthracene	37.6	U
50-32-8	Benzo(a)pyrene	37.6	U
91-20-3	Naphthalene	14200 ~~254000~~	~~ED~~ E=X02
208-96-8	Acenaphthylene	37.6	U
83-32-9	Acenaphthene	37.6	U
193-39-5	Indeno(1,2,3-cd)pyrene	37.6	U
86-73-7	Fluorene	154	
191-24-2	Benzo(g,h,i)perylene	37.6	U
85-01-8	Phenanthrene	37.6	U
120-12-7	Anthracene	37.6	U
206-44-0	Fluoranthene	37.6	U
129-00-0	Pyrene	37.6	U
56-55-3	Benzo(a)anthracene	37.6	U
218-01-9	Chrysene	37.6	U
91-58-7	2-Chloronaphthalene	37.6	U
207-08-9	Benzo(k)fluoranthene	37.6	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2311

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900563005

Sample wt/vol: 6.1 (g/mL) G Lab File ID: 5N332

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. 19 Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF2311

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 025F2501

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: 19 decanted: (Y/N) N COPY Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/16/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	2.1	B	UJ F01, F07 per

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2311

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863005

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N1021

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: not dec. 19 Date Analyzed: 12/13/99

GC Column: RTX-VOLATILES 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
	----------Gasoline Range Organics	132	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2311

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA09S

Matrix: (soil/water) SOIL Lab Sample ID: 9900863005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Y511

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/10/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	40.9	U
53-70-3	Dibenz(a,h)anthracene	40.9	U
50-32-8	Benzo(a)pyrene	40.9	U
91-20-3	Naphthalene	40.9	U
208-96-8	Acenaphthylene	40.9	U
83-32-9	Acenaphthene	40.9	U
193-39-5	Indeno(1,2,3-cd)pyrene	40.9	U
86-73-7	Fluorene	40.9	U
191-24-2	Benzo(g,h,i)perylene	40.9	U
85-01-8	Phenanthrene	40.9	U
120-12-7	Anthracene	40.9	U
206-44-0	Fluoranthene	40.9	U
129-00-0	Pyrene	40.9	U
56-55-3	Benzo(a)anthracene	40.9	U
218-01-9	Chrysene	40.9	U
91-58-7	2-Chloronaphthalene	40.9	U
207-08-9	Benzo(k)fluoranthene	40.9	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SF24:1

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HEFA055

Matrix: (soil/water) SOIL Lab Sample ID: 9900841007

Sample wt/vol: 5.1 (g/mL) G Lab File ID: 5N214

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: not dec. 19 Date Analyzed: 12/14/99

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	0.79	J	J
108-88-3	Toluene	5.4		=
100-41-4	Ethylbenzene	1.2	U	U
1330-20-7	Xylenes (total)	3.6	U	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2411

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 022F2201

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/17/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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	7.7	B	J A01,F08,F01

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2411

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841007

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1M5010

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. 19 Date Analyzed: 12/10/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	----------Gasoline Range Organics	180	≃

FORM I VOA

13

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2411

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA35S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Y715

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/19/99

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
205-99-2	Benzo(b)fluoranthene	41.3	U
53-70-3	Dibenz(a,h)anthracene	41.3	U
50-32-8	Benzo(a)pyrene	41.3	U
91-20-3	Naphthalene	41.3	U
208-96-8	Acenaphthylene	41.3	U
83-32-9	Acenaphthene	41.3	U
193-39-5	Indeno(1,2,3-cd)pyrene	41.3	U
86-73-7	Fluorene	41.3	U
191-24-2	Benzo(g,h,i)perylene	41.3	U
85-01-8	Phenanthrene	41.3	U
120-12-7	Anthracene	41.3	U
206-44-0	Fluoranthene	41.3	U
129-00-0	Pyrene	41.3	U
56-55-3	Benzo(a)anthracene	41.3	U
218-01-9	Chrysene	41.3	U
91-58-7	2-Chloronaphthalene	41.3	U
207-08-9	Benzo(k)fluoranthene	41.3	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFAC5S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841008

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 5N212

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. 22 DATA VALIDATION COPY Date Analyzed: 12/14/99

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	0.88	J	J
108-88-3	Toluene	2.5		U
100-41-4	Ethylbenzene	1.2	J	U
1330-20-7	Xylenes (total)	3.5	J	U

FORM 1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BF2511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9911841005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 041F4101

DATA VALIDATION COPY

Level: (low/med) LOW Date Received: 12/09/99

% Moisture: 22 decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/10/99

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_____	1.4	JB	u f01,f06

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841005

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1M508

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: not dec. 22 Date Analyzed: 12/10/99

GC Column: RTX-VOLATILES 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
	----------Gasoline Range Organics	305	

FORM I VOA

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2511

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA05S

Matrix: (soil/water) SOIL Lab Sample ID: 9900841005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Y713

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: 22 decanted: (Y/N) N Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/19/99

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
205-99-2	Benzo(b)fluoranthene	42.6	U
53-70-3	Dibenz(a,h)anthracene	42.6	U
50-32-8	Benzo(a)pyrene	42.6	U
91-20-3	Naphthalene	42.6	U
208-96-8	Acenaphthylene	42.6	U
83-32-9	Acenaphthene	42.6	U
193-39-5	Indeno(1,2,3-cd)pyrene	42.6	U
86-73-7	Fluorene	42.6	U
191-24-2	Benzo(g,h,i)perylene	42.6	U
85-01-8	Phenanthrene	42.6	U
120-12-7	Anthracene	42.6	U
206-44-0	Fluoranthene	42.6	U
129-00-0	Pyrene	42.6	U
56-55-3	Benzo(a)anthracene	42.6	U
218-01-9	Chrysene	42.6	U
91-58-7	2-Chloronaphthalene	42.6	U
207-08-9	Benzo(k)fluoranthene	42.6	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849004

Sample wt/vol: 5.6 (g/mL) G Lab File ID: 5N326

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. 24 DATA VALIDATION COPY Date Analyzed: 12/16/99

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
108-88-3	Toluene	1.2	U
100-41-4	Ethylbenzene	1.2	U
1330-20-7	Xylenes (total)	3.5	U

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FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF2611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A . SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 050F5001

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: 24 decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/10/99

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) MG/KG	Q	
	Diesel Range Organics	0.59	JB	U F01,F06

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N107

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. 24 Date Analyzed: 12/13/99

DATA VALIDATION COPY

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics	131	U	u

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2611

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA08S

Matrix: (soil/water) SOIL Lab Sample ID: 9900849004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2Z104

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: 24 decanted: (Y/N) N Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/20/99

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
205-99-2	Benzo(b)fluoranthene	43.6	U
53-70-3	Dibenz(a,h)anthracene	43.6	U
50-32-8	Benzo(a)pyrene	43.6	U
91-20-3	Naphthalene	43.6	U
208-96-8	Acenaphthylene	43.6	U
83-32-9	Acenaphthene	43.6	U
193-39-5	Indeno(1,2,3-cd)pyrene	43.6	U
86-73-7	Fluorene	43.6	U
191-24-2	Benzo(g,h,i)perylene	43.6	U
85-01-8	Phenanthrene	43.6	U
120-12-7	Anthracene	43.6	U
206-44-0	Fluoranthene	43.6	U
129-00-0	Pyrene	43.6	U
56-55-3	Benzo(a)anthracene	43.6	U
218-01-9	Chrysene	43.6	U
91-58-7	2-Chloronaphthalene	43.6	U
207-08-9	Benzo(k)fluoranthene	43.6	U

u

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447006

Sample wt/vol: 5.1 (g/mL) G Lab File ID: 5S216

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: not dec. 21 Date Analyzed: 01/18/00

GC Column: DB-624 ID: 0.25 (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	1.2	J	U
108-88-3	Toluene	1.1	J	J
100-41-4	Ethylbenzene	1.2	J	U
1330-20-7	Xylenes (total)	3.7	J	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF2711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 012F1201

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: 21 decanted: (Y/N) N Date Extracted:01/18/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/18/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	2.0	JB	U Fo1,Fo6

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447006

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1S3015

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: not dec. 21 Date Analyzed: 01/19/00

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics	211		=

18

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BF2711

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 7B519

DATA VALIDATION COPY

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: 21 decanted: (Y/N) N Date Extracted: 01/13/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/15/00

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	42.4	U
91-58-7	2-Chloronaphthalene	42.4	U
208-96-8	Acenaphthylene	42.4	U
83-32-9	Acenaphthene	42.4	U
86-73-7	Fluorene	42.4	U
85-01-8	Phenanthrene	42.4	U
120-12-7	Anthracene	42.4	U
206-44-0	Fluoranthene	42.4	U
129-00-0	Pyrene	42.4	U
56-55-3	Benzo(a)anthracene	42.4	U
218-01-9	Chrysene	42.4	U
205-99-2	Benzo(b)fluoranthene	42.4	U
207-08-9	Benzo(k)fluoranthene	42.4	U
50-32-8	Benzo(a)pyrene	42.4	U
193-39-5	Indeno(1,2,3-cd)pyrene	42.4	U
53-70-3	Dibenz(a,h)anthracene	42.4	U
191-24-2	Benzo(g,h,i)perylene	42.4	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2811

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA195

Matrix: (soil/water) SOIL Lab Sample ID: 20447005

Sample wt/vol: 4.4 (g/mL) G Lab File ID: 5S308

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: not dec. 21 Date Analyzed: 01/19/00

GC Column: DB-624 ID: 0.25 (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	1.4	J	U J J U
108-88-3	Toluene	0.46	J	
100-41-4	Ethylbenzene	0.86	J	
1330-20-7	Xylenes (total)	4.3	U	

Fol, Fos

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF2811

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 011F1101

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: 21 decanted: (Y/N) N Date Extracted: 01/18/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/18/00

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) MG/KG	Q	
	----------Diesel Range Organics	2.5	B	U F01,F07

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2911

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447005

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1S3014

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: not dec. 21 Date Analyzed: 01/19/00

DATA VALIDATION COPY

GC Column: RTX-VOLATILES 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
	Gasoline Range Organics	1690	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2811

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 7C207

Level: (low/med) LOW DATA VALIDATION Date Received: 01/12/00

% Moisture: 21 decanted: (Y/N) N COPY Date Extracted: 01/13/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/18/00

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	42.1	U
91-58-7	2-Chloronaphthalene	42.1	U
208-96-8	Acenaphthylene	42.1	U
83-32-9	Acenaphthene	42.1	U
86-73-7	Fluorene	42.1	U
85-01-8	Phenanthrene	42.1	U
120-12-7	Anthracene	42.1	U
206-44-0	Fluoranthene	42.1	U
129-00-0	Pyrene	42.1	U
56-55-3	Benzo(a)anthracene	42.1	U
218-01-9	Chrysene	42.1	U
205-99-2	Benzo(b)fluoranthene	42.1	U
207-08-9	Benzo(k)fluoranthene	42.1	U
50-32-8	Benzo(a)pyrene	42.1	U
193-39-5	Indeno(1,2,3-cd)pyrene	42.1	U
53-70-3	Dibenz(a,h)anthracene	42.1	U
191-24-2	Benzo(g,h,i)perylene	42.1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2911

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447004

Sample wt/vol: 4.5 (g/mL) G Lab File ID: 5S214

Level: (low/med) LOW DATA VALIDAT Date Received: 01/13/00

% Moisture: not dec. 25 Date Analyzed: 01/18/00

GC Column: DB-624 ID: 0.25 (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	0.92	J	J
108-88-3	Toluene	1.5		J
100-41-4	Ethylbenzene	0.61	JB	J
1330-20-7	Xylenes (total)	279		

Fo1, Fo8

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF2911

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 010F1001

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: 25 decanted: (Y/N) N Date Extracted: 01/18/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/18/00

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) MG/KG	Q	
	----------Diesel Range Organics	2.6	B	U F01,F07

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2911

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1S3011

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: not dec. 25 Date Analyzed: 01/19/00

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	----------Gasoline Range Organics_____	871	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF291L

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 7B517

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: 25 decanted: (Y/N) N Date Extracted: 01/13/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/15/00

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/KG	Q
91-20-3	Naphthalene	44.5	U
91-58-7	2-Chloronaphthalene	44.5	U
208-96-8	Acenaphthylene	44.5	U
83-32-9	Acenaphthene	44.5	U
86-73-7	Fluorene	44.5	U
85-01-8	Phenanthrene	44.5	U
120-12-7	Anthracene	44.5	U
206-44-0	Fluoranthene	44.5	U
129-00-0	Pyrene	44.5	U
56-55-3	Benzo(a)anthracene	44.5	U
218-01-9	Chrysene	44.5	U
205-99-2	Benzo(b)fluoranthene	44.5	U
207-08-9	Benzo(k)fluoranthene	44.5	U
50-32-8	Benzo(a)pyrene	44.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	44.5	U
53-70-3	Dibenz(a,h)anthracene	44.5	U
191-24-2	Benzo(g,h,i)perylene	44.5	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3011

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447002

Sample wt/vol: 5.9 (g/mL) G Lab File ID: 5S217

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: not dec. 22 Date Analyzed: 01/18/00

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

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF3011

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 008F0801

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: 22 decanted: (Y/N) N Date Extracted: 01/18/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/18/00

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) MG/KG	Q	
	----------Diesel Range Organics	1.9	JB	U F01,F06

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3011

Lab Name: GENERAL ENGINEERING LABCR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447C02

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1S309

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: not dec. 22 Date Analyzed: 01/19/00

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics	93.9	J	J

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3011

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 7B515

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: 22 decanted: (Y/N) N Date Extracted: 01/13/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/15/00

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	42.7	U
91-58-7	2-Chloronaphthalene	42.7	U
208-96-8	Acenaphthylene	42.7	U
83-32-9	Acenaphthene	42.7	U
86-73-7	Fluorene	42.7	U
85-01-8	Phenanthrene	42.7	U
120-12-7	Anthracene	42.7	U
206-44-0	Fluoranthene	42.7	U
129-00-0	Pyrene	42.7	U
56-55-3	Benzo(a)anthracene	42.7	U
218-01-9	Chrysene	42.7	U
205-99-2	Benzo(b)fluoranthene	42.7	U
207-08-9	Benzo(k)fluoranthene	42.7	U
50-32-8	Benzo(a)pyrene	42.7	U
193-39-5	Indeno(1,2,3-cd)pyrene	42.7	U
53-70-3	Dibenz(a,h)anthracene	42.7	U
191-24-2	Benzo(g,h,i)perylene	42.7	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3013

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447003

Sample wt/vol: 5.6 (g/mL) G Lab File ID: 5S213

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: not dec. 20 Date Analyzed: 01/18/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	1.1	U
108-88-3	Toluene	1.1	U
100-41-4	Ethylbenzene	1.1	U
1330-20-7	Xylenes (total)	3.4	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF3013

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 009F0901

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: 20 decanted: (Y/N) N Date Extracted: 01/18/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/18/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

DATA VALIDATION

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	1.9	JB	U F01,F06

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3013

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1S3010

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: not dec. 20 Date Analyzed: 01/19/00

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	----------Gasoline Range Organics_____	532	____

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3013

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 7B516

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: 20 decanted: (Y/N) N Date Extracted: 01/13/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/15/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	41.8	U
91-58-7	2-Chloronaphthalene	41.8	U
208-96-8	Acenaphthylene	41.8	U
83-32-9	Acenaphthene	41.8	U
86-73-7	Fluorene	41.8	U
85-01-8	Phenanthrene	41.8	U
120-12-7	Anthracene	41.8	U
206-44-0	Fluoranthene	41.8	U
129-00-0	Pyrene	41.8	U
56-55-3	Benzo(a)anthracene	41.8	U
218-01-9	Chrysene	41.8	U
205-99-2	Benzo(b)fluoranthene	41.8	U
207-08-9	Benzo(k)fluoranthene	41.8	U
50-32-8	Benzo(a)pyrene	41.8	U
193-39-5	Indeno(1,2,3-cd)pyrene	41.8	U
53-70-3	Dibenz(a,h)anthracene	41.8	U
191-24-2	Benzo(g,h,i)perylene	41.8	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447001

Sample wt/vol: 4.3 (g/mL) G Lab File ID: 5S211

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: not dec. 20 Date Analyzed: 01/18/00

GC Column: DB-624 ID: 0.25 (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	1.5	U
108-88-3	Toluene	1.5	U
100-41-4	Ethylbenzene	1.5	U
1330-20-7	Xylenes (total)	4.4	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF3111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 007F0701

Level: (low/med) LOW

DATA VALIDATION COPY

Date Received: 01/13/00

% Moisture: 20 decanted: (Y/N) N Date Extracted:01/18/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/18/00

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	1.5	JB	U F01,F06

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1S308

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: not dec. 20 Date Analyzed: 01/19/00

DATA VALIDATION COPY

GC Column: RTX-VOLATILES 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
	----------Gasoline Range Organics	297	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: BF3111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA19S

Matrix: (soil/water) SOIL Lab Sample ID: 20447001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 7B514

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: 20 decanted: (Y/N) N Date Extracted: 01/13/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/15/00

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/KG	Q
91-20-3	Naphthalene	41.8	U
91-58-7	2-Chloronaphthalene	41.8	U
208-96-8	Acenaphthylene	41.8	U
83-32-9	Acenaphthene	41.8	U
86-73-7	Fluorene	41.8	U
85-01-8	Phenanthrene	41.8	U
120-12-7	Anthracene	41.8	U
206-44-0	Fluoranthene	41.8	U
129-00-0	Pyrene	41.8	U
56-55-3	Benzo(a)anthracene	41.8	U
218-01-9	Chrysene	41.8	U
205-99-2	Benzo(b)fluoranthene	41.8	U
207-08-9	Benzo(k)fluoranthene	41.8	U
50-32-8	Benzo(a)pyrene	41.8	U
193-39-5	Indeno(1,2,3-cd)pyrene	41.8	U
53-70-3	Dibenz(a,h)anthracene	41.8	U
191-24-2	Benzo(g,h,i)perylene	41.8	U

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SEDIMENT ANALYTICAL DATA SHEETS

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFC119

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA1TS

Matrix: (soil/water) SOIL Lab Sample ID: 9900904001

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 8N607

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. 31 Date Analyzed: 12/18/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	1.3	U
108-88-3	Toluene	1.3	U
100-41-4	Ethylbenzene	1.3	U
1330-20-7	Xylenes (total)	4.0	U

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FORM I
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BFC118

Lab Name: GENERAL ENGINEERING LABCR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 008F0801

Level: (low/med) LOW DATA VALIDATION Date Received: 12/07/99

% Moisture: 31 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	3.7	B	u fol, FOb,

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FFA SAMPLE NO.

BF0118

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N404

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: not dec. 31 Date Analyzed: 12/16/99

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics	144	U	u

18

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0119

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5Z110

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: 31 decanted? (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/20/99

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
205-99-2	Benzo(b)fluoranthene	48.1	U
53-70-3	Dibenz(a,h)anthracene	48.1	U
50-32-8	Benzo(a)pyrene	48.1	U
91-20-3	Naphthalene	48.1	U
208 96-8	Acenaphthylene	48.1	U
83-32-9	Acenaphthene	48.1	U
193 39-5	Indeno(1,2,3-cd)pyrene	48.1	U
86-73 7	Fluorene	48.1	U
191-24-2	Benzo(g,h,i)perylene	48.1	U
85-01 8	Phenanthrene	48.1	U
120-12-7	Anthracene	48.1	U
206-44-0	Fluoranthene	48.1	U
129-00-0	Pyrene	48.1	U
56-55-3	Benzo(a)anthracene	48.1	U
218-01-9	Chrysene	48.1	U
91-58-7	2-Chloronaphthalene	481	U
207-08-9	Benzo(k)fluoranthene	48.1	U

u

FORM I SV-1 OLM03.0

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF9218

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: IBFA178

Matrix: (soil/water) SOIL Lab Sample ID: 9900904002

Sample wt/vol: 4.8 (g/mL) G Lab File ID: 8N533

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. 46 Date Analyzed: 12/17/99

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	1.9	U	U
108-88-3	Toluene	12.3		=
100-41-4	Ethylbenzene	1.9	U	U
1330-20-7	Xylenes (total)	5.7	U	U

FORM I
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0218

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 009F0901

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: 46 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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	9.2	B

FOI, FOS, 223 uc

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0218

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA175

Matrix: (soil/water) SOIL Lab Sample ID: 9900904002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N405

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: not dec. 46 Date Analyzed: 12/16/99

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics	184	U	UJ Go2

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0218

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5Z111

Level: (low/med) LOW DATA VALIDATION ONLY Date Received: 12/07/99

% Moisture: 46 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/20/99

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
205-99-2	Benzo(b)fluoranthene	61.2	U
53-70-3	Dibenz(a,h)anthracene	61.2	U
50-32-8	Benzo(a)pyrene	61.2	U
91-20-3	Naphthalene	61.2	U
208-96-8	Acenaphthylene	61.2	U
83-32-9	Acenaphthene	61.2	U
193-39-5	Indeno(1,2,3-cd)pyrene	61.2	U
86-73-7	Fluorene	61.2	U
191-24-2	Benzo(g,h,i)perylene	61.2	U
85-01-8	Phenanthrene	61.2	U
120-12-7	Anthracene	61.2	U
206-44-0	Fluoranthene	107	
129-00-0	Pyrene	94.1	
56-55-3	Benzo(a)anthracene	61.2	U
218-01-9	Chrysene	61.2	U
91-58-7	2-Chloronaphthalene	612	U
207-08-9	Benzo(k)fluoranthene	61.2	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0315

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

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

Matrix: (soil/water) SOIL Lab Sample ID: 9900904093

Sample wt/vol: 5.6 (g/mL) G Lab File ID: 8N520

Level: (low/med) MED Date Received: 12/07/99

% Moisture: not dec. 42 Date Analyzed: 12/18/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 103(uL

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	154	U	u
108-88-3	Toluene	2810		=
100-41-4	Ethylbenzene	154	U	u
1330-20-7	Xylenes (total)	463	U	u

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0318RE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 013F1301

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: 42 decanted: (Y/N) N Date Extracted: 01/05/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/05/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	Diesel Range Organics	5.4	B

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0318

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904003

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N406

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: not dec. 42 Date Analyzed: 12/16/99

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics_____	173	U	u

2B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0318

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5Z112

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: 42 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/20/99

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
205-99-2	Benzo(b)fluoranthene	57.8	U
53-70-3	Dibenz(a,h)anthracene	57.8	U
50-32-8	Benzo(a)pyrene	57.8	U
91-20-3	Naphthalene	57.8	U
208-96-8	Acenaphthylene	57.8	U
83-32-9	Acenaphthene	57.8	U
193-39-5	Indeno(1,2,3-cd)pyrene	57.8	U
86-73-7	Fluorene	57.8	U
191-24-2	Benzo(g,h,i)perylene	57.8	U
85-01-8	Phenanthrene	57.8	U
120-12-7	Anthracene	57.8	U
206-44-0	Fluoranthene	57.8	U
129-00-0	Pyrene	57.8	U
56-55-3	Benzo(a)anthracene	57.8	U
218-01-9	Chrysene	57.8	U
91-58-7	2-Chloronaphthalene	578	U
207-08-9	Benzo(k)fluoranthene	57.8	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0418

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9930904004

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 8N535

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. 27 Date Analyzed: 12/18/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0 use

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	1.4	U	U
108-88-3	Toluene	40.2 ~~294~~	~~J~~ DJ	J
100-41-4	Ethylbenzene	1.4	U	U
1330-20-7	Xylenes (total)	4.2	U	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0418RE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 014F1401

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: 27 decanted: (Y/N) N Date Extracted: 01/05/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/05/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	Diesel Range Organics	3.0	B UJ

use

A01, F01, F06

FORM I SV

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0418

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N407

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: not dec. 27 Date Analyzed: 12/16/99

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics_____	136	U	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0418

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5Z113

Level: (low/med) LOW DATA VALIDATED Date Received: 12/07/99

% Moisture: 27 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/20/99

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
205-99-2	Benzo(b)fluoranthene	45.5	U
53-70-3	Dibenz(a,h)anthracene	45.5	U
50-32-8	Benzo(a)pyrene	45.5	U
91-20-3	Naphthalene	45.5	U
208-96-8	Acenaphthylene	45.5	U
83-32-9	Acenaphthene	45.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	45.5	U
86-73-7	Fluorene	45.5	U
191-24-2	Benzo(g,h,i)perylene	45.5	U
85-01-8	Phenanthrene	45.5	U
120-12-7	Anthracene	45.5	U
206-44-0	Fluoranthene	45.5	U
129-00-0	Pyrene	45.5	U
56-55-3	Benzo(a)anthracene	45.5	U
218-01-9	Chrysene	45.5	U
91-58-7	2 Chloronaphthalene	455	U
207-08-9	Benzo(k)fluoranthene	45.5	U

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FORM I SV 1

OLM03.0

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0518

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904005

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 8N536

Level: (low/med) LOW DATA VALIDATION Date Received: 12/07/99

% Moisture: not dec. 25 COPY Date Analyzed: 12/13/99

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	4.3		
100-41-4	Ethylbenzene	1.2	U	U
1330-20-7	Xylenes (total)	3.6	U	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0518RE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 015F1501

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: 25 decanted: (Y/N) N Date Extracted: 01/05/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/05/00 use

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	5.4	B	UJ AC1,F01,F06

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0518

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904005

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N408

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: not dec. 25 Date Analyzed: 12/16/99

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics	134	U	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFC518

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5Z114

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: 25 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/20/99

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/KG	Q
205-99-2	Benzo(b)fluoranthene	44.5	U
53-70-3	Dibenz(a,h)anthracene	44.5	U
50-32-8	Benzo(a)pyrene	44.5	U
91-20-3	Naphthalene	44.5	U
208-96-8	Acenaphthylene	44.5	U
83-32-9	Acenaphthene	44.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	44.5	U
86-73-7	Fluorene	44.5	U
191-24-2	Benzo(g,h,i)perylene	44.5	U
85-01-8	Phenanthrene	44.5	U
120-12-7	Anthracene	44.5	U
206-44-0	Fluoranthene	44.5	U
129-00-0	Pyrene	44.5	U
56-55-3	Benzo(a)anthracene	44.5	U
218-01-9	Chrysene	44.5	U
91-58-7	2-Chloronaphthalene	445	U
207-08-9	Benzo(k)fluoranthene	44.5	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFQ5LA DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA175

Matrix: (soil/water) SOIL Lab Sample ID: 9900304016

Sample wt/vol: 4.8 (g/mL) G Lab File ID: 8N537

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. 22 Date Analyzed: 12/18/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	1.3	U	UJ GO2
108-88-3	Toluene	1.6		J
100-41-4	Ethylbenzene	1.3	U	UJ
1330-20-7	Xylenes (total)	4.0	U	UJ

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF051A
DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 012F1201

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: 22 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/17/99

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics_____	30.7	B	= Fo1,Fo8

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF051A DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904006

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N409

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: not dec. 22 Date Analyzed: 12/16/99

GC Column: RTX-VOLATILES 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	
	----------Gasoline Range Organics	128	U	u

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF051A DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5Z115

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: 22 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 0.96(mL) Date Analyzed: 12/20/99

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
205-99-2	Benzo(b)fluoranthene	41.0	U
53-70-3	Dibenz(a,h)anthracene	41.0	U
50-32-8	Benzo(a)pyrene	41.0	U
91-20-3	Naphthalene	41.0	U
208-96-8	Acenaphthylene	41.0	U
83-32-9	Acenaphthene	41.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	41.0	U
86-73-7	Fluorene	41.0	U
191-24-2	Benzo(g,h,i)perylene	41.0	U
85-01-8	Phenanthrene	41.0	U
120-12-7	Anthracene	41.0	U
206-44-0	Fluoranthene	41.0	U
129-00-0	Pyrene	41.0	U
56-55-3	Benzo(a)anthracene	41.0	U
218-01-9	Chrysene	41.0	U
91-58-7	2-Chloronaphthalene	410	U
207-08-9	Benzo(k)fluoranthene	41.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BN0618

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HEFA1?S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904007

Sample wt/vol: 5.3 (g/mL) G Lab File ID: 8N538

Level: (low/med) LOW Date Received: 12/0?/99

% Moisture: not dec. 41 Date Analyzed: 12/18/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	1.6	U	U
108-88-3	Toluene	0.42	J	J
100-41-4	Ethylbenzene	1.6	U	U
1330-20-7	Xylenes (total)	4.8	U	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BFC618

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 003F0301

Level: (low/med) LOW DATA VALIDATED BY Date Received: 12/07/99

% Moisture: 41 decanted: (Y/N) N Date Extracted: 01/07/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/11/00

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	9.2	B	J

AOL Fol/Fo3/Pc

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0618

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904007

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N4010

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. 41 Date Analyzed: 12/16/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	----------Gasoline Range Organics	232	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0618

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: H3FA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5Z116

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: 41 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/20/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

DATA VALIDATION

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
205-99-2	Benzo(b)fluoranthene	56.7	U
53-70-3	Dibenz(a,h)anthracene	56.7	U
50-32-8	Benzo(a)pyrene	56.7	U
91-20-3	Naphthalene	56.7	U
208-96-8	Acenaphthylene	56.7	U
83-32-9	Acenaphthene	56.7	U
193-39-5	Indeno(1,2,3-cd)pyrene	56.7	U
86-73-7	Fluorene	56.7	U
191-24-2	Benzo(g,h,i)perylene	56.7	U
85-01-8	Phenanthrene	56.7	U
120-12-7	Anthracene	56.7	U
206-44-0	Fluoranthene	56.7	U
129-00-0	Pyrene	56.7	U
56-55-3	Benzo(a)anthracene	56.7	U
218-01-9	Chrysene	56.7	U
91-58-7	2-Chloronaphthalene	567	U
207-08-9	Benzo(k)fluoranthene	56.7	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0718

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904008

Sample wt/vol: 5.6 (g/mL G Lab File ID: 8N539

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. 39 DATA VALIDATION COPY Date Analyzed: 12/18/99

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	1.5	U	u
108-88-3	Toluene	1.5	U	
100-41-4	Ethylbenzene	1.5	U	
1330-20-7	Xylenes (total)	4.4	U	

FORM I

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0718

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904008

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 018F1801

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: 39 decanted: (Y/N) N Date Extracted: 01/07/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/10/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	2.1	JB	UJ A01,F01,F06

FORM I SV

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0718

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904008

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N4011

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. 39 Date Analyzed: 12/16/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics_____	165	U	U

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0718

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904008

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5Z117

Level: (low/med) LOW DATA VALIDATION Date Received: 12/07/99

% Moisture: 39 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/20/99

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
205-99-2	Benzo(b)fluoranthene	55.0	U
53-70-3	Dibenz(a,h)anthracene	55.0	U
50-32-8	Benzo(a)pyrene	55.0	U
91-20-3	Naphthalene	55.0	U
208-96-8	Acenaphthylene	55.0	U
83-32-9	Acenaphthene	55.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	55.0	U
86-73-7	Fluorene	55.0	U
191-24-2	Benzo(g,h,i)perylene	55.0	U
85-01-8	Phenanthrene	55.0	U
120-12-7	Anthracene	55.0	U
206-44-0	Fluoranthene	55.0	U
129-00-0	Pyrene	55.0	U
56-55-3	Benzo(a)anthracene	55.0	U
218-01-9	Chrysene	55.0	U
91-58-7	2-Chloronaphthalene	550	U
207-08-9	Benzo(k)fluoranthene	55.0	U

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FORM I SV-1 OLM03.0

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0818

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFAL7S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904009

Sample wt/vol: 5.8 (g/mL) G Lab File ID: 8N540

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. 31 Date Analyzed: 12/18/99

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	J	UJ
108-88-3	Toluene	0.36	J	J
100-41-4	Ethylbenzene	1.2	J	UJ
1330-20-7	Xylenes (total)	3.7	J	UJ

GO2 ↓

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0818

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904009

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 019F1901

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: 31 decanted: (Y/N) N Date Extracted: 01/07/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/10/00

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_____	1.5	JB	WS A01,F01,FC6

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0818

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA178

Matrix: (soil/water) SOIL Lab Sample ID: 9900904009

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N4014

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. 31 Date Analyzed: 12/16/99

GC Column: RTX-VOLATILES ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	----------Gasoline Range Organics	160	

FORM I VOA

1E

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0818

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904009

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5Z118

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: 31 decanted: (Y/N) N Date Extracted:12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/20/99

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
205-99-2	Benzo(b)fluoranthene	48.4	U
53-70-3	Dibenz(a,h)anthracene	48.4	U
50-32-8	Benzo(a)pyrene	48.4	U
91-20-3	Naphthalene	48.4	U
208-96-8	Acenaphthylene	48.4	U
83-32-9	Acenaphthene	48.4	U
193-39-5	Indeno(1,2,3-cd)pyrene	48.4	U
86-73-7	Fluorene	48.4	U
191-24-2	Benzo(g,h,i)perylene	48.4	U
85-01-8	Phenanthrene	48.4	U
120-12-7	Anthracene	48.4	U
206-44-0	Fluoranthene	48.4	U
129 00-0	Pyrene	48.4	U
56 55-3	Benzo(a)anthracene	48.4	U
218 01-9	Chrysene	48.4	U
91 58-7	2-Chloronaphthalene	484	U
207-08-9	Benzo(k)fluoranthene	48.4	U

U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0918

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904010

Sample wt/vol: 5.3 (g/mL) G Lab File ID: 8N611

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. 27 Date Analyzed: 12/18/99

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	1.3	U	U
108-88-3	Toluene	0.58	J	J
100-41-4	Ethylbenzene	1.3	U	U
1330-20-7	Xylenes (total)	3.8	U	U

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

BF0918

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904010

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 020F2001

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: 27 decanted: (Y/N) N Date Extracted: 01/07/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/10/00

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) MG/KG	Q	
	Diesel Range Organics	3.6	B	UJ A01, F01, F06

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0918

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904010

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1N4015

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. 27 DATA VALIDATION COPY Date Analyzed: 12/16/99

GC Column: RTX-VOLATILES 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
	----------Gasoline Range Organics_____	137	U

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0918

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA17S

Matrix: (soil/water) SOIL Lab Sample ID: 9900904010

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5Z119

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: 27 decanted: (Y/N) N Date Extracted: 12/11/99

Concentrated Extract Volume: 0.96 (mL) Date Analyzed: 12/20/99

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/KG	Q
205-99-2	Benzo(b)fluoranthene	474	
53-70-3	Dibenz(a,h)anthracene	43.8	U
50-32-8	Benzo(a)pyrene	282	
91-20-3	Naphthalene	43.8	U
208-96-8	Acenaphthylene	43.8	U
83-32-9	Acenaphthene	43.8	U
193-39-5	Indeno(1,2,3-cd)pyrene	43.8	U
86-73-7	Fluorene	43.8	U
191-24-2	Benzo(g,h,i)perylene	43.8	U
85-01-8	Phenanthrene	62.5	
120-12-7	Anthracene	43.8	U
206-44-0	Fluoranthene	645	
129-00-0	Pyrene	736	
56-55-3	Benzo(a)anthracene	336	
218-01-9	Chrysene	422	
91-58-7	2-Chloronaphthalene	438	U
207-08-9	Benzo(k)fluoranthene	43.8	U

FORM I SV-1 OLM03.0

SOIL GEOTECHNICAL DATA

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Summary Table For HAAF Bulk Facility CAP- Part A

SAMPLE	MOISTURE CONTENT (%)	ATTERBERG LIMITS FINES CLASSIFICATION				SIEVE ANALYSIS (% PASSING)												USCS
		LL	PL	PI	Class	3"	2"	1 1/2"	3/4"	3/8"	#4	#10	#20	#40	#60	#140	#200	
BF1911	15.25	32.5	20.8	11.7	CL	100	100	100	100	100	100	99.83	99.79	99.78	99.58	34.04	30.88	SC
BF2611	20.65	27.7	21.4	6.3	CL-ML	100	100	100	100	100	99.31	98.43	97.96	97.3	96.17	63.09	58.39	CL-ML
BF1011	16.72	33.2	22.4	10.8	CL	100	100	100	100	100	100	99.74	98.63	95.23	86.56	29.33	27.21	SC
BF1711	10.07	NONPLASTIC				100	100	100	100	100	87.94	84.81	83.43	81.52	78	22.76	18.77	SC
BF0411	24.05	NONPLASTIC				100	100	100	100	100	100	98.14	97.43	96.58	91.28	35.25	33.73	SC
HLB811	13.86	NONPLASTIC				100	100	100	100	100	99.59	97.69	92.83	83.44	73.93	22.82	13.56	SC
BF0911	16.31	42.3	21.6	20.7	CL	100	100	100	100	100	97.42	94.49	92.81	90.99	87.33	40.96	38.71	SC
BF0511	24.69	49.2	21.2	28.0	CL	100	100	100	100	100	88.43	82.99	82.16	81.26	77.9	52.65	50.07	CL
BF1111	9.57	NONPLASTIC				100	100	100	100	100	98.82	94.59	92.88	91.31	89.04	34.32	29.29	SC
130711	12.36	NONPLASTIC				100	100	100	100	100	100	100	99.6	98.7	97.1	18.9	16.8	SC
BF2411	25.07	40.0	24.1	15.9	CL	100	100	100	100	100	100	99.91	99.47	98.67	97.3	49.36	44.37	SC
BF0311	20.39	38.2	23.5	14.7	CL	100	100	100	100	100	99.84	99.78	99.71	99.1	95.76	48.48	46.08	SC
BF2111	22.98	34.5	21.2	13.3	CL	100	100	100	100	100	99.62	97.14	96.13	95.02	92.29	38.02	33.96	SC
BF1811	20.98	NONPLASTIC				100	100	100	100	100	98.25	96.98	96.38	95.67	93.41	21.69	17.94	SC
BF2511	17.49	49.0	23.6	25.4	CL	100	100	100	100	100	90.69	86.02	84.01	82.95	81.86	52.41	47.97	SC
BF2211	23.08	35.8	23.3	12.5	CL	100	100	100	100	100	100	99.79	99.12	97.7	93.57	42.6	36.57	SC
BF2011	8.16	NONPLASTIC				100	100	100	100	100	95.61	94.35	93.43	91.06	87.11	24.85	23.31	SC
BF1211	12.19	NONPLASTIC				100	100	100	100	100	99.59	98.87	98.13	97.09	94.54	33.12	25.71	SC
BF0611	22.57	30.0	20.3	9.7	CL	100	100	100	100	100	100	99.92	98.96	96.42	87.72	31.73	28.9	SC
BF1511	20.63	NONPLASTIC				100	100	100	100	100	99.94	99.28	99.09	98.23	92.18	12.04	10.64	SW-SC
BF0711	15.80	22.9	17.6	5.3	CL-ML	100	100	100	100	100	99.96	99.95	99.91	98.49	86.41	19.18	17.69	SC-SM
BF0111	12.14	28.6	18.9	9.7	CL	100	100	100	100	100	100	99.96	99.84	99.15	95.94	38.41	32.64	SC
HLB911	14.27	NONPLASTIC				100	100	100	100	100	96.58	90.58	77.44	57.34	39.73	12.81	9.48	SP-SC
BF1311	18.48	34.4	22.8	11.6	CL	100	100	100	100	100	100	98.83	97.24	96.93	96.1	42.99	36.71	SC
BF0211	14.29	NONPLASTIC				100	100	100	100	100	99.78	98.73	98.25	97.49	94.32	33.26	29.06	SC
130811	13.19	NONPLASTIC				100	100	100	100	100	100	99.8	99.35	98.46	96.95	15.27	13.22	SC
BF1611	8.97	NONPLASTIC				100	100	100	100	100	97.05	93.99	93.14	92.2	89.42	26.47	22.37	SC
BF0811	10.05	25.3	15.7	9.6	CL	100	100	100	100	100	95.05	92.35	91.48	90.24	85.9	49.9	47.04	SC
BF1411	23.09	37.7	20.2	17.5	CL	100	100	100	100	100	99.88	99.62	99.37	72.47	49.48	34.0	32.49	SC
BFGT11	28.90	51.7	21.6	30.1	CH	100	100	100	100	100	100	100	100	99.96	98.94	68.18	67.02	CH

Sample	Permeability k (cm/sec)	Specific Gravity	Porosity	Bulk Density (pcf)
BFGT11	1.42E-08	2.65	0.49	84.10

V-211

Shelby Tube (undisturbed sample)

CATLIN Engineers and Scientists
Geotechnical Laboratories

Summary Table for HAAF Bulk Fuel Facility, CAP -PartA

Sample	BF2711	BF2811	BF2911	BF3011	BF3111
Moisture Content, %	27.36	18.01	13.77	18.65	17.71

Atterberg Limits

Liquid Limit	36.5	31.6	Nonplastic	27.2	28.9
Plastic Limit	22.8	18.5	Nonplastic	18.5	19.3
Plastic Index	13.7	13.1	Nonplastic	8.7	9.6
Fines Classification	CL	CL	N/A	CL	CL

Grain Size - Sieve (% passing)

Sieve #	Sample	Sample	Sample	Sample	Sample
	BF2711	BF2811	BF2911	BF3011	BF3111
3	100	100	100	100	100
2	100	100	100	100	100
1 1/2	100	100	100	100	100
3/4	100	100	100	100	100
3/8	100	100	100	100	100
4	95.69	97.07	98.31	100	97.45
10	86.04	94.75	97.84	99.42	95.55
20	83.88	92.48	97.37	98.88	94.31
40	83.02	90.73	95.37	97.82	92.77
60	81.57	87.96	87.26	94.74	90.86
140	45.29	43.14	10.89	32.85	39.93
200	41.75	38.99	8.70	27.99	35.62
USCS Classification	SC	SC	SP-SC	SC	SC

John T. Jones, P.E.

CATLIN Engineers and Scientists
Geotechnical Laboratories

Science Applications International Corporation — An Employee-Owned Company

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CHAIN OF CUSTODY RECORD

COC NO.: 1 of 3

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

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

LABORATORY NAME: Catlin Laboratories

LABORATORY ADDRESS: 1051 Johnnie Dodds Blvd. Suite C Mt. Pleasant, SC 29464

PHONE NO: (803) 881-6000

Sample ID	Date Collected	Time Collected	Matrix	MOISTURE CONTENT	GRAIN SIZE (SIEVE)	ATTERBERG LIMITS	PERMEABILITY	SPECIFIC GRAVITY	POROSITY/BULK DENSITY	No. of Bottles/ Vial/ Bags:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
HLB911	12-1-99	0830	soil	X	X	X				1	0.0	4.0 - 5.2 FEET
130811	12-1-99	1515	soil	X	X	X				1	106	~~0.8 - 5.2~~ 4.8 - 5.0
130711	12-1-99	1325	soil	X	X	X				1	0.6	3.5 - 4.0
BFGT11	12-5-99	1323	soil	X	X	X	X	X	X	1	0	2 - 4 shelby tube

V-213

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 4	Cooler Temperature: NA
Mitchell Hall	12-20-99 1000	FB	12/21/99	Cooler ID: NA	FEDEX NUMBER: 810624323348
COMPANY NAME: SAIC		COMPANY NAME: Catlin Engineering Laboratories			
RECEIVED BY: Fedex	Date/Time 12-20-99 1000	RELINQUISHED BY:	Date/Time 10:00am	Shelby Tube shipped separately	
COMPANY NAME:		COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

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CHAIN OF CUSTODY RECORD

COC NO.: 1 of 3

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

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

LABORATORY NAME: Catlin Laboratories

LABORATORY ADDRESS: 1051 Johnnie Dodds Blvd. Suite C Mt. Pleasant, SC 29464

PHONE NO: (803) 881-6000

Sample ID	Date Collected	Time Collected	Matrix	MOISTURE CONTENT	GRAIN SIZE (SIEVE)	ATTERBERG LIMITS	PERMEABILITY	SPECIFIC GRAVITY	POROSITY/BULK DENSITY	No. of Bottles/ Vials/ Bags.	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF1011	12-2-99	0830	Soil	X	X	X				1	400	5 - 6 Feet
BF1711	12-3-99	0925	Soil	X	X	X				1	2.7	0 - 2
BF0911	12-3-99	1635	Soil	X	X	X				1	5.3	7.0 - 8.0
BF1111	12-2-99	0950	Soil	X	X	X				1	2.6	4.0 - 5.0
BF0511	12-3-99	1450	Soil	X	X	X				1	1.0	5.5 - 7.5
BF1211	12-4-99	0820	Soil	X	X	X				1	11.3	0.5 - 2.5
BF0611	12-2-99	1450	Soil	X	X	X				1	2.5	8.8 - 10.5
BF1511	12-2-99	1145	Soil	X	X	X				1	0	7 - 8
BF0711	12-2-99	1614	Soil	X	X	X				1	5.9	6.4 - 7.2
BF0411	12-3-99	1310	Soil	X	X	X				1	0.0	10 - 11
BF2111	12-5-99	0925	Soil	X	X	X				1	5.1	4.0 - 6.0
BF1611	12-2-99	1500	Soil	X	X	X				1	0.0	0.0 - 2.0
BF0811	12-3-99	1155	Soil	X	X	X				1	1.3	4.0 - 6.0

V-214

RELINQUISHED BY: Mitchell Hall	Date/Time 12-20-99 1000	RECEIVED BY: FB	Date/Time 12-21/99	TOTAL NUMBER OF CONTAINERS: ~~See 1 of 3~~ 13	Cooler Temperature: NA
COMPANY NAME: SAIC		COMPANY NAME: Catlin Engineering		Cooler ID: NA	FEDEX NUMBER: 810624 523345
RECEIVED BY: Fedex	Date/Time 12-20-99 1000	RELINQUISHED BY:	Date/Time 10:00AM		
COMPANY NAME: SAIC		COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

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CHAIN OF CUSTODY RECORD

COC NO.: 2 of 3

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

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

LABORATORY NAME: Catlin Laboratories

LABORATORY ADDRESS: 1051 Johnnie Dodds Blvd. Suite C Mt. Pleasant, SC 29464

PHONE NO: (803) 881-6000

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	MOISTURE CONTENT	GRAIN SIZE (SIEVE)	ATTERBERG LIMITS	PERMEABILITY	SPECIFIC GRAVITY	POROSITY/BULK DENSITY	No. of Bottles/ Vials/ Bags:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF2611	12-2-99	1255	Soil	X	X	X				1	0.0	4.0-6.0 FEET
BF2411	12-2-99	1008	Soil	X	X	X				1	3.3	4.0-6.0
BF1411	12-1-99	1440	Soil	X	X	X				1	0.0	5.2-7.2
BF2211	12-5-99	1345	Soil	X	X	X				1	400	4.0-6.0
BF2011	12-5-99	1610	Soil	X	X	X				1	31.6	00-2.0
BF2511	12-2-99	0825	Soil	X	X	X				1	0.4	3.6-5.6
BF1811	12-1-99	1615	Soil	X	X	X				1	0.0	4.1-6.1
BF1911	11-30-99	1430	Soil	X	X	X				1	0.0	4.0-6.0
BF0111	12-1-99	1315	Soil	X	X	X				1	0	4-6
BF1311	11-30-99	1110	Soil	X	X	X				1	1.9	5.0-7.0
BF0211	12-1-99	1035	Soil	X	X	X				1	0.0	1.3-3.3
BF0311	12-1-99	0816	Soil	X	X	X				1	0.0	4.0-6.0 FT
HLB811	12-1-99	1115	Soil	X	X	X				1	0.0	4.0-6.0

RELINQUISHED BY: Mitchell Hall	Date/Time 12-20-99 1000	RECEIVED BY: FB	Date/Time 12/21/99	TOTAL NUMBER OF CONTAINERS: 13	Cooler Temperature: NA
COMPANY NAME: SAIC		COMPANY NAME: Catlin Engineers & Scientists		Cooler ID: 81 NA	FEDEX NUMBER: 810624323348
RECEIVED BY: Fedex	Date/Time 12-20-99 1000	RELINQUISHED BY:	Date/Time 10:00 AM		
COMPANY NAME:		COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

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

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature) (Printed Name) Ken Swain

LABORATORY NAME: Catlin Laboratories

LABORATORY ADDRESS: 1051 Johnnie Dodds Blvd. Suite C Mt. Pleasant, SC 29464

PHONE NO: (803) 881-6000

Sample ID	Date Collected	Time Collected	Matrix	MOISTURE CONTENT	GRAIN SIZE (SIEVE)	ATTERBERG LIMITS	PERMEABILITY	SPECIFIC GRAVITY	POROSITY/BULK DENSITY	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF2711	1/11/00	1425	Soil	X	X	X				1		5-7 ft bgs
BF2811	1/11/00	1120	Soil	X	X	X				1		4-6 ft bgs
BF2911	1/11/00	0940	Soil	X	X	X				1		4-5.7 ft bgs
BF3011	1/11/00	0810	Soil	X	X	X				1		1.0-3.0 ft bgs
BF3111	1/10/00	1620	Soil	X	X	X				1		4.0-5.7 ft bgs
							01/24/00					

REQUESTED PARAMETERS

V-216

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 5	Cooler Temperature: NA
COMPANY NAME: SAIC	01/24/00 1800	COMPANY NAME: CATLIN	1/25/00	Cooler ID: NA	FEDEX NUMBER: 1777771446
RECEIVED BY: 1777771446	Date/Time	RELINQUISHED BY:	Date/Time		
COMPANY NAME: FedEx	01/24/00 1800	COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

PERMEABILITY TEST ANALYSIS (ASTM D5084)

Project : HAAF Bulk Fuel Facility CAP- Part A
Location of Project : Savannah , Georgia
Description of Soil : Dark Gray Sandy Fat Clay

Job # : 199-233
Date of Testing: 1/11-18/00
Tested by: JTJ
Boring # : STA. GT
Sample # : BFGT11
Sample Depth : 2'- 4'

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

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

Sample Permeation:

De-Aired Water
% Saturation: 100 %
Cell Pressure: 85 *psi*
Lower Pressure: 80 *psi*
Upper Pressure: 77 *psi*
Gradient: 20.90

Sample Dimensions		
	Before	After
Length (cm)	10.10	10.08
Diameter (cm)	4.70	4.57
Water Content (%)	28.9	27.90
Weight (g)	304.2	305.68

Constant Head Calculation:

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

$V(t_1,t_2)$ = Volume of flow from t_1 to t_2 (cm^2)
L = Length of Sample = 10.10 cm
A = Area of Sample = 17.35 cm^2
t = $t_2 - t_1$ (sec)
P_B = Bias Pressure = 3 psi x 70.37 cm/psi $_{(cm - H2O)}$ = 211.11 cm
R_T = Temperature correction = 1.051

t_2 (min)	t_1 (min)	$(t_2 - t_1)*60$ (sec)	V (cm3)	$[LR_T]/[P_B A]$ (cm^{-2})	K (cm/sec)
1530	330	72000	0.3	2.90E-03	1.21E-08
1830	1530	18000	0.1	2.90E-03	1.61E-08
2970	1830	68400	0.3	2.90E-03	1.27E-08
3270	2970	18000	0.1	2.90E-03	1.61E-08

K_{avg} = 1.42E-08 cm/sec

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Specific Gravity
ASTM-D854

Project: HAAF Bulk Fuel Facility CAP- Part A	Job No.: 199-233
Project Location: Savannah , Georgia	Sample No.: BFGT11
Sample Description: Dark Gray Sandy Fat Clay	Sample Depth: 2'- 4'
	Boring No.: STA. GT
Tested By: FB	Date of Testing: 1/15/00

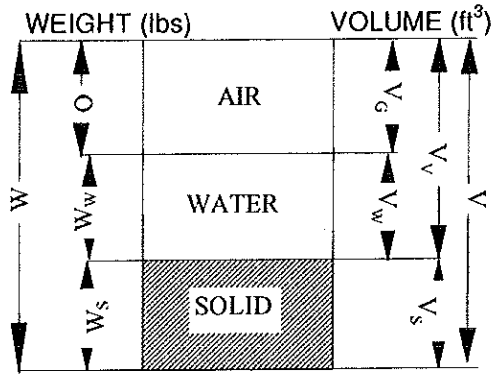
Test No.:	2
Wt. of Flask, Mf	163.8
Mass Flask + H2O @ Ta = Ma @ T a	657.0
Temperature, Ta, oC	23.0
Method of air removal	Vacuum
Wt. Flask + H2O+ Soil = Mb (g)	717.7
Temperature, Tb, oC	23.0
Wt. Flask + H2Ob = Ma	657.0
evap dish no.	P51
wt of evap. dish +dry soil	347.70
Wt. evap dish	250.42
Wt. of dry soil = Mo (g)	97.28
Ww = Mo + Ma - Mb	36.63
G @ Tb = Mo/Ww	2.66
K @ Tb	0.9993
Gs = K * G	2.65

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BULK DENSITY, SPECIFIC GRAVITY AND POROSITY

PROJECT: HAAF Bulk Fuel Facility CAP- Part A
LOCATION OF PROJECT: Savannah, Georgia
DESCRIPTION OF SOIL: Dark Gray Sandy Fat Clay
TESTED BY: FB

JOB NO.: 199-233
SAMPLE NO.: BFGT11
DEPTH OF SAMPLE: 2'- 4'
DATE OF TESTING: 1/16/00



W = 0.67
W_W = W - W_S = 0.15
W_S = Y_d*V = 0.52

V = 0.0062
V_W = W_W/Y_W = 0.0024
V_S = W_S/G_S*Y_W = 0.0031
V_G = V - (V_S +V_W) = 0.00064
V_V = V_G +V_W = 0.003

MEASUREMENTS OF TUBE/CAN

HEIGHT= 10.1 cm
DIAMETER= 4.7 cm

CALCULATED VOLUME OF TUBE/CAN

V= 175.23 cm^3
0.0062 ft^3

WT. OF TUBE/CAN + WET SOIL= N/A g
WEIGHT OF TUBE/CAN= N/A g
WEIGHT OF WET SOIL= 304.19 g
W = 0.67 lb

MOISTURE CONTENT

M_{CWS} = 161.20 g
M_{CDS} = 132.89 g
M_W = 28.31 g
M_C = 34.82 g
M_S = 98.07 g
w = 28.87 %

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= 108.4 lbs/ft^3
Y_d= 84.1 lbs/ft^3	Y_d= 84.1 lbs/ft^3

Void Ratio, e = V_V/V_S
e = 0.97

Porosity, n = V_V /V
n = 0.49

Specific Gravity = 2.65

Degree of Saturation, S = V_W/V_V
S = 0.79

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Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Savannah, Georgia
Description Of Soil: Dark Gray Sandy Fat Clay
Tested By: FB

Job No.: 199-233
Sample No.: BFGT11
Depth of Sample: 2'- 4'
Date of Testing: 1/11/00

Liquid Limit Dermination

Can No.	A36	A21	A43	A45	A2
Wt of Soil + can, Mcws	18.14	25.50	24.06	24.41	17.95
Wt. of dry soil + can,Mcds	15.64	22.00	21.12	21.35	17.05
Wt. of can, Mc	10.89	15.38	15.32	15.45	15.31
Wt. of dry soil, Ms	4.75	6.62	5.80	5.90	1.74
Wt. of moisture	2.50	3.50	2.94	3.06	0.90
Water content, w%	52.63	52.87	50.69	51.86	51.72
No. of blows, N	15	10	27	33	17

Plastic Limit Determination

Can no.	C22	A52	C16
Wt. of wet soil + can, Mcws	7.03	7.59	5.90
Wt. of dry soil +can, Mcds	6.54	6.98	5.61
Wt. of can, Mc	4.27	4.10	4.29
Wt. of dry soil, Ms	2.27	2.88	1.32
Wt. of moisture, Mw	0.49	0.61	0.29
Water content, W% = Wp	21.59	21.18	21.97

LIQUID LIMIT =	51.7
PLASTIC LIMIT =	21.6
PLASTICITY INDEX =	30.1
CLASSIFICATION	CH

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GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Savannah, Georgia	Sample: BFGT11
Sample Description: Dark Gray Sandy Fat Clay	Sample Depth: 2' - 4'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc:A31	Mw	Ms	w%	Mws	Ms
6.87	6.81	4.07	0.06	2.74	2.2	200.23	195.94

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	0	0.00	0.00	100.00
20	0.841	0	0.00	0.00	100.00
40	0.42	0.07	0.04	0.04	99.96
60	0.25	2.00	1.02	1.06	98.94
140	0.106	60.28	30.76	31.82	68.18
200	0.074	2.28	1.16	32.98	67.02

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Certificate of Analysis

Company : SAIC
Address : 800 Oak Ridge Turnpike
Oak Ridge, TN 37831

DATA VALIDATION COPY

Report Date: January 6, 2000

Contact: Ms. Leslie Barbour
Project: CAP-Part A HAA-009 Bulk Fuel Facility

Client Sample ID:	BF0111	Project:	SAIC01999
Sample ID:	9900841011	Client ID:	SAIC024
Matrix:	Soil		
Collect Date:	01-DEC-99		
Receive Date:	02-DEC-99		
Collector:	Client		
Moisture:			

Parameter	Qual	Result	MDL	RL	Units	DF	Anlst	Date	Time	Batch
TOC Analysis Federal										
EPA 415.1 Total Organic Carbon										
Total Organic Carbon		979 =	47.2	100	mg/kg	1	JB1	12/14/99	1426	3541

Notes:
The Qualifiers in this report are defined as follows :

U Result not detected above the detection limit

J Estimated value. Result > detection limit but result < PQL/RDL

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at 843-556-8171 Ext. 4485.

Valerie A Davis
Reviewed by

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF0111
Sample Description: Brown Clayey Sand	Sample Depth: 4' - 6'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A43	Mw	Ms	w%	Mws	Ms
21.50	21.48	15.31	0.02	6.17	0.3	200.06	199.41

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	0.08	0.04	0.04	99.96
20	0.841	0.23	0.12	0.16	99.84
40	0.42	1.38	0.69	0.85	99.15
60	0.25	6.41	3.21	4.06	95.94
140	0.106	114.72	57.53	61.59	38.41
200	0.074	11.50	5.77	67.36	32.64

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Brown Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF0111
Depth of Sample: 4'- 6'
Date of Testing: 1/11/00

Liquid Limit Dermination

Can No.	A36	A23	A47	A14	A55
Wt of Soil + can, Mcws	19.18	19.26	25.20	18.15	14.68
Wt. of dry soil + can,Mcds	17.35	17.48	22.98	16.60	13.82
Wt. of can, Mc	10.89	11.34	15.09	11.12	10.91
Wt. of dry soil, Ms	6.46	6.14	7.89	5.48	2.91
Wt. of moisture	1.83	1.78	2.22	1.55	0.86
Water content, w%	28.33	28.99	28.14	28.28	29.55
No. of blows, N	29	15	33	23	10

Plastic Limit Determination

Can no.	C3	C12	A5
Wt. of wet soil + can, Mcws	6.51	5.52	7.63
Wt. of dry soil +can, Mcds	6.16	5.02	7.07
Wt. of can, Mc	4.31	2.38	4.10
Wt. of dry soil, Ms	1.85	2.64	2.97
Wt. of moisture, Mw	0.35	0.50	0.56
Water content, W% = Wp	18.92	18.94	18.86

LIQUID LIMIT =	28.6
PLASTIC LIMIT =	18.9
PLASTICITY INDEX =	9.7
CLASSIFICATION	CL

CATLIN Engineers and Scientists
Geotechnical Laboratories

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF0211
Sample Description: Black Clayey Sand	Sample Depth: 1.3' - 3.3'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A43	Mw	Ms	w%	Mws	Ms
25.65	24.91	15.35	0.74	9.56	7.7	202.00	187.49

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0.42	0.22	0.22	99.78
10	2.00	1.97	1.05	1.27	98.73
20	0.841	0.90	0.48	1.75	98.25
40	0.42	1.42	0.76	2.51	97.49
60	0.25	5.94	3.17	5.68	94.32
140	0.106	114.47	61.05	66.74	33.26
200	0.074	7.89	4.21	70.94	29.06

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF0311
Sample Description: Gray Clayey Sand	Sample Depth: 4' - 6'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A41	Mw	Ms	w%	Mws	Ms
22.84	22.75	15.34	0.09	7.41	1.2	200.23	197.83

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0.32	0.16	0.16	99.84
10	2.00	0.11	0.06	0.22	99.78
20	0.841	0.15	0.08	0.29	99.71
40	0.42	1.20	0.61	0.90	99.10
60	0.25	6.60	3.34	4.24	95.76
140	0.106	93.54	47.28	51.52	48.48
200	0.074	4.74	2.40	53.92	46.08

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Gray Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF0311
Depth of Sample: 4'- 6'
Date of Testing: 1/12/00

Liquid Limit Dermination

Can No.					
Wt of Soil + can, Mcws	167.00	166.57	192.71	190.29	192.00
Wt. of dry soil + can,Mcds	165.56	165.45	184.00	182.00	184.09
Wt. of can, Mc	162.29	162.29	162.29	162.29	162.29
Wt. of dry soil, Ms	3.27	3.16	21.71	19.71	21.80
Wt. of moisture	1.44	1.12	8.71	8.29	7.91
Water content, w%	44.04	35.44	40.12	42.06	36.28
No. of blows, N	11	39	20	15	30

Plastic Limit Determination

Can no.			
Wt. of wet soil + can, Mcws	163.13	185.23	175.48
Wt. of dry soil +can, Mcds	162.97	181.06	172.86
Wt. of can, Mc	162.29	162.29	162.29
Wt. of dry soil, Ms	0.68	18.77	10.57
Wt. of moisture, Mw	0.16	4.17	2.62
Water content, W% = Wp	23.53	22.22	24.79

LIQUID LIMIT =	38.2
PLASTIC LIMIT =	23.5
PLASTICITY INDEX =	14.7
CLASSIFICATION	CL

CATLIN Engineers and Scientists
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GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF0411
Sample Description: Gray Clayey Sand	Sample Depth: 10' - 11'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A5	Mw	Ms	w%	Mws	Ms
17.39	17.33	10.92	0.06	6.41	0.9	100.05	99.12

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	1.84	1.86	1.86	98.14
20	0.841	0.71	0.72	2.57	97.43
40	0.42	0.84	0.85	3.42	96.58
60	0.25	5.25	5.30	8.72	91.28
140	0.106	55.54	56.03	64.75	35.25
200	0.074	1.51	1.52	66.27	33.73

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF0511
Sample Description: Gray Sandy Clay	Sample Depth: 5.5' - 7.5'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A5	Mw	Ms	w%	Mws	Ms
17.95	17.92	10.91	0.03	7.01	0.4	100.07	99.64

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	12.05	12.09	0.00	100.00
4	4.76	11.53	11.57	11.57	88.43
10	2.00	5.42	5.44	17.01	82.99
20	0.841	0.83	0.83	17.84	82.16
40	0.42	0.89	0.89	18.74	81.26
60	0.25	3.35	3.36	22.10	77.90
140	0.106	25.16	25.25	47.35	52.65
200	0.074	2.57	2.58	49.93	50.07

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Gray Sandy Clay
Tested By: FB

Job No.: 199-233
Sample No.: BF0511
Depth of Sample: 5.5'- 7.5'
Date of Testing: 1/11/00

Liquid Limit Dermination

Can No.	A12	A21	A14	A8	A38
Wt of Soil + can, Mcws	15.84	22.23	16.23	20.06	21.20
Wt. of dry soil + can,Mcds	14.31	19.95	14.52	17.21	19.10
Wt. of can, Mc	11.20	15.38	11.12	11.30	14.95
Wt. of dry soil, Ms	3.11	4.57	3.40	5.91	4.15
Wt. of moisture	1.53	2.28	1.71	2.85	2.10
Water content, w%	49.20	49.89	50.29	48.22	50.60
No. of blows, N	23	18	13	33	10

Plastic Limit Determination

Can no.	C24	C22	C4
Wt. of wet soil + can, Mcws	3.47	5.23	3.52
Wt. of dry soil +can, Mcds	3.28	5.06	3.32
Wt. of can, Mc	2.38	4.27	2.37
Wt. of dry soil, Ms	0.90	0.79	0.95
Wt. of moisture, Mw	0.19	0.17	0.20
Water content, W% = Wp	21.11	21.52	21.05

LIQUID LIMIT =	49.2
PLASTIC LIMIT =	21.2
PLASTICITY INDEX =	28.0
CLASSIFICATION	CL

CATLIN Engineers and Scientists
Geotechnical Laboratories

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF0611
Sample Description: Black Clayey Sand	Sample Depth: 8.8' - 10.4'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A41	Mw	Ms	w%	Mws	Ms
22.17	22.05	15.34	0.12	6.71	1.8	102.27	100.47

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	0.08	0.08	0.08	99.92
20	0.841	0.96	0.96	1.04	98.96
40	0.42	2.56	2.55	3.58	96.42
60	0.25	8.74	8.70	12.28	87.72
140	0.106	56.25	55.99	68.27	31.73
200	0.074	2.85	2.84	71.10	28.90

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Black Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF0611
Depth of Sample: 8.8'- 10.4'
Date of Testing: 1/11/00

Liquid Limit Dermination

Can No.	A16	A56	A53	A33	A19
Wt of Soil + can, Mcws	15.92	24.75	22.21	23.70	21.40
Wt. of dry soil + can,Mcds	14.80	22.58	20.45	21.64	19.93
Wt. of can, Mc	11.07	14.94	14.93	15.32	15.01
Wt. of dry soil, Ms	3.73	7.64	5.52	6.32	4.92
Wt. of moisture	1.12	2.17	1.76	2.06	1.47
Water content, w%	30.03	28.40	31.88	32.59	29.88
No. of blows, N	19	48	16	13	30

Plastic Limit Determination

Can no.	C2	C7	C19
Wt. of wet soil + can, Mcws	5.24	6.17	4.88
Wt. of dry soil +can, Mcds	4.75	5.54	4.37
Wt. of can, Mc	2.37	2.39	1.87
Wt. of dry soil, Ms	2.38	3.15	2.50
Wt. of moisture, Mw	0.49	0.63	0.51
Water content, W% = Wp	20.59	20.00	20.40

LIQUID LIMIT =	30.0
PLASTIC LIMIT =	20.3
PLASTICITY INDEX =	9.7
CLASSIFICATION	CL

CATLIN Engineers and Scientists
Geotechnical Laboratories

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF0711
Sample Description: Light Brown Clayey Sand	Sample Depth: 6.4' - 7.2'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A47	Mw	Ms	w%	Mws	Ms
22.57	22.56	15.09	0.01	7.47	0.1	200.02	199.75

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0.08	0.04	0.04	99.96
10	2.00	0.01	0.01	0.05	99.95
20	0.841	0.08	0.04	0.09	99.91
40	0.42	2.85	1.43	1.51	98.49
60	0.25	24.13	12.08	13.59	86.41
140	0.106	134.30	67.23	80.82	19.18
200	0.074	2.97	1.49	82.31	17.69

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Light Brown Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF0711
Depth of Sample: 6.4'- 7.2'
Date of Testing: 1/11/00

Liquid Limit Dermination

Can No.	A57	A28	A24	A35	A15
Wt of Soil + can, Mcws	10.10	10.30	9.61	8.05	7.78
Wt. of dry soil + can,Mcds	9.10	9.14	8.55	7.31	7.10
Wt. of can, Mc	4.34	4.10	4.08	4.13	4.10
Wt. of dry soil, Ms	4.76	5.04	4.47	3.18	3.00
Wt. of moisture	1.00	1.16	1.06	0.74	0.68
Water content, w%	21.01	23.02	23.71	23.27	22.67
No. of blows, N	37	27	10	15	30

Plastic Limit Determination

Can no.	C4	C23	C10
Wt. of wet soil + can, Mcws	3.93	5.76	4.38
Wt. of dry soil +can, Mcds	3.70	5.56	4.07
Wt. of can, Mc	2.39	4.35	2.40
Wt. of dry soil, Ms	1.31	1.21	1.67
Wt. of moisture, Mw	0.23	0.20	0.31
Water content, W% = Wp	17.56	16.53	18.56

LIQUID LIMIT =	22.9
PLASTIC LIMIT =	17.6
PLASTICITY INDEX =	5.3
CLASSIFICATION	CL-ML

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF0811
Sample Description: Black Clayey Sand	Sample Depth: 4' - 6'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A52	Mw	Ms	w%	Mws	Ms
20.26	20.14	15.07	0.12	5.07	2.4	200.00	195.38

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	9.68	4.95	4.95	95.05
10	2.00	5.26	2.69	7.65	92.35
20	0.841	1.70	0.87	8.52	91.48
40	0.42	2.43	1.24	9.76	90.24
60	0.25	8.47	4.34	14.10	85.90
140	0.106	70.34	36.00	50.10	49.90
200	0.074	5.60	2.87	52.96	47.04

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Black Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF0811
Depth of Sample: 4'- 6'
Date of Testing: 1/12/00

Liquid Limit Dermination

Can No.	A19	A18	A40	A25	A55
Wt of Soil + can, Mcws	25.76	19.45	23.71	16.93	20.00
Wt. of dry soil + can,Mcds	23.52	17.81	21.94	15.77	18.28
Wt. of can, Mc	15.01	11.44	15.00	11.21	10.90
Wt. of dry soil, Ms	8.51	6.37	6.94	4.56	7.38
Wt. of moisture	2.24	1.64	1.77	1.16	1.72
Water content, w%	26.32	25.75	25.50	25.44	23.31
No. of blows, N	10	33	18	26	41

Plastic Limit Determination

Can no.	C7	C17	C12
Wt. of wet soil + can, Mcws	3.31	3.33	4.38
Wt. of dry soil +can, Mcds	3.12	3.13	4.11
Wt. of can, Mc	1.89	1.90	2.37
Wt. of dry soil, Ms	1.23	1.23	1.74
Wt. of moisture, Mw	0.19	0.20	0.27
Water content, W% = Wp	15.45	16.26	15.52

LIQUID LIMIT =	25.3
PLASTIC LIMIT =	15.7
PLASTICITY INDEX =	9.6
CLASSIFICATION	CL

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF0911
Sample Description: Gray Clayey Sand	Sample Depth: 7' - 8'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc	Mw	Ms	w%	Mws	Ms
21.47	21.42	15.45	0.05	5.97	0.8	120.13	119.13

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	3.07	2.58	2.58	97.42
10	2.00	3.49	2.93	5.51	94.49
20	0.841	2.00	1.68	7.19	92.81
40	0.42	2.17	1.82	9.01	90.99
60	0.25	4.37	3.67	12.67	87.33
140	0.106	55.23	46.36	59.04	40.96
200	0.074	2.69	2.26	61.29	38.71

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Gray Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF0911
Depth of Sample: 7'- 8'
Date of Testing: 1/11/00

Liquid Limit Dermination

Can No.	A35	A30	A43	A45	A11
Wt of Soil + can, Mcws	17.26	18.97	19.81	21.74	18.43
Wt. of dry soil + can,Mcds	15.47	17.85	18.47	19.86	16.22
Wt. of can, Mc	11.28	15.23	15.32	15.45	10.89
Wt. of dry soil, Ms	4.19	2.62	3.15	4.41	5.33
Wt. of moisture	1.79	1.12	1.34	1.88	2.21
Water content, w%	42.72	42.75	42.54	42.63	41.46
No. of blows, N	13	10	21	18	33

Plastic Limit Determination

Can no.	A52	A37	A59
Wt. of wet soil + can, Mcws	5.49	5.59	5.80
Wt. of dry soil +can, Mcds	5.24	5.33	5.50
Wt. of can, Mc	4.10	4.10	4.12
Wt. of dry soil, Ms	1.14	1.23	1.38
Wt. of moisture, Mw	0.25	0.26	0.30
Water content, W% = Wp	21.93	21.14	21.74

LIQUID LIMIT =	42.3
PLASTIC LIMIT =	21.6
PLASTICITY INDEX =	20.7
CLASSIFICATION	CL

CATLIN Engineers and Scientists
Geotechnical Laboratories

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF1011
Sample Description: Brown Clayey Sand	Sample Depth: 5' - 6'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A23	Mw	Ms	w%	Mws	Ms
19.63	19.62	11.34	0.01	8.28	0.1	109.72	109.59

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	0.29	0.26	0.26	99.74
20	0.841	1.21	1.10	1.37	98.63
40	0.42	3.73	3.40	4.77	95.23
60	0.25	9.50	8.67	13.44	86.56
140	0.106	62.72	57.23	70.67	29.33
200	0.074	2.32	2.12	72.79	27.21

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Brown Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF1011
Depth of Sample: 5'- 6'
Date of Testing: 1/12/00

Liquid Limit Dermination

Can No.	A24	A2	A31	A27	A18
Wt of Soil + can, Mcws	15.38	21.64	15.62	16.42	19.53
Wt. of dry soil + can,Mcds	14.31	20.04	14.56	15.07	17.50
Wt. of can, Mc	11.12	15.32	11.13	10.91	11.43
Wt. of dry soil, Ms	3.19	4.72	3.43	4.16	6.07
Wt. of moisture	1.07	1.60	1.06	1.35	2.03
Water content, w%	33.54	33.90	30.90	32.45	33.44
No. of blows, N	23	27	40	31	10

Plastic Limit Determination

Can no.	C16	C1	C11
Wt. of wet soil + can, Mcws	6.27	4.63	4.94
Wt. of dry soil +can, Mcds	5.92	4.22	4.45
Wt. of can, Mc	4.29	2.40	2.35
Wt. of dry soil, Ms	1.63	1.82	2.10
Wt. of moisture, Mw	0.35	0.41	0.49
Water content, W% = Wp	21.47	22.53	23.33

LIQUID LIMIT =	33.2
PLASTIC LIMIT =	22.4
PLASTICITY INDEX =	10.8
CLASSIFICATION	CL

CATLIN Engineers and Scientists
Geotechnical Laboratories

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF1111
Sample Description: Brown Clayey Sand	Sample Depth: 4' - 5'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A36	Mw	Ms	w%	Mws	Ms
18.83	18.43	10.90	0.40	7.53	5.3	200.00	189.91

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	2.24	1.18	1.18	98.82
10	2.00	8.03	4.23	5.41	94.59
20	0.841	3.25	1.71	7.12	92.88
40	0.42	2.98	1.57	8.69	91.31
60	0.25	4.32	2.27	10.96	89.04
140	0.106	103.92	54.72	65.68	34.32
200	0.074	9.55	5.03	70.71	29.29

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF1211
Sample Description: Black Clayey Sand	Sample Depth: 0' - 2'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A5	Mw	Ms	w%	Mws	Ms
17.86	17.82	10.97	0.04	6.85	0.6	121.51	120.80

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0.50	0.41	0.41	99.59
10	2.00	0.87	0.72	1.13	98.87
20	0.841	0.89	0.74	1.87	98.13
40	0.42	1.25	1.03	2.91	97.09
60	0.25	3.08	2.55	5.46	94.54
140	0.106	74.21	61.43	66.88	33.12
200	0.074	8.95	7.41	74.29	25.71

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF1311
Sample Description: Gray Clayey Sand	Sample Depth: 5' - 7'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A14	Mw	Ms	w%	Mws	Ms
16.45	16.07	11.13	0.38	4.94	7.7	200.00	185.71

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	2.18	1.17	1.17	98.83
20	0.841	2.95	1.59	2.76	97.24
40	0.42	0.58	0.31	3.07	96.93
60	0.25	1.53	0.82	3.90	96.10
140	0.106	98.64	53.11	57.01	42.99
200	0.074	11.66	6.28	63.29	36.71
pan	---	0	0.00	63.29	36.71

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Gray Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF1311
Depth of Sample: 5'- 7'
Date of Testing: 1/12/00

Liquid Limit Dermination

Can No.	A43	A12	A53	A51	A49
Wt of Soil + can, Mcws	22.30	21.90	22.11	15.98	17.34
Wt. of dry soil + can,Mcds	20.45	20.27	20.27	14.77	15.65
Wt. of can, Mc	15.33	15.27	14.92	11.27	10.88
Wt. of dry soil, Ms	5.12	5.00	5.35	3.50	4.77
Wt. of moisture	1.85	1.63	1.84	1.21	1.69
Water content, w%	36.13	32.60	34.39	34.57	35.43
No. of blows, N	13	33	39	28	19

Plastic Limit Determination

Can no.	C22	C1	C2
Wt. of wet soil + can, Mcws	4.60	5.46	4.47
Wt. of dry soil +can, Mcds	4.19	4.88	4.08
Wt. of can, Mc	2.37	2.38	2.37
Wt. of dry soil, Ms	1.82	2.50	1.71
Wt. of moisture, Mw	0.41	0.58	0.39
Water content, W% = Wp	22.53	23.20	22.81

LIQUID LIMIT =	34.4
PLASTIC LIMIT =	22.8
PLASTICITY INDEX =	11.6
CLASSIFICATION	CL

CATLIN Engineers and Scientists
Geotechnical Laboratories

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF1411
Sample Description: Brown Clayey Sand	Sample Depth: 5.2' - 7.2'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A55	Mw	Ms	w%	Mws	Ms
16.31	16.29	10.91	0.02	5.38	0.4	200.00	199.26

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0.24	0.12	0.12	99.88
10	2.00	0.51	0.26	0.38	99.62
20	0.841	0.50	0.25	0.63	99.37
40	0.42	53.60	26.90	27.53	72.47
60	0.25	45.82	23.00	50.52	49.48
140	0.106	30.85	15.48	66.00	34.00
200	0.074	3.00	1.51	67.51	32.49

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Brown Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF1411
Depth of Sample: 5.2'- 7.2'
Date of Testing: 1/11/00

Liquid Limit Dermination

Can No.	A18	A38	A24	A49	A27
Wt of Soil + can, Mcws	17.13	21.50	19.80	17.36	15.21
Wt. of dry soil + can,Mcds	15.56	19.65	17.43	15.60	14.02
Wt. of can, Mc	11.44	14.95	11.13	10.87	10.91
Wt. of dry soil, Ms	4.12	4.70	6.30	4.73	3.11
Wt. of moisture	1.57	1.85	2.37	1.76	1.19
Water content, w%	38.11	39.36	37.62	37.21	38.26
No. of blows, N	24	10	28	39	19

Plastic Limit Determination

Can no.	C16	C22	C13
Wt. of wet soil + can, Mcws	7.02	7.14	5.02
Wt. of dry soil +can, Mcds	6.56	6.66	4.57
Wt. of can, Mc	4.28	4.26	2.38
Wt. of dry soil, Ms	2.28	2.40	2.19
Wt. of moisture, Mw	0.46	0.48	0.45
Water content, W% = Wp	20.18	20.00	20.55

LIQUID LIMIT =	37.7
PLASTIC LIMIT =	20.2
PLASTICITY INDEX =	17.5
CLASSIFICATION	CL

CATLIN Engineers and Scientists
Geotechnical Laboratories

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF1511
Sample Description: Gray Well Graded Sand With Clay	Sample Depth: 7' - 8'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A38	Mw	Ms	w%	Mws	Ms
23.59	22.78	14.95	0.81	7.83	10.3	200.00	181.25

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0.10	0.06	0.06	99.94
10	2.00	1.20	0.66	0.72	99.28
20	0.841	0.35	0.19	0.91	99.09
40	0.42	1.55	0.86	1.77	98.23
60	0.25	10.97	6.05	7.82	92.18
140	0.106	145.25	80.14	87.96	12.04
200	0.074	2.55	1.41	89.36	10.64

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF1611
Sample Description: Black Clayey Sand	Sample Depth: 0' - 2'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A24	Mw	Ms	w%	Mws	Ms
18.29	18.04	11.17	0.25	6.87	3.6	200.00	192.98

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	5.69	2.95	2.95	97.05
10	2.00	5.90	3.06	6.01	93.99
20	0.841	1.64	0.85	6.86	93.14
40	0.42	1.82	0.94	7.80	92.20
60	0.25	5.36	2.78	10.58	89.42
140	0.106	121.48	62.95	73.53	26.47
200	0.074	7.92	4.10	77.63	22.37

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF1711
Sample Description: Dark Brown Clayey Sand	Sample Depth: 0' - 2'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A18	Mw	Ms	w%	Mws	Ms
18.90	18.67	11.46	0.23	7.21	3.2	200.00	193.82

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	1.17	0.60	0.00	100.00
4	4.76	23.37	12.06	12.06	87.94
10	2.00	6.08	3.14	15.19	84.81
20	0.841	2.66	1.37	16.57	83.43
40	0.42	3.71	1.91	18.48	81.52
60	0.25	6.82	3.52	22.00	78.00
140	0.106	107.07	55.24	77.24	22.76
200	0.074	7.72	3.98	81.23	18.77

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF1811
Sample Description: Black Clayey Sand	Sample Depth: 1' - 3'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A41	Mw	Ms	w%	Mws	Ms
24.47	23.73	15.34	0.74	8.39	8.8	200.00	183.79

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	1.50	0.82	0.00	100.00
4	4.76	3.22	1.75	1.75	98.25
10	2.00	2.33	1.27	3.02	96.98
20	0.841	1.10	0.60	3.62	96.38
40	0.42	1.30	0.71	4.33	95.67
60	0.25	4.16	2.26	6.59	93.41
140	0.106	131.82	71.72	78.31	21.69
200	0.074	6.88	3.74	82.06	17.94

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF1911
Sample Description: Gray Clayey Sand	Sample Depth: 4' - 6'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A12	Mw	Ms	w%	Mws	Ms
17.19	16.97	11.21	0.22	5.76	3.8	200.95	193.56

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	0.32	0.17	0.17	99.83
20	0.841	0.08	0.04	0.21	99.79
40	0.42	0.02	0.01	0.22	99.78
60	0.25	0.40	0.21	0.42	99.58
140	0.106	126.85	65.54	65.96	34.04
200	0.074	6.12	3.16	69.12	30.88

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Gray Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF1911
Depth of Sample: 4'- 6'
Date of Testing: 1/11/00

Liquid Limit Dermination

Can No.	A50	A52	A4	A1	A36
Wt of Soil + can, Mcws	21.55	29.20	28.35	25.11	26.00
Wt. of dry soil + can,Mcds	18.89	25.67	25.20	22.67	23.32
Wt. of can, Mc	10.92	15.07	15.35	15.31	15.17
Wt. of dry soil, Ms	7.97	10.60	9.85	7.36	8.15
Wt. of moisture	2.66	3.53	3.15	2.44	2.68
Water content, w%	33.38	33.30	31.98	33.15	32.88
No. of blows, N	10	17	37	13	20

Plastic Limit Determination

Can no.	C23	C63	C13
Wt. of wet soil + can, Mcws	6.72	4.80	6.22
Wt. of dry soil +can, Mcds	6.31	4.39	5.88
Wt. of can, Mc	4.34	2.40	4.25
Wt. of dry soil, Ms	1.97	1.99	1.63
Wt. of moisture, Mw	0.41	0.41	0.34
Water content, W% = Wp	20.81	20.60	20.86

LIQUID LIMIT =	32.5
PLASTIC LIMIT =	20.8
PLASTICITY INDEX =	11.7
CLASSIFICATION	CL

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GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF2011
Sample Description: Black Clayey Sand	Sample Depth: 0' - 2'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A14	Mw	Ms	w%	Mws	Ms
18.71	18.66	11.14	0.05	7.52	0.7	200.23	198.91

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	10.16	5.11	0.00	100.00
4	4.76	8.73	4.39	4.39	95.61
10	2.00	2.51	1.26	5.65	94.35
20	0.841	1.82	0.91	6.57	93.43
40	0.42	4.73	2.38	8.94	91.06
60	0.25	7.84	3.94	12.89	87.11
140	0.106	123.85	62.27	75.15	24.85
200	0.074	3.06	1.54	76.69	23.31

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF2111
Sample Description: Dark Gray Clayey Sand	Sample Depth: 4' - 6'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A50	Mw	Ms	w%	Mws	Ms
18.89	18.85	10.91	0.04	7.94	0.5	200.64	199.63

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0.75	0.38	0.38	99.62
10	2.00	4.96	2.48	2.86	97.14
20	0.841	2.02	1.01	3.87	96.13
40	0.42	2.21	1.11	4.98	95.02
60	0.25	5.46	2.74	7.71	92.29
140	0.106	108.33	54.26	61.98	38.02
200	0.074	8.10	4.06	66.04	33.96

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Dark Gray Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF2111
Depth of Sample: 4'- 6'
Date of Testing: 1/11/00

Liquid Limit Dermination

Can No.	A34	A44	A12	A8	A9
Wt of Soil + can, Mcws	21.91	16.66	24.20	18.28	20.82
Wt. of dry soil + can,Mcds	20.25	15.23	21.85	16.46	19.40
Wt. of can, Mc	15.31	11.23	15.27	11.30	15.39
Wt. of dry soil, Ms	4.94	4.00	6.58	5.16	4.01
Wt. of moisture	1.66	1.43	2.35	1.82	1.42
Water content, w%	33.60	35.75	35.71	35.27	35.41
No. of blows, N	33	10	14	17	23

Plastic Limit Determination

Can no.	C22	C8	C18
Wt. of wet soil + can, Mcws	3.85	3.85	3.59
Wt. of dry soil +can, Mcds	3.59	3.60	3.29
Wt. of can, Mc	2.37	2.40	1.90
Wt. of dry soil, Ms	1.22	1.20	1.39
Wt. of moisture, Mw	0.26	0.25	0.30
Water content, W% = Wp	21.31	20.83	21.58

LIQUID LIMIT =	34.5
PLASTIC LIMIT =	21.2
PLASTICITY INDEX =	13.3
CLASSIFICATION	CL

CATLIN Engineers and Scientists
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GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF2211
Sample Description: Brown Clayey Sand	Sample Depth: 4' - 6'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A42	Mw	Ms	w%	Mws	Ms
22.71	22.65	15.06	0.06	7.59	0.8	200.79	199.22

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	2.17	1.09	0.00	100.00
4	4.76	0.00	0.00	0.00	100.00
10	2.00	0.41	0.21	0.21	99.79
20	0.841	1.35	0.68	0.88	99.12
40	0.42	2.82	1.42	2.30	97.70
60	0.25	8.22	4.13	6.43	93.57
140	0.106	101.55	50.98	57.40	42.60
200	0.074	12.01	6.03	63.43	36.57

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Brown Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF2211
Depth of Sample: 4'- 6'
Date of Testing: 1/11/00

Liquid Limit Dermination

Can No.	A21	A38	A12	A30	A43
Wt of Soil + can, Mcws	22.38	24.11	15.14	17.15	18.19
Wt. of dry soil + can,Mcds	20.55	21.66	14.07	16.65	17.43
Wt. of can, Mc	15.34	14.93	11.17	15.23	15.31
Wt. of dry soil, Ms	5.21	6.73	2.90	1.42	2.12
Wt. of moisture	1.83	2.45	1.07	0.50	0.76
Water content, w%	35.12	36.40	36.90	35.21	35.85
No. of blows, N	38	19	10	33	27

Plastic Limit Determination

Can no.	C13	C14	C24
Wt. of wet soil + can, Mcws	4.33	6.33	4.02
Wt. of dry soil +can, Mcds	3.96	5.94	3.71
Wt. of can, Mc	2.36	4.28	2.37
Wt. of dry soil, Ms	1.60	1.66	1.34
Wt. of moisture, Mw	0.37	0.39	0.31
Water content, W% = Wp	23.13	23.49	23.13

LIQUID LIMIT =	35.8
PLASTIC LIMIT =	23.3
PLASTICITY INDEX =	12.5
CLASSIFICATION	CL

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GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF2411
Sample Description: Black Clayey Sand	Sample Depth: 4' - 6'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A16	Mw	Ms	w%	Mws	Ms
15.89	15.79	11.05	0.10	4.74	2.1	100.73	98.65

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	0.09	0.09	0.09	99.91
20	0.841	0.43	0.44	0.53	99.47
40	0.42	0.79	0.80	1.33	98.67
60	0.25	1.35	1.37	2.70	97.30
140	0.106	47.30	47.95	50.64	49.36
200	0.074	4.92	4.99	55.63	44.37

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Black Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF2411
Depth of Sample: 4'- 6'
Date of Testing: 1/12/00

Liquid Limit Dermination

Can No.	A23	A2	A11A	A6	A44
Wt of Soil + can, Mcws	17.41	20.60	15.71	17.54	15.80
Wt. of dry soil + can,Mcds	15.63	19.10	14.32	15.75	14.51
Wt. of can, Mc	11.34	15.31	10.89	11.29	11.24
Wt. of dry soil, Ms	4.29	3.79	3.43	4.46	3.27
Wt. of moisture	1.78	1.50	1.39	1.79	1.29
Water content, w%	41.49	39.58	40.52	40.13	39.45
No. of blows, N	10	38	20	26	33

Plastic Limit Determination

Can no.	C24	C10	C21
Wt. of wet soil + can, Mcws	3.14	2.62	3.32
Wt. of dry soil +can, Mcds	2.91	2.49	3.03
Wt. of can, Mc	1.93	1.93	1.90
Wt. of dry soil, Ms	0.98	0.56	1.13
Wt. of moisture, Mw	0.23	0.13	0.29
Water content, W% = Wp	23.47	23.21	25.66

LIQUID LIMIT =	40
PLASTIC LIMIT =	24.1
PLASTICITY INDEX =	15.9
CLASSIFICATION	CL

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GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF2511
Sample Description: Black Clayey Sand	Sample Depth: 3.6' - 5.6'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A48	Mw	Ms	w%	Mws	Ms
21.96	21.87	15.31	0.09	6.56	1.4	200.86	198.14

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	2.41	1.22	0.00	100.00
4	4.76	18.45	9.31	9.31	90.69
10	2.00	9.26	4.67	13.98	86.02
20	0.841	3.98	2.01	15.99	84.01
40	0.42	2.10	1.06	17.05	82.95
60	0.25	2.15	1.09	18.14	81.86
140	0.106	58.35	29.45	47.59	52.41
200	0.074	8.80	4.44	52.03	47.97

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Black Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF2511
Depth of Sample: 3.6'- 5.6'
Date of Testing: 1/11/00

Liquid Limit Dermination

Can No.	A25	A32	A4	A52	A57
Wt of Soil + can, Mcws	17.03	15.52	19.17	18.85	16.07
Wt. of dry soil + can,Mcds	15.13	14.03	17.89	17.58	14.44
Wt. of can, Mc	11.20	10.87	15.34	15.06	11.18
Wt. of dry soil, Ms	3.93	3.16	2.55	2.52	3.26
Wt. of moisture	1.90	1.49	1.28	1.27	1.63
Water content, w%	48.35	47.15	50.20	50.40	50.00
No. of blows, N	27	39	19	14	23

Plastic Limit Determination

Can no.	C7	C2	C13
Wt. of wet soil + can, Mcws	3.89	6.28	5.81
Wt. of dry soil +can, Mcds	3.51	5.90	5.51
Wt. of can, Mc	1.90	4.29	4.24
Wt. of dry soil, Ms	1.61	1.61	1.27
Wt. of moisture, Mw	0.38	0.38	0.30
Water content, W% = Wp	23.60	23.60	23.62

LIQUID LIMIT =	49
PLASTIC LIMIT =	23.6
PLASTICITY INDEX =	25.4
CLASSIFICATION	CL

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GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF2611
Sample Description: Black Sandy Silty Clay	Sample Depth: 4' - 6'
	Boring No.:
Tested By: FB	Date of Testing: 12/30/99

Mcws	Mcds	Mc : A14	Mw	Ms	w%	Mws	Ms
17.65	17.61	11.12	0.04	6.49	0.6	200.02	198.79

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	1.38	0.69	0.69	99.31
10	2.00	1.75	0.88	1.57	98.43
20	0.841	0.93	0.47	2.04	97.96
40	0.42	1.31	0.66	2.70	97.30
60	0.25	2.24	1.13	3.83	96.17
140	0.106	65.76	33.08	36.91	63.09
200	0.074	9.35	4.70	41.61	58.39

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Black Sandy Silty Clay
Tested By: FB

Job No.: 199-233
Sample No.: BF2611
Depth of Sample: 4'- 6'
Date of Testing: 1/12/00

Liquid Limit Dermination

Can No.	A40	A49	A54	A6	A1
Wt of Soil + can, Mcws	22.63	17.87	16.49	18.45	23.74
Wt. of dry soil + can,Mcds	20.95	16.28	15.31	16.93	21.93
Wt. of can, Mc	15.01	10.87	11.15	11.29	15.30
Wt. of dry soil, Ms	5.94	5.41	4.16	5.64	6.63
Wt. of moisture	1.68	1.59	1.18	1.52	1.81
Water content, w%	28.28	29.39	28.37	26.95	27.30
No. of blows, N	23	16	11	43	39

Plastic Limit Determination

Can no.	C22	C63	C12
Wt. of wet soil + can, Mcws	7.33	6.15	4.85
Wt. of dry soil +can, Mcds	6.80	5.50	4.32
Wt. of can, Mc	4.27	2.40	1.95
Wt. of dry soil, Ms	2.53	3.10	2.37
Wt. of moisture, Mw	0.53	0.65	0.53
Water content, W% = Wp	20.95	20.97	22.36

LIQUID LIMIT =	27.7
PLASTIC LIMIT =	21.4
PLASTICITY INDEX =	6.3
CLASSIFICATION	CL-ML

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GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF2711
Sample Description: Tan Clayey Sand	Sample Depth: 5'- 7'
	Boring No.:
Tested By: FB	Date of Testing: 2/17/00

Mcws	Mcds	Mc : A32	Mw	Ms	w%	Mws	Ms
16.59	16.25	10.86	0.34	5.39	6.3	200.0	188.13

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	8.10	4.31	4.31	95.69
10	2.00	18.17	9.66	13.96	86.04
20	0.841	4.06	2.16	16.12	83.88
40	0.42	1.62	0.86	16.98	83.02
60	0.25	2.73	1.45	18.43	81.57
140	0.106	68.24	36.27	54.71	45.29
200	0.074	6.66	3.54	58.25	41.75

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Tan Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF2711
Depth of Sample: 5'- 7'
Date of Testing: 2/16/00

Liquid Limit Dermination

Can No.	A56	A36	A41	A47	A3
Wt of Soil + can, Mcws	21.89	20.75	26.37	23.30	26.55
Wt. of dry soil + can,Mcds	19.99	18.11	23.51	21.09	23.56
Wt. of can, Mc	14.95	10.90	15.35	15.10	15.39
Wt. of dry soil, Ms	5.04	7.21	8.16	5.99	8.17
Wt. of moisture	1.90	2.64	2.86	2.21	2.99
Water content, w%	37.70	36.62	35.05	36.89	36.60
No. of blows, N	13	22	26	24	39

Plastic Limit Determination

Can no.	C10	C18	C7
Wt. of wet soil + can, Mcws	3.27	2.81	2.55
Wt. of dry soil +can, Mcds	3.11	2.64	2.43
Wt. of can, Mc	2.39	1.90	1.91
Wt. of dry soil, Ms	0.72	0.74	0.52
Wt. of moisture, Mw	0.16	0.17	0.12
Water content, W% = Wp	22.22	22.97	23.08

LIQUID LIMIT = 36.5
PLASTIC LIMIT = 22.8
PLASTICITY INDEX = 13.7
CLASSIFICATION CL

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GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF2811
Sample Description: Brown Clayey Sand	Sample Depth: 4'- 6'
	Boring No.:
Tested By: FB	Date of Testing: 2/17/00

Mcws	Mcds	Mc : A30	Mw	Ms	w%	Mws	Ms
20.82	20.72	15.24	0.10	5.48	1.82	100.3	98.50

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	2.89	2.93	2.93	97.07
10	2.00	2.28	2.31	5.25	94.75
20	0.841	2.24	2.27	7.52	92.48
40	0.42	1.72	1.75	9.27	90.73
60	0.25	2.73	2.77	12.04	87.96
140	0.106	44.15	44.82	56.86	43.14
200	0.074	4.09	4.15	61.01	38.99

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Brown Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF2811
Depth of Sample: 4'- 6'
Date of Testing: 2/16/00

Liquid Limit Dermination

Can No.	A12	A57	A31	A3	A45
Wt of Soil + can, Mcws	20.03	15.82	23.31	22.84	26.95
Wt. of dry soil + can,Mcds	17.83	14.74	21.33	20.96	24.00
Wt. of can, Mc	11.18	11.19	15.24	15.37	15.45
Wt. of dry soil, Ms	6.65	3.55	6.09	5.59	8.55
Wt. of moisture	2.20	1.08	1.98	1.88	2.95
Water content, w%	33.08	30.42	32.51	33.63	34.50
No. of blows, N	11	35	21	13	33

Plastic Limit Determination

Can no.	C13	C10	C7
Wt. of wet soil + can, Mcws	5.57	3.04	3.15
Wt. of dry soil +can, Mcds	5.36	2.87	3.03
Wt. of can, Mc	4.25	1.93	2.38
Wt. of dry soil, Ms	1.11	0.94	0.65
Wt. of moisture, Mw	0.21	0.17	0.12
Water content, W% = Wp	18.92	18.09	18.46

LIQUID LIMIT =	31.6
PLASTIC LIMIT =	18.5
PLASTICITY INDEX =	13.1
CLASSIFICATION	CL

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GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF2911
Sample Description: Brown Poorly Graded Sand With Clay	Sample Depth: 4'- 5.7'
	Boring No.:
Tested By: FB	Date of Testing: 2/17/00

Mcws	Mcds	Mc : A42	Mw	Ms	w%	Mws	Ms
20.11	19.87	15.05	0.24	4.82	4.98	150.0	142.89

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	2.41	1.69	1.69	98.31
10	2.00	0.68	0.48	2.16	97.84
20	0.841	0.67	0.47	2.63	97.37
40	0.42	2.86	2.00	4.63	95.37
60	0.25	11.58	8.10	12.74	87.26
140	0.106	109.13	76.38	89.11	10.89
200	0.074	3.12	2.18	91.30	8.70

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF3011
Sample Description: Brown Clayey Sand	Sample Depth: 1' - 3'
	Boring No.:
Tested By: FB	Date of Testing: 2/16/00

Mcws	Mcds	Mc : A11	Mw	Ms	w%	Mws	Ms
17.93	17.66	10.88	0.27	6.78	3.98	120.28	115.67

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	0.67	0.58	0.58	99.42
20	0.841	0.63	0.54	1.12	98.88
40	0.42	1.22	1.05	2.18	97.82
60	0.25	3.57	3.09	5.26	94.74
140	0.106	71.58	61.88	67.15	32.85
200	0.074	5.63	4.87	72.01	27.99

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ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Brown Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF3011
Depth of Sample: 1'- 3'
Date of Testing: 2/16/00

Liquid Limit Dermination

Can No.	A27	A35	A33	A9	A45
Wt of Soil + can, Mcws	19.11	21.10	24.84	24.25	26.30
Wt. of dry soil + can,Mcds	17.30	18.90	22.77	22.41	24.00
Wt. of can, Mc	10.90	11.28	15.31	15.39	15.45
Wt. of dry soil, Ms	6.40	7.62	7.46	7.02	8.55
Wt. of moisture	1.81	2.20	2.07	1.84	2.30
Water content, w%	28.28	28.87	27.75	26.21	26.90
No. of blows, N	16	10	20	40	33

Plastic Limit Determination

Can no.	C4	C16	C21
Wt. of wet soil + can, Mcws	3.19	5.38	3.36
Wt. of dry soil +can, Mcds	3.06	5.20	3.13
Wt. of can, Mc	2.36	4.22	1.90
Wt. of dry soil, Ms	0.70	0.98	1.23
Wt. of moisture, Mw	0.13	0.18	0.23
Water content, W% = Wp	18.57	18.37	18.70

LIQUID LIMIT = 27.2
PLASTIC LIMIT = 18.5
PLASTICITY INDEX = 8.7
CLASSIFICATION CL

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GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: HAAF Bulk Fuel Facility CAP-Part A	Job No.: 199-233
Project Location: Bulk Fuel Facility	Sample: BF3111
Sample Description: Brown Clayey Sand	Sample Depth: 4' - 5.7'
	Boring No.:
Tested By: FB	Date of Testing: 2/17/00

Mcws	Mcds	Mc : A34	Mw	Ms	w%	Mws	Ms
20.24	19.96	15.36	0.28	4.60	6.09	160.0	150.82

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	3.84	2.55	2.55	97.45
10	2.00	2.87	1.90	4.45	95.55
20	0.841	1.87	1.24	5.69	94.31
40	0.42	2.32	1.54	7.23	92.77
60	0.25	2.88	1.91	9.14	90.86
140	0.106	76.82	50.94	60.07	39.93
200	0.074	6.50	4.31	64.38	35.62

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: HAAF Bulk Fuel Facility Cap- Part A
Location of project: Bulk Fuel Facility
Description Of Soil: Brown Clayey Sand
Tested By: FB

Job No.: 199-233
Sample No.: BF3111
Depth of Sample: 4'- 5.7'
Date of Testing: 2/16/00

Liquid Limit Dermination

Can No.	A12	A3	A24	A3	A45
Wt of Soil + can, Mcws	19.98	22.72	19.45	22.84	26.95
Wt. of dry soil + can,Mcds	18.02	21.04	17.60	21.13	24.37
Wt. of can, Mc	11.18	15.35	11.13	15.37	15.45
Wt. of dry soil, Ms	6.84	5.69	6.47	5.76	8.92
Wt. of moisture	1.96	1.68	1.85	1.71	2.58
Water content, w%	28.65	29.53	28.59	29.69	28.92
No. of blows, N	11	28	18	13	33

Plastic Limit Determination

Can no.	C13	C7	C10
Wt. of wet soil + can, Mcws	5.10	3.17	2.48
Wt. of dry soil +can, Mcds	4.96	3.04	2.39
Wt. of can, Mc	4.23	2.38	1.92
Wt. of dry soil, Ms	0.73	0.66	0.47
Wt. of moisture, Mw	0.14	0.13	0.09
Water content, W% = Wp	19.18	19.70	19.15

LIQUID LIMIT =	28.9
PLASTIC LIMIT =	19.3
PLASTICITY INDEX =	9.6
CLASSIFICATION	CL

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APPENDIX VI

ALTERNATE THRESHOLD LEVEL (ATL) CALCULATIONS

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1.0 INTRODUCTION

During the Former Underground Storage Tank (UST) 117, Building 7002 Corrective Action Plan (CAP)-Part A investigation activities, the area around location SB-22, in the vicinity of aboveground storage tank (AST) 7003, was determined to be the area of greatest soil and groundwater contamination. Soil sample BF2211, collected at a depth of 0.0 to 2.0 feet below ground surface (BGS), contained concentrations of benzene at 1.13 mg/kg, toluene at 0.404 mg/kg, ethylbenzene at 13.6 mg/kg, and xylene at 74.6 mg/kg. All of these concentrations were found to exceed their respective applicable soil threshold levels (STLs) of 0.005 mg/kg, 0.400 mg/kg, 0.370 mg/kg, and 20.0 mg/kg (Table A, column 1). The groundwater sample collected from this location (BF2212) at a depth of 1.5 to 12.18 feet BGS was found to contain the highest concentrations of benzene at 553 µg/L, toluene at 0.86 µg/L, ethylbenzene at 86.7 µg/L, xylene at 352 µg/L, and naphthalene at 101 µg/L. Of these detected compounds, only benzene was found to exceed its respective maximum contaminant level (MCL) of 5.0 µg/L and the In-Stream Water Quality Standard (IWQS) of 71.28 µg/L. There are no regulatory levels for naphthalene, thus the risk-based screening level of 6.5 µg/L was used to develop an Alternate Concentration Level (ACL) for naphthalene. Following the Georgia Department of Natural Resources (GA DNR) UST Corrective Action Plan (CAP)-Part A and B guidance documents (GA DNR 1995 and 1998), the calculation of Alternate Threshold Levels (ATLs) and ACLs is warranted. These calculation methodologies and results are presented in the following sections.

2.0 ALTERNATE THRESHOLD LEVELS

Although, at boring SB-07, higher concentrations of benzene and toluene were detected in the soil (<1.350 mg/kg) than at SB-22, the analytical data collected from SB-22 were selected to evaluate conditions at the Former UST 117 site. By using the data from SB-22, a more conservative approach is taken because the contamination is closer to the nearest receptor. In addition, groundwater contamination was detected at this location, whereas it was not detected at SB-07. Consideration was also given to the fact that the volatile reporting limits were elevated in the soil sample collected from SB-07, causing the volatile compounds to be qualified as non-detects although their detection limits were above their applicable STLs. For these reasons, the soil data from SB-22 were used to calculate the ATLs for benzene, toluene, ethylbenzene, and xylene.

The nearest downgradient receptor location from the SB-22 is a storm drain that is approximately 120 feet from the center of the source area. Therefore, a dilution attenuation factor (DAF_w) for lateral migration from the source to the nearest receptor was used in the ATL calculation. There is also a dilution attenuation for the migration of the leachate to the groundwater. The dilution attenuation factor (DAF_L) for migration of leachate to the water table is calculated based on the SESOIL modeling results. SESOIL is used to simulate the vertical transport of contaminants from the source areas down through the vadose zone to the shallow groundwater (water table). SESOIL is an acronym for Seasonal Soil compartment model and is a one-dimensional, vertical transport code for the unsaturated soil zone. SESOIL is designed to simultaneously model water transport and pollutant fate. The program was originally developed by the U.S. Environmental Protection Agency (EPA) and has been extensively modified to enhance its capabilities (Hetrick et al. 1989; Hetrick et al. 1986; Hetrick and Travis 1988). The ATLs were calculated using the following equation:

$$ATL = Koc * fcs * Cstd * DAF_L * DAF_w.$$

Based on the results of the model, an ATL of 0.3867 mg/kg was calculated for benzene, 12.210 mg/kg for toluene, 61.850 mg/kg for ethylbenzene, and 74.6 mg/kg for xylene. Based on the CAP-Part A analytical soil data, the maximum benzene concentration (1.13 mg/kg) still exceeds its ATL. For toluene and ethylbenzene, their maximum concentrations are well below their respective ATLs. For xylene, the maximum concentration (74.6 mg/kg) is equal to the calculated ATL.

3.0 ALTERNATE CONCENTRATION LEVELS

To be conservative, the chemical properties of benzene were used to evaluate contaminant migration from the site. The maximum benzene concentration in groundwater of 553.0 µg/L was detected at location SB-22 at a depth of 1.5 to 12.18 µg/L and was used as the source concentration for Analytical Transient 1-, 2-, 3-Dimensional (AT123D) Modeling. AT123D is a well-known and commonly used analytical groundwater pollutant fate and transport model. It computes the spatial-temporal concentration distribution of chemicals in the aquifer system and predicts the transient spread of a chemical plume through a groundwater aquifer. Fate and transport modeling was use to develop site-specific dilution attenuation factor (DAFs) for benzene between the source (SB-22) and the receptor (storm drain). The DAF is a numerical value that represents the attempt to mathematically quantify the natural physical, chemical, and biological processes that result in the decrease of chemical concentration at the source (or point of origin) to the concentration at the exposure point. The DAFs reflect the natural attenuation concept outline in the American Standard for Testing and Materials (ASTM) Risk-Based Corrective Action (RBCA) protocol (ASTM 1995).

The modeling results estimated a DAF of 8.9 for benzene and naphthalene. Compound-specific regulatory levels of risk-based screening levels were used in conjunction with the site-specific DAF identified for the potential migration of contamination from the site to determine the ACL for each compound. The ACL for these compounds can then be calculated using the following equation:

ACL = Applicable Regulatory Levels or Risk-Based Screening Levels × DAF.

Using this equation, the ACL for benzene in the groundwater is 634.4 µg/L (i.e., 71.28 µg/L × 8.9). The ACL for naphthalene is 57.85 µg/L (i.e., 6.5 µg/L × 8.9). Based on the CAP-Part A analytical groundwater data, the maximum benzene concentration detected at the site (553.0 mg/kg) does not exceed this ACL. However, the maximum naphthalene detected at the site at location SB-22 (101.0 µg/L) does exceed its ACL.

TABLES

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Former UST 117, Building 7002
Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

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)
7002	117	9-025113*1	BFGT11	2.0 to 4.0	CH	28.9	0.1	2.65	0.49	1.42E-08

NOTE: CH = Sandy, fat clay.
UST = Underground storage tank.

TABLE VI-B. AT123D FATE AND TRANSPORT MODEL INPUT AND OUTPUT VALUES FOR BENZENE AT THE FORMER UST 117, BUILDING 7002 SITE

NO. OF POINTS IN X-DIRECTION	14
NO. OF POINTS IN Y-DIRECTION	2
NO. OF POINTS IN Z-DIRECTION	1
NO. OF ROOTS: NO. OF SERIES TERMS	400
NO. OF BEGINNING TIME STEP	13
NO. OF ENDING TIME STEP	241
NO. OF TIME INTERVALS FOR PRINTED OUT SOLUTION	12
INSTANTANEOUS SOURCE CONTROL = 0 FOR INSTANT SOURCE	1
SOURCE CONDITION CONTROL = 0 FOR STEADY SOURCE	0
INTERMITTENT OUTPUT CONTROL = 0 NO SUCH OUTPUT	1
CASE CONTROL =1 THERMAL, = 2 FOR CHEMICAL, = 3 RAD	2
AQUIFER DEPTH, = 0.0 FOR INFINITE DEEP (METERS)	0.1524E+02
AQUIFER WIDTH, = 0.0 FOR INFINITE WIDE (METERS)	0.0000E+00
BEGIN POINT OF X-SOURCE LOCATION (METERS)	-0.9100E+01
END POINT OF X-SOURCE LOCATION (METERS)	0.9100E+01
BEGIN POINT OF Y-SOURCE LOCATION (METERS)	-0.6100E+01
END POINT OF Y-SOURCE LOCATION (METERS)	0.6100E+01
BEGIN POINT OF Z-SOURCE LOCATION (METERS)	0.0000E+00
END POINT OF Z-SOURCE LOCATION (METERS)	0.0000E+00
POROSITY	0.1800E+00
HYDRAULIC CONDUCTIVITY (METER/HOUR)	0.9000E-01
HYDRAULIC GRADIENT	0.3500E-02
LONGITUDINAL DISPERSIVITY (METER)	0.1000E+02
LATERAL DISPERSIVITY (METER)	0.3000E+01
VERTICAL DISPERSIVITY (METER)	0.1000E+01
DISTRIBUTION COEFFICIENT, KD (M**3/KG)	0.7900E-04
HEAT EXCHANGE COEFFICIENT (KCAL/HR-M**2-DEGREE C)	0.0000E+00
MOLECULAR DIFFUSION MULTIPLY BY POROSITY (M**2/HR)	0.3530E-05
DECAY CONSTANT (PER HOUR)	0.4000E-04
BULK DENSITY OF THE SOIL (KG/M**3)	0.1320E+04
ACCURACY TOLERANCE FOR REACHING STEADY STATE	0.1000E-02
DENSITY OF WATER (KG/M**3)	0.1000E+04
TIME INTERVAL SIZE FOR THE DESIRED SOLUTION (HR)	0.7300E+03
DISCHARGE TIME (HR)	0.8760E+06
WASTE RELEASE RATE (KCAL/HR), (KG/HR), OR (CI/HR)	0.2210E-04
RETARDATION FACTOR	0.1579E+01
RETARDED DARCY VELOCITY (M/HR)	0.1108E-02
RETARDED LONGITUDINAL DISPERSION COEF. (M**2/HR)	0.1109E-01
RETARDED LATERAL DISPERSION COEFFICIENT (M**2/HR)	0.3337E-02
RETARDED VERTICAL DISPERSION COEFFICIENT (M**2/HR)	0.1120E-02

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.0000E+00 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y	-31.	-28.	0.	5.	X 10.	12.	15.	18.	20.	24.
0.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
-24.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

CONTINUE

Y	30.	37.	60.	X 104.
0.	0.000E+00	0.000E+00	0.000E+00	0.000E+00
-24.	0.000E+00	0.000E+00	0.000E+00	0.000E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+04 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y	-31.	-28.	0.	5.	X 10.	12.	15.	18.	20.	24.
0.	0.159E-02	0.296E-02	0.494E+00	0.489E+00	0.354E+00	0.282E+00	0.188E+00	0.124E+00	0.947E-01	0.516E-01
-24.	0.902E-05	0.149E-04	0.415E-03	0.477E-03	0.479E-03	0.462E-03	0.422E-03	0.367E-03	0.326E-03	0.234E-03

CONTINUE

Y	30.	37.	60.	X 104.
0.	0.225E-01	0.758E-02	0.451E-04	0.000E+00
-24.	0.133E-03	0.567E-04	0.518E-06	0.000E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1752E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

					X					
Y	-31.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.376E-02	0.608E-02	0.537E+00	0.540E+00	0.410E+00	0.339E+00	0.245E+00	0.179E+00	0.147E+00	0.977E-01
-24.	0.125E-03	0.178E-03	0.241E-02	0.289E-02	0.316E-02	0.320E-02	0.319E-02	0.308E-02	0.297E-02	0.262E-02

CONTINUE

					X
Y	30.	37.	60.	104.	
0.	0.582E-01	0.310E-01	0.216E-02	0.948E-06	
-24.	0.207E-02	0.141E-02	0.154E-03	0.881E-07	

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.2628E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

					X					
Y	-31.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.476E-02	0.738E-02	0.548E+00	0.553E+00	0.425E+00	0.355E+00	0.262E+00	0.197E+00	0.166E+00	0.116E+00
-24.	0.280E-03	0.379E-03	0.406E-02	0.492E-02	0.556E-02	0.572E-02	0.586E-02	0.588E-02	0.581E-02	0.551E-02

CONTINUE

					X
Y	30.	37.	60.	104.	
0.	0.761E-01	0.467E-01	0.719E-02	0.485E-04	
-24.	0.485E-02	0.387E-02	0.984E-03	0.888E-05	

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.3504E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y	X: -31.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.519E-02	0.792E-02	0.552E+00	0.558E+00	0.431E+00	0.361E+00	0.269E+00	0.204E+00	0.173E+00	0.124E+00
-24.	0.390E-03	0.518E-03	0.500E-02	0.609E-02	0.696E-02	0.722E-02	0.749E-02	0.763E-02	0.764E-02	0.746E-02

CONTINUE

Y	X: 30.	37.	60.	104.
0.	0.840E-01	0.546E-01	0.120E-01	0.306E-03
-24.	0.690E-02	0.593E-02	0.225E-02	0.792E-04

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.4380E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y	X: -31.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.538E-02	0.815E-02	0.553E+00	0.560E+00	0.433E+00	0.363E+00	0.271E+00	0.207E+00	0.176E+00	0.127E+00
-24.	0.455E-03	0.597E-03	0.548E-02	0.669E-02	0.769E-02	0.801E-02	0.836E-02	0.858E-02	0.865E-02	0.858E-02

CONTINUE

Y	X: 30.	37.	60.	104.
0.	0.876E-01	0.585E-01	0.153E-01	0.825E-03
-24.	0.814E-02	0.725E-02	0.341E-02	0.263E-03

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5256E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

					X					
Y	-31.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.546E-02	0.825E-02	0.554E+00	0.560E+00	0.434E+00	0.364E+00	0.272E+00	0.208E+00	0.177E+00	0.129E+00
-24.	0.491E-03	0.640E-03	0.572E-02	0.700E-02	0.807E-02	0.841E-02	0.882E-02	0.908E-02	0.918E-02	0.918E-02

CONTINUE

					X
Y	30.	37.	60.	104.	
0.	0.893E-01	0.603E-01	0.174E-01	0.147E-02	
-24.	0.882E-02	0.803E-02	0.426E-02	0.535E-03	

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.6132E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

					X					
Y	-31.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.550E-02	0.830E-02	0.554E+00	0.561E+00	0.434E+00	0.364E+00	0.273E+00	0.209E+00	0.178E+00	0.129E+00
-24.	0.510E-03	0.663E-03	0.584E-02	0.715E-02	0.826E-02	0.862E-02	0.905E-02	0.934E-02	0.945E-02	0.950E-02

CONTINUE

					X
Y	30.	37.	60.	104.	
0.	0.900E-01	0.612E-01	0.185E-01	0.208E-02	
-24.	0.919E-02	0.846E-02	0.482E-02	0.828E-03	

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7008E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y \ X	-31.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.552E-02	0.832E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.520E-03	0.675E-03	0.590E-02	0.723E-02	0.836E-02	0.872E-02	0.917E-02	0.947E-02	0.960E-02	0.966E-02

CONTINUE

Y \ X	30.	37.	60.	104.
0.	0.904E-01	0.617E-01	0.192E-01	0.258E-02
-24.	0.939E-02	0.869E-02	0.516E-02	0.109E-02

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7884E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y \ X	-31.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.553E-02	0.833E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.525E-03	0.681E-03	0.593E-02	0.727E-02	0.841E-02	0.878E-02	0.923E-02	0.954E-02	0.967E-02	0.975E-02

CONTINUE

Y \ X	30.	37.	60.	104.
0.	0.906E-01	0.619E-01	0.195E-01	0.294E-02
-24.	0.950E-02	0.882E-02	0.537E-02	0.129E-02

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

					X					
Y	-31.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.554E-02	0.834E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.528E-03	0.685E-03	0.595E-02	0.729E-02	0.843E-02	0.881E-02	0.926E-02	0.958E-02	0.971E-02	0.980E-02

CONTINUE

					X
Y	30.	37.	60.	104.	
0.	0.907E-01	0.620E-01	0.197E-01	0.319E-02	
-24.	0.955E-02	0.889E-02	0.549E-02	0.144E-02	

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.9636E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

					X					
Y	-31.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.554E-02	0.834E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.530E-03	0.686E-03	0.596E-02	0.730E-02	0.845E-02	0.882E-02	0.928E-02	0.960E-02	0.973E-02	0.982E-02

CONTINUE

					X
Y	30.	37.	60.	104.	
0.	0.907E-01	0.621E-01	0.199E-01	0.335E-02	
-24.	0.958E-02	0.893E-02	0.555E-02	0.155E-02	

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1051E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y	-31.	-28.	0.	5.	X 10.	12.	15.	18.	20.	24.
0.	0.554E-02	0.834E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.530E-03	0.687E-03	0.596E-02	0.730E-02	0.845E-02	0.883E-02	0.929E-02	0.961E-02	0.974E-02	0.984E-02

CONTINUE

Y	X 30.	37.	60.	104.
0.	0.908E-01	0.621E-01	0.199E-01	0.345E-02
-24.	0.960E-02	0.894E-02	0.559E-02	0.161E-02

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1139E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y	-31.	-28.	0.	5.	X 10.	12.	15.	18.	20.	24.
0.	0.554E-02	0.834E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.531E-03	0.688E-03	0.596E-02	0.731E-02	0.846E-02	0.883E-02	0.929E-02	0.961E-02	0.975E-02	0.984E-02

CONTINUE

Y	X 30.	37.	60.	104.
0.	0.908E-01	0.621E-01	0.199E-01	0.352E-02
-24.	0.961E-02	0.896E-02	0.561E-02	0.166E-02

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1226E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y	-31.	-28.	0.	5.	X 10.	12.	15.	18.	20.	24.
0.	0.554E-02	0.834E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.531E-03	0.688E-03	0.597E-02	0.731E-02	0.846E-02	0.884E-02	0.929E-02	0.961E-02	0.975E-02	0.985E-02

CONTINUE

Y	30.	37.	60.	X 104.
0.	0.908E-01	0.621E-01	0.200E-01	0.356E-02
-24.	0.961E-02	0.896E-02	0.563E-02	0.168E-02

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1314E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y	-31.	-28.	0.	5.	X 10.	12.	15.	18.	20.	24.
0.	0.554E-02	0.834E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.531E-03	0.688E-03	0.597E-02	0.731E-02	0.846E-02	0.884E-02	0.929E-02	0.962E-02	0.975E-02	0.985E-02

CONTINUE

Y	30.	37.	60.	X 104.
0.	0.908E-01	0.621E-01	0.200E-01	0.358E-02
-24.	0.961E-02	0.896E-02	0.563E-02	0.170E-02

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1402E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y	-31.	-28.	0.	5.	X 10.	12.	15.	18.	20.	24.
0.	0.554E-02	0.834E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.531E-03	0.688E-03	0.597E-02	0.731E-02	0.846E-02	0.884E-02	0.930E-02	0.962E-02	0.975E-02	0.985E-02

CONTINUE

Y	30.	37.	60.	104.	X
0.	0.908E-01	0.621E-01	0.200E-01	0.359E-02	
-24.	0.961E-02	0.897E-02	0.564E-02	0.171E-02	

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1489E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y	-31.	-28.	0.	5.	X 10.	12.	15.	18.	20.	24.
0.	0.554E-02	0.834E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.531E-03	0.688E-03	0.597E-02	0.731E-02	0.846E-02	0.884E-02	0.930E-02	0.962E-02	0.975E-02	0.985E-02

CONTINUE

Y	30.	37.	60.	104.	X
0.	0.908E-01	0.621E-01	0.200E-01	0.360E-02	
-24.	0.962E-02	0.897E-02	0.564E-02	0.172E-02	

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1577E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

	X									
Y	-31.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.554E-02	0.834E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.531E-03	0.688E-03	0.597E-02	0.731E-02	0.846E-02	0.884E-02	0.930E-02	0.962E-02	0.975E-02	0.985E-02

CONTINUE

	X			
Y	30.	37.	60.	104.
0.	0.908E-01	0.621E-01	0.200E-01	0.360E-02
-24.	0.962E-02	0.897E-02	0.564E-02	0.172E-02

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1664E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

	X									
Y	-31.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.554E-02	0.834E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.531E-03	0.688E-03	0.597E-02	0.731E-02	0.846E-02	0.884E-02	0.930E-02	0.962E-02	0.975E-02	0.985E-02

CONTINUE

	X			
Y	30.	37.	60.	104.
0.	0.908E-01	0.621E-01	0.200E-01	0.361E-02
-24.	0.962E-02	0.897E-02	0.564E-02	0.172E-02

STEADY STATE SOLUTION HAS BEEN OBTAINED BEFORE FINAL SIMULATING TIME

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1752E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

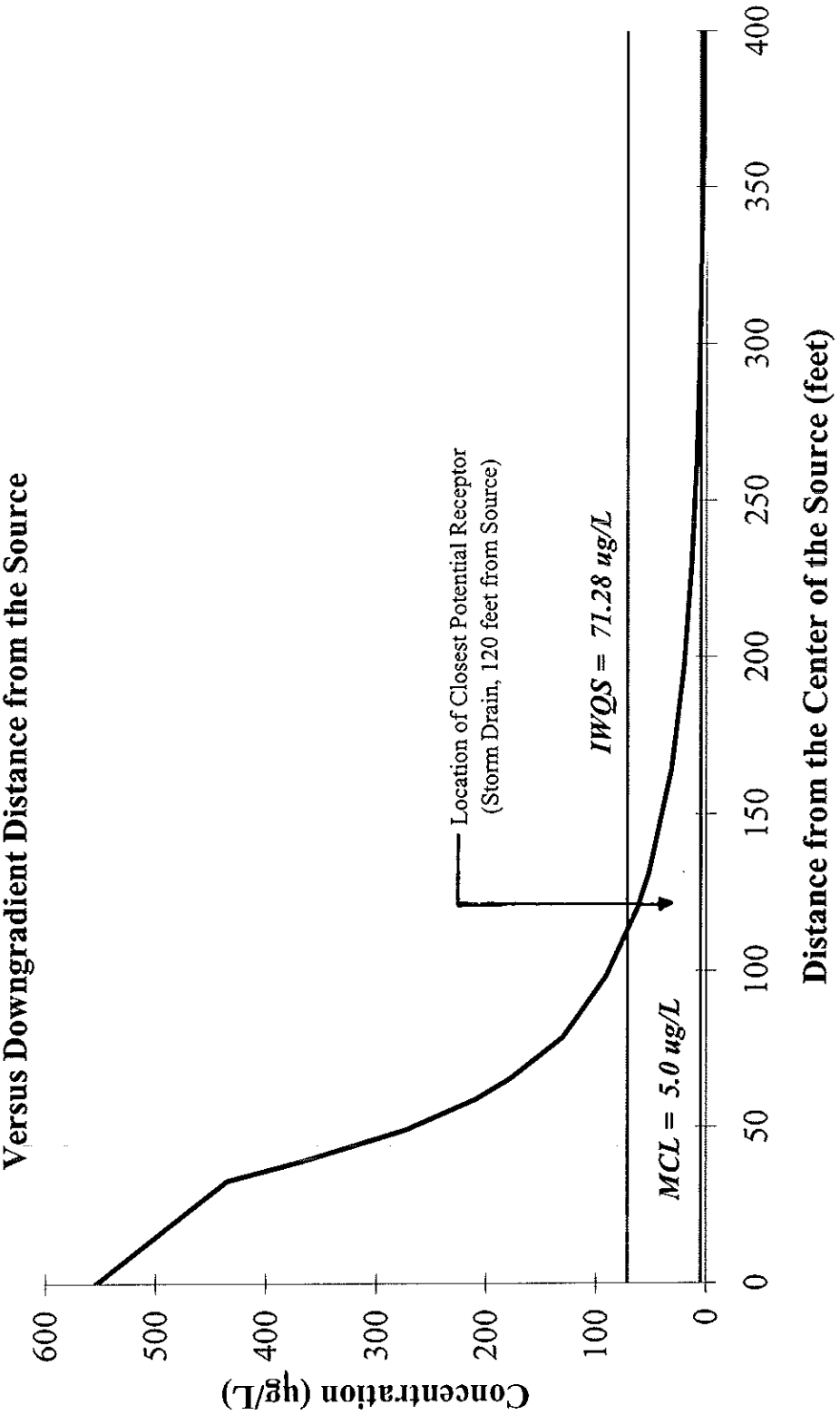
Z = 0.00

					X					
Y	175200.	-28.	0.	5.	10.	12.	15.	18.	20.	24.
0.	0.554E-02	0.834E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
-24.	0.531E-03	0.688E-03	0.597E-02	0.731E-02	0.846E-02	0.884E-02	0.930E-02	0.962E-02	0.975E-02	0.985E-02

CONTINUE

					X
Y	30.	37.	60.	104.	
0.	0.908E-01	0.621E-01	0.200E-01	0.361E-02	
-24.	0.962E-02	0.897E-02	0.564E-02	0.172E-02	

Figure 1. AT123D Modeled Maximum Concentration of Benzene in the Groundwater Versus Downgradient Distance from the Source



APPENDIX VII

MONITORING WELL DETAILS

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MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Log #7 DELIVERY ORDER NO: 0051

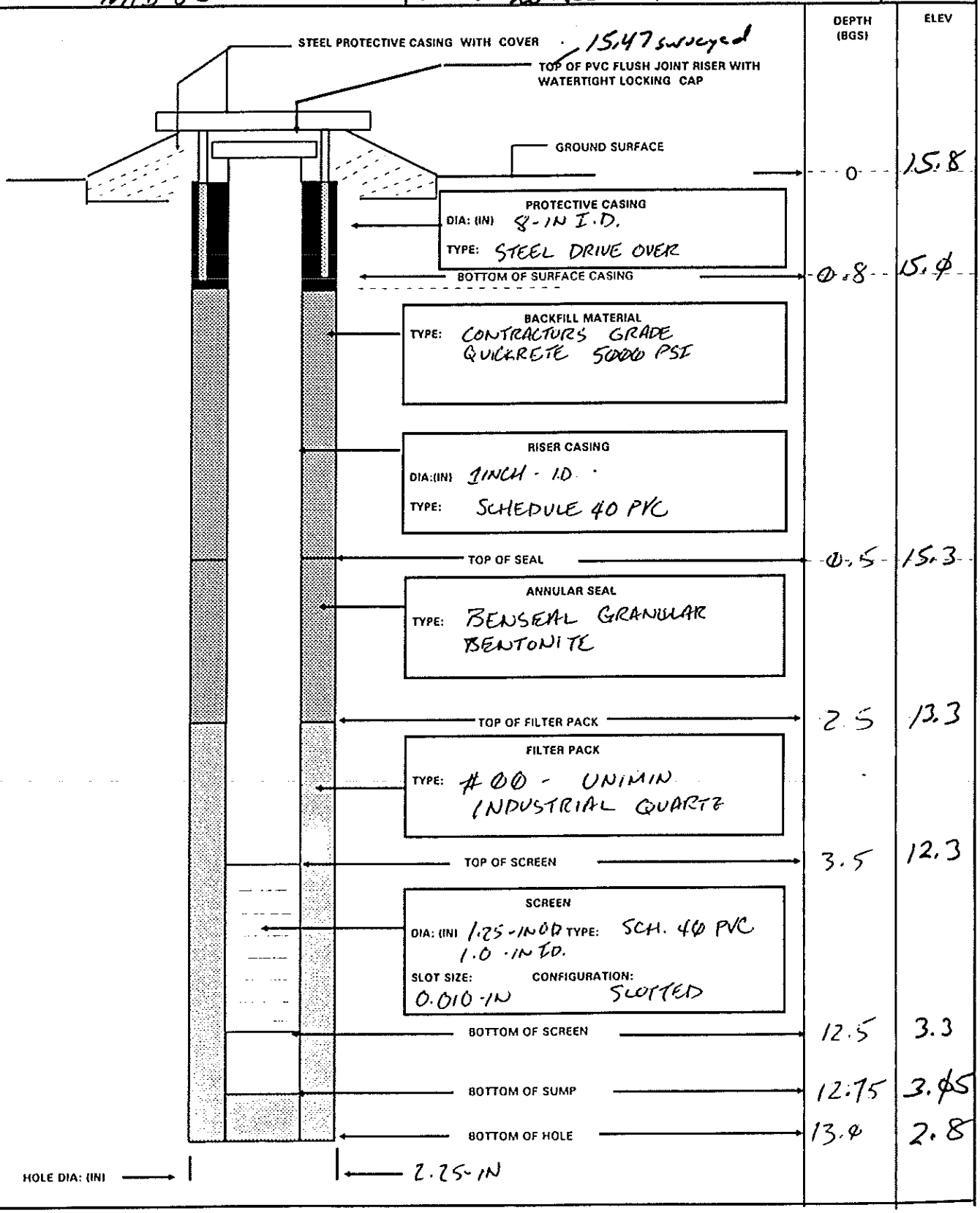
WELL NUMBER: MW-01

BEGIN: 12/01/99 END: 12/01/99

COORDINATES: N: 739524.845
E: 972617.077

DATUM/UNITS: NAD 83

REFERENCE POINT: Ground surface ELEVATION: 15.8 DATUM/UNITS: NAVD88/ft AMSL



	DEPTH (BGS)	ELEV
GROUND SURFACE	0	15.8
BOTTOM OF SURFACE CASING	0.8	15.0
TOP OF SEAL	0.5	15.3
TOP OF FILTER PACK	2.5	13.3
TOP OF SCREEN	3.5	12.3
BOTTOM OF SCREEN	12.5	3.3
BOTTOM OF SUMP	12.75	3.05
BOTTOM OF HOLE	13.0	2.8

MONITORING WELL

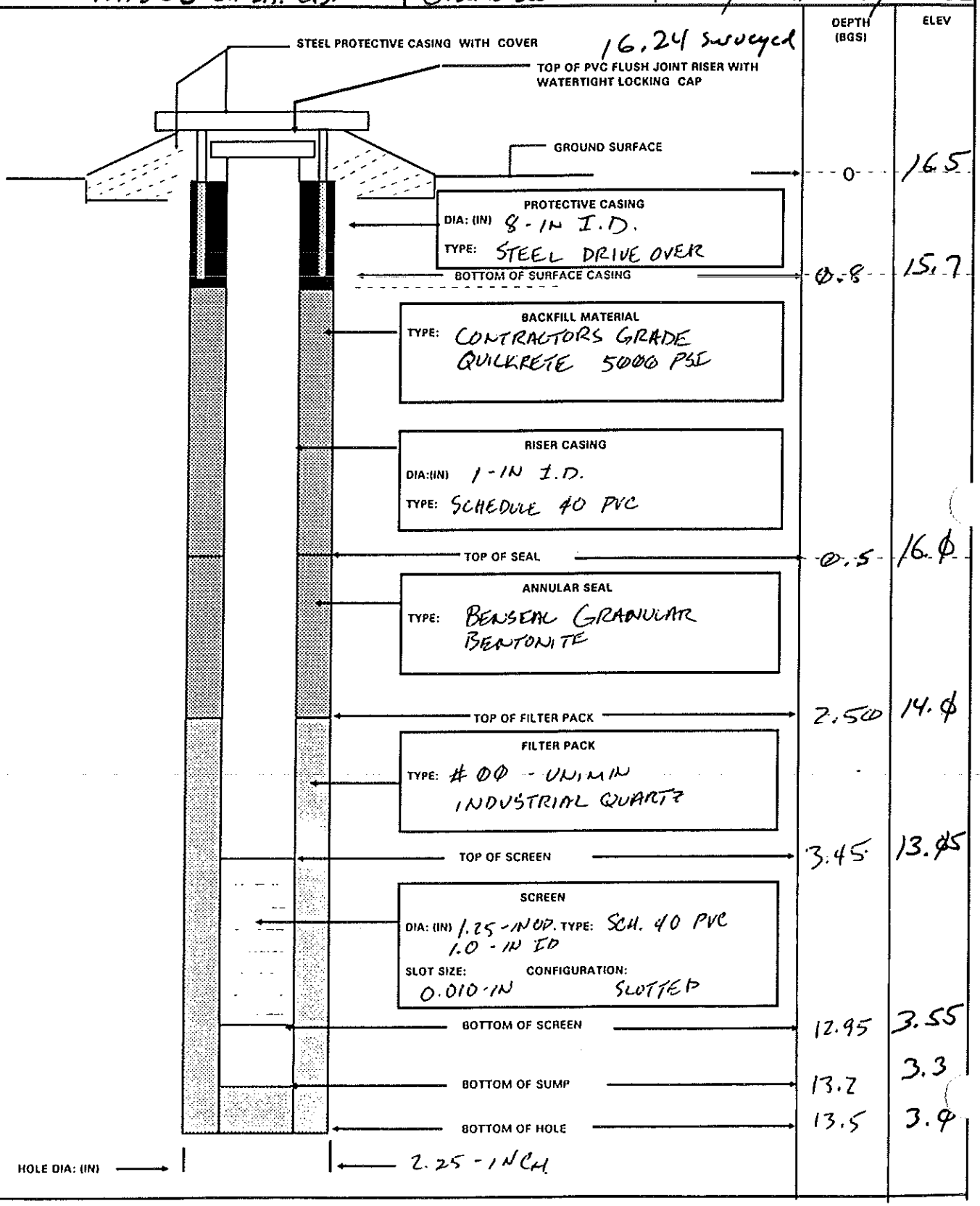
PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #7 DELIVERY ORDER NO: 0051

WELL NUMBER: MW-02 KS 1/27/99 BEGIN: 12/01/99 END: 12/01/99

COORDINATES: N: 739706.845638
E: 972903.471

DATUM/UNITS: NAD 83 GA S.P. east

REFERENCE POINT: Ground surface ELEVATION: 16.59 DATUM/UNITS: NAVD88/ftAMSL



	DEPTH (BGS)	ELEV
GROUND SURFACE	0	16.5
BOTTOM OF SURFACE CASING	0.8	15.7
TOP OF SEAL	0.5	16.0
TOP OF FILTER PACK	2.50	14.0
TOP OF SCREEN	3.45	13.05
BOTTOM OF SCREEN	12.95	3.55
BOTTOM OF SUMP	13.2	3.3
BOTTOM OF HOLE	13.5	3.0

MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility

DELIVERY ORDER NO: 0051

WELL NUMBER: MW-3 Logbook #7

BEGIN: 12-01-99

END: 12-01-99

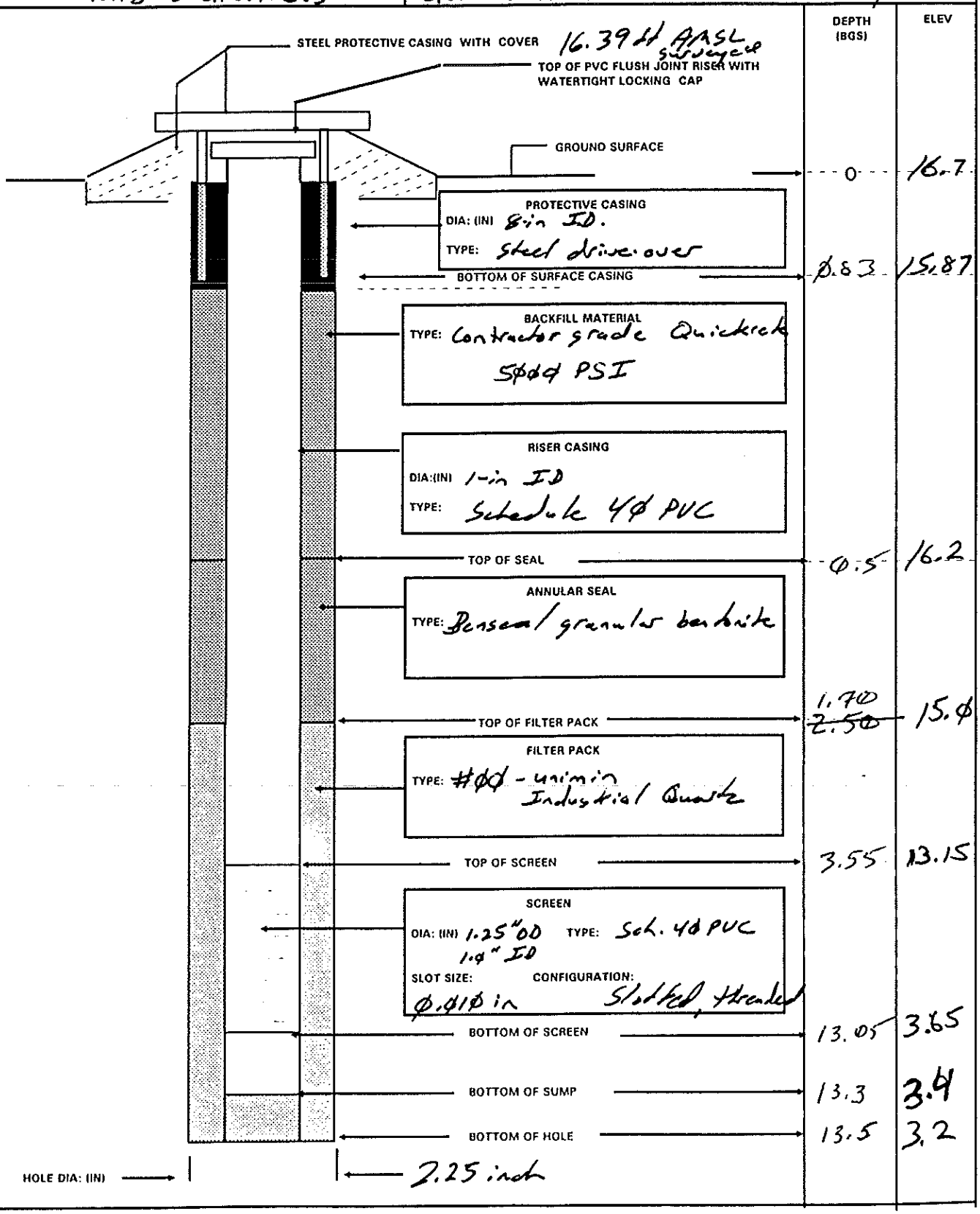
COORDINATES: N: 739890.508
E: 973195.498

DATUM/UNITS: NAD 83 GA S.P. east

REFERENCE POINT: Ground surface

ELEVATION: 16.7

DATUM/UNITS: NAVD88/ftAMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #10 DELIVERY ORDER NO: 0051

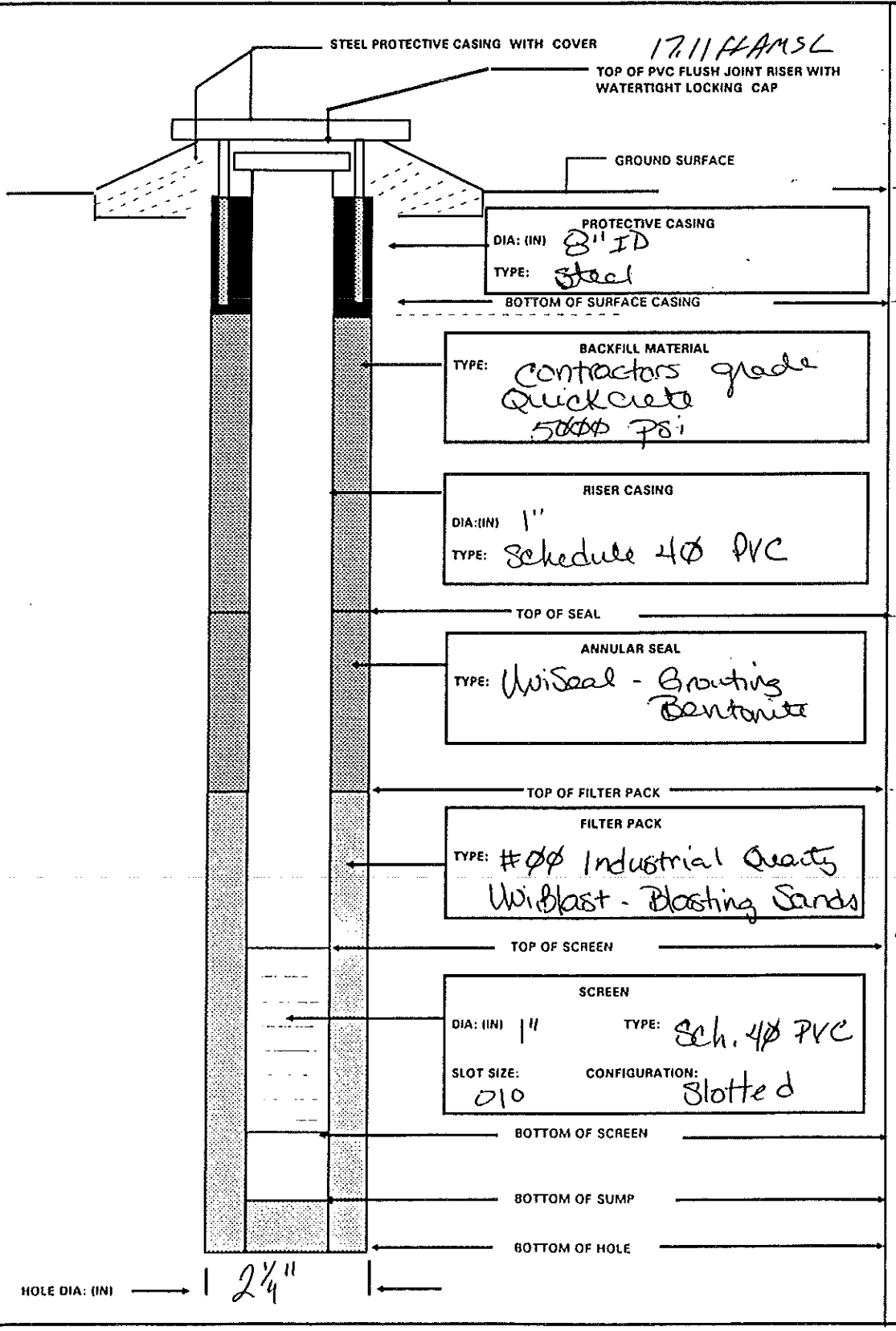
WELL NUMBER: MWSB-4

BEGIN: 12/03/99 END: 12/03/99

COORDINATES: N: 739856.308
E: 973412.262

DATUM/UNITS: NAD 83 GA S. P. east

REFERENCE POINT: Ground Surface ELEVATION: 17.3 DATUM/UNITS: NAVD88/Ft AMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #8 DELIVERY ORDER NO: 0051

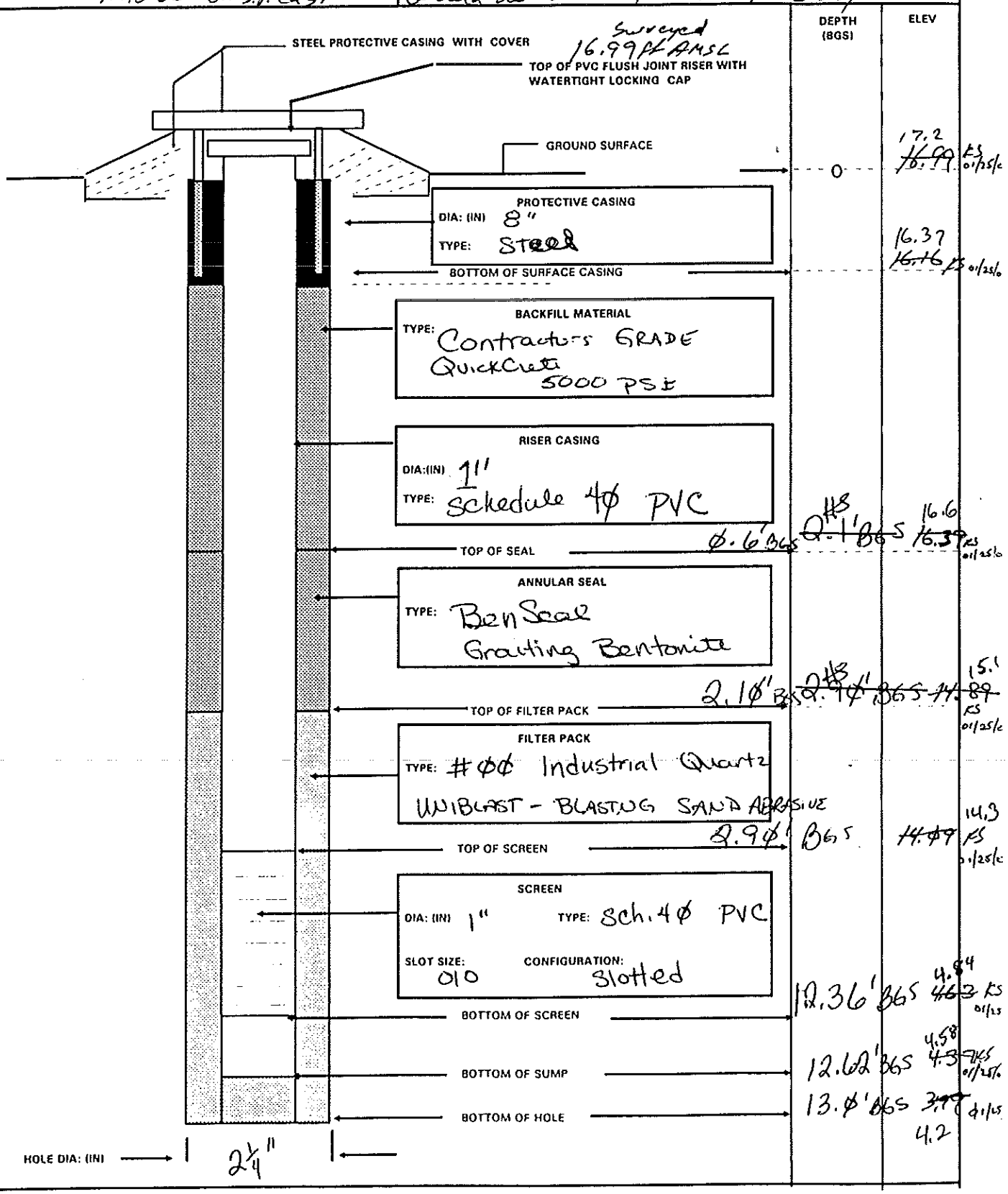
VELL NUMBER: MW38-05

BEGIN: 12/3/99 END: 12/3/99

COORDINATES: N: 739796.832
E: 973363.678

DATUM/UNITS: NAD 83 GA S.P. east

REFERENCE POINT: Ground surface ELEVATION: ~~16.99~~ 17.2 KS 01/25/00 DATUM/UNITS: NAVD 88/FT AMSL



MONITORING WELL

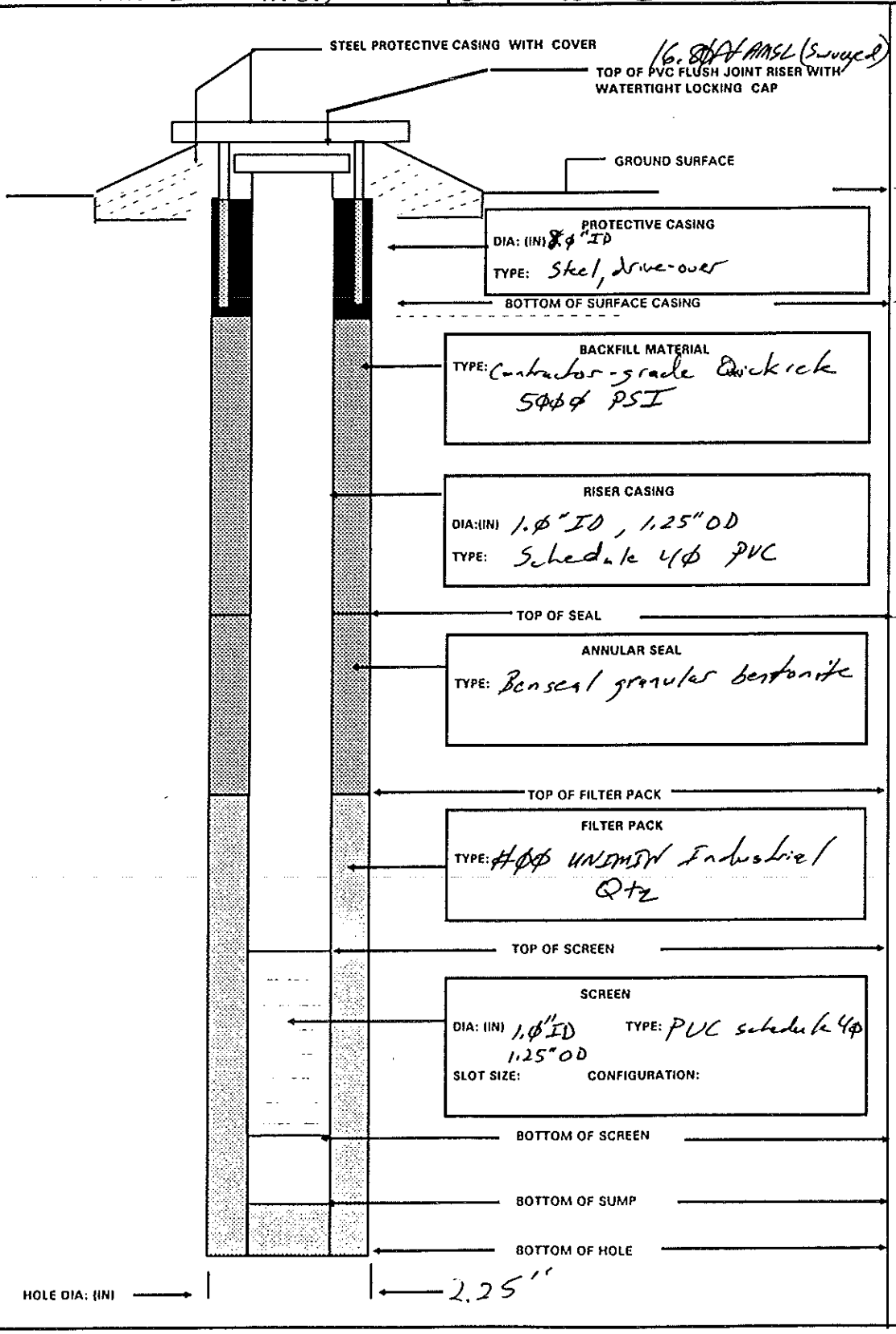
PROJECT: CAP-Part A, Bulk Fuel Facility Ledyard #10 DELIVERY ORDER NO: 0051

WELL NUMBER: MW86-06 BEGIN: 12/02/99 END: 12/02/99

COORDINATES: N: 739740.107
E: 973217.2

DATUM/UNITS: NAD83 GA S.P. east

REFERENCE POINT: Ground surface ELEVATION: 17.2 DATUM/UNITS: NAVD88/ft AMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #10 DELIVERY ORDER NO: 0051

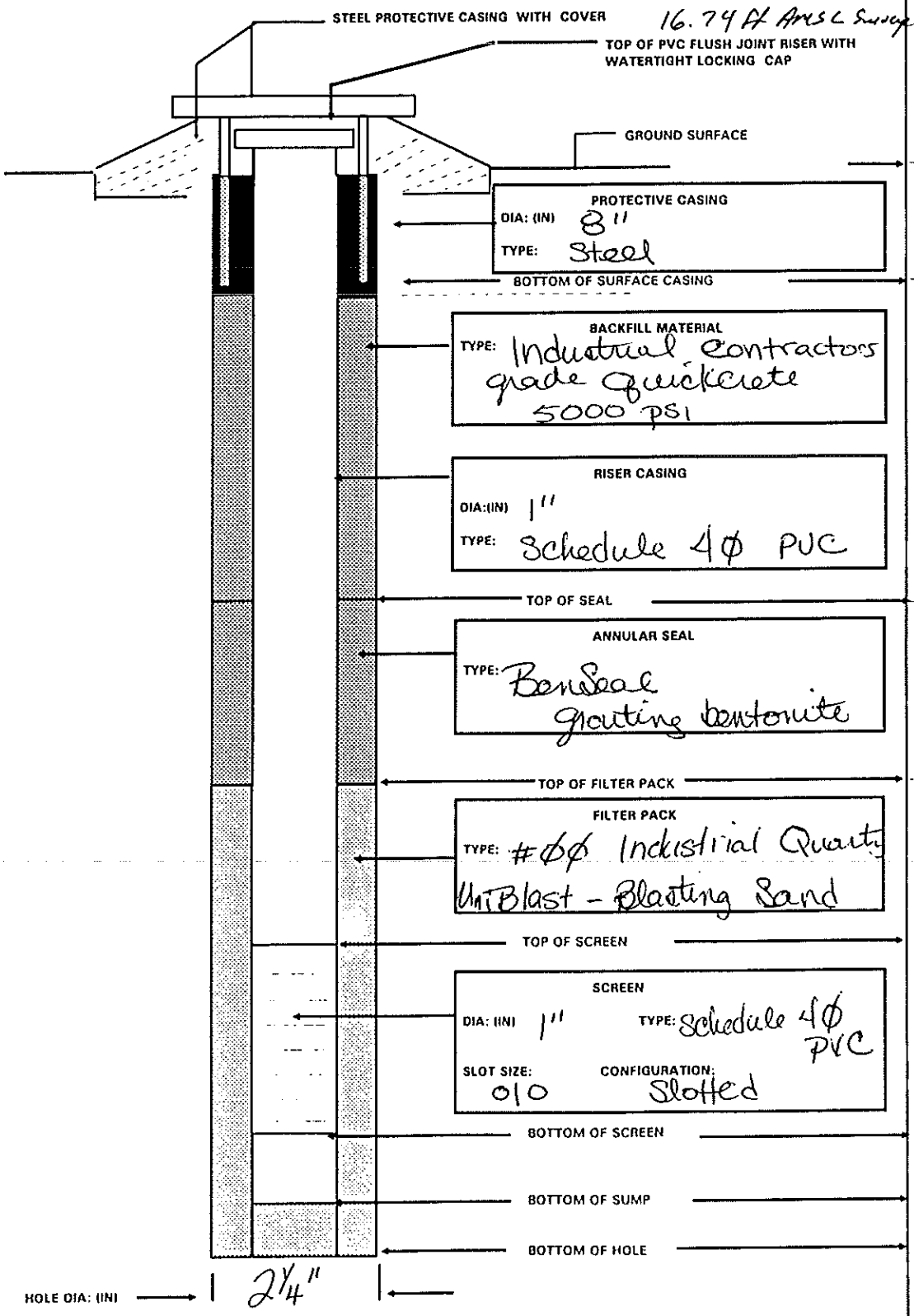
WELL NUMBER: MW SB-7

BEGIN: 12/02/99 END: 12/02/99

COORDINATES: N: 739657.589
E: 973884.82

DATUM/UNITS: NAD83 GA S.P. east

REFERENCE POINT: Ground surface ELEVATION: 16.9 DATUM/UNITS: NAVD 88/ft AMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #9 DELIVERY ORDER NO: 0051

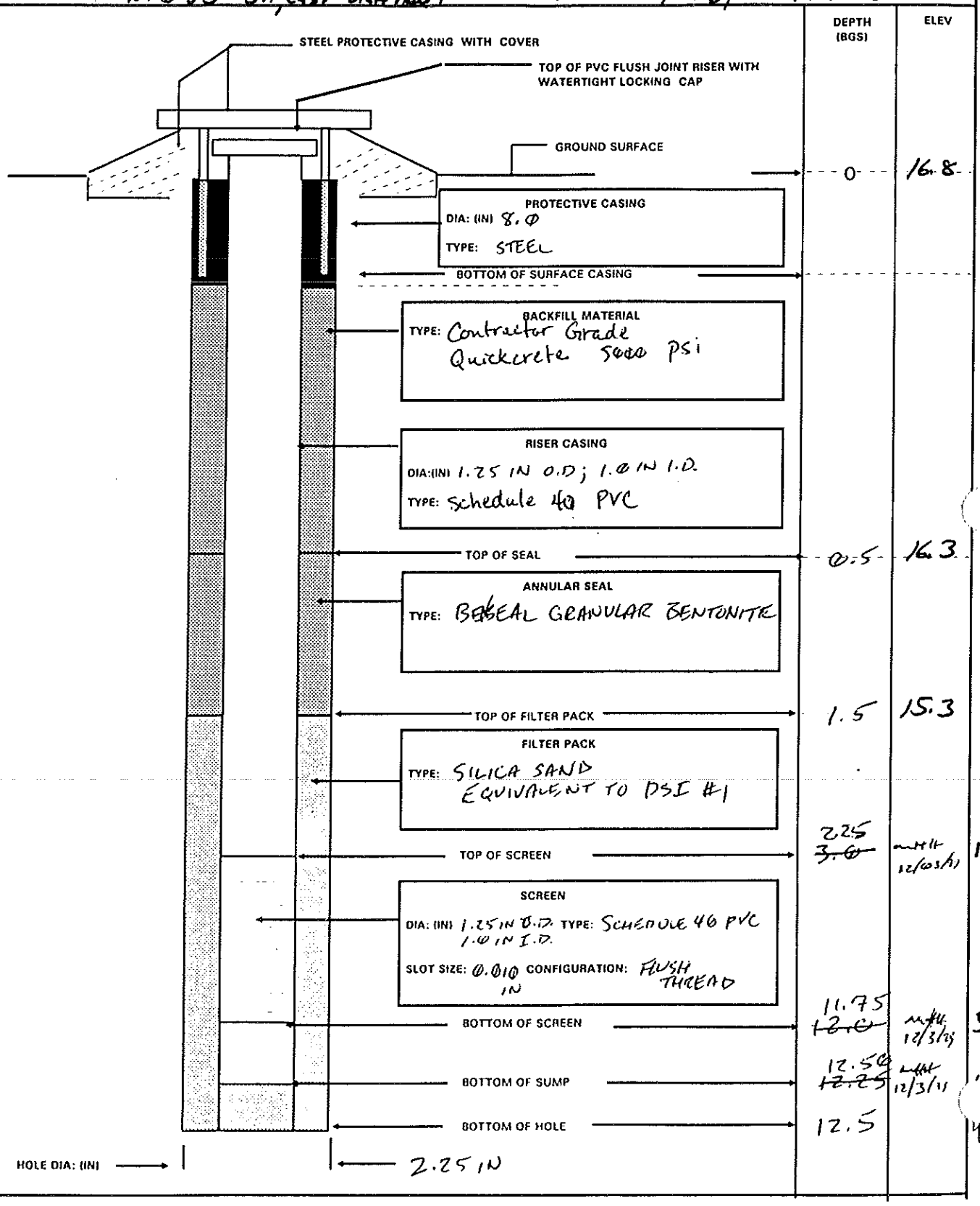
WELL NUMBER: MW-08

BEGIN: 12/03/99 END: 12/03/99

COORDINATES: N: 739744.208
E: 973095.595

DATUM/UNITS: NAD 83 GA, east State Plane

REFERENCE POINT: TOC Ground surface ELEVATION: 16.80 DATUM/UNITS: NAVD 88 FT AMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #8 DELIVERY ORDER NO: 0051

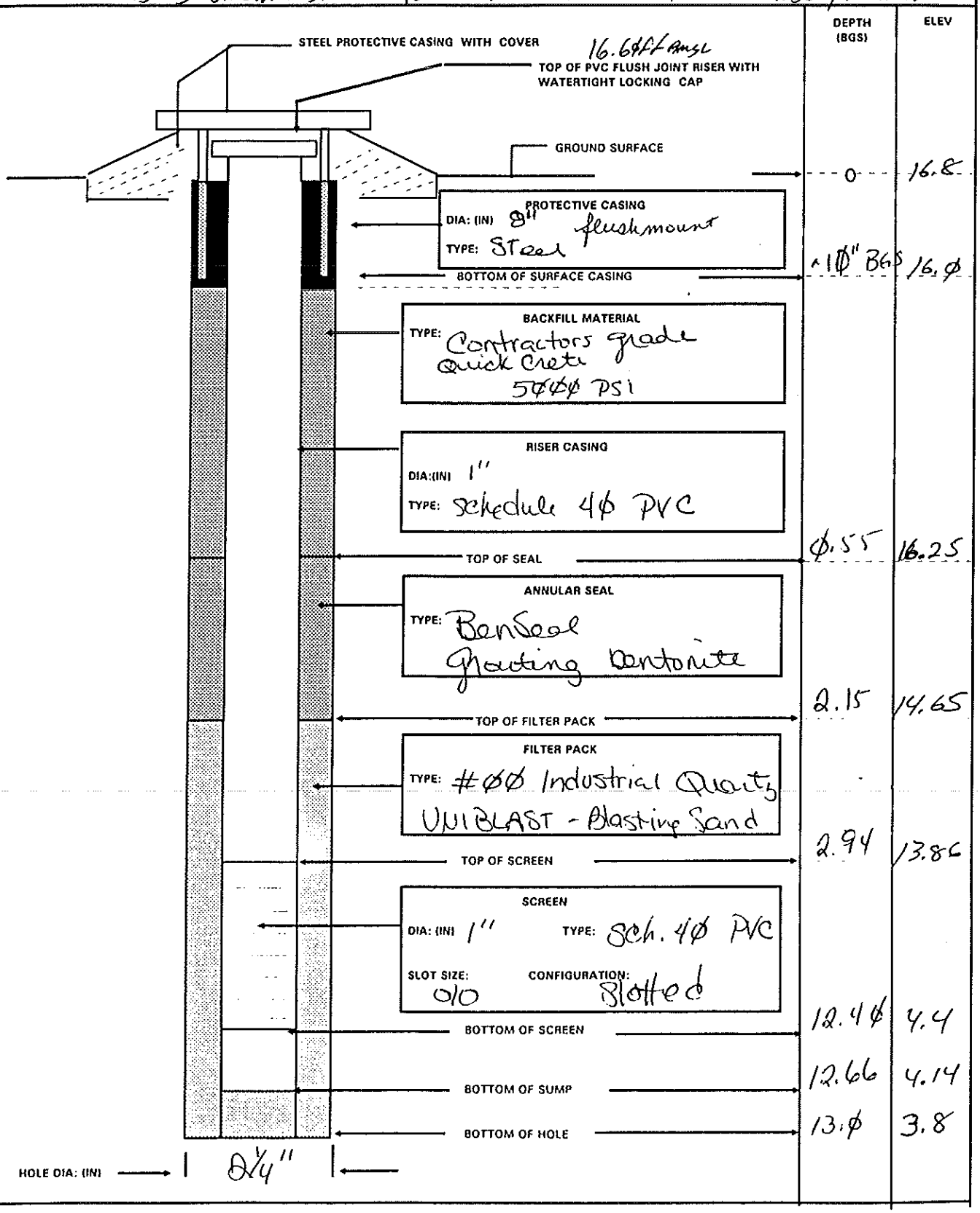
WELL NUMBER: SB-09 MW

BEGIN: 12/3/99 END: 12/3/99

COORDINATES: N: 739583.027
E: 972969.91

DATUM/UNITS: NAD 83 GASP. east

REFERENCE POINT: Ground surface ELEVATION: 16.8 DATUM/UNITS: NAVD88/ft AMSL



	DEPTH (BGS)	ELEV
GROUND SURFACE	0	16.8
BOTTOM OF SURFACE CASING	~10" BGS	16.0
TOP OF SEAL	0.55	16.25
TOP OF FILTER PACK	2.15	14.65
TOP OF SCREEN	2.94	13.86
BOTTOM OF SCREEN	12.40	4.4
BOTTOM OF SUMP	12.66	4.14
BOTTOM OF HOLE	13.0	3.8

MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility

DELIVERY ORDER NO: 0051

WELL NUMBER: MW SB-1Φ Logbook #7

BEGIN: 12/02/99

END: 12/02/99

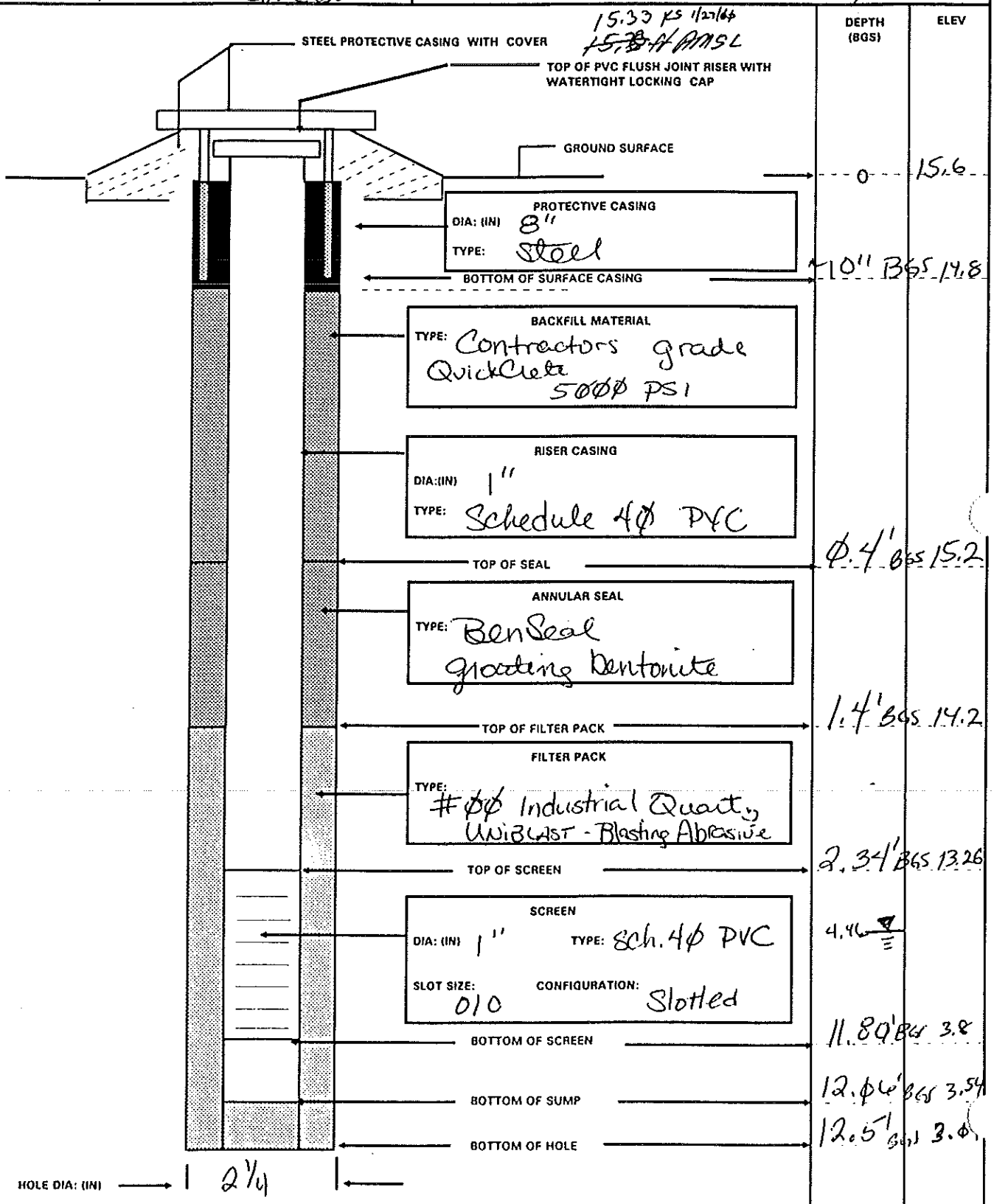
COORDINATES: N: 739487.163
E: 972881.312

DATUM/UNITS: NAD 83 GA S.P. east

REFERENCE POINT: Ground surface

ELEVATION: 15.6

DATUM/UNITS: NAVD88/ft AMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook # 10 DELIVERY ORDER NO: 0051

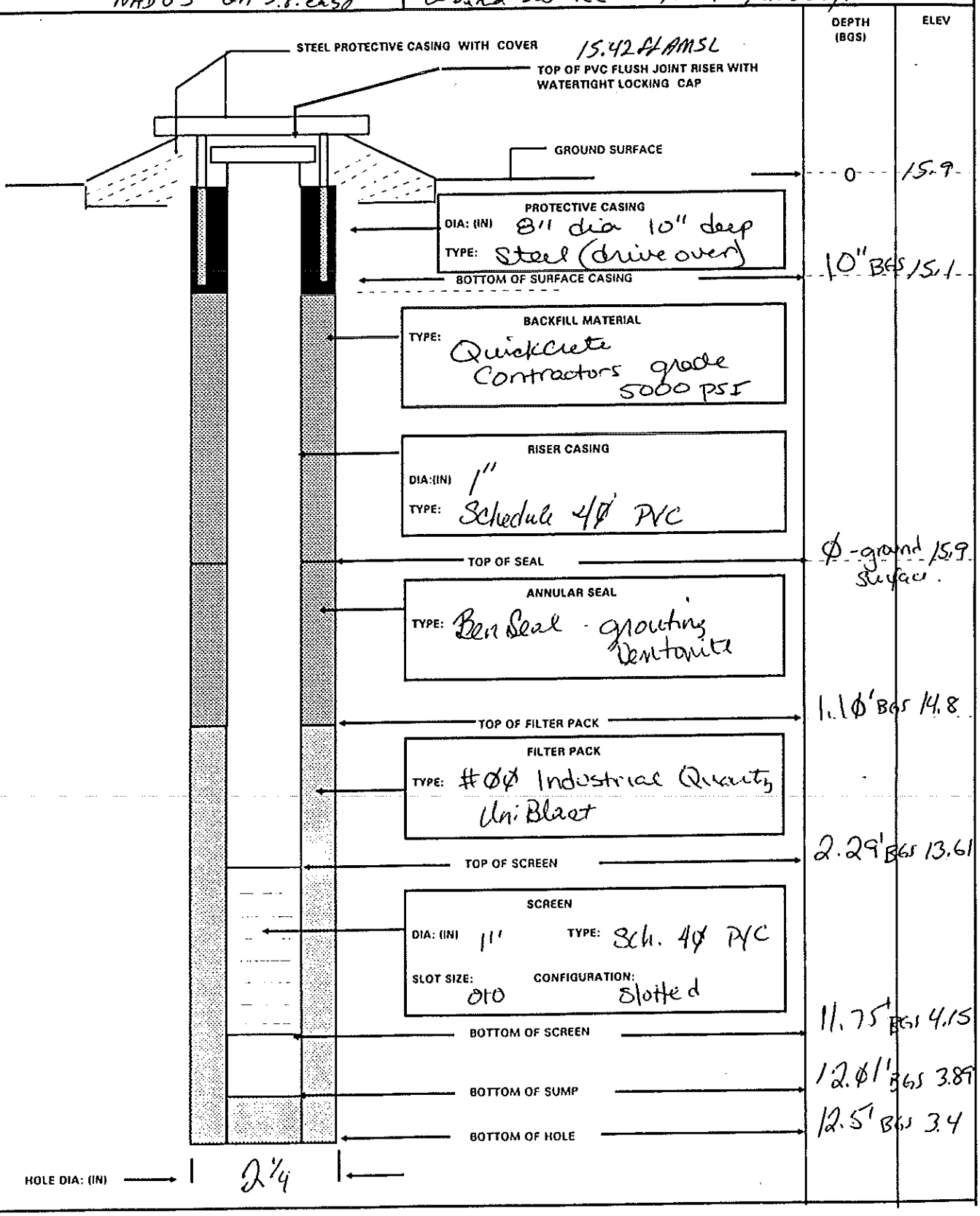
WELL NUMBER: MW ~~SB~~-11

BEGIN: 12/02/99 END: 12/02/99

COORDINATES: N: 739463.803
E: 972941.689

DATUM/UNITS: NAD83 GA S.P. east

REFERENCE POINT: Ground surface ELEVATION: 15.9 DATUM/UNITS: NAVD88/ft AMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #8 DELIVERY ORDER NO: 0051

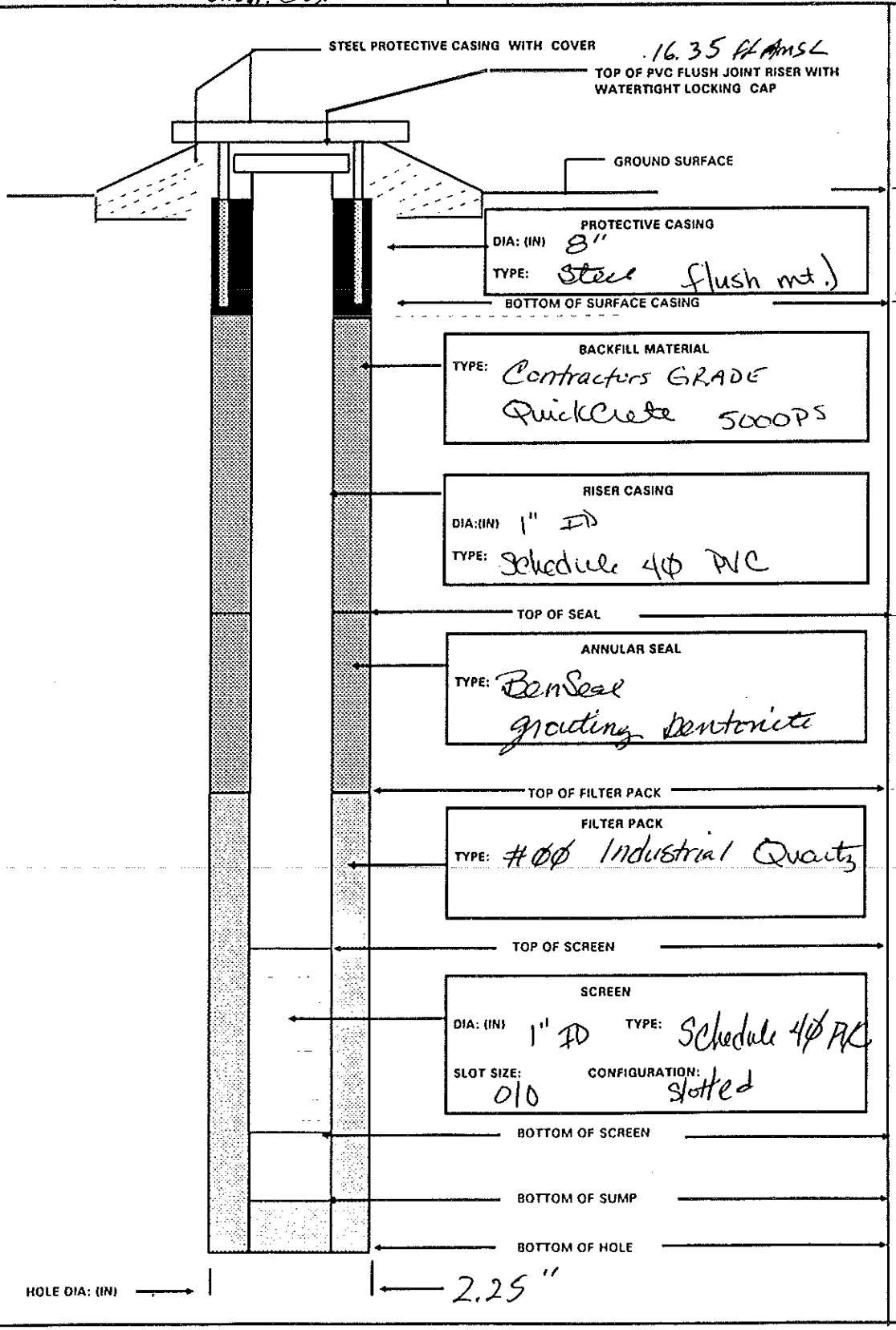
WELL NUMBER: MW SB-12

BEGIN: 12/4/99 END: 12/4/99

COORDINATES: N: 739441.998
E: 972754.581

DATUM/UNITS: NAD 83 GAS.P. east

REFERENCE POINT: Groundsurface ELEVATION: 16.6 DATUM/UNITS: NAVD88/ft AMSL



	DEPTH (BGS)	ELEV (ft AMSL)
GROUND SURFACE	0	16.6
BOTTOM OF SURFACE CASING	~1.0' BGS	~15.6
TOP OF SEAL	0.55' BGS	16.05
TOP OF FILTER PACK	1.6' BGS	15.0
TOP OF SCREEN	3.02' BGS	13.58
BOTTOM OF SCREEN	12.48' BGS	4.12
BOTTOM OF SUMP	12.74' BGS	3.86
BOTTOM OF HOLE	13.0' BGS	3.6

MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #8 DELIVERY ORDER NO: 0051

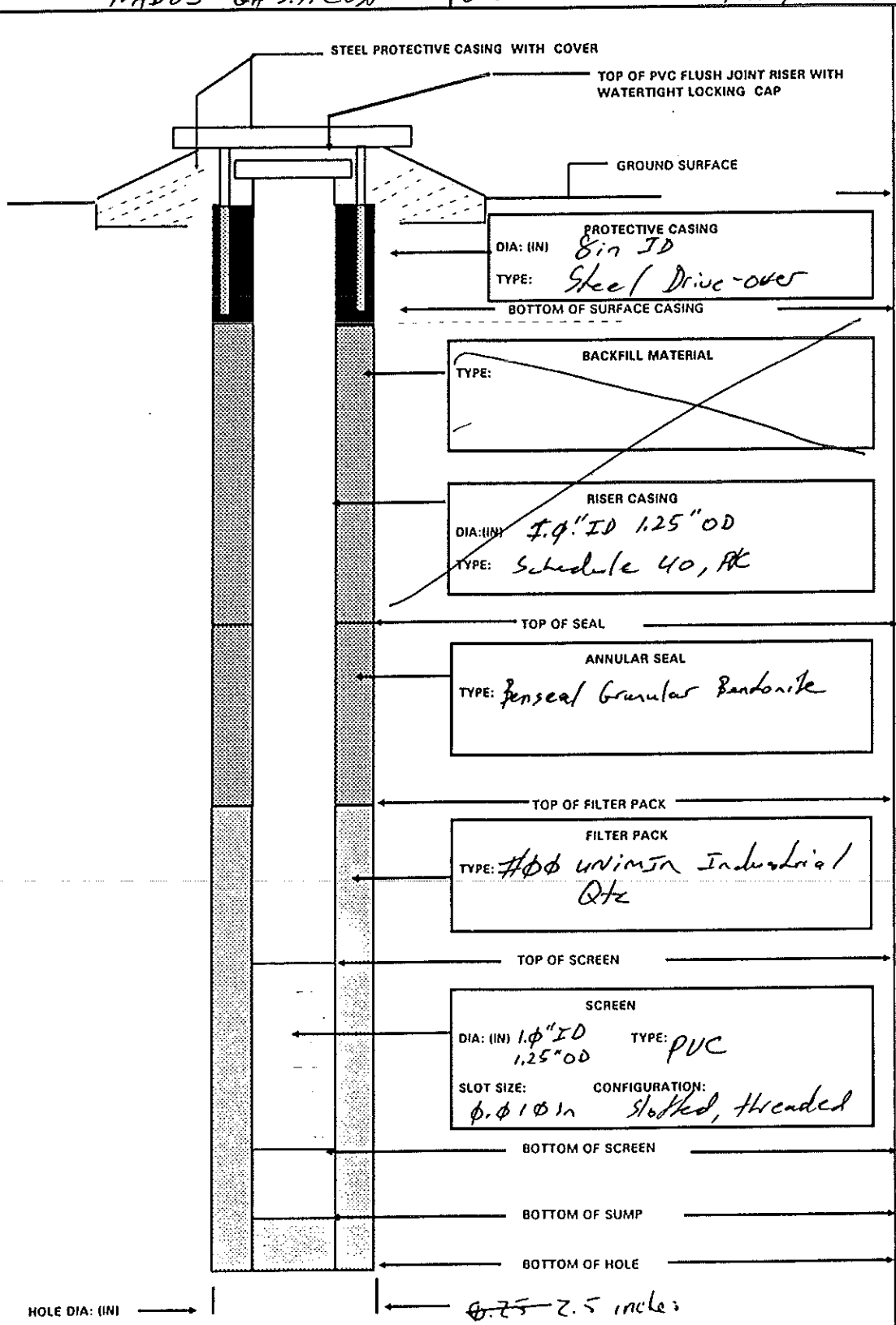
WELL NUMBER: MW-13

BEGIN: 11/30/99 END: 11/30/99

COORDINATES: N: 739297.565
E: 972484.632

DATUM/UNITS: NAD83 GA S.P. east

REFERENCE POINT: Ground surface ELEVATION: 14.0 DATUM/UNITS: NAVD 88/Ft AMSL



	DEPTH (BGS)	ELEV
GROUND SURFACE	0	14.0
BOTTOM OF SURFACE CASING	0.8	13.2
TOP OF SEAL	0.0	14.0
TOP OF FILTER PACK	0.7	13.3
TOP OF SCREEN	2.25 ~~2.55~~	11.75
BOTTOM OF SCREEN	11.75 ~~12.05~~	2.25
BOTTOM OF SUMP	12.0	2.00
BOTTOM OF HOLE	13.5	0.5

MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Book #8 DELIVERY ORDER NO: 0051

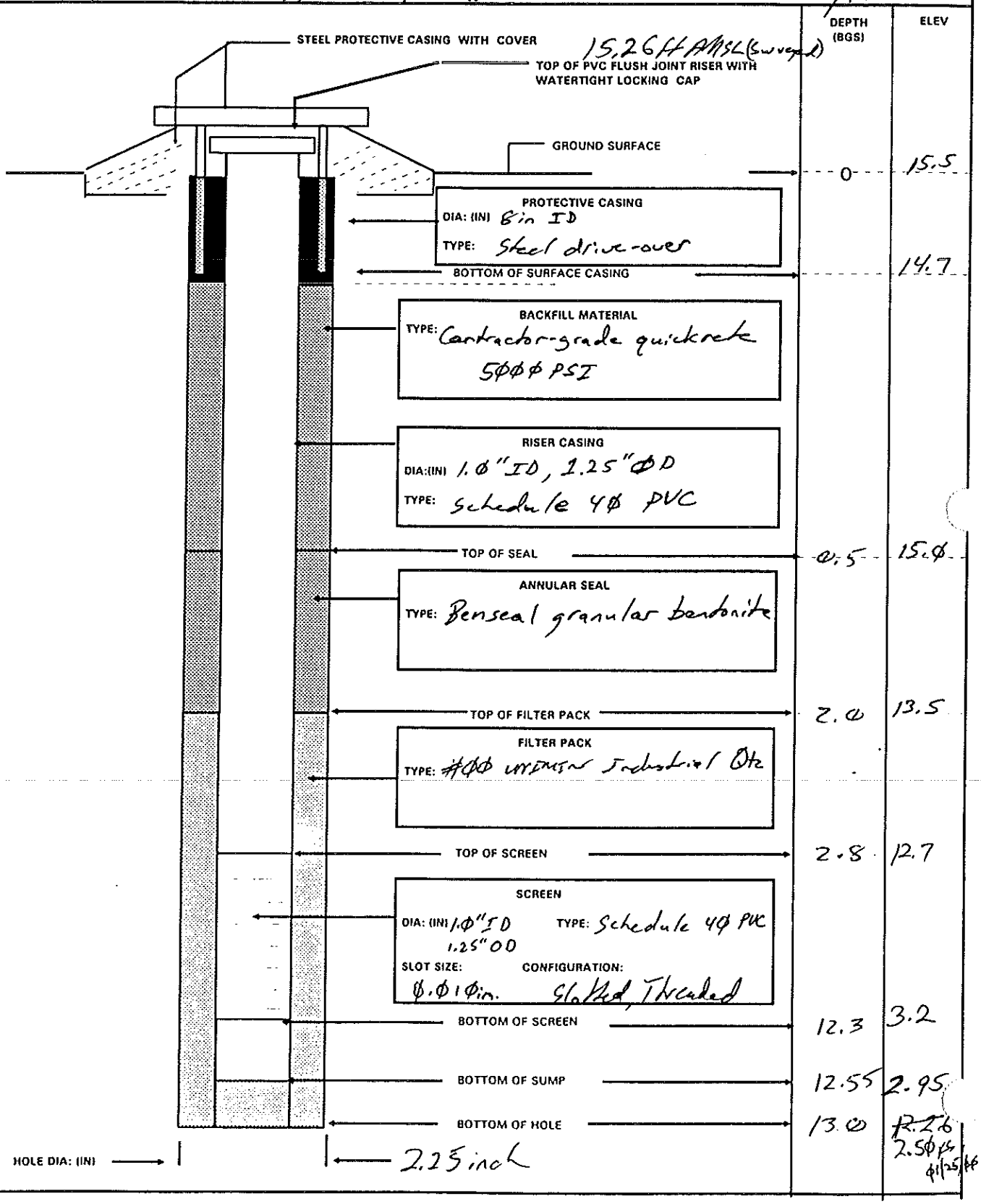
WELL NUMBER: MW-14

BEGIN: 12/01/99 END: 12/01/99

COORDINATES: N: 739362.004
E: 972545.998

DATUM/UNITS: NAD 83 GA S.P. east

REFERENCE POINT: Ground surface ELEVATION: 15.5 DATUM/UNITS: NAVD88/ft AMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook # 10 DELIVERY ORDER NO: 0051

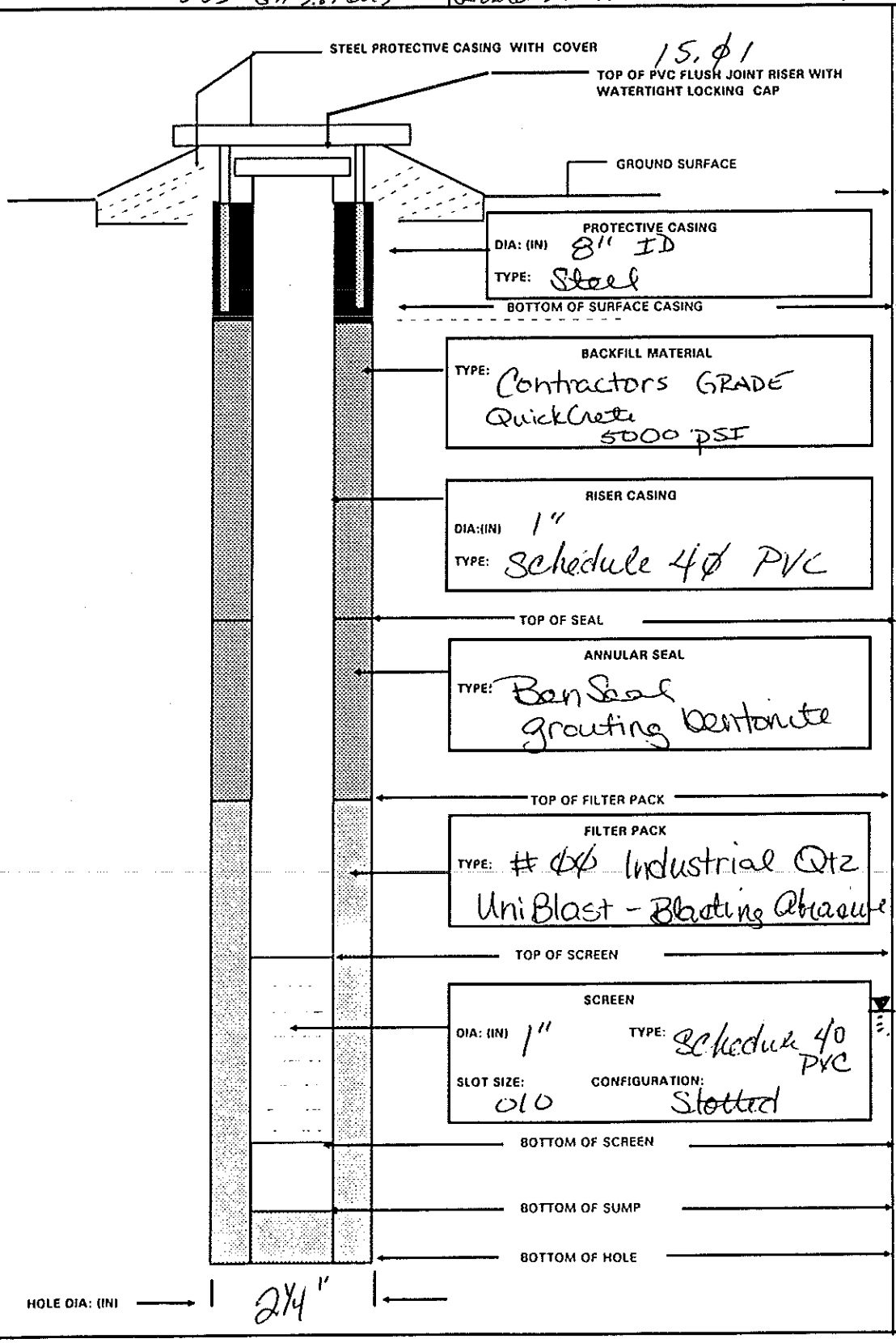
WELL NUMBER: MWSB-15

BEGIN: 12/2/99 END: 12/2/99

COORDINATES: N: 739364.793
E: 972811.562

DATUM/UNITS: NAD83 GA S.P. east

REFERENCE POINT: Ground surface ELEVATION: 15.3 DATUM/UNITS: NAVD88/AL AMSL



	DEPTH (BGS)	ELEV
GROUND SURFACE	0	15.3
BOTTOM OF SURFACE CASING	~10" BGS	~14.5
TOP OF SEAL	0-6.5	15.3
TOP OF FILTER PACK	1.65	13.65
TOP OF SCREEN	2.54	12.76
STATIC WL @ 4.35 BGS		
BOTTOM OF SCREEN	12.00	3.3
BOTTOM OF SUMP	12.26	3.04
BOTTOM OF HOLE	13.00	2.3

MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Lajes #8 DELIVERY ORDER NO: 0051

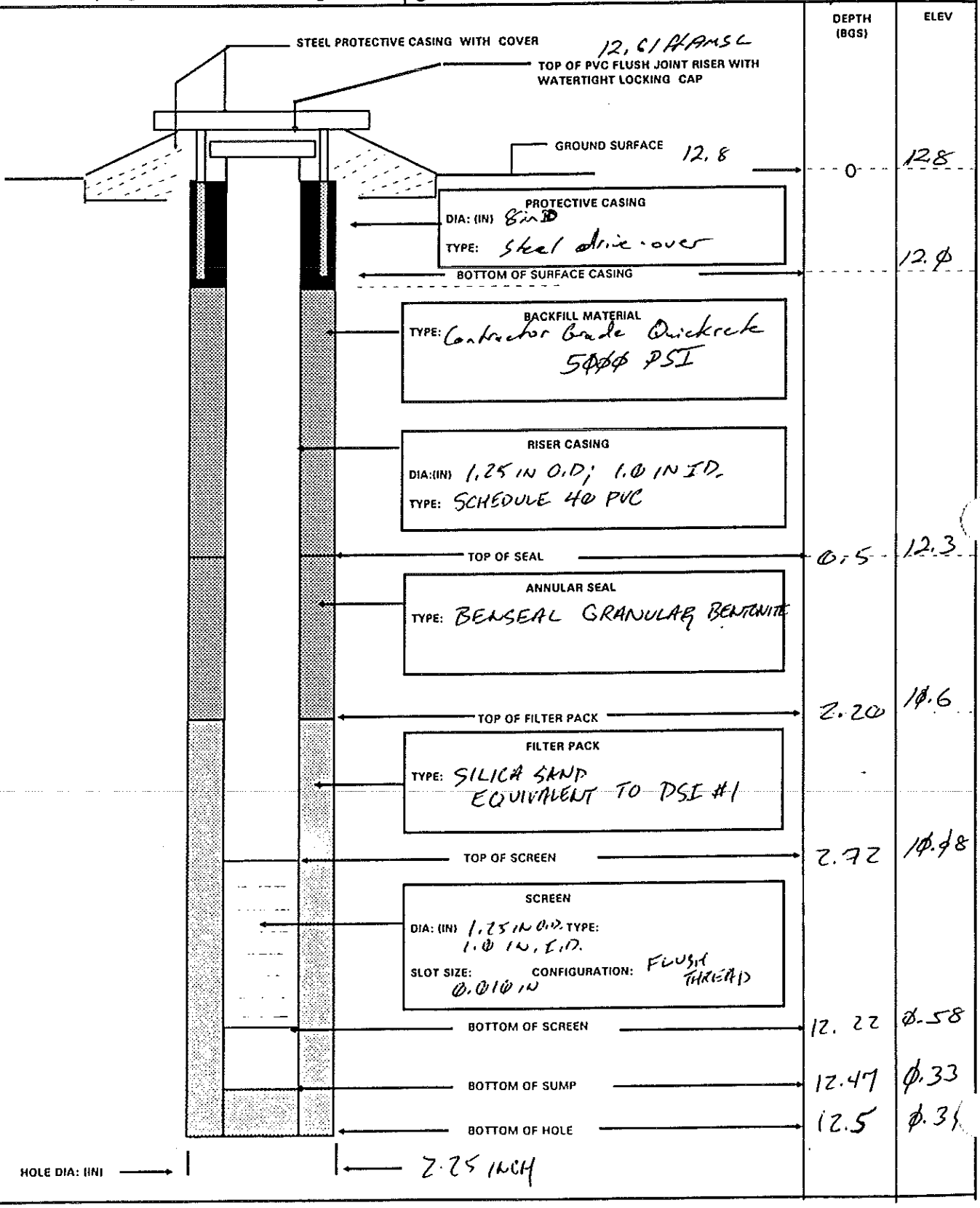
WELL NUMBER: MW-16

BEGIN: 12/02/95 END: 12/02/95

COORDINATES: N: 739107.253 E: 972715.746

DATUM/UNITS: NAD 83 GA S.P. east

REFERENCE POINT: Ground Surface ELEVATION: 12.8 DATUM/UNITS: NAVD88/ftAMSL



	DEPTH (BGS)	ELEV
GROUND SURFACE	0	12.8
BOTTOM OF SURFACE CASING		12.0
TOP OF SEAL	0.5	12.3
TOP OF FILTER PACK	2.20	10.6
TOP OF SCREEN	2.72	10.08
BOTTOM OF SCREEN	12.22	0.58
BOTTOM OF SUMP	12.47	0.33
BOTTOM OF HOLE	12.5	0.3

MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #10 DELIVERY ORDER NO: 0051

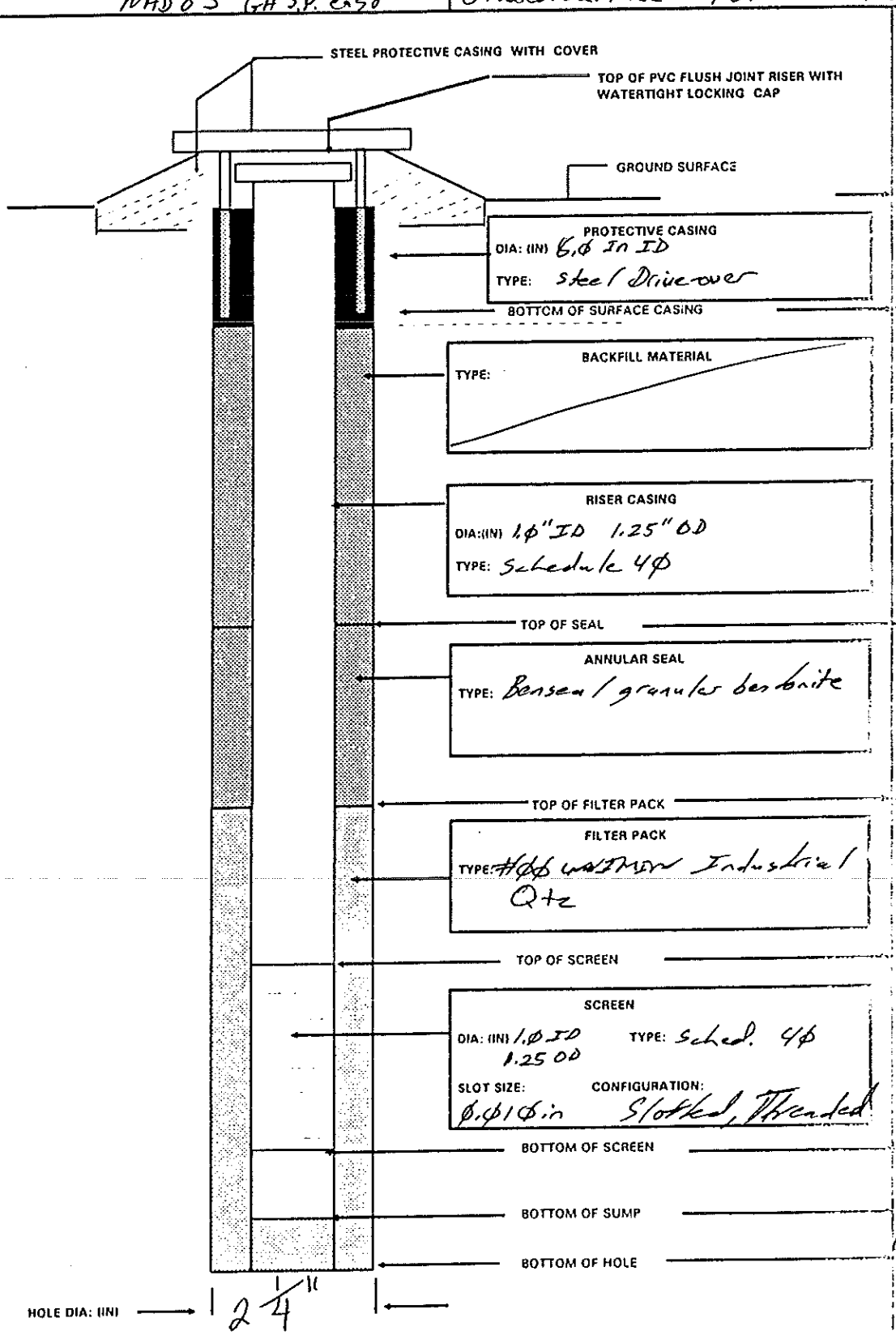
WELL NUMBER: MW-17

BEGIN: 12/3/99 END: 12/3/99

COORDINATES: N: 739185.951
E: 972981.774

DATUM/UNITS: NAD83 GA S.P. east

REFERENCE POINT: Ground surface ELEVATION: 13.5 DATUM/UNITS: NAVD88/Ft AMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Ledyard #8 DELIVERY ORDER NO: 0051

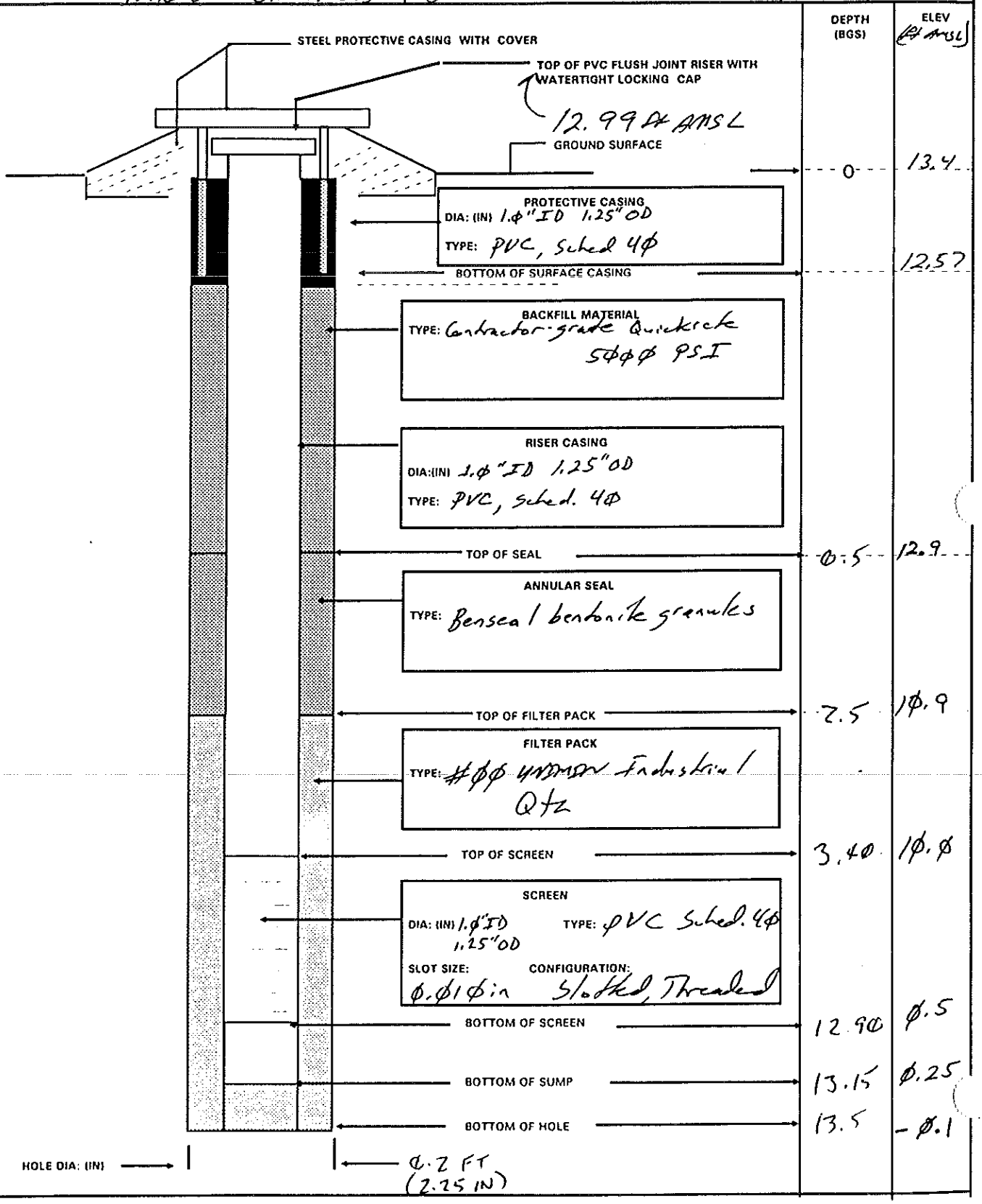
WELL NUMBER: MW-18

BEGIN: 12/1/99 END: 12/1/99

COORDINATES: N: 739088.287
E: 973029.823

DATUM/UNITS: NAD 83 GA S.P. east

REFERENCE POINT: Ground surface ELEVATION: 13.4 DATUM/UNITS: NAVD88/ft AMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #8 DELIVERY ORDER NO: 0051

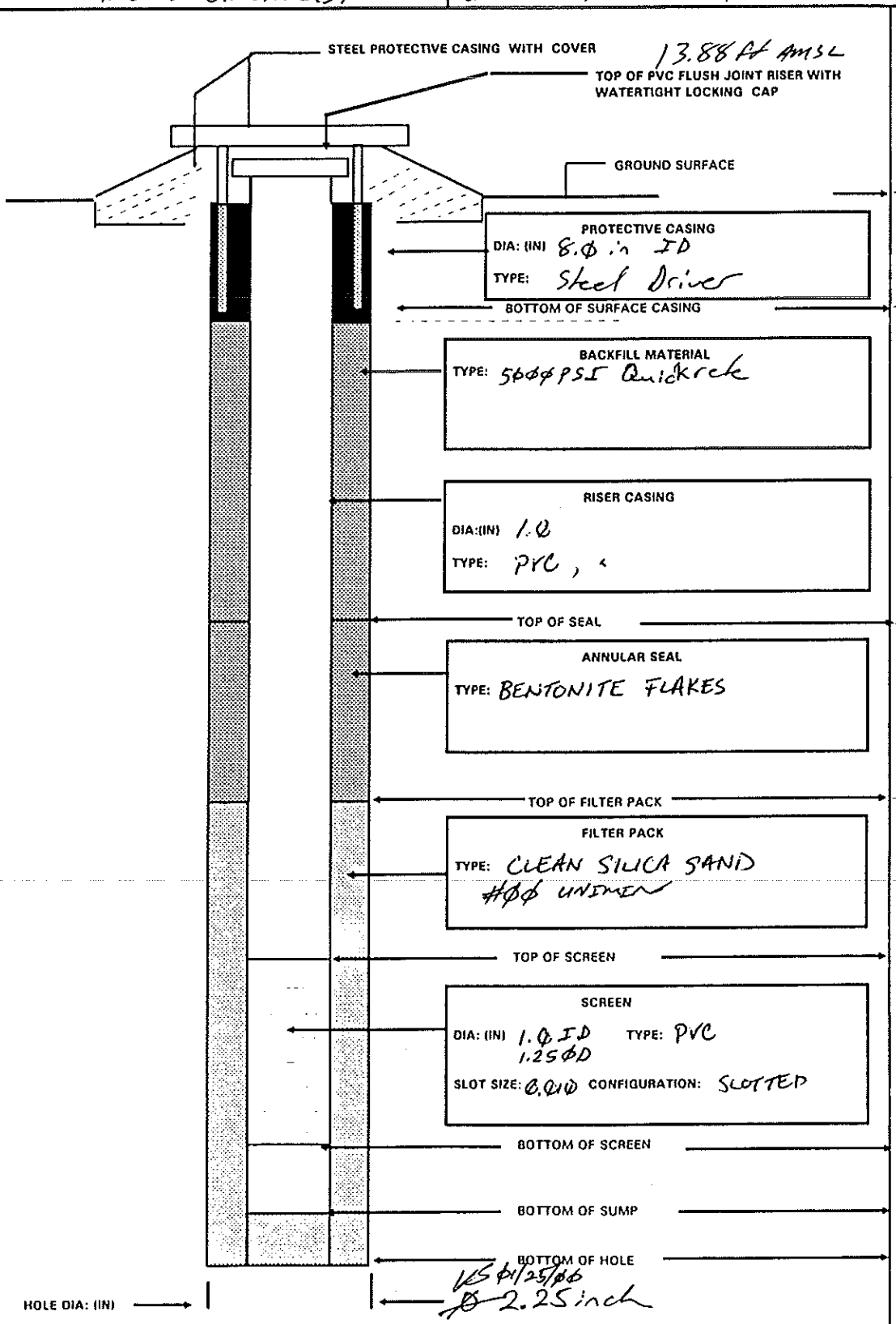
WELL NUMBER: MW-19

BEGIN: 11/30/99 END: 11/30/99

COORDINATES: N: 739236.256
E: 973262.153

DATUM/UNITS: NAD 83 GA S.P. east

REFERENCE POINT: Ground surface ELEVATION: 13.8 DATUM/UNITS: NAVD 88/ft AMSL



	DEPTH (BGS)	ELEV ft AMSL
GROUND SURFACE	0	13.8
BOTTOM OF SURFACE CASING		13.0
TOP OF SEAL	0.0	13.8
TOP OF FILTER PACK	1.5	12.3
TOP OF SCREEN	2.0	11.8
BOTTOM OF SCREEN	11.50	2.3
BOTTOM OF SUMP	11.75	2.05
BOTTOM OF HOLE	13.0	0.8

MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #9 DELIVERY ORDER NO: 0051

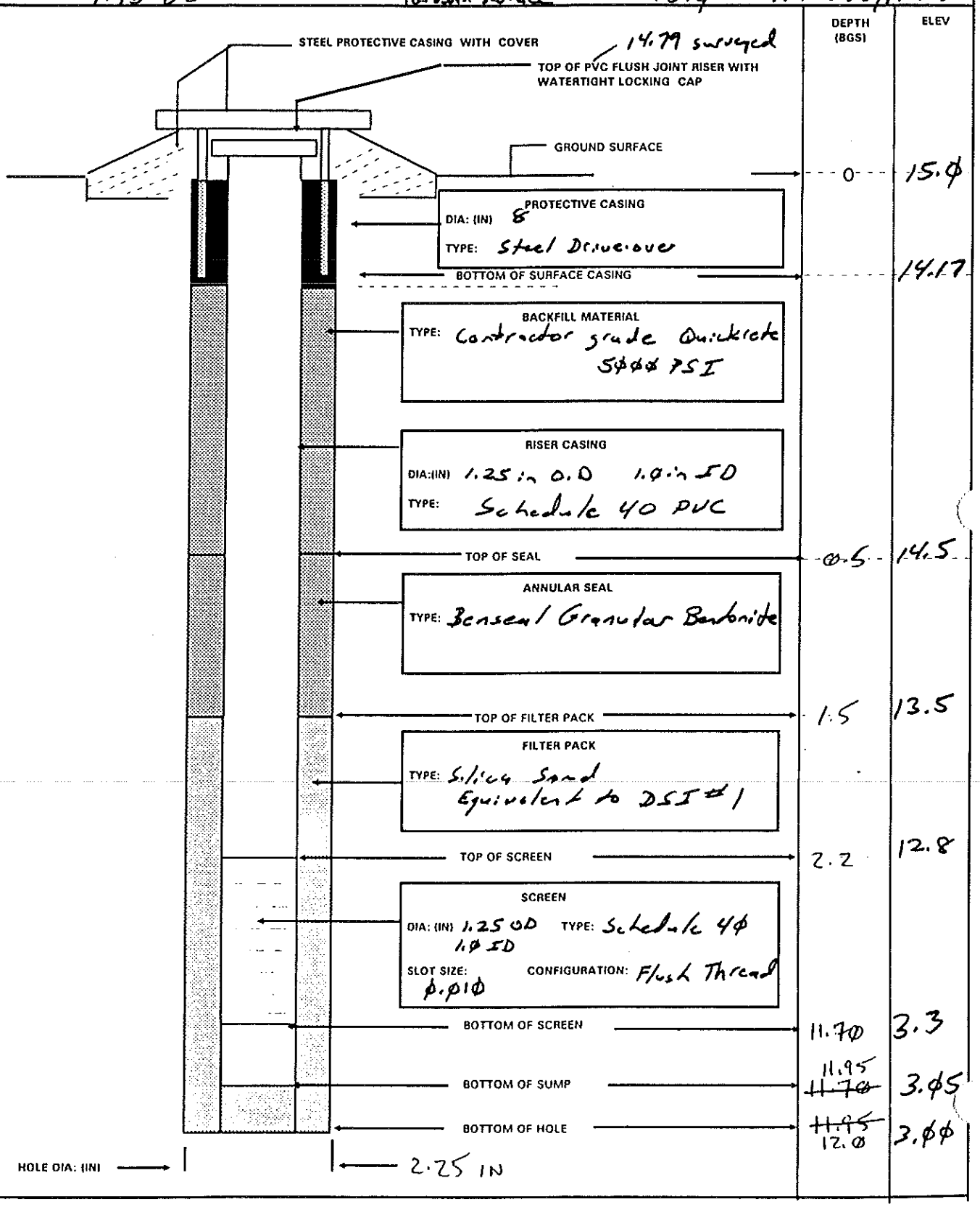
WELL NUMBER: MW-20

BEGIN: 12/05/99 END: 12/05/99

COORDINATES: N: 739326.56
E: 973129.517

DATUM/UNITS: NAD 83

REFERENCE POINT: Ground surface ELEVATION: 15.0 DATUM/UNITS: NAVD 88/FT AMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #9 DELIVERY ORDER NO: 0051

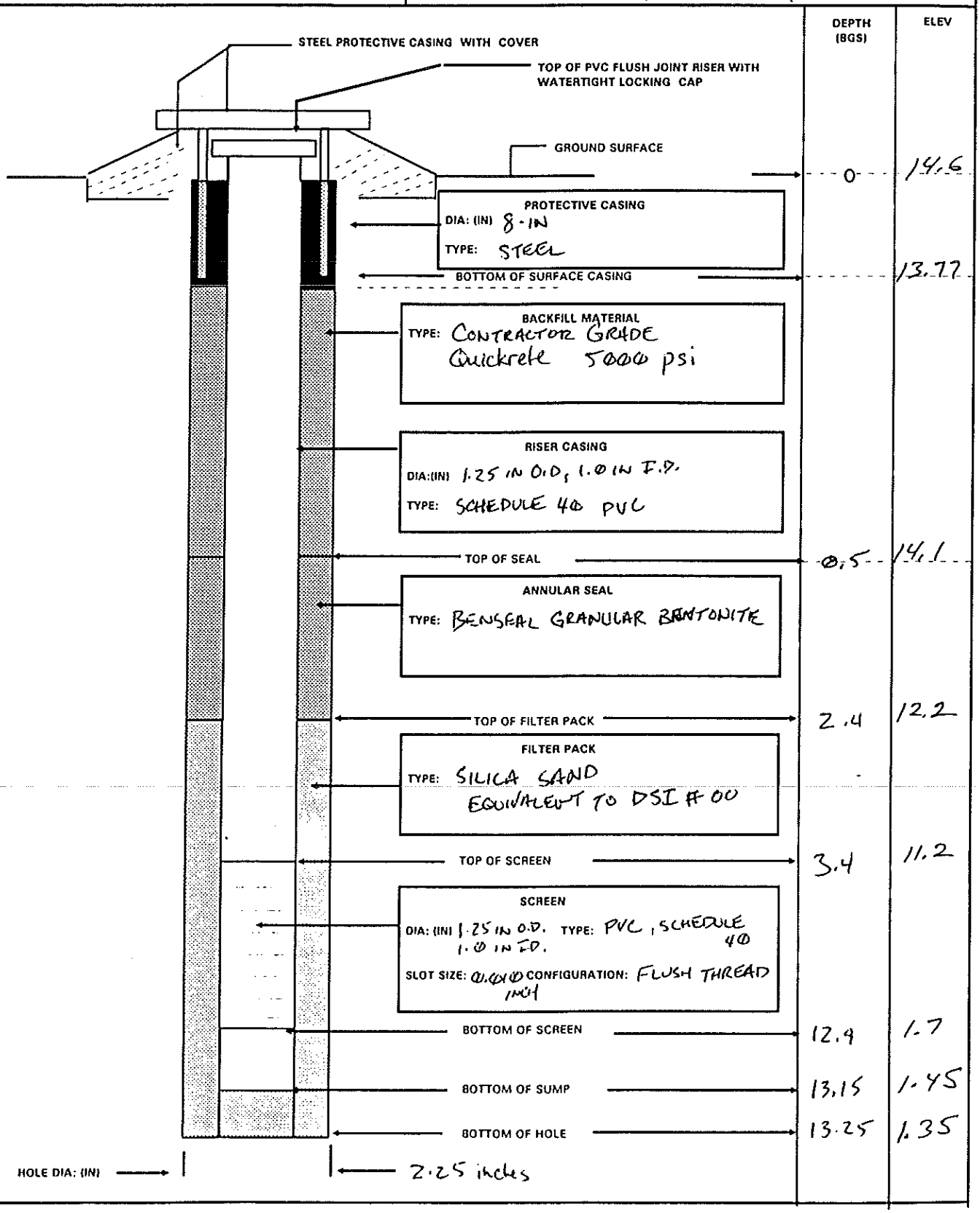
WELL NUMBER: MW-21

BEGIN: 12/05/99 END: 12/05/99 -1105

COORDINATES: N: 739342.731
E: 973246.273

DATUM/UNITS: NAD 83

REFERENCE POINT: Ground surface ELEVATION: 14.6 DATUM/UNITS: NAVD88 ft AMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #9 DELIVERY ORDER NO: 0051

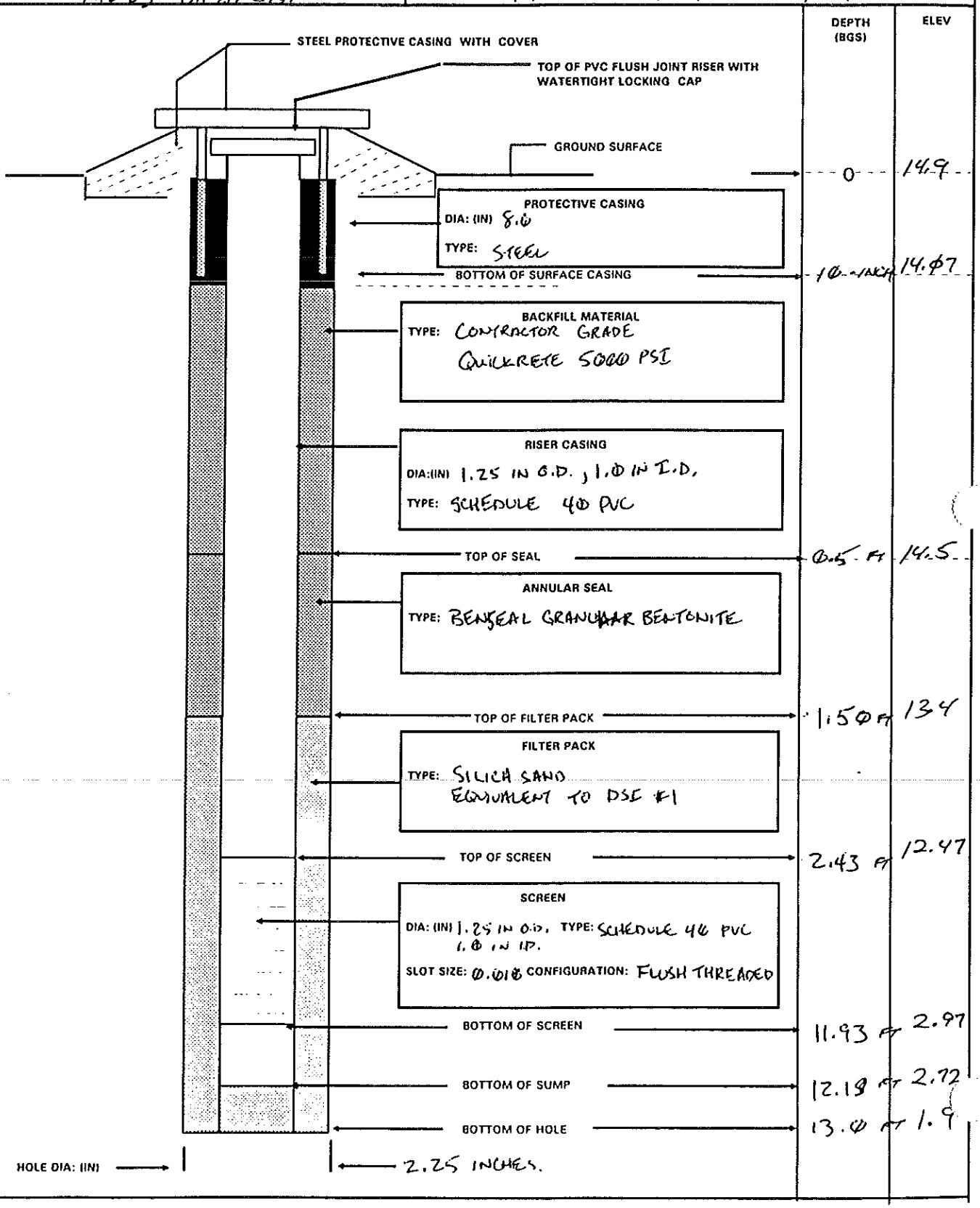
WELL NUMBER: MW-27

BEGIN: 12/05/99 END: 12/05/99

COORDINATES: N: 739409.658
E: 97200.558

DATUM/UNITS: NAD 83 GA SP. east

REFERENCE POINT: NAVD 88 ~~14.9~~ FS ELEVATION: 14.9 DATUM/UNITS: ft AMSL



MONITORING WELL

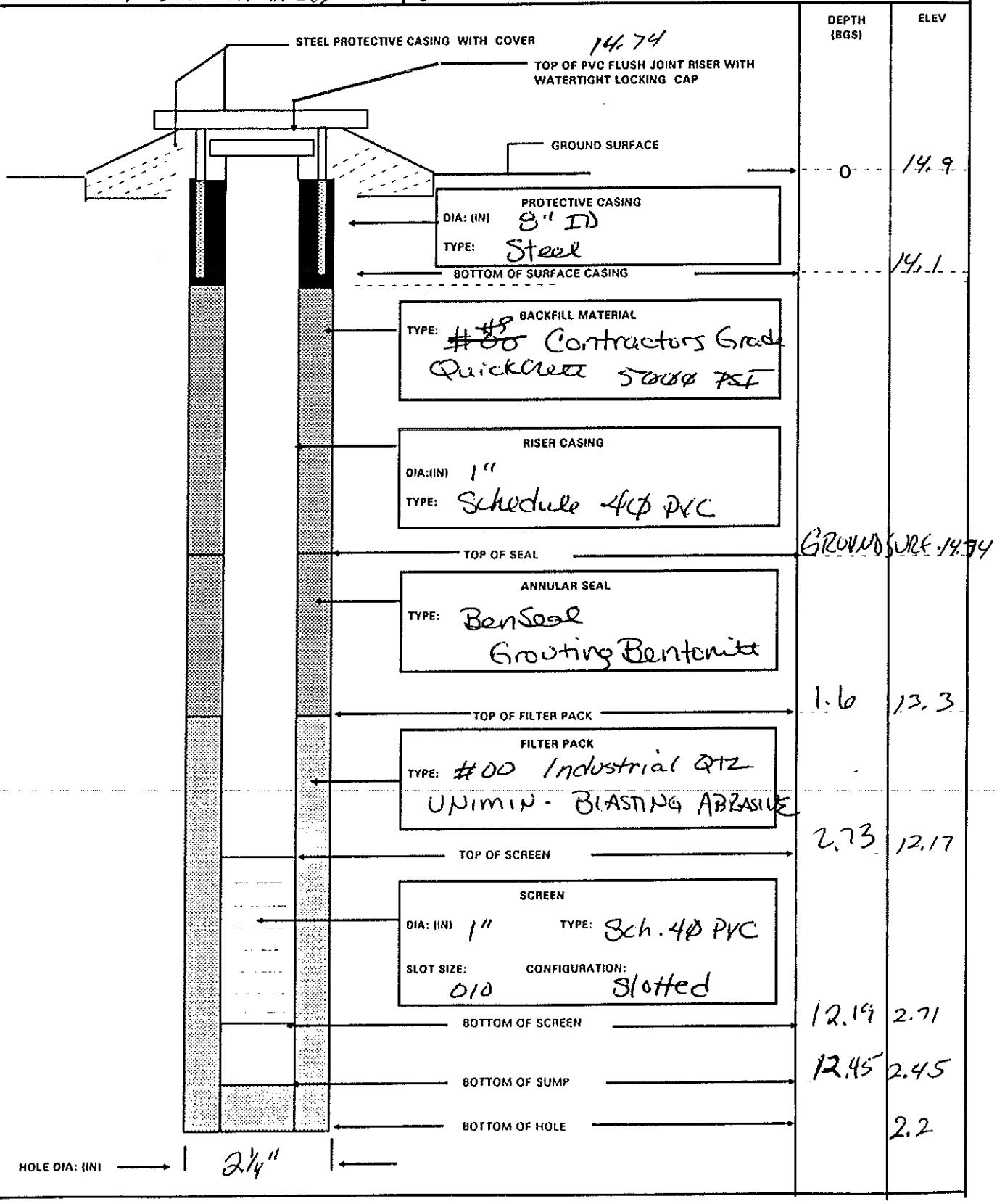
PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #8 DELIVERY ORDER NO: 0051

WELL NUMBER: MW SB-23 BEGIN: 12/4/99 END: 12/4/99

COORDINATES: N: 739490.586
E: 973144.664

DATUM/UNITS: NAD83 GA S.P. east

REFERENCE POINT:	ELEVATION:	DATUM/UNITS:
Ground surface	14.9	NAVD88/FEMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #9 DELIVERY ORDER NO: 0051

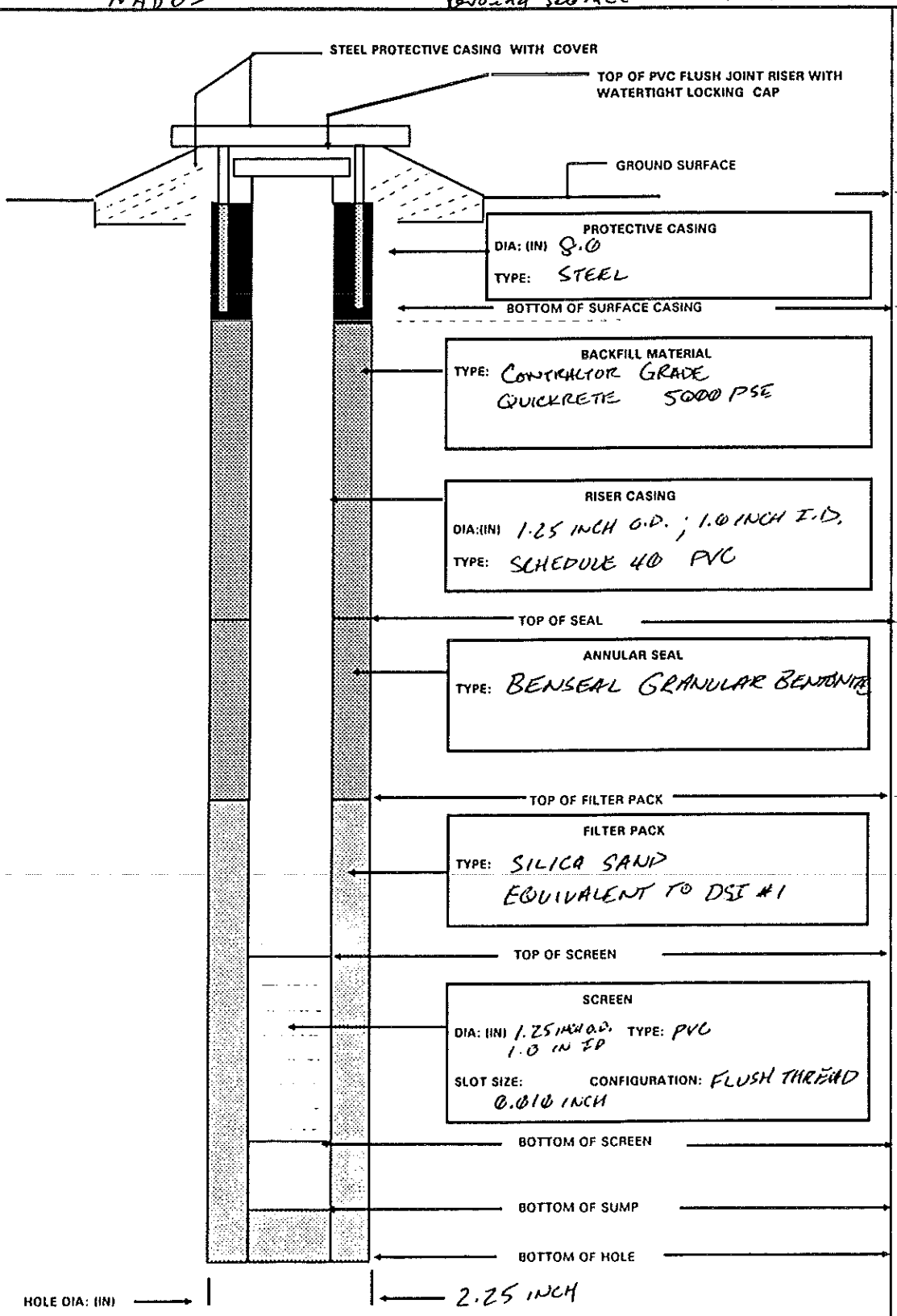
WELL NUMBER: MW-24

BEGIN: 12/02/99 END: 12/02/99

COORDINATES: N: 739430.19
E: 973427.231

DATUM/UNITS: NAD83

REFERENCE POINT: Ground surface ELEVATION: 14.1 DATUM/UNITS: NAVD88/PHASE



	DEPTH (BGS)	ELEV
GROUND SURFACE	0	14.1
BOTTOM OF SURFACE CASING	13.27	
TOP OF SEAL	0.5	13.6
TOP OF FILTER PACK	1.65	12.45
TOP OF SCREEN	3.15	10.95
BOTTOM OF SCREEN	12.65	1.45
BOTTOM OF SUMP	12.9	1.2
BOTTOM OF HOLE	13.50	0.6

52

MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #9 DELIVERY ORDER NO: 0051

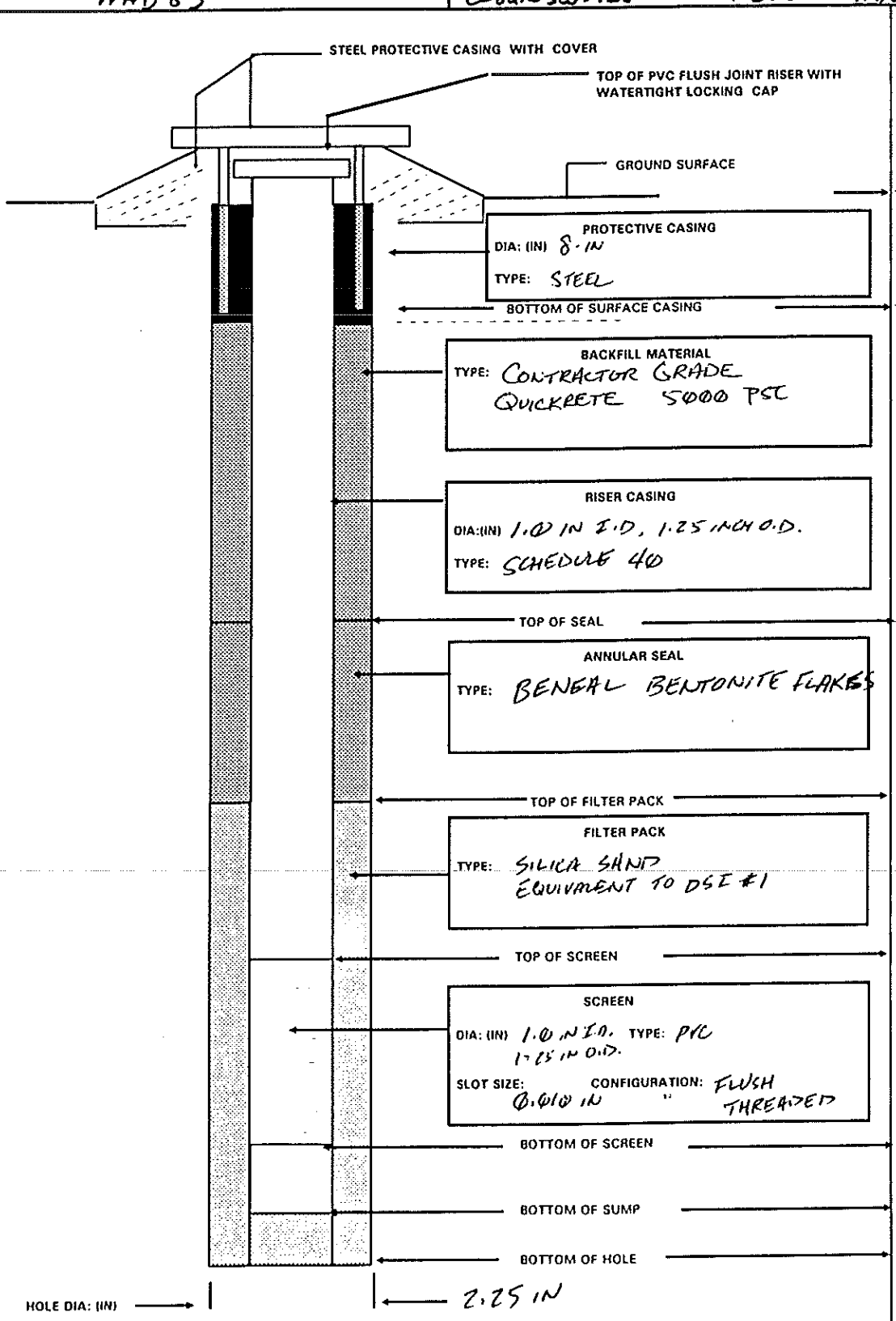
WELL NUMBER: MW-25

BEGIN: 12/02/99 END: 12/02/99

COORDINATES: N: 739626.678
E: 973569.71

DATUM/UNITS: NAD 83

REFERENCE POINT: Groundsurface ELEVATION: 13.8 DATUM/UNITS: NAVD88/ft AMSL



	DEPTH (BGS)	ELEV
GROUND SURFACE	0	13.8
BOTTOM OF SURFACE CASING	~~0.64~~ 12/6/99	~~13.16~~ 12.97
TOP OF SEAL	0.5	13.3
TOP OF FILTER PACK	2.60	11.2
TOP OF SCREEN	3.60	10.2
BOTTOM OF SCREEN	13.1	0.7
BOTTOM OF SUMP	13.35	0.45
BOTTOM OF HOLE	13.5	0.30

MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility Logback#9 DELIVERY ORDER NO: 0051

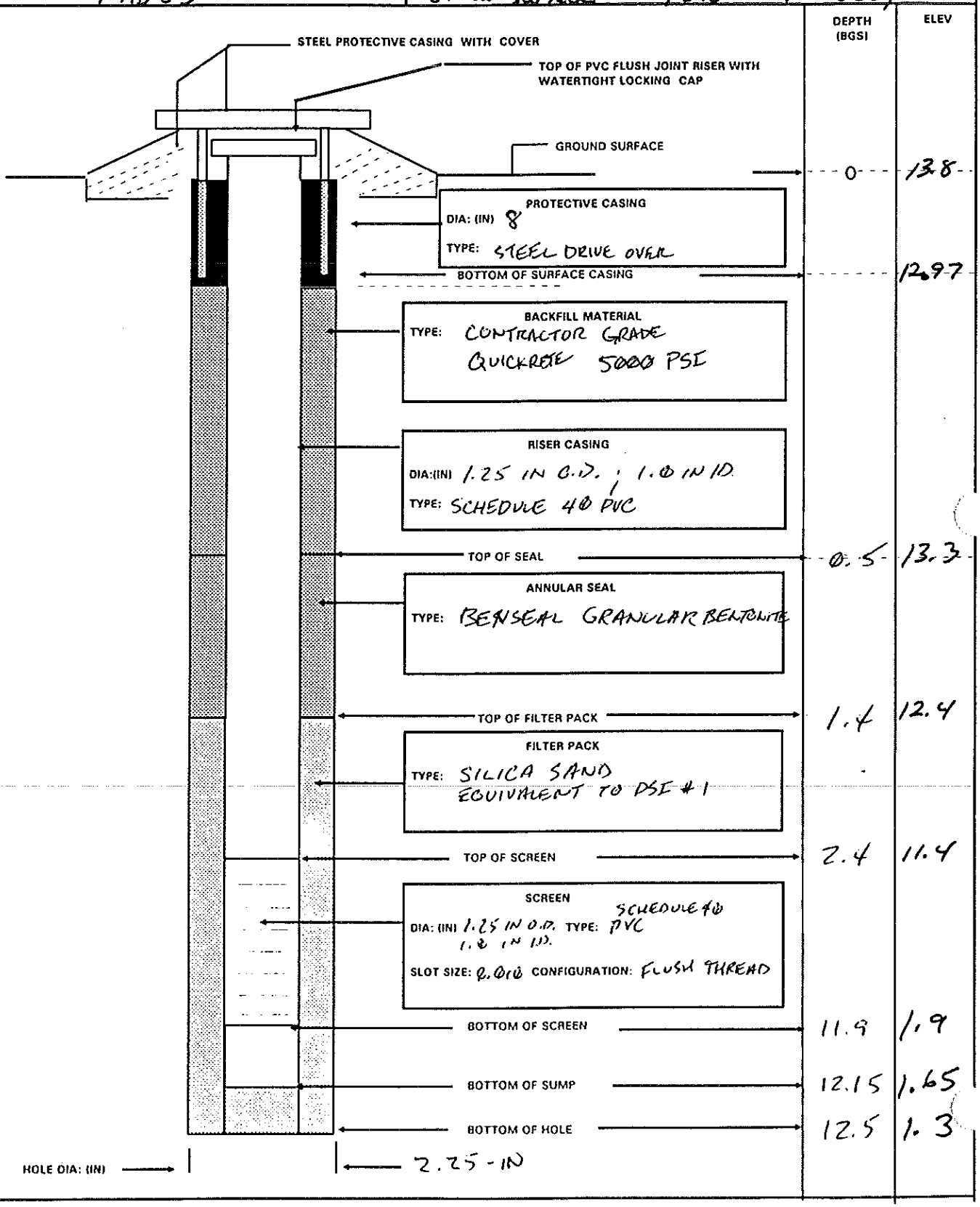
WELL NUMBER: MW-26

BEGIN: 12/02/99 END: 12/02/99

COORDINATES: N: 739842.858
E: 973638.06

DATUM/UNITS: NAD 83

REFERENCE POINT: Ground surface ELEVATION: 13.8 DATUM/UNITS: NAVD 88/ELAMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility

DELIVERY ORDER NO: 0051

WELL NUMBER: NW~~SB~~-27 Logbook #7

BEGIN: 1/11/00

END: 1/11/00

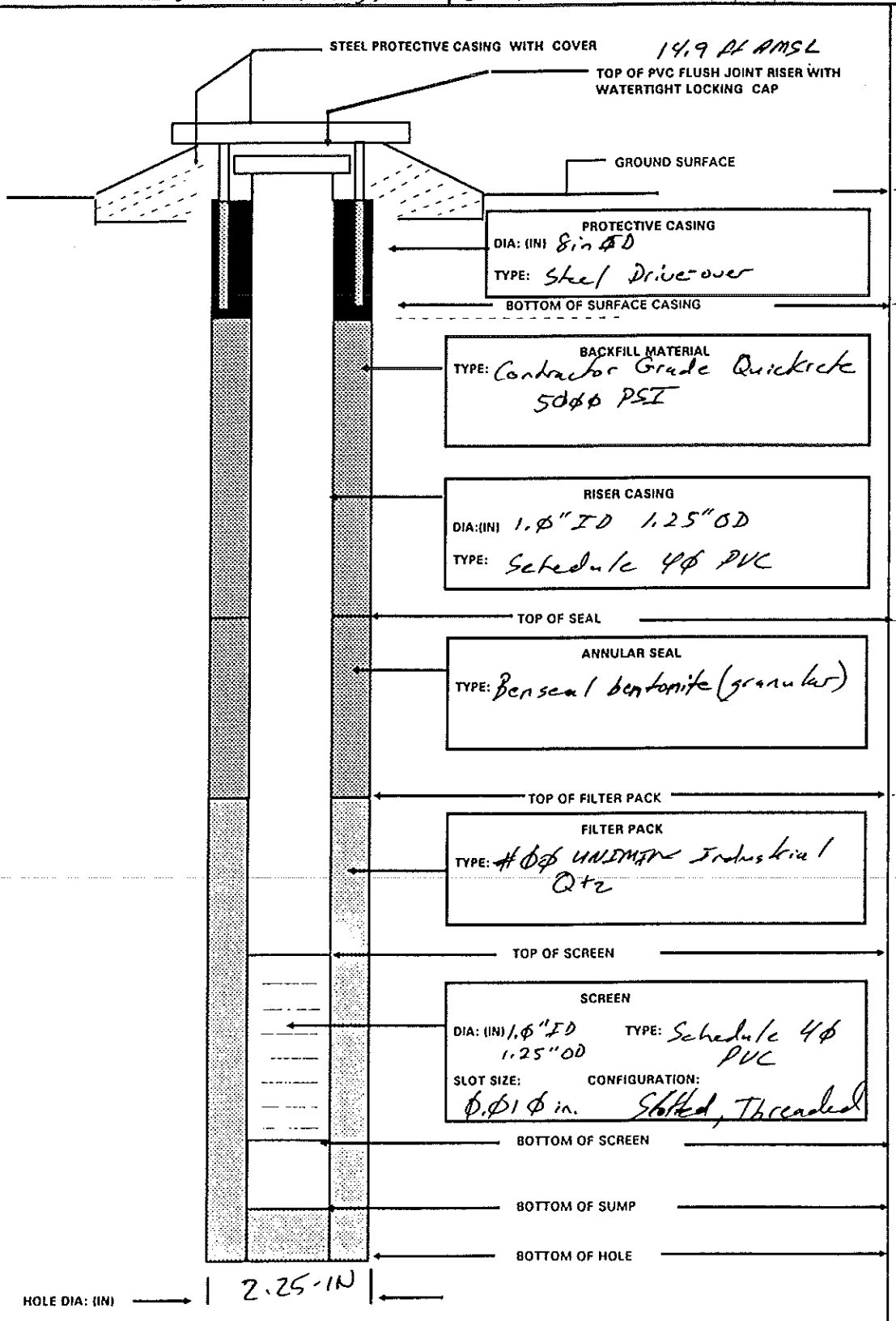
COORDINATES: N: 739785.679
E: 97345.606

DATUM/UNITS: NAD 83 GA S.P. east

REFERENCE POINT: Ground surface

ELEVATION: 14.9

DATUM/UNITS: NAVD88/FT AMSL



	DEPTH (BGS)	ELEV
GROUND SURFACE	0	14.9
BOTTOM OF SURFACE CASING	Ø.8	14.1
TOP OF SEAL	Ø.5	14.4
TOP OF FILTER PACK	1.5	13.4
TOP OF SCREEN	2.5	12.4
BOTTOM OF SCREEN	12.Ø	2.9
BOTTOM OF SUMP	12.25	2.65
BOTTOM OF HOLE	12.5	2.4

MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility — DELIVERY ORDER NO: 0051

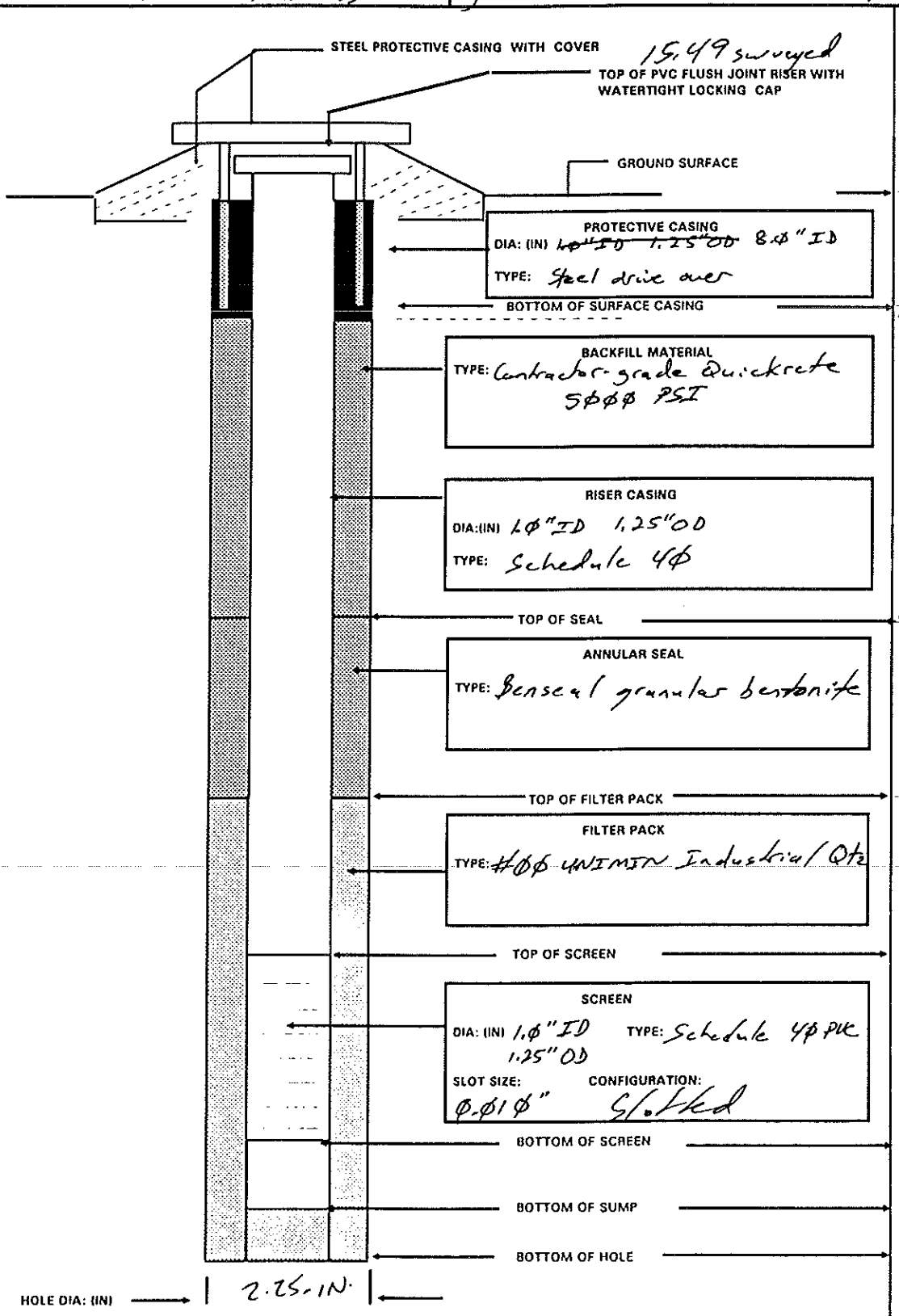
WELL NUMBER: MW SB-28 Logbook #7

BEGIN: 1/11/00 — END: 1/11/00

COORDINATES: N: 739617.74 E: 973272.873

DATUM/UNITS: NAD 83 GA S.P. east

REFERENCE POINT: ground surface — ELEVATION: 15.3 — DATUM/UNITS: NAVD88/AMSL



MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility

DELIVERY ORDER NO: 0051

WELL NUMBER: MW-29 Lookout #7

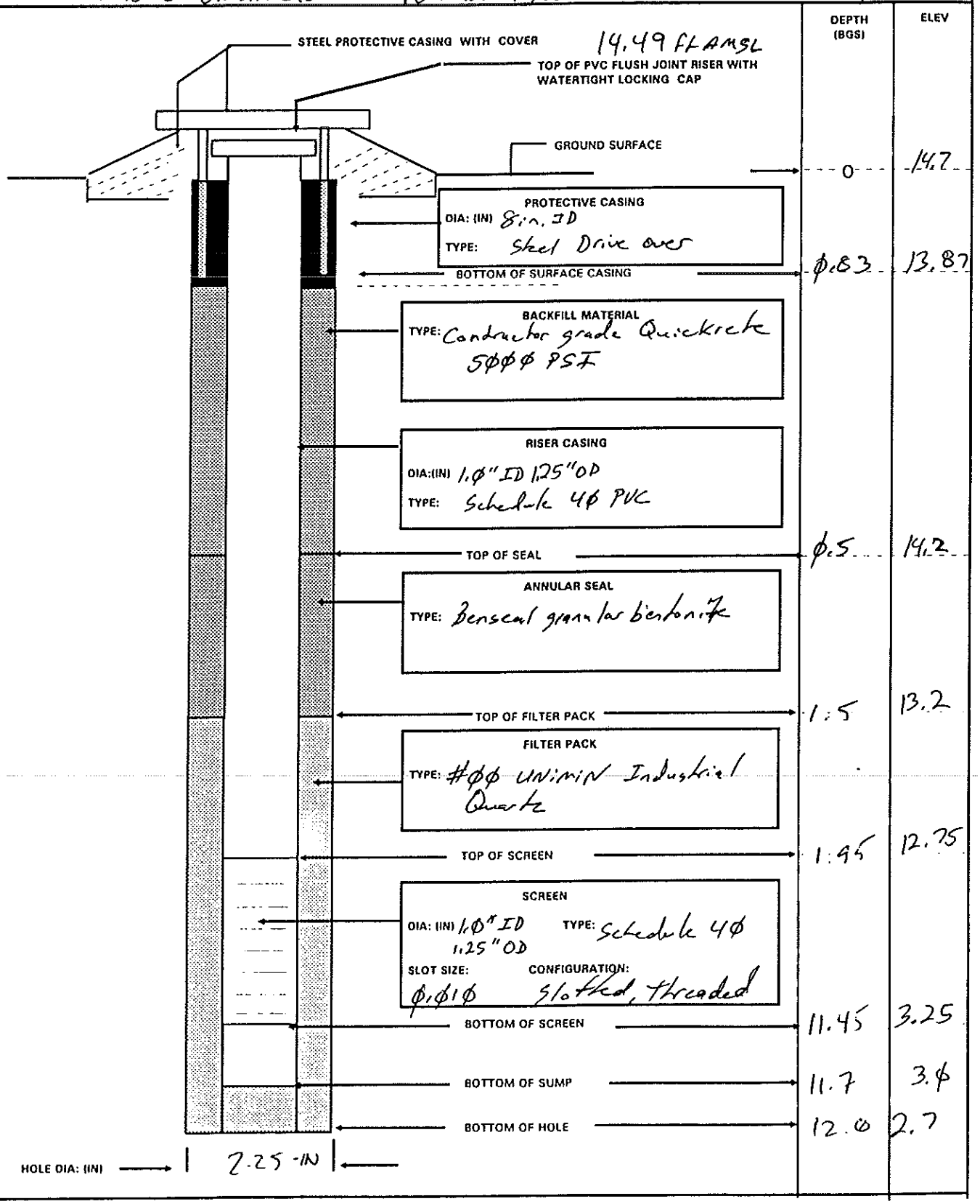
BEGIN: 1/11/00

END: 1/11/00

COORDINATES: N: 739527.208
E: 973277.647

DATUM/UNITS: NAD83 GA S.P. east

REFERENCE POINT:	ELEVATION:	DATUM/UNITS:
Ground surface	14.7	NAVD88/FT AMSL



MONITORING WELL

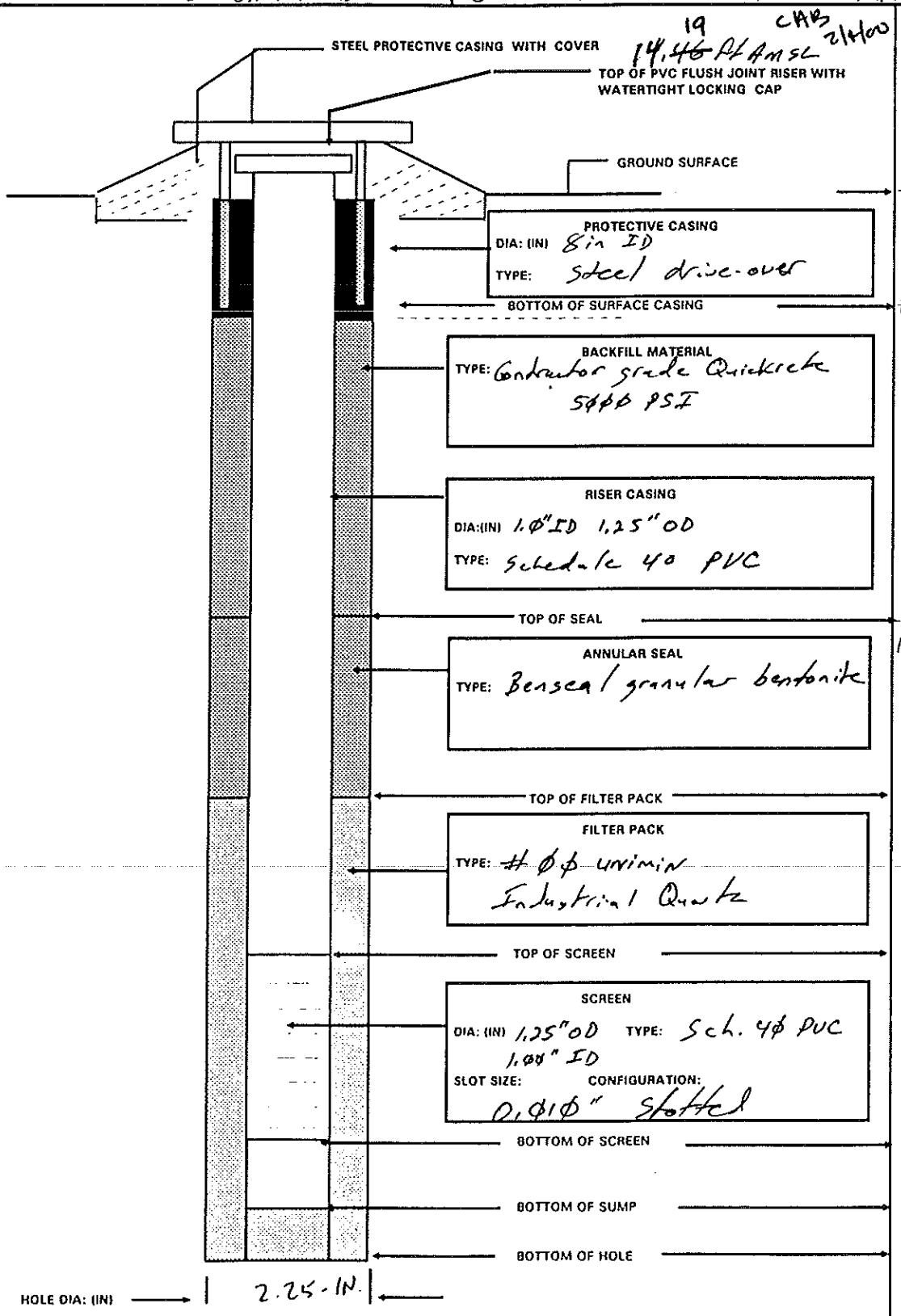
PROJECT: CAP-Part A, Bulk Fuel Facility Logbook #7 DELIVERY ORDER NO: 0051

WELL NUMBER: ~~SB-30~~ MW-30

BEGIN: 1/11/00 END: 1/11/00

COORDINATES: ~~739472.228~~ N: ~~739529.291~~ CAB
973295.514 → E: ~~973317.783~~ CAB 2/4/00
DATUM/UNITS: NAD 83 GA S.P. east 2/4/00

REFERENCE POINT: Ground surface ELEVATION: ~~14.8~~ 14.10 CAB 2/4/00 DATUM/UNITS: NAVD88/ft AMSL



	DEPTH (BGS)	ELEV
GROUND SURFACE	0	14.6
BOTTOM OF SURFACE CASING	0.83	13.77
TOP OF SEAL	0.5	14.1
TOP OF FILTER PACK	0.9	13.7
TOP OF SCREEN	1.9	12.7
BOTTOM OF SCREEN	11.40	3.2
BOTTOM OF SUMP	11.65	2.95
BOTTOM OF HOLE	12.0	2.6

MONITORING WELL

PROJECT: CAP-Part A, Bulk Fuel Facility

DELIVERY ORDER NO: 0051

WELL NUMBER: MW-31 Logbook #7

BEGIN: 1/10/00

END: 1/10/00

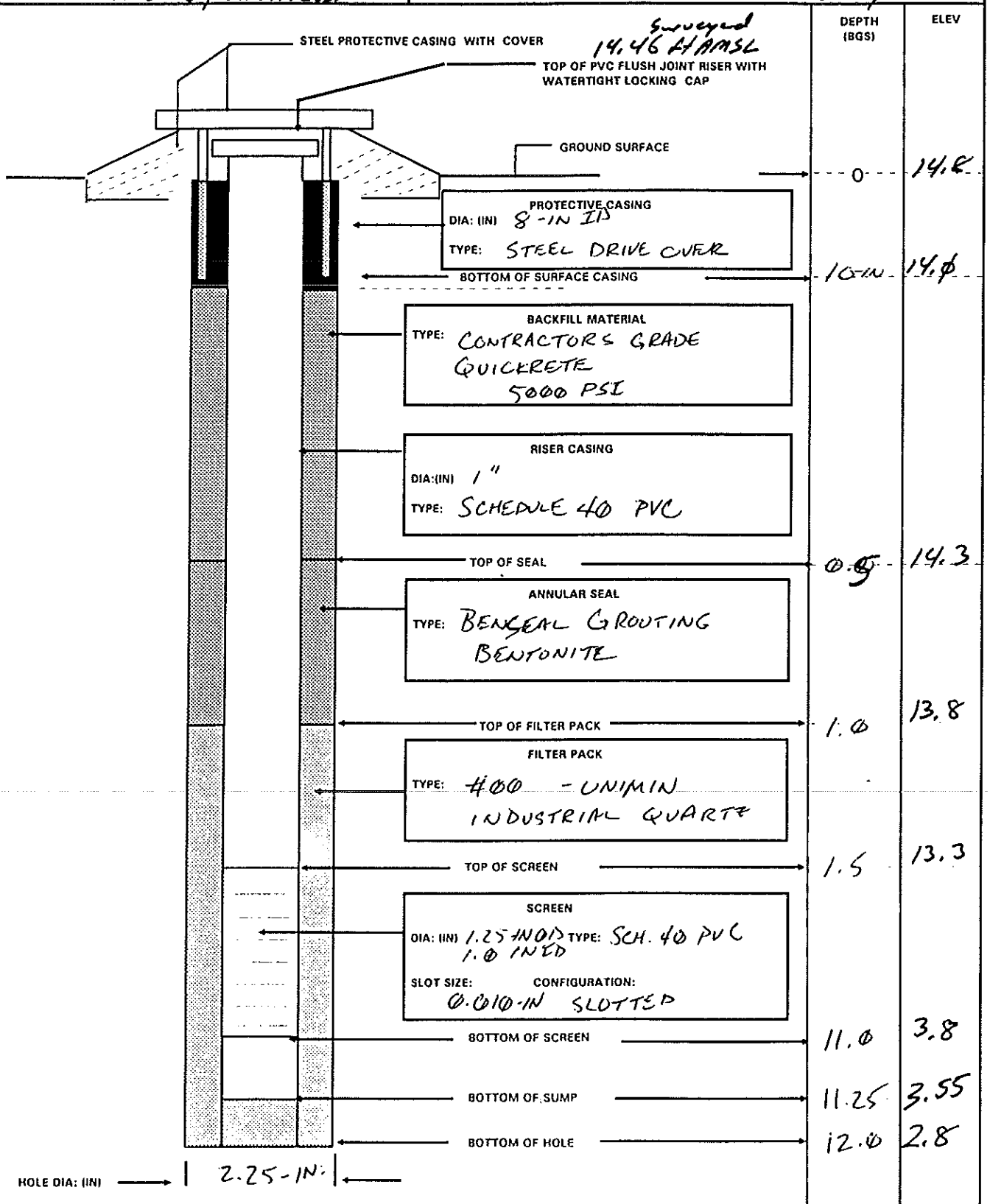
COORDINATES: N: 739524.291
E: 973397.183

DATUM/UNITS: NAD 83 / CA S.P. east

REFERENCE POINT: Ground surface

ELEVATION: 14.8

DATUM/UNITS: NAVD88/CF AMSL



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APPENDIX VIII

GROUNDWATER LABORATORY RESULTS

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Former UST 117, Building 7002
Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCL[1]	IWQS[2]	MW-01 BF0112 12/01/99 6.7 to 11.7	MW-02 BF0212 12/01/99 8.0 to 13.0	MW-03 BF0312 12/01/99 8.0 to 13.0	MW-04 BF0412 12/03/99 8.5 to 12.5	MW-05 BF0512 12/03/99 8.0 to 12.0	MW-06 BF0612 12/02/99 8.0 to 12.0	MW-07 BF0712 12/02/99 6.5to 10.5
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1,000	200,000	1.0 U	1.0 U	1.0 U	0.33 J	0.51 J	1.0 U	1.0 U
Ethylbenzene	700	28,718	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.4 =
Xylenes	10,000	NRC	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	2.1 J
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	10.0 U	9.90 UJ	9.80 U	9.80 U	9.8 U	10.9 UJ	11.1 U
Acenaphthene	NRC	NRC	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Acenaphthylene	NRC	NRC	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Anthracene	NRC	110,000	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Benzo(a)anthracene	NRC	0.0311	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Benzo(a)pyrene	0.2	0.0311	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Benzo(b)fluoranthene	NRC	NRC	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Benzo(g,h,i)perylene	NRC	NRC	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Benzo(k)fluoranthene	NRC	0.0311	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Chrysene	NRC	0.0311	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Dibenzo(a,h)anthracene	NRC	0.0311	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Fluoranthene	NRC	370	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Fluorene	NRC	14,000	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Naphthalene	NRC	NRC	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	5.8 =
Phenanthrene	NRC	NRC	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U
Pyrene	NRC	11,000	1.0 U	0.99 UJ	0.98 U	0.98 U	0.98 U	1.1 UJ	1.1 U

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).

BGS - Below ground surface.
IWQS - In-stream Water Quality Standard.
MW - Monitoring well.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
VP - Vertical profile.
Bold values exceed the applicable standard.

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

TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCL[1]	IWQS[2]	MW-08 BF0812 12/03/99 6.5 to 11.5	MW-09 BF0912 12/03/99 8.5 to 12.5	MW-10 BF1012 12/02/99 6.0 to 10.0	MW-10 BF1014[3] 12/02/99 6.0 to 10.0	MW-11 BF1112 12/02/99 6.0 to 10.0	MW-12 BF1212 12/04/99 8.0 to 12.0	MW-13 BF1312 11/30/99 12.5 to 16.5	MW-14 BF1412 12/01/99 7.2 to 12.2
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	1.0 UJ	1.0 UJ	4.8 =	4.7 =	1.0 U	1.0 UJ	1.0 U	1.0 U
Toluene	1,000	200,000	1.0 UJ	0.42 J	0.53 J	0.60 J	1.0 U	0.36 J	1.0 U	1.0 U
Ethylbenzene	700	28,718	1.0 UJ	1.4 =	9.5 =	8.9 =	1.0 U	1.0 UJ	1.0 U	1.0 U
Xylenes	10,000	NRC	3.0 UJ	3.0 U	3.8 =	3.6 =	3.0 U	3.0 UJ	3.0 U	3.0 U
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	1.0 UJ	9.8 U	10.0 U	9.7 U	10.0 U	10.5 U	9.52 U	10.0 U
Acenaphthene	NRC	NRC	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Acenaphthylene	NRC	NRC	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Anthracene	NRC	110,000	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Benzo(a)anthracene	NRC	0.0311	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Benzo(a)pyrene	0.2	0.0311	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Benzo(b)fluoranthene	NRC	NRC	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Benzo(g,h,i)perylene	NRC	NRC	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Benzo(k)fluoranthene	NRC	0.0311	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Chrysene	NRC	0.0311	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Dibenzo(a,h)anthracene	NRC	0.0311	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Fluoranthene	NRC	370	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Fluorene	NRC	14,000	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Naphthalene	NRC	NRC	1.0 UJ	0.98 U	41.2 =	38.8 =	1.0 U	1.0 U	0.95 U	1.0 U
Phenanthrene	NRC	NRC	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U
Pyrene	NRC	11,000	1.0 UJ	0.98 U	1.0 U	0.97 U	1.0 U	1.0 U	0.95 U	1.0 U

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).
[3]Duplicate sample.

BGS - Below ground surface.
IWQS - In-stream Water Quality Standard.
MW - Monitoring well.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
VP - Vertical profile.
Bold values exceed the applicable standard.

Laboratory Qualifiers
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UJ - Indicates the compound was not detected at the reported concentration and the concentration was estimated.
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TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCL[1]	IWQS[2]	MW-15 BF1512 12/02/99 6.0 to 10	MW-16 BF1612 12/02/99 6.3 to 11.3	MW-17 BF1712 12/ 8/99 3.0 to 12.5	MW-18 BF1812 12/01/99 6.1 to 11.1	MW-19 BF1912 11/30/99 8.0 to 13.0	MW-20 BF2012 12/ 7/99 2.2 to 11.7	MW-20 BF2014[3] 12/7/99 2.2 to 11.7	MW-21 BF2112 12/07/99 3.4 to 12.9
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	1.0 U	1.0 U	0.44 J	1.0 U	1.0 U	0.60 J	0.59 J	**130 =**
Toluene	1,000	200,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.8 =
Ethylbenzene	700	28,718	1.0 U	1.0 U	2.0 =	1.0 U	1.0 U	3.1 =	3.0 =	14.7 =
Xylenes	10,000	NRC	1.3 J	3.0 U	14.2 =	3.0 U	3.0 U	21.0 =	20.4 =	710 =
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	10.0 U	9.9 U	0.95 U	10.0 U	9.90 UJ	1.1 U	0.95 U	0.95 U
Acenaphthene	NRC	NRC	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Acenaphthylene	NRC	NRC	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Anthracene	NRC	110,000	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Benzo(a)anthracene	NRC	0.0311	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Benzo(a)pyrene	0.2	0.0311	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Benzo(b)fluoranthene	NRC	NRC	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Benzo(g,h,i)perylene	NRC	NRC	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Benzo(k)fluoranthene	NRC	0.0311	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Chrysene	NRC	0.0311	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Dibenzo(a,h)anthracene	NRC	0.0311	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Fluoranthene	NRC	370	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Fluorene	NRC	14,000	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Naphthalene	NRC	NRC	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	2.0 =	2.6 =	18.3 =
Phenanthrene	NRC	NRC	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U
Pyrene	NRC	11,000	1.0 U	0.99 U	0.95 U	1.0 U	0.99 UJ	1.1 U	0.95 U	0.95 U

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).
[3]Duplicate sample.

BGS - Below ground surface.
IWQS - In-stream Water Quality Standard.
MW - Monitoring well.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
VP - Vertical profile.
Bold values exceed the applicable standard.

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

TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCL[1]	IWQS[2]	MW-22 BF2212 12/07/99 2.4 to 11.9	MW-23 BF2312 12/07/99 2.7 to 12.2	MW-24 BF2412 12/ 02/99 7.5 to 12.5	MW-25 BF2512 12/02/99 7.6 to 12.6	MW-26 BF2612 12/02/99 7.2 to 12.2	MW-27 BF2712 01/11/99 7.0 to 12.0	MW-28 BF2812 01/11/99 7.5 to 12.5
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	**553 =**	1.1 =	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U
Toluene	1,000	200,000	0.86 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U
Ethylbenzene	700	28,718	86.7 =	0.48 J	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U
Xylenes	10,000	NRC	352 =	1.4 J	3.0 U	3.0 U	3.0 U	3.0 UJ	3.0 U
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	1.0 U	1.0 U	9.9 UJ	9.8 UJ	10.0 U	1.1 U	1.0 UJ
Acenaphthene	NRC	NRC	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Acenaphthylene	NRC	NRC	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Anthracene	NRC	110,000	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Benzo(a)anthracene	NRC	0.0311	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Benzo(a)pyrene	0.2	0.0311	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Benzo(b)fluoranthene	NRC	NRC	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Benzo(g,h,i)perylene	NRC	NRC	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Benzo(k)fluoranthene	NRC	0.0311	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Chrysene	NRC	0.0311	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Dibenzo(a,h)anthracene	NRC	0.0311	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Fluoranthene	NRC	370	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Fluorene	NRC	14,000	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Indeno(1,2,3-cd)pyrene	NRC	0.0311	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Naphthalene	NRC	NRC	101 =	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Phenanthrene	NRC	NRC	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Pyrene	NRC	11,000	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).
[3]Duplicate sample.

BGS - Below ground surface.
IWQS – In-stream Water Quality Standard.
MW - Monitoring well.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
VP - Vertical profile.
Bold values exceed the applicable standard.

Laboratory Qualifiers
U - Indicates the compound was not detected at the concentration reported.
J - Indicates the value for the compound is an estimated value.
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TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCL[1]	IWQS[2]	MW-29 BF2912 01/11/99 5.7 to 10.7	MW-30 BF3012 01/11/99 5.9 to10.9	MW-30 BF3014[3] 01/11/99 5.9 to 10.9	MW-31 BF3112 01/ 10/99 5.7 to 10.7
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	1.0 UJ	1.0 U	1.0 U	1.0 U
Toluene	1,000	200,000	0.40 J	1.0 U	1.0 U	1.0 U
Ethylbenzene	700	28,718	1.0 UJ	1.0 U	1.0 U	1.0 U
Xylenes	10,000	NRC	376 J	3.0 U	3.0 U	3.0 U
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Acenaphthene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Acenaphthylene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Anthracene	NRC	110,000	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Benzo(a)anthracene	NRC	0.0311	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Benzo(a)pyrene	0.2	0.0311	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Benzo(b)fluoranthene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Benzo(g,h,i)perylene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Benzo(k)fluoranthene	NRC	0.0311	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Chrysene	NRC	0.0311	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Dibenzo(a,h)anthracene	NRC	0.0311	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Fluoranthene	NRC	370	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Fluorene	NRC	14,000	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Indeno(1,2,3-cd)pyrene	NRC	0.0311	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Naphthalene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Phenanthrene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ
Pyrene	NRC	11,000	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).
[3]Duplicate sample.

BGS - Below ground surface.
IWQS - In-stream Water Quality Standard.
MW - Monitoring well.
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PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
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Bold values exceed the applicable standard.

Laboratory Qualifiers
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UJ - Indicates the compound was not detected at the reported concentration and the concentration was estimated.
= - Indicates the compound was detected at the concentration reported.

TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCL[1]	IWQS[2]	VP-2 BFV212 12/04/99 12.0 to 17.0	VP-2 BFV222 12/04/99 17.0 to 22.0	VP-2 BFV232 12/04/99 22.0 to 27.0	VP-2 BFV242 12/04/99 27.0 to 32.0	VP-2 BFV244[3] 12/04/99 27.0 to 32.0	VP-2 BFV252 12/04/99 32.0 to 37.0	VP-2 BFV262 12/04/99 31.0 to 42.0
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	1.0 U	1.0 U	1.0 U	0.22 J	0.24 J	1.0 U	1.0 U
Toluene	1,000	200,000	0.42 J	1.0 U	0.30 J	0.40 J	0.27 J	0.36 J	0.35 J
Ethylbenzene	700	28,718	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes	10,000	NRC	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Acenaphthene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Acenaphthylene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Anthracene	NRC	110,000	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Benzo(a)anthracene	NRC	0.0311	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Benzo(a)pyrene	0.2	0.0311	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Benzo(b)fluoranthene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Benzo(g,h,i)perylene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Benzo(k)fluoranthene	NRC	0.0311	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Chrysene	NRC	0.0311	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Dibenzo(a,h)anthracene	NRC	0.0311	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Fluoranthene	NRC	370	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Fluorene	NRC	14,000	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Naphthalene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Phenanthrene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U
Pyrene	NRC	11,000	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U	1.0 U

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).
[3]Duplicate sample.

BGS - Below ground surface.
IWQS - In-stream Water Quality Standard.
MW - Monitoring well.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
VP - Vertical profile.
Bold values exceed the applicable standard.

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

TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCL[1]	IWQS[2]	VP-3 BFV312 12/05/99 12.0 to 17.0	VP-3 BFV322 12/05/99 17.0 to 22.0	VP-3 BFV332 12/05/99 22.0 to 27.0	VP-3 BFV342 12/05/99 27.0 to 32.0	VP-3 BFV352 12/05/99 32.0 to 37.0	VP-3 BFV362 12/05/99 37.0 to 42.0
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Toluene	1,000	200,000	0.33 J	0.80 J	0.31J	0.37 J	0.28 J	0.28 J
Ethylbenzene	700	28,718	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Xylenes	10,000	NRC	3.0 U	3.0 U	3.0 U	3.0 U	3.0 UJ	3.0 UJ
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene	NRC	NRC	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene	NRC	NRC	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene	NRC	110,000	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)anthracene	NRC	0.0311	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)pyrene	0.2	0.0311	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(b)fluoranthene	NRC	NRC	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(g,h,i)perylene	NRC	NRC	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(k)fluoranthene	NRC	0.0311	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chrysene	NRC	0.0311	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzo(a,h)anthracene	NRC	0.0311	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene	NRC	370	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene	NRC	14,000	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	NRC	NRC	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Phenanthrene	NRC	NRC	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	NRC	11,000	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).

BGS - Below ground surface.
IWQS - In-stream Water Quality Standard.
MW - Monitoring well.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
VP - Vertical profile.
Bold values exceed the applicable standard.

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

TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCL[1]	IWQS[2]	VP-4 BFV412 12/04/99 13.0 to 18.0	VP-4 BFV422 12/04/99 18.0 to 23.0	VP-4 BFV424[3] 12/04/99 18.0 to 23.0	VP-4 BFV432 12/04/99 23.0 to 28.0	VP-4 BFV442 12/04/99 28.0 to 33.0	VP-4 BFV452 12/04/99 33.0 to 38.0	VP-4 BFV462 12/04/99 38.0 to 43.0
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	**81.8** =	1.4 =	2.6 =	0.60 J	0.29 J	0.24 J	0.21 J
Toluene	1,000	200,000	0.42 J	0.44 J	0.54 J	0.70 J	0.42 J	1.0 U	0.79 J
Ethylbenzene	700	28,718	1.0 U	1.0 U	1.0 U	0.22 J	0.16 J	1.0 U	1.0 U
Xylenes	10,000	NRC	31.5 =	0.36 J	0.35 U	3.0 U	3.0 UJ	3.0 U	3.0 U
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Acenaphthene	NRC	NRC	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Acenaphthylene	NRC	NRC	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Anthracene	NRC	110,000	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Benzo(a)anthracene	NRC	0.0311	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Benzo(a)pyrene	0.2	0.0311	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Benzo(b)fluoranthene	NRC	NRC	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Benzo(g,h,i)perylene	NRC	NRC	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Benzo(k)fluoranthene	NRC	0.0311	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Chrysene	NRC	0.0311	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Dibenzo(a,h)anthracene	NRC	0.0311	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Fluoranthene	NRC	370	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Fluorene	NRC	14,000	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Indeno(1,2,3-cd)pyrene	NRC	0.0311	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Naphthalene	NRC	NRC	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Phenanthrene	NRC	NRC	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ
Pyrene	NRC	11,000	1.0 U	1.0 U	1.0 UJ	0.98 U	1.0 U	0.99 U	1.0 UJ

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).
[3]Duplicate sample.

BGS - Below ground surface.
IWQS - In-stream Water Quality Standard.
MW - Monitoring well.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
VP - Vertical profile.
Bold values exceed the applicable standard.

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

TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCL[1]	IWQS[2]	VP-5 BFV512 12/02/99 12.5 to 17.5	VP-5 BFV522 12/02/99 17.5 to 22.5	VP-5 BFV532 12/ 02/99 22.5 to 27.5	VP-5 BFV542 12/02/99 27.5 to 32.5	VP-5 BFV552 12/02/99 32.5 to 37.5	VP-5 BFV562 12/02/99 37.5 to 42.5	VP-5 BFV564[3] 12/02/99 37.5 to 42.5
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ
Toluene	1,000	200,000	1.0 U	1.0 U	0.51 J	1.0 UJ	0.58 J	1.0 UJ	0.58 J
Ethylbenzene	700	28,718	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	0.17 J
Xylenes	10,000	NRC	3.0 U	3.0 U	3.0 UJ	3.0 UJ	3.0 U	3.0 UJ	3.0 UJ
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	9.9 U	9.8 U
Acenaphthene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Acenaphthylene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Anthracene	NRC	110,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Benzo(a)anthracene	NRC	0.0311	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Benzo(a)pyrene	0.2	0.0311	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Benzo(b)fluoranthene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Benzo(g,h,i)perylene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Benzo(k)fluoranthene	NRC	0.0311	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Chrysene	NRC	0.0311	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Dibenzo(a,h)anthracene	NRC	0.0311	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Fluoranthene	NRC	370	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Fluorene	NRC	14,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Naphthalene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Phenanthrene	NRC	NRC	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U
Pyrene	NRC	11,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	0.98 U

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).
[3]Duplicate sample.

BGS - Below ground surface.
IWQS - In-stream Water Quality Standard.
MW - Monitoring well.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
VP - Vertical profile.
Bold values exceed the applicable standard.

Laboratory Qualifiers
U - Indicates the compound was not detected at the concentration reported.
J - Indicates the value for the compound is an estimated value.
UJ - Indicates the compound was not detected at the reported concentration and the concentration was estimated.
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TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCL[1]	IWQS[2]	VP-6 BFV612 12/03/99 13.0 to 18.0	VP-6 BFV622 12/03/99 18.0 to 23.0	VP-6 BFV632 12/03/99 23.0 to 28.0	VP-6 BFV642 12/03/99 28.0 to 33.0	VP-6 BFV652 12/03/99 33.0 to 38.0	VP-6 BFV662 12/03/99 38.0 to 43.0
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	4.4 J	0.26 J	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ
Toluene	1,000	200,000	0.56 J	0.46 J	0.43 J	0.45 J	0.47 J	0.44 J
Ethylbenzene	700	28,718	0.44J	0.11 J	1.0 UJ	1.0 UJ	0.16 J	0.15 J
Xylenes	10,000	NRC	2.7 J	3.0 UJ	3.0 UJ	3.0 UJ	3.0 UJ	3.0 UJ
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	1.0 UJ	10.0 U	1.0 UJ	10.0 U	10.0 U	10.0 U
Acenaphthene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Acenaphthylene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Anthracene	NRC	110,000	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Benzo(a)anthracene	NRC	0.0311	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Benzo(a)pyrene	0.2	0.0311	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Benzo(b)fluoranthene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Benzo(g,h,i)perylene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Benzo(k)fluoranthene	NRC	0.0311	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Chrysene	NRC	0.0311	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Dibenzo(a,h)anthracene	NRC	0.0311	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Fluoranthene	NRC	370	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Fluorene	NRC	14,000	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Naphthalene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Phenanthrene	NRC	NRC	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Pyrene	NRC	11,000	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).
[3]Duplicate sample.

BGS - Below ground surface.
IWQS - In-stream Water Quality Standard.
MW - Monitoring well.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
VP - Vertical profile.
Bold values exceed the applicable standard.

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

TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCL[1]	IWQS[2]	VP-7 BFV712 12/04/99 12.0 to 17.0	VP-7 BFV722 12/04/99 17.0 to 22.0	VP-7 BFV732 12/ 04/99 22.0 to 27.0	VP-7 BFV742 12/04/99 27.0 to 32.0	VP-7 BFV744[3] 12/04/99 32.0 to 37.0	VP-7 BFV752 12/04/99 32.0 to 37.0	VP-7 BFV762 12/04/99 37.0 to 42.0
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	1.0 UJ	1.0 UJ	0.23 J	0.31 J	0.28 J	0.25 J	1.0 U
Toluene	1,000	200,000	0.60J	0.35 J	0.70 J	0.58 J	0.70 J	0.74 J	0.56 J
Ethylbenzene	700	28,718	0.10 J	1.0 UJ	0.12 J	1.0 UJ	1.0 UJ	0.12 J	0.15 J
Xylenes	10,000	NRC	0.33 J	3.0 UJ	3.0 UJ	3.0 UJ	3.0 UJ	3.0 UJ	3.0 U
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	9.9 U	9.8 U	9.9 U	10.5 U	10.0 U	1.0 U	1.0 U
Acenaphthene	NRC	NRC	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene	NRC	NRC	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene	NRC	110,000	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)anthracene	NRC	0.0311	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)pyrene	0.2	0.0311	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(b)fluoranthene	NRC	NRC	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(g,h,i)perylene	NRC	NRC	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(k)fluoranthene	NRC	0.0311	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Chrysene	NRC	0.0311	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzo(a,h)anthracene	NRC	0.0311	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene	NRC	370	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene	NRC	14,000	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	NRC	NRC	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Phenanthrene	NRC	NRC	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	NRC	11,000	0.99 U	0.98 U	0.99 U	1.0 U	1.0 U	1.0 U	1.0 U

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).
[3]Duplicate sample.

BGS - Below ground surface.
IWQS - In-stream Water Quality Standard.
MW - Monitoring well.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
VP - Vertical profile.
Bold values exceed the applicable standard.

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

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SUMMARY TABLE
OF
SURFACE WATER ANALYTICAL RESULTS

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Former UST 117, Building 7002
Hunter Army Airfield
Chatham County, Facility ID: 9-025113*1

TABLE VIII-B. SUMMARY OF SURFACE WATER ANALYTICAL RESULTS

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCLs[1]	IWQS[2]	SD-01 BF0117 12/06/99	SD-02 BF0217 12/06/99	SD-03 BF0317 12/06/99	SD-04 BF0417 12/06/99	SD-06 BF0617 12/07/99	SD-07 BF0717 12/07/99	SD-08 BF0817 12/07/99
VOCs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	1.0 U	0.17 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1,000	200,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	700	28,718	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes	10,000	NRC	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
PAHs	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Acenaphthene	NRC	NRC	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Acenaphthylene	NRC	NRC	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Anthracene	NRC	110,000	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Benzo(a)anthracene	NRC	0.0311	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Benzo(a)pyrene	0.2	0.0311	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Benzo(b)fluoranthene	NRC	NRC	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Benzo(g,h,i)perylene	NRC	NRC	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Benzo(k)fluoranthene	NRC	0.0311	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Chrysene	NRC	0.0311	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Dibenzo(a,h)anthracene	NRC	0.0311	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Fluoranthene	NRC	370	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Fluorene	NRC	14,000	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Naphthalene	NRC	NRC	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Phenanthrene	NRC	NRC	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U
Pyrene	NRC	11,000	0.98 U	0.98 U	0.98 U	0.98 U	1.0 U	1.0 U	0.98 U

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03)
[3]Duplicate sample.

BGS - Below ground surface.
IWQS - In-stream Water Quality Standard.
MCL - Maximum contaminant level.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
SDWA - Safe Drinking Water Act.
VOCs - Volatile organic compounds.

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

TABLE VIII-B. SUMMARY OF SURFACE WATER ANALYTICAL RESULTS (continued)

Location Sample ID Date Collected Depth (ft BGS)	Federal SDWA MCL[1]	IWQS[2]	SD-09 BF0917 12/07/99	SD-09 BF1019[3] 12/07/99
VOCs	µg/L	µg/L	µg/L	µg/L
Benzene	5	71.28	1.0 U	1.0 U
Toluene	1,000	200,000	1.0 U	1.0 U
Ethylbenzene	700	28,718	1.0 U	1.0 U
Xylenes	10,000	NRC	3.0 U	3.0 U
PAHs	µg/L	µg/L	µg/L	µg/L
2-Chloronaphthalene	NRC	NRC	0.98 UJ	0.98 U
Acenaphthene	NRC	NRC	0.98 UJ	0.98 UJ
Acenaphthylene	NRC	NRC	0.98 UJ	0.98 UJ
Anthracene	NRC	110,000	0.98 UJ	0.98 UJ
Benzo(a)anthracene	NRC	0.0311	0.98 UJ	0.98 UJ
Benzo(a)pyrene	0.2	0.0311	0.98 UJ	0.98 UJ
Benzo(b)fluoranthene	NRC	NRC	0.98 UJ	0.98 UJ
Benzo(g,h,i)perylene	NRC	NRC	0.98 UJ	0.98 UJ
Benzo(k)fluoranthene	NRC	0.0311	0.98 UJ	0.98 UJ
Chrysene	NRC	0.0311	0.98 UJ	0.98 UJ
Dibenzo(a,h)anthracene	NRC	0.0311	0.98 UJ	0.98 UJ
Fluoranthene	NRC	370	0.98 UJ	0.98 UJ
Fluorene	NRC	14,000	0.98 UJ	0.98 UJ
Indeno(1,2,3-cd)pyrene	NRC	0.0311	0.98 UJ	0.98 UJ
Naphthalene	NRC	NRC	0.98 UJ	0.98 UJ
Phenanthrene	NRC	NRC	0.98 UJ	0.98 UJ
Pyrene	NRC	11,000	0.98 UJ	0.98 UJ

NOTE: [1]U.S. Environmental Protection Agency Safe Drinking Water Act maximum contaminant level.
[2]Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03)
[3]Duplicate sample.

BGS - Below ground surface.
IWQS - In-stream Water Quality Standard.
MCL - Maximum contaminant level.
NRC - No regulatory criteria.
PAHs - Polynuclear aromatic hydrocarbons.
SDWA - Safe Drinking Water Act.
VOCs - Volatile organic compounds.

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

CHAIN-OF-CUSTODY RECORDS

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

CHAIN OF CUSTODY RECORD

COC NO.: BFFCAPA01

OJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

OJECT NUMBER: DACA21-95-D-0022, DO # 0051

OJECT MANAGER: Allison Bailey

pler (Signature) (Printed Name) Mitchell Hall

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX (3x5g Encores-10mL)	PAH, TPH-DRO	THP-GRO, MOISTURE EXCLUSION Loss	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF1311	11/30/99	1115	Soil	1	1	1									3	3-8 ppm	7.0-8.9 FT
BF1312	11/30/99	1155	water	2			2								4	N/A	12.5-16.5 FT
BF1911	11/30/99	1420	Soil	1	1	1									3	0.0 ppm	6.0-8.0 FT
BF1912	11/30/99	1450	water	2			2								4	N/A	8.0-13.0 FT
BFTB01	11/30/99	1000	water	2											2	N/A	TRIP BLANK
BF0311	12/01/99	0820	soil	1	1	1									3	0.0 ppm	6.0-8.0 FT
BF0312	12/01/99	0905	water	2			2								4	N/A	8.0-13.0 FT
BF0211	12/01/99	1030	Soil	1	1	1									3	0.0 ppm	6.0-8.0 FT
BF0212	12/01/99	1100	water	2			2								4	N/A	8.0-13.0 FT

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Mitchell Hall	12/01/99 1145		12-1-99 1140
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RELINQUISHED BY:	Date/Time 12/1/99 1145	RECEIVED BY:	Date/Time 12-1-99 1810
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RELINQUISHED BY:	Date/Time 12/1/99 1210	RECEIVED BY:	Date/Time 12/1/99 1610
COMPANY NAME: SAIC		COMPANY NAME: GEL	

TOTAL NUMBER OF CONTAINERS: 30

Cooler ID: #50 and #52

Cooler Temperature: 4°C (Field)

FEDEX NUMBER: N/A TRANSPORTED BY LAB COURIER

Temperature Blanks included in both coolers.

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

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature) C. Allison Bailey (Printed Name) C. Allison Bailey

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	PID OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
130811	12-1-99	1515	Soil	3	1	1									5	Ø ppm	2000 ppm
130711	12-1-99	1325	Soil	3	1	1									5	Ø ppm	895 ppm
130812	12-1-99	1530	GW	2			2								4	Ø ppm	
130712	12-1-99	1354	GW	2			2								4	Ø ppm	
BF2512	12-2-99	0835	GW	2											2	Ø ppm	
BF2412	12-2-99	1045	GW	2											2	Ø ppm	
BFØ112	12-1-99	1325	GW	2											2		
BF1412	12-1-99	1505	GW	2											2		
BFTBØ2	12-1-99	1200	Water	2											2		
BF1812	12-1-99	1620	GW	2											2		
BF1912	12-2-99	0840	GW	2											2		
BF1Ø14	12-2-99	0844	GW	2											2		
BF1112	12-2-99	1005	GW	2											2		

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
	12/2/99		12/2/99
COMPANY NAME: SAIC	1210	COMPANY NAME: GEL	1570
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
	12-2-99		
COMPANY NAME: GEL	1210	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
	12-2-99		
COMPANY NAME: GEL	1510	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 36

Cooler ID:

Cooler Temperature: 4°C

FEDEX NUMBER: NA

GEL COURIER

VIII-22

7

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

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature) (Printed Name)

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE Grain Size	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
3F1812	12/1/99	1620	Water				2								2	r	
F1412	12/1/99	1505	Water				2								2		
F0111	12/1/99	1310	Soil											1	1		
F0111	12/1/99	1310	Soil	3	1	1									5		
F1811	12/1/99	1610	Soil	3	1	1									5		

12/02/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: SAIC	12/02/99 1210	COMPANY NAME: GEL	12/2/99 1510
RELINQUISHED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEC	12-2-99 1210	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: GEC	12-2-99 1510	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 15

Cooler ID: #60

Cooler Temperature: 4°C

FEDEX NUMBER:

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Science Applications International Corporation
Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

No #

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature) (Printed Name) Ken Smith

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE, Loss on Dry	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
F2512	12/2/99	0835	GW				2								2		
F2412	12/2/99	~~1445~~ 1045	GW				2								2		
F2511	12/2/99	0810	Soil	3	1	1									5		
F0112	12/01/99	1325	GW				2								2		
F1411	12/01/99	1435	Soil	3	1	1									5		
F2411	12/02/99	1008		3	1	1									5		

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: SAIC	12/02/99 1210	COMPANY NAME: GEL	12/2/99 1510
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	12-2-99 1210	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: GEL	12-2-99 1510	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 21

Cooler ID: 7

Cooler Temperature: 4° C

FEDEX NUMBER:

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Science Applications International Corporation
[illegible] Ridge Turnpike, Oak Ridge, TN 37831 (423) 481 4600

CHAIN OF CUSTODY RECORD

COC NO.:

JECT NAME: HAAF Bulk Fuel Facility CAP - Part A

JECT NUMBER: DACA21-95-D-0022, DO # 0051

JECT MANAGER: Allison Bailey

ler (Signature): [signature] (Printed Name): Ken Swain

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, ~~Methane~~ Ethane, Propane	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
F1112	12-2-99	1005	GW				2								2		
F1014	12-2-99	0845	GW				2								2		
F1012	12-2-99	0840	GW				2								2		
F1111	12-2-99	0950	Soil	3	1	1									5		
1011	12-2-99	0815	Soil	3	1	1									5		
1013	12-2-99	0815	Soil	3	1	1									5		

NQUISHED BY: [signature]	Date/Time 12/2/99	RECEIVED BY: [signature]	Date/Time 12/2/99	TOTAL NUMBER OF CONTAINERS: 21	Cooler Temperature: 4°C
IPANY NAME: SAIC	1210	COMPANY NAME: GEL	1510	Cooler ID: 589	FEDEX NUMBER: NA
EIVED BY: [signature]	Date/Time 12-2-99	RELINQUISHED BY:	Date/Time		
IPANY NAME: GEL	1210	COMPANY NAME:			
QUISHED BY: [signature]	Date/Time 12-2-99	RECEIVED BY:	Date/Time		
IPANY NAME: GEL	1510	COMPANY NAME:			

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

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Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481 4600

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

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

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

	Sample ID	Date Collected	Time Collected	Matrix	REQUESTED PARAMETERS: BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
31	BF0712	12-2-99	1630	water	2											2	0.0	6.5-10.5 ft
32	BF0612	12-2-99	1500	water	2											2	0.0	8.0-12.0 ft
33	BF1512	12-2-99	1140	water	2											2	0.0 ppm	6.0-10.0 ft
34	BFTB03	12-2-99	0900	water	2											2	0.0 ppm	Trip Blank
35	BF2612	12-02-99	1315	water	2											2	N/A	7.2-12.2 ft
36	BF1612	12-02-99	1520	water	2											2	N/A	6.3-11.3 ft
37	BFV512	12-02-99	1640	water	2											2	N/A	12.5-17.5 ft
38	BFV522	12-02-99	1705	water	2											2	N/A	17.5-22.5 ft
39	BFV532	12-02-99	1725	water	2											2	N/A	22.5-27.5 ft
40	BFV542	12-03-99	0830	water	2											2	N/A	27.5-32.5 ft
41	BFV552	12-03-99	0915	water	2											2	N/A	32.5-37.5 ft
42	BFV562	12-03-99	0950	water	2											2	N/A	37.5-42.5 ft
43	BFV564	12-03-99	0950	water	2											2	N/A	37.5-42.5 ft

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RELINQUISHED BY: Mitchell Hall	Date/Time 12/03/99 1100	RECEIVED BY:	Date/Time
COMPANY NAME: SAIC		COMPANY NAME:	
RECEIVED BY:	Date/Time 12/03/99 1100	RELINQUISHED BY:	Date/Time 12-3-99 1505
COMPANY NAME: GEL Lab SAIC		COMPANY NAME: GEL	
RELINQUISHED BY:	Date/Time 12-3-99 1700	RECEIVED BY:	Date/Time 12/3/99 1505
COMPANY NAME: GEL		COMPANY NAME: GEL	

TOTAL NUMBER OF CONTAINERS:

Cooler ID: #56 55

Cooler Temperature: Field 2°C

FEDEX NUMBER: N/A SAMPLES TRANSPORTED BY GEL Lab Courier

Note: Temp. Blak Include

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Science Applications International Corporation
0 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

9900849

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature) (Printed Name)

C. Allison Bailey C. Allison Bailey

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE, Ev40 Loss	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	PID SCREENING	OBSERVATIONS COMMENTS, SPECIAL INSTRUCTIONS
BF0711	12-2-99	1610	Soil	3	1	1									5	1644 ppm	1.5-3.0' BLS
BF0611	12-2-99	1450	Soil	3	1	1									5	2.5 ppm	8.8-10.4' BLS
BF1511	12-2-99	1125	Soil	3	1	1									5	2.4 ppm	1.5 to 3.5 BLS
BF0712	12-2-99	1630	Water	2			2								4	A_2	6.5 to 10.5
BF0612	12-2-99	1540	Water	2			2								3	A_2	8.0 to 12.0
BF1512	12-2-99	1140	Water	2			2								4	A_2	6.0 to 10.0

12-2-99

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
C. Allison Bailey	12-3-99		12/3/99
COMPANY NAME: SAIC	1200	COMPANY NAME: GEL	1545
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
	12-3-99		
COMPANY NAME: GEL	1250	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
	12-3-99		
COMPANY NAME: GEL	1525	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 27

Cooler ID: ABH2

Cooler Temperature: 4°C

FEDEX NUMBER: NA GEL LAB COURIER

VIII-27

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

CHAIN OF CUSTODY RECORD

COC NO.:

OJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

OJECT NUMBER: DACA21-95-D-0022, DO # 0051

OJECT MANAGER: Allison Bailey

upler (Signature) (Printed Name)

Ken Swain

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
FV512	12-2-99	1640	water				2								2	NA	12.5-17.5 Ft
FV522	12-2-99	1705	water				2								2		17.5-22.5 Ft
FV532	12-2-99	1725	water				2								2		22.5 Ft-27.5 Ft
FV542	12-3-99	0830	water				2								2		27.5-32.5 Ft
FV552	12-3-99	0915	water				2								2		32.5-37.5 Ft
FV562	12-3-99	0950	water				2								2		37.5-42.5 Ft
FV564	12-3-99	0950	water				2								2		37.5-42.5 Ft

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 14	Cooler Temperature: 4°C
COMPANY NAME: SAIC	12/3/99 1150	COMPANY NAME: GEL	12/3/99 1505	Cooler ID: 56	FEDEX NUMBER: NA
RELINQUISHED BY:	Date/Time 12-3-99	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL	1200	COMPANY NAME:			
RELINQUISHED BY:	Date/Time 12-3-99	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL	1505	COMPANY NAME:			

Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481 4600

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

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

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX (3x5g Encores)	PAH, TPH-DRO	THP-GRO, MOISTURE Eng Loss	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF2611	12-02-99	1248	soil	1	1	1									3	0.8 ppm	1.2 ft - 3.2 ft
BF1611	12-02-99	1455	soil	1	1	1									3	0.0 ppm	4.3 ft - 6.3 ft
BF2612	12-02-99	1315	water				2								2	N/A	7.2 - 12.2 ft
BF1612	12-02-99	1520	water				2								2	N/A	6.3 - 11.3 ft
BF1711	12-03-99	0925	soil	1	1	1									3	680 ppm	2.0 - 4.0 ft

12/03/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 13	Cooler Temperature: Field: 22
Mitchell Hall	12/03/99 1100		12/3/99 1150	Cooler ID: 55	FEDEX NUMBER: N/A SAMPLES
COMPANY NAME: SAIC		COMPANY NAME: SAIC			
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time		
	12/03/99 1100		12-3-99 1505		
COMPANY NAME: SAIC		COMPANY NAME: GEL			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
	12-3-99 1200		12/3/99 1505		
COMPANY NAME: GEL		COMPANY NAME: GEL			

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Science Applications International Corporation
10 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature) (Printed Name) Ken Swain

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
FV612	12/3/99	1415	Water	2			2										990086 4013
FV622	12/3/99	1445	water	2			2										990086 4014
FV632	12/3/99	1510	water	2			2										990086 4015
FV642	12/3/99	1535	water	2			2										990086 4016
FV652	12/3/99	1605	water	2													990086 5001
FV662	12/3/99	1625	water	2													990086 5002
FØ812	12/3/99	1215	water	2													003
FTBØ4	12/3/99	1100	water	2													004
F1212	12/4/99	0830	water	2													005
FØ512	12/3/99	1500	water	2													006
FØ912	12/3/99	1645	water	2													007
FØ412	12/3/99	1320	water	2													008
F1211	12/4/99	0820	Soil	3	1	1											990086 3007

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature:
SAIC	12/4/99 1200	COMPANY NAME:	12/4/99 1400	Cooler ID: 13	FEDEX NUMBER:
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
GEL	12/4/99 1200	COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
GEL	12/4/99 1400	COMPANY NAME:			

REQUESTED PARAMETERS

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Science Applications International Corporation
10 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature): Ken Swain (Printed Name)

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	REQUESTED PARAMETERS: BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE, Ever Loss	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
SF1711	12-3-99	0925	Soil	3	1	1									5	139 ppm	990086 3001
SF0412	12-3-99	1320	water				2								2	NA	990086 4001
SF0411	12-3-99	1310	Soil	3	1	1									5	4.2 ppm	990086 3002
SF0912	12-3-99	1645	water				2								2	NA	990086 4002
SF0911	12-3-99	1635	Soil	3	1	1									5	104 ppm	990086 3003
SF0511	12-3-99	1450	water				2								2	NA	990086 4003
				3	1	1									5	1.0 ppm	990086 3004

12/4/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Ken Swain	12/4/99 1206	[illegible]	12/4/99 1400
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RECEIVED BY: [illegible]	Date/Time 12/4/99 1200	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL		COMPANY NAME:	
RELINQUISHED BY: [illegible]	Date/Time 12/4/99 1400	RECEIVED BY:	Date/Time
COMPANY NAME: GEL		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 26

Cooler ID: 8

Cooler Temperature: 4°C

FEDEX NUMBER:

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CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature): _____ (Printed Name): Ken Swain

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF1212	12-4-99	0830	water				2								2		990086 4009
BF0812	12-3-99	1215	water				2								2		990086 4010
BFV662	12-3-99	1625	water				2								2		990086 4011
BFV652	12-3-99	1685	water				2								2		990086 4012
BF0811	12-3-99	1135	Soil	3	1	1									5		990086 3006

KE 12/4/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Ken Swain	12/4/99 1200	[illegible]	12/4/99 1400
COMPANY NAME: SAIC		COMPANY NAME:	
RECEIVED BY: Amy James	Date/Time 12/4/99 1200	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL		COMPANY NAME:	
RELINQUISHED BY: Amy C. James	Date/Time 12/4/99 1400	RECEIVED BY:	Date/Time
COMPANY NAME: GEL		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 13

Cooler ID: 838

Cooler Temperature: 4°C

FEDEX NUMBER:

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CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature): Ken Li (Printed Name): Ken Swain

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BFU712	12-4-99	0955	water	2											2	N/A	9900865009
BFU722		1020		2											2		010
BFU732		1045		2											2		011
BFU742		1115		2											2		012
BFU744		1115		2											2		013

RELINQUISHED BY: Ken Li — Date/Time: 12/4/99 1200 — RECEIVED BY: Ottawa — COMPANY NAME: GEL — Date/Time: 12/4/99 1400

COMPANY NAME: SAIC

TOTAL NUMBER OF CONTAINERS:

Cooler Temperature: 4°C

Cooler ID: 13

FEDEX NUMBER:

RECEIVED BY: Tracy James — Date/Time: 12/4/99 1200 — RELINQUISHED BY: — Date/Time:

COMPANY NAME: GEL — COMPANY NAME:

RELINQUISHED BY: Tracy C. James — Date/Time: 12/4/99 1400 — RECEIVED BY: — Date/Time:

COMPANY NAME: GEL — COMPANY NAME:

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CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature) (Printed Name) C. Allison Bailey

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556 8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
3FV712	12-4-99	0955	GW	X			2								X2	NA	9900864004
3FV722	12-4-99	1024	GW	X			2								X2		9900864005
3FV732	12-4-99	1045	GW	X			2								X2		9900864006
3FV742	12-4-99	1115	GW	X			2								X2		9900864007
3FV744	12-4-99	1115	GW	X			2								X2		9900864008
3F2311	12-4-99	1115	Soil	3	1	1									5	1.0 ppm	9900863005

12/4/99

RELINQUISHED BY: C. Allison Bailey
COMPANY NAME: SAIC
Date/Time: 12/4/99 1200

RECEIVED BY: [signature]
COMPANY NAME: GEL
Date/Time: 12/4/99 1400

RELINQUISHED BY: [signature]
COMPANY NAME: GEL
Date/Time: 12/4/99 1200

RECEIVED BY:
COMPANY NAME:
Date/Time:

RELINQUISHED BY: [signature]
COMPANY NAME: GEL
Date/Time: 12/4/99 1400

RECEIVED BY:
COMPANY NAME:
Date/Time:

TOTAL NUMBER OF CONTAINERS: 15

Cooler ID: 589

Cooler Temperature: 4°C

FEDEX NUMBER:

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Science Applications International Corporation
10 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481 4600

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature) (Printed Name) Ken Swain

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556 8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BFV752	12-4-99	1140	water	2											2	NA	9900875001
BFV762	12-4-99	1205	water	2											2		002
BFV262	12-4-99	1715	water	2											2		003
BFTB05	12-4-99	0800	water	2											2		004
BFV412	12-4-99	0835	water	2											2		005
BFV422	12-4-99	0905	water	2											2		006
BFV424	12-4-99	0905	water	2			2								4		9900878001
BFV432	12-4-99	0940	water	2											2		9900875007
BFV442	12-4-99	1000	water	2			2								4		9900878002
BFV452	12-4-99	1030	water	2			2								4		9900878003
BFV462	12-4-99	1110	water	2											2		9900875008
BFV212	12-4-99	1210	water	2											2		009
BFV222	12-4-99	1230	water	2											2	✓	010

RELINQUISHED BY:	Date/Time 12/6/99 1200	RECEIVED BY:	Date/Time 12/6/99 1515	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature: 4°C
COMPANY NAME: SAIC		COMPANY NAME:		Cooler ID: #7	FEDEX NUMBER:
RELINQUISHED BY:	Date/Time 12/6/99 1700	RELINQUISHED BY:	Date/Time	1 of 2 COCs for cooler #7	
COMPANY NAME:		COMPANY NAME:			
RELINQUISHED BY:	Date/Time 12/6/99 1515	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

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

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature): Ken Lin (Printed Name): Ken Swain

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, ~~MOISTURE~~ Encore, Less	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF2111	12/05/99	0925	Soil	3	1	1									5	5.1 ppm	MS/MSD BTEX
BF2013	12/05/99	1605	Soil	3	1	1									5	>2000 ppm	extra soil for bulk 003
BF2211	12/05/99	1310	Soil	3	1	1									5	>2000 ppm	004
BF2011	12/05/99	1605	Soil	3	1	1									5	>2000 ppm	
BFV762	12/04/99	1205	Water				2								2	NA	9900876015
BFV752	12/04/99	1140	Water				2								2		016
BFV262	12/04/99	1715	Water				2								2		017
BFV252	12/04/99	1635	Water				2								2		018
BFV462	12/04/99	1110	Water				2								2		019
							MS										

REQUESTED PARAMETERS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
	12/6/99		12/6/99
COMPANY NAME: SAIC	1207	COMPANY NAME: GEL	1515
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
	12-6-99		
COMPANY NAME: GEL	1200	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
	12-6-99		
COMPANY NAME:	1515	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 30

Cooler ID: #6

Cooler Temperature: 4°C

FEDEX NUMBER:

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CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature): Ken Li (Printed Name): Ken Smith

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BFV432	12/4/99	0940	Water	2		9900876 EEX
BFV 422	12/4/99	0945	water	2		007
BFV 412	12/4/99	0835	water	2		008
BFV212	12/4/99	1210	water	2		009

REQUESTED PARAMETERS

BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC
			2		2	3				
			2							
			2							
			2							

12/6/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 8	Cooler Temperature: 4°C
COMPANY NAME: SAIC	12/6/99 1200	COMPANY NAME: SAIC	12/6/99 1515	Cooler ID: #20	FEDEX NUMBER:
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time		
COMPANY NAME: SAIC	12/6/99 1200	COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME: SAIC	12/6/99 1515	COMPANY NAME:			

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CHAIN OF CUSTODY RECORD

COC NO.:

OJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

OJECT NUMBER: DACA21-95-D-0022, DO # 0051

OJECT MANAGER: Allison Bailey

mpler (Signature) (Printed Name)

Ken Lin — Ken Lin

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
FV232	12/04/99	1345	water	2											2	NA	990D875011
FV242	12-4-99	1335	water	2											2		012
FV244	12-4-99	1335	water	2											2		013
FV252	12-4-99	1635	water	2											2		014
FV312	12-5-99	0809	water	2											2		015
FV322	12-5-99	0830	water	2											2		016
FV332	12-5-99	0853	water	2											2		017
FV342	12-5-99	0940	water	2											2		018
FV352	12-5-99	1000	water	2											2		019
FV362	12-5-99	1025	water	2											2		020
											KS 12/4/99						

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature:
IL L	12/6/99 1204		12/6/99 1525	Cooler ID: #7	FEDEX NUMBER:
COMPANY NAME: SAIC		COMPANY NAME: GEL			
RELINQUISHED BY:	Date/Time 12/6/99 1700	RELINQUISHED BY:	Date/Time	2 of 2 for cooler #7	
COMPANY NAME:		COMPANY NAME:			
RELINQUISHED BY:	Date/Time 12/6/99 1515	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

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Science Applications International Corporation
900 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature): Ka Smith (Printed Name): Ka Smith

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BFV 362	12/5/99	1025	water				2								2	NA	990087G010
BFV232	12/4/99	1305	water				2								2		011
BFV244	12/4/99	1335	water				2								2		012
BFV 222	12/4/99	1230	water				2								2		013
BFV 242	12/4/99	1335	water				2								2		014

REQUESTED PARAMETERS

VOC

12/6/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 10	Cooler Temperature: 4°C
COMPANY NAME: SAIC	12/6/99 1204	COMPANY NAME: GEL	12/6/99 1515	Cooler ID: P01	FEDEX NUMBER:
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL	12/6/99 1200	COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL	12/6/99 1515	COMPANY NAME:			

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CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-96-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature): Ken Li (Printed Name): Ken Swan

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BFV312	12/5/99	0809	water	2		9900876-001
BFV332	12/5/99	0858	water	2		002
BFV322	12/5/99	0836	water	2		003
BFV352	12/5/99	1000	water	2		004
BFV342	12/5/99	0940	water	2		005

REQUESTED PARAMETERS

BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC
			2			2	12/06/99			

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Ken Li	12/6/99 1267	[illegible]	12/6/99 1575
COMPANY NAME: SAIC		COMPANY NAME: [illegible]	
RECEIVED BY: [illegible]	Date/Time 12/6/99 1250	RELINQUISHED BY:	Date/Time
COMPANY NAME: [illegible]		COMPANY NAME:	
RELINQUISHED BY: [illegible]	Date/Time 12/6/99 1575	RECEIVED BY:	Date/Time
COMPANY NAME: [illegible]		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 10

Cooler ID: 300

Cooler Temperature: 4°C

FEDEX NUMBER:

Science Applications International Corporation
10 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

Sampler (Signature): Heather L Smith (Printed Name): Heather L Smith

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556 8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC (5x20 Extract)	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
3FTISO1	12-7-99	0900	water	2											2	NA	Trip Blank
FIWS1	12-7-99	1245	soil								1	1	1		3	STRONG ODOR	collected from drum # BFFID.W.S1
3F2Ø12	12-7-99	1Ø4Ø	water	2			2								4	BZ = Ø	@SB-20
BF2Ø11	12-7-99	1ØØØ	water	2			2								4	BZ = Ø	@SB-20
3F2Q12	12-7-99	1410	water	2			2								4	BZ = Ø	@SB-22
3F2312	12-7-99	1715	water	2			2								4	BZ = Ø	@SB-23
3F2112	12-7-99	1Ø45	water	2			2								4	BZ = Ø	@SB-21
F1712	12-8-99	Ø83Ø	water	2			2								4	BZ = Ø	@SB-17
3F1WL1	12-8-99	1ØØØ	water	2				2	2						4	BZ = Ø	Waste water
				VOA 2													

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Heather L Smith	12/8/99	[illegible]	12/8/99
COMPANY NAME: SAIC	1140	COMPANY NAME: GEL	1520
RELINQUISHED BY:	Date/Time	RELINQUISHED BY:	Date/Time
[illegible]	12/8/99	COMPANY NAME:	
COMPANY NAME: GEL	1170		
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
[illegible]	12/8/99		
COMPANY NAME: GEL	1730	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: ~~29~~ 33

Cooler ID: 515

Cooler Temperature: < 4°C

FEDEX NUMBER:

9900922 (.1, .3)
9900923 (.2)
9900921 (.4)

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

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

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

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	REQUESTED PARAMETERS: BTEX (Soil Trig Events)	PAH, TPH-DRO	THP-GRO, MOISTURE EVAP. Loss.	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING PPM	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
BF3111	1/10/00	1620	soil	1	1	1									3	0.0	4.0 - 5.7 SB-
BF3112	1/10/00	1640	water	2			2								4	0.0	5.7 - 10.7 SB-3
BFTB08	1/10/00	1400	water	2											2	N/A	TRIP BLANK
BF3011	1/11/00	0805	soil	1	1	1									3	0.0	4.0 - 5.9 SB-30
BF3012	1/11/00	0825	water	2			2								4	0.0	5.9 - 10.9 SB-3
BF3013	1/11/00	0805	soil	1	1	1									3	0.0	4.0 - 5.9 SB-30
BF3014	1/11/00	0825	water	2			2								4	0.0	5.9 - 10.9 SB-30
BF2911	1/11/00	0940	soil	1	1	1									3	59.0	4.0 - 5.7 SB-29
BF2912	1/11/00	0955	water	2			2								4	0.0	5.7 - 10.7 SB-29
BF2811	1/11/00	1112	soil	1	1	1									3	10.2	2.0 - 2.8 SB-28
BF2812	1/11/00	1140	water	2			2								4	0.0	7.5 - 12.5 SB-28
BF2711	1/11/00	1425	soil	1	1	1									3	0.0	5.0 - 7.0 SB-27
BF2712	1/11/00	1455	water	2			2								4	0.0	7.0 - 12.0 SB-27

RELINQUISHED BY: Mitchell Hall — Date/Time: 1/12/00 — RECEIVED BY: [illegible] — COMPANY NAME: GEL — Date/Time: 1/13/00

COMPANY NAME: SAIC

RECEIVED BY: [illegible] — Date/Time: 1/12/00 1200 — RELINQUISHED BY: — Date/Time:

COMPANY NAME: GEL — COMPANY NAME:

RELINQUISHED BY: — Date/Time: — RECEIVED BY: — Date/Time:

COMPANY NAME: — COMPANY NAME:

TOTAL NUMBER OF CONTAINERS: 44

Cooler ID: 720 and 553

Cooler Temperature: 3°C (Field)

FEDEX NUMBER: NA
COURIER SERVICE PROVIDED BY GEL

- Temperature blanks included in both coolers
- Samples contained in two coolers
- Holding time for BF3111 critical; please preserve all Encore samples today.

VIII-42

7

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

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: IIAAF Bulk Fuel Facility CAP - Part A

PROJECT NUMBER: DACA21 95 D 0022, DO # 0051

PROJECT MANAGER: Allison Bailey

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

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH, TPH-DRO	THP-GRO, MOISTURE	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS COMMENTS, SPECIAL INSTRUCTIONS
BF0117	12-6-99	1507	water	2			2									N/A	SW/SD-01
BF0217	12-6-99	1447	water	2			2										-02
BF0317	12-6-99	1425	water	2			2										-03
BF0417	12-6-99	1532	water	2			2										-04
BF0617	12-7-99	0912	water	2			2										-06
BF0717	12-7-99	0858	water	2													-07
BF0817	12-7-99	0804	water	2													08
BF0917	12-6-99	1605	water	2													-09
BF0919	12-6-99	1605	water	2													-09
BFTB06	12-6-99	0900	water	2												N/A	Trip Blank
	12-7-99													12-7-99			12/6/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Mitchell Hall	12-7-99 1210		12/7/99 1580
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
	12-7-99 1210		
COMPANY NAME: GEL		COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
	12-7-99 1503		
COMPANY NAME: GEL		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 30

Cooler ID: #5

Cooler Temperature: Field 3°C 4°C

FEDEX NUMBER: N/A

GEL LAB COURIER TRANSFERRING SAMPLES

Temp Blank Included.

SAIC
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37830 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.:

PROJECT NAME: HAAP Bulk Fuel Facility CAP Part A

PROJECT NUMBER: DACA21-95-D-0022, DO # 0051

PROJECT MANAGER: Allison Bailey

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

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX (SW-846 8021B)	PAH, TPH-DRO	THP-GRO, MOISTURE CONTENT	PAH	CHLOR. SOLVENTS	VOC	SVOC, pH, Oil & Grease, Phenols	TCLP VOC	TCLP SVOC	TCLP Metal	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
BFW717	12-7-99	0838	water				N								2	N/A	990090101
BFW817	12-7-99	0804	water				N								2		012
BFW917	12-6-99	1605	water				N								2		013
BFW919	12-6-99	1605	water				N								2		014
BFW118	12-6-99	1510	SEDIMENT	1	1	1									3	0.0	990090101 001
BFW218	12-6-99	1450	SEDIMENT	1	1	1									3		002
BFW318	12-6-99	1430	SEDIMENT	1	1	1									3		003
BFW418	12-6-99	1535	SEDIMENT	1	1	1									3		004
BFW518	12-6-99	1403	SEDIMENT	1	1	1									3		005
BFW51A	12-6-99	1403	SEDIMENT	1	1	1									3		006
BFW618	12-7-99	0916	SEDIMENT	1	1	1									3		007
BFW718	12-7-99	0812	SEDIMENT	1	1	1									3		008
BFW818	12-7-99	0825	SEDIMENT	1	1	1									3		009
BFW918	12-6-99	1615	SEDIMENT	1	1	1									3		010

RELINQUISHED BY:	Date/Time: 12-7-99 1210	RECEIVED BY:	Date/Time: 12/7/99 1500	TOTAL NUMBER OF CONTAINERS: 38
COMPANY NAME: SAIC		COMPANY NAME: GEL		Cooler ID: 8
RECEIVED BY:	Date/Time: 12-7-99 1210	RELINQUISHED BY:	Date/Time	Temp Blank Included
COMPANY NAME: GEL		COMPANY NAME:		
RELINQUISHED BY:	Date/Time: 12-7-99 1502	RECEIVED BY:	Date/Time	
COMPANY NAME: GEL		COMPANY NAME:		

Cooler Temperature: Field 2C 4.0°C

FEDEX NUMBER: GEL Lab Courier Transporting Samples.

GROUNDWATER ANALYTICAL DATA SHEETS

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0112

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFAC4M

Matrix: (soil/water) WATER Lab Sample ID: 9900839013

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: SN235

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. _____ Date Analyzed: 12/15/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0112

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839003

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y216

Level: (low/med) LOW DATA VALIDATION Date Received: 12/02/99

% Moisture: _____ decanted: (Y/N) COPY Date Extracted: 12/06/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/14/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0212

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA21W

Matrix: (soil/water) WATER Lab Sample ID: 9900833004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8M134

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: not dec. _____ Date Analyzed: 12/07/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0212

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA01W

Matrix: (soil/water) WATER Lab Sample ID: 9900833004

Sample wt/vol: 1010 (g/mL) ML Lab File ID: 5Y317

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/01/99

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/03/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/15/99

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	0.99	U
91-58-7	2-Chloronaphthalene	9.90	U
208-96-8	Acenaphthylene	0.99	U
83-32-9	Acenaphthene	0.99	U
86-73-7	Fluorene	0.99	U
85-01-8	Phenanthrene	0.99	U
120-12-7	Anthracene	0.99	U
206-44-0	Fluoranthene	0.99	U
129-00-0	Pyrene	0.99	U
56-55-3	Benzo(a)anthracene	0.99	U
218-01-9	Chrysene	0.99	U
205-99-2	Benzo(b)fluoranthene	0.99	U
207-08-9	Benzo(k)fluoranthene	0.99	U
50-32-8	Benzo(a)pyrene	0.99	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.99	U
53-70-3	Dibenz(a,h)anthracene	0.99	U
191-24-2	Benzo(g,h,i)perylene	0.99	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0312

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBHA01W

Matrix: (soil/water) WATER Lab Sample ID: 9900833003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8M133

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/01/99

% Moisture: not dec. _____ Date Analyzed: 12/06/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0312

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA01W

Matrix: (soil/water) WATER Lab Sample ID: 9900833003

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 5Y316

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/01/99

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/03/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/15/99

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	0.98	U
91-58-7	2-Chloronaphthalene	9.80	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
86-73-7	Fluorene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
205-99-2	Benzo(b)fluoranthene	0.98	U
207-08-9	Benzo(k)fluoranthene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFC412

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA11W

Matrix: (soil/water) WATER Lab Sample ID: 9900865008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N440

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.33	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0412

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864001

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 5Y529

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N) Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91-58-7	2-Chloronaphthalene	9.8	U
207-08-9	Benzo(k)fluoranthene	0.98	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0513

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA11W

Matrix: (soil/water) WATER Lab Sample ID: 9900865006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N438

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.51	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0512

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864003

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 5Y531

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91-58-7	2-Chloronaphthalene	9.8	U
207-08-9	Benzo(k)fluoranthene	0.98	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0612

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA07W

Matrix: (soil/water) WATER Lab Sample ID: 9900851002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N313

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. _____ Date Analyzed: 12/15/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0612RE

Lab Name: GENERAL ENGINEERING LABCR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA06W

Matrix: (soil/water) WATER Lab Sample ID: 9900850002

Sample wt/vol: 920.0 (g/mL) ML Lab File ID: 5Z205

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: ___ decanted: (Y/N)___ Date Extracted: 12/20/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/21/99 use

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	1.1	U
91-58-7	2-Chloronaphthalene	10.9	U
208-96-8	Acenaphthylene	1.1	U
83-32-9	Acenaphthene	1.1	U
86-73-7	Fluorene	1.1	U
85 01-8	Phenanthrene	1.1	U
120-12-7	Anthracene	1.1	U
206-44-0	Fluoranthene	1.1	U
129-00-0	Pyrene	1.1	U
56-55-3	Benzo(a)anthracene	1.1	U
218-01-9	Chrysene	1.1	U
205-99-2	Benzo(b)fluoranthene	1.1	U
207-08-9	Benzo(k)fluoranthene	1.1	U
50-32-8	Benzo(a)pyrene	1.1	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.1	U
53-70-3	Dibenz(a,h)anthracene	1.1	U
191-24-2	Benzo(g,h,i)perylene	1.1	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0712

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA07W

Matrix: (soil/water) WATER Lab Sample ID: 9900851001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N312

Level: (low/med) LOW DATA VALIDATION Date Received: 12/03/99

% Moisture: not dec. _____ COPY Date Analyzed: 12/15/99

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/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	1.0	U	U
100-41-4	Ethylbenzene	4.4		
1330-20-7	Xylenes (total)	2.1	J	J

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0712

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA06W

Matrix: (soil/water) WATER Lab Sample ID: 9900850001

Sample wt/vol: 900.0 (g/mL) ML Lab File ID: 5Y408

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/16/99

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
205-99-2	Benzo(b)fluoranthene	1.1	U
53-70-3	Dibenz(a,h)anthracene	1.1	U
50-32-8	Benzo(a)pyrene	1.1	U
91-20-3	Naphthalene	5.8	
208-96-8	Acenaphthylene	1.1	U
83-32-9	Acenaphthene	1.1	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.1	U
86-73-7	Fluorene	1.1	U
191-24-2	Benzo(g,h,i)perylene	1.1	U
85-01-8	Phenanthrene	1.1	U
120-12-7	Anthracene	1.1	U
206-44-0	Fluoranthene	1.1	U
129-00-0	Pyrene	1.1	U
56-55-3	Benzo(a)anthracene	1.1	U
218-01-9	Chrysene	1.1	U
91-58-7	2-Chloronaphthalene	11.1	U
207-08-9	Benzo(k)fluoranthene	1.1	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF[illegible]812

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA11W

Matrix: (soil/water) WATER Lab Sample ID: 9900865013

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: SN436

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0812RE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864010

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7Z209

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/20/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/21/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

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CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0912

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA11W

Matrix: (soil/water) WATER Lab Sample ID: 9900865007

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N439

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.42	J	J
100-41-4	Ethylbenzene	1.4		=
1330-20-7	Xylenes (total)	3.0	U	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0912

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864002

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 5Y530

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: _____ decanted: COPY Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91-58-7	2-Chloronaphthalene	9.8	U
207-08-9	Benzo(k)fluoranthene	0.98	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1012

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839017

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N239

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. DATA VALIDATION COPY Date Analyzed: 12/15/99

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/L	Q
71-43-2	Benzene	4.8	
108-88-3	Toluene	0.53	J
100-41-4	Ethylbenzene	9.5	
1330-20-7	Xylenes (total)	3.8	

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1012

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839008

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y221

Level: (low/med) LOW DATA VALIDATION Date Received: 12/02/99

% Moisture: _____ decanted: (Y/N)/___ Date Extracted:12/06/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/14/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	41.2	
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1014 DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839018

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N240

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. DATA VALIDATION COPY Date Analyzed: 12/15/99

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/L	Q	
71-43-2	Benzene	4.7		U
108-88-3	Toluene	0.60	J	U
100-41-4	Ethylbenzene	8.9		U
1330-20-7	Xylenes (total)	3.6		U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1014 DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839007

Sample wt/vol: 1030 (g/mL) ML Lab File ID: 5Y220

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 12/06/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/14/99

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
205-99-2	Benzo(b)fluoranthene	0.97	U
53-70-3	Dibenz(a,h)anthracene	0.97	U
50-32-8	Benzo(a)pyrene	0.97	U
91-20-3	Naphthalene	38.8	
208-96-8	Acenaphthylene	0.97	U
83-32-9	Acenaphthene	0.97	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.97	U
86-73-7	Fluorene	0.97	U
191-24-2	Benzo(g,h,i)perylene	0.97	U
85-01-8	Phenanthrene	0.97	U
120-12-7	Anthracene	0.97	U
206-44-0	Fluoranthene	0.97	U
129-00-0	Pyrene	0.97	U
56-55-3	Benzo(a)anthracene	0.97	U
218-01-9	Chrysene	0.97	U
91-58-7	2-Chloronaphthalene	9.7	U
207-08-9	Benzo(k)fluoranthene	0.97	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1112

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839019

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N241

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. DATA VALIDATION COPY Date Analyzed: 12/15/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1112

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839006

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y219

Level: (low/med) LOW DATA VALIDATION Date Received: 12/02/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/06/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/14/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1212

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA11W

Matrix: (soil/water) WATER Lab Sample ID: 9900865005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N511

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q		
71-43-2	Benzene	1.0	U	UJ	A05, A03
108-88-3	Toluene	0.36	J	J	↓
100-41-4	Ethylbenzene	1.0	U	UJ	↓
1330-20-7	Xylenes (total)	3.0	U	UJ	↓

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1212

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864009

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 5Y537

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.5	U
207-08-9	Benzo(k)fluoranthene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1312

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA81W

Matrix: (soil/water) WATER Lab Sample ID: 9900833001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8M131

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: not dec. _____ Date Analyzed: 12/06/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1312

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA01W

Matrix: (soil/water) WATER Lab Sample ID: 9900833001

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 5Y314

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/03/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/15/99

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	0.95	U
91-58-7	2-Chloronaphthalene	9.52	U
208-96-8	Acenaphthylene	0.95	U
83-32-9	Acenaphthene	0.95	U
86-73-7	Fluorene	0.95	U
85-01-8	Phenanthrene	0.95	U
120-12-7	Anthracene	0.95	U
206-44-0	Fluoranthene	0.95	U
129-00-0	Pyrene	0.95	U
56-55-3	Benzo(a)anthracene	0.95	U
218-01-9	Chrysene	0.95	U
205-99-2	Benzo(b)fluoranthene	0.95	U
207-08-9	Benzo(k)fluoranthene	0.95	U
50-32-8	Benzo(a)pyrene	0.95	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.95	U
53-70-3	Dibenz(a,h)anthracene	0.95	U
191-24-2	Benzo(g,h,i)perylene	0.95	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

BF1412

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839014

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N236

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. _____ Date Analyzed: 12/15/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1412

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839005

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y218

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: _____ decanted: (Y/N) Date Extracted: 12/06/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/14/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	J
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronapnthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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FORM I SV-1 OLM03.0

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1512

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA07W

Matrix: (soil/water) WATER Lab Sample ID: 9900851003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N314

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. _____ Date Analyzed: 12/15/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	1.3	J

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1S12

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA06W

Matrix: (soil/water) WATER Lab Sample ID: 9900850003

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y410

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: ____ decanted: (Y/N) Y Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/16/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1612

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA07W

Matrix: (soil/water) WATER Lab Sample ID: 9900851006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N317

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. _____ Date Analyzed: 12/15/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1612RE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA06W

Matrix: (soil/water) WATER Lab Sample ID: 9900850005

Sample wt/vol: 1010 (g/mL) ML Lab File ID: 5Z206

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/20/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

DATA VALIDATION COPY

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CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	0.99	U
91-58-7	2-Chloronaphthalene	9.9	U
208-96-8	Acenaphthylene	0.99	U
83-32-9	Acenaphthene	0.99	U
86-73-7	Fluorene	0.99	U
85-01-8	Phenanthrene	0.99	U
120-12-7	Anthracene	0.99	U
206-44-0	Fluoranthene	0.99	U
129-00-0	Pyrene	0.99	U
56 55-3	Benzo(a)anthracene	0.99	U
218-01-9	Chrysene	0.99	U
205-99-2	Benzo(b)fluoranthene	0.99	U
207-08-9	Benzo(k)fluoranthene	0.99	U
50-32-8	Benzo(a)pyrene	0.99	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.99	U
53-70-3	Dibenz(a,h)anthracene	0.99	U
191-24-2	Benzo(g,h,i)perylene	0.99	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1713

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA18W

Matrix: (soil/water) WATER Lab Sample ID: 9903922307

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 50206

Level: (low/med) LOW Date Received: 12/08/99

% Moisture: not dec. _____ Date Analyzed: 12/21/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	0.44	J
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	2.0	
1330-20-7	Xylenes (total)	14.2	

FORM I VOA

SLM03.0

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1712

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA18W

Matrix: (soil/water) WATER Lab Sample ID: 9900922007

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 8Y520A

Level: (low/med) LOW DATA VALIDATION Date Received: 12/08/99

% Moisture: _____ decanted: CORY (Y/N) ___ Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	0.95	U
53-70-3	Dibenz(a,h)anthracene	0.95	U
50-32-8	Benzo(a)pyrene	0.95	U
91-20-3	Naphthalene	0.95	U
208-96-8	Acenaphthylene	0.95	U
83-32-9	Acenaphthene	0.95	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.95	U
86-73-7	Fluorene	0.95	U
191-24-2	Benzo(g,h,i)perylene	0.95	U
85-01-8	Phenanthrene	0.95	U
120-12-7	Anthracene	0.95	U
206-44-0	Fluoranthene	0.95	U
129-00-0	Pyrene	0.95	U
56-55-3	Benzo(a)anthracene	0.95	U
218-01-9	Chrysene	0.95	U
91-58-7	2-Chloronaphthalene	0.95	U
207 08 9	Benzo(k)fluoranthene	0.95	U

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FORM I SV-1

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1912

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBPA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900639016

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N235

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. _____ Date Analyzed: 12/15/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1812

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839004

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y217

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/06/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/14/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SF1912

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFAC1W

Matrix: (soil/water) WATER Lab Sample ID: 9900833002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8M132

Level: (low/med) LOW Date Received: 12/01/99

% Moisture: not dec. _____ DATA VALIDATION COPY Date Analyzed: 12/06/99

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/L	Q	
71-43-2	Benzene	1.0	U	u
108-88-3	Toluene	1.0	U	↓
100-41-4	Ethylbenzene	1.0	U	
1330-20-7	Xylenes (total)	3.0	U	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF1912

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HBFA01W

Matrix: (soil/water) WATER Lab Sample ID: 9900833002

Sample wt/vol: 1010 (g/mL) ML Lab File ID: 5Y315

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/01/99

% Moisture: _____ decanted: (Y/N) Date Extracted: 12/03/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/15/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0 U20

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	0.99	U
91-58-7	2-Chloronaphthalene	9.90	U
208-96-8	Acenaphthylene	0.99	U
83-32-9	Acenaphthene	0.99	U
86-73-7	Fluorene	0.99	U
85-01-8	Phenanthrene	0.99	U
120-12-7	Anthracene	0.99	U
206-44-0	Fluoranthene	0.99	U
129-00-0	Pyrene	0.99	U
56-55-3	Benzo(a)anthracene	0.99	U
218-01-9	Chrysene	0.99	U
205-99-2	Benzo(b)fluoranthene	0.99	U
207-08-9	Benzo(k)fluoranthene	0.99	U
50-32-8	Benzo(a)pyrene	0.99	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.99	U
53-70-3	Dibenz(a,h)anthracene	0.99	U
191-24-2	Benzo(g,h,i)perylene	0.99	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2012

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: H5FN18W

Matrix: (soil/water) WATER Lab Sample ID: 9908922002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 50124

Level: (low/med) LOW Date Received: 12/08/99

% Moisture: not dec. Date Analyzed: 12/20/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	0.60	J	J
108-88-3	Toluene	1.0	U	U
100-41-4	Ethylbenzene	3.1		
1330-20-7	Xylenes (total)	21.0		

FORM 1 VOA SOM02.0

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2012

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA18W

Matrix: (soil/water) WATER Lab Sample ID: 9900922002

Sample wt/vol: 900.0 (g/mL) ML Lab File ID: 8Y515A

Level: (low/med) LOW Date Received: 12/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	1.1	U
53-70-3	Dibenz(a,h)anthracene	1.1	U
50-32-8	Benzo(a)pyrene	1.1	U
91-20-3	Naphthalene	2.0	
208-96-8	Acenaphthylene	1.1	U
83-32-9	Acenaphthene	1.1	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.1	U
86-73-7	Fluorene	1.1	U
191-24-2	Benzo(g,h,i)perylene	1.1	U
85-01-8	Phenanthrene	1.1	U
120-12-7	Anthracene	1.1	U
206-44-0	Fluoranthene	1.1	U
129-00-0	Pyrene	1.1	U
56-55-3	Benzo(a)anthracene	1.1	U
218-01-9	Chrysene	1.1	U
91-58-7	2-Chloronaphthalene	1.1	U
207-08-9	Benzo(k)fluoranthene	1.1	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2314 Duplicate

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA18W

Matrix: (soil/water) WATER Lab Sample ID: 9900922003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 50125

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/08/99

% Moisture: not dec. _____ Date Analyzed: 12/20/99

GC Column: DB-624 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/L	Q	
71-43-2	Benzene	0.59	J	J
108-88-3	Toluene	1.0	U	U
100-41-4	Ethylbenzene	3.0		=
1330-20-7	Xylenes (total)	20.4		=

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2014 Duplicate

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA18W

Matrix: (soil/water) WATER Lab Sample ID: 9900922003

Sample wt/vol: 1050 (g/mL) mL Lab File ID: 8Y516A

Level: (low/med) LOW Date Received: 12/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	0.95	U
53-70-3	Dibenz(a,h)anthracene	0.95	U
50-32-8	Benzo(a)pyrene	0.95	U
91-20-3	Naphthalene	2.6	
208-96-8	Acenaphthylene	0.95	U
83-32-9	Acenaphthene	0.95	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.95	U
86-73-7	Fluorene	0.95	U
191-24-2	Benzo(g,h,i)perylene	0.95	U
85-01-8	Phenanthrene	0.95	U
120-12-7	Anthracene	0.95	U
206-44-0	Fluoranthene	0.95	U
129-00-0	Pyrene	0.95	U
56-55-3	Benzo(a)anthracene	0.95	U
218-01-9	Chrysene	0.95	U
91-58-7	2-Chloronaphthalene	0.95	U
207-08-9	Benzo(k)fluoranthene	0.95	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB5112

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBH013W

Matrix: (soil/water) WATER Lab Sample ID: 9900912006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 50126

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/08/99

% Moisture: not dec. _____ Date Analyzed: 12/21/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0 use

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	130 ~~113~~	ED
108-88-3	Toluene	2.8	
100-41-4	Ethylbenzene	14.7	
1330-20-7	Xylenes (total)	710 ~~596~~	ED

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2112

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA18W

Matrix: (soil/water) WATER Lab Sample ID: 9900922006

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 8Y519A

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/08/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	0.95	U
53-70-3	Dibenz(a,h)anthracene	0.95	U
50-32-8	Benzo(a)pyrene	0.95	U
91-20-3	Naphthalene	18.3	
208-96-8	Acenaphthylene	0.95	U
83-32-9	Acenaphthene	0.95	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.95	U
86-73-7	Fluorene	0.95	U
191-24-2	Benzo(g,h,i)perylene	0.95	U
85-01-8	Phenanthrene	0.95	U
120-12-7	Anthracene	0.95	U
206-44-0	Fluoranthene	0.95	U
129-00-0	Pyrene	0.95	U
56-55-3	Benzo(a)anthracene	0.95	U
218-01-9	Chrysene	0.95	U
91-58-7	2-Chloronaphthalene	0.95	U
207-08-9	Benzo(k)fluoranthene	0.95	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2213

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA18W

Matrix: (soil/water) WATER Lab Sample ID: 9900922004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 50126

Level: (low/med) LOW DATA VALIDATION Date Received: 12/08/99

% Moisture: not dec. _____ DRY Date Analyzed: 12/21/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0 use

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	553 ~~483~~	~~E~~D	U
108-88-3	Toluene	0.86	J	
100-41-4	Ethylbenzene	86.7		
1330-20-7	Xylenes (total)	352 ~~355~~	~~E~~D	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2212

Lab Name: GENERAL ENGINEERING LABOR Contract: N A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA18W

Matrix: (soil/water) WATER Lab Sample ID: 9900922004

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 8Y517A

Level: (low/med) LOW DATA VALIDATION Date Received: 12/08/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	101	
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3312

Lab Name: GENERAL ENGINEERING LABOR Contract: N A

Lab Code: N/A Case No.: N/A SAS No.: N A SDG No.: MBTA18W

Matrix: (soil/water) WATER Lab Sample ID: 9901P22005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 50127

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/08/99

% Moisture: not dec. _____ Date Analyzed: 12/21/99

GC Column: DB-624 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/L	Q	
71-43-2	Benzene	1.1		U
108-88-3	Toluene	1.0	U	J
100-41-4	Ethylbenzene	0.46	J	J
1330-20-7	Xylenes (total)	1.4	J	

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2312

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA18W

Matrix: (soil/water) WATER Lab Sample ID: 9900922005

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 8Y518A

Level: (low/med) LOW DATA VALIDATION Date Received: 12/08/99

% Moisture: _____ decanted: (COPY Date Extracted: 12/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2412

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839012

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N234

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. _____ Date Analyzed: 12/15/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2412RE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839002

Sample wt/vol: 1010 (g/mL) ML Lab File ID: 5Y511

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/16/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/17/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

DATA VALIDATION COPY

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CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
205-99-2	Benzo(b)fluoranthene	0.99	U
53-70-3	Dibenz(a,h)anthracene	0.99	U
50-32-8	Benzo(a)pyrene	0.99	U
91-20-3	Naphthalene	0.99	U
208-96-8	Acenaphthylene	0.99	U
83-32-9	Acenaphthene	0.99	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.99	U
86-73-7	Fluorene	0.99	U
191-24-2	Benzo(g,h,i)perylene	0.99	U
85-01-8	Phenanthrene	0.99	U
120-12-7	Anthracene	0.99	U
206-44-0	Fluoranthene	0.99	U
129-00-0	Pyrene	0.99	U
56-55-3	Benzo(a)anthracene	0.99	U
218-01-9	Chrysene	0.99	U
91-58-7	2-Chloronaphthalene	9.9	U
207-08-9	Benzo(k)fluoranthene	0.99	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SF2512

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9910839011

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N233

Level: (low/med) LOW Date Received: 12/02/99

% Moisture: not dec. DATA VALIDATION COPY Date Analyzed: 12/15/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2512RE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA04W

Matrix: (soil/water) WATER Lab Sample ID: 9900839001

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 5Y510

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/02/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/16/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91-58-7	2-Chloronaphthalene	9.8	U
207-08-9	Benzo(k)fluoranthene	0.98	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2612

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA07W

Matrix: (soil/water) WATER Lab Sample ID: 9900851005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N316

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. _____ Date Analyzed: 12/15/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2612

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA06W

Matrix: (soil/water) WATER Lab Sample ID: 9900850004

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y411

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/16/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2712

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA20W

Matrix: (soil/water) WATER Lab Sample ID: 20448006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5S317

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: not dec. _____ Date Analyzed: 01/19/00

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BF2712

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HSFA20W

Matrix: (soil/water) GROUND WAT Lab Sample ID: 20448006

Sample wt/vol: 940.0 (g/mL) ML Lab File ID: 4D121

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: _____ decanted: (Y/N) Date Extracted: 01/14/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/18/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

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CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1.1	U
91-58-7	2-Chloronaphthalene	1.1	U
208-96-8	Acenaphthylene	1.1	U
83-32-9	Acenaphthene	1.1	U
86-73-7	Fluorene	1.1	U
85-01-8	Phenanthrene	1.1	U
120-12-7	Anthracene	1.1	U
206-44-0	Fluoranthene	1.1	U
129-00-0	Pyrene	1.1	U
56-55-3	Benzo(a)anthracene	1.1	U
218-01-9	Chrysene	1.1	U
205-99-2	Benzo(b)fluoranthene	1.1	U
207-08-9	Benzo(k)fluoranthene	1.1	U
50-32-8	Benzo(a)pyrene	1.1	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.1	U
53-70-3	Dibenz(a,h)anthracene	1.1	U
191-24-2	Benzo(g,h,i)perylene	1.1	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2812

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA20W

Matrix: (soil/water) WATER Lab Sample ID: 20448005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5S405

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: not dec. _____ Date Analyzed: 01/20/00

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2812

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA20W

Matrix: (soil/water) GROUND WAT Lab Sample ID: 20448005

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 4D120

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 01/14/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/18/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EF2912

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA20W

Matrix: (soil/water) WATER Lab Sample ID: 20448004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5S315

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: not dec. _____ Date Analyzed: 01/19/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: 5.0 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene		1.0	U	U A03, A05, G02
108-88-3	Toluene		0.40	J	J
100-41-4	Ethylbenzene	1.0	~~0.57~~	JB	U
1330-20-7	Xylenes (total)	376	~~336~~	E D	J

MMF
3/2/00

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF2912RE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA20W

Matrix: (soil/water) GROUND WAT Lab Sample ID: 20448004

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 5D118

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 01/21/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/24/00

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	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

US AQ1

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3012

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA20W

Matrix: (soil/water) WATER Lab Sample ID: 20448002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5S313

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: not dec. _____ Date Analyzed: 01/19/00

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/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	1.0	U	U
100-41-4	Ethylbenzene	1.0 ~~0.052~~	JB	U F01, F06
1330-20-7	Xylenes (total)	3.0	U	U

MMP 3/2/00

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3012

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA20W

Matrix: (soil/water) GROUND WAT Lab Sample ID: 20448002

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 4D117

Level: (low/med) LOW DATA VALIDATION Date Received: 01/13/00

% Moisture: _____ decanted: (Y/N) COPY Date Extracted: 01/14/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/18/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

USD

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3014 DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA20W

Matrix: (soil/water) WATER Lab Sample ID: 20448003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5S314

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: not dec. _____ Date Analyzed: 01/19/00

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3014RE DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA20W

Matrix: (soil/water) GROUND WAT Lab Sample ID: 20448003

Sample wt/vol: 970.0 (g/mL) ML Lab File ID: 5D117

Level: (low/med) LOW Date Received: 01/13/00

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 01/21/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/24/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

DATA VALIDATION

USQ

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3112

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA20W

Matrix: (soil/water) WATER Lab Sample ID: 204480C1

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5S312

Level: (low/med) LOW DATA VALIDATION Date Received: 01/13/00

% Moisture: not dec. _____ Date Analyzed: 01/19/00

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF3112

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA20W

Matrix: (soil/water) GROUND WAT Lab Sample ID: 20448001

Sample wt/vol: 880.0 (g/mL) ML Lab File ID: 4D116

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 01/13/00

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 01/14/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/18/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

USL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		
91-20-3	Naphthalene	1.1	U	U5 GD2
91-58-7	2-Chloronaphthalene	1.1	U	
208-96-8	Acenaphthylene	1.1	U	
83-32-9	Acenaphthene	1.1	U	
86-73-7	Fluorene	1.1	U	
85-01-8	Phenanthrene	1.1	U	
120-12-7	Anthracene	1.1	U	
206-44-0	Fluoranthene	1.1	U	
129-00-0	Pyrene	1.1	U	
56-55-3	Benzo(a)anthracene	1.1	U	
218-01-9	Chrysene	1.1	U	
205-99-2	Benzo(b)fluoranthene	1.1	U	
207-08-9	Benzo(k)fluoranthene	1.1	U	
50-32-8	Benzo(a)pyrene	1.1	U	
193-39-5	Indeno(1,2,3-cd)pyrene	1.1	U	
53-70-3	Dibenz(a,h)anthracene	1.1	U	
191-24-2	Benzo(g,h,i)perylene	1.1	U	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV212

Lab Name: CENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875009

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N520

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.42	J	J
100 41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV212

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876009

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ217

Level: (low/med) LOW DATA VALIDATION Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) COPY Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/28/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

BFV222

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875010

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N521

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV222

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: IIBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876013

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ221

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/28/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV232

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875011

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N530

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. _____ DATA VALIDATION COPY Date Analyzed: 12/18/99

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/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.30	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV232

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876011

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ219

Level: (low/med) LOW DATA VALIDATION Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) COPY Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/28/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73 7	Fluorene	1.0	U
191-24 2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV242

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: H3FA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900875012

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: SN531

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/18/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	0.22	J	J
108-88-3	Toluene	0.40	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV242

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876014

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ222

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/28/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U	
53-70-3	Dibenz(a,h)anthracene	1.0	U	
50-32-8	Benzo(a)pyrene	1.0	U	
91-20-3	Naphthalene	1.0	U	
208-96-8	Acenaphthylene	1.0	U	
83-32-9	Acenaphthene	1.0	U	
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U	
86-73-7	Fluorene	1.0	U	
191-24-2	Benzo(g,h,i)perylene	1.0	U	
85-01-8	Phenanthrene	1.0	U	
120-12-7	Anthracene	1.0	U	
206-44-0	Fluoranthene	1.0	U	
129-00-0	Pyrene	1.0	U	
56-55-3	Benzo(a)anthracene	1.0	U	
218-01-9	Chrysene	1.0	U	
91-58-7	2-Chloronaphthalene	1.0	U	
207-08-9	Benzo(k)fluoranthene	1.0	U	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV744 DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: H3FA12W

Matrix: (soil/water) WATER Lab Sample ID: 990087-013

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N532

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/16/99

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/L	Q	
71-43-2	Benzene	0.24	J	J
108-88-3	Toluene	0.27	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BPV244 DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876012

Sample wt/vol: 1010 (g/mL) ML Lab File ID: 7ZZ220

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/28/99

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
205-99-2	Benzo(b)fluoranthene	0.99	U
53-70-3	Dibenz(a,h)anthracene	0.99	U
50-32-8	Benzo(a)pyrene	0.99	U
91-20-3	Naphthalene	0.99	U
208-96-8	Acenaphthylene	0.99	U
83-32-9	Acenaphthene	0.99	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.99	U
86-73-7	Fluorene	0.99	U
191-24-2	Benzo(g,h,i)perylene	0.99	U
85-01-8	Phenanthrene	0.99	U
120-12-7	Anthracene	0.99	U
206-44-0	Fluoranthene	0.99	U
129-00-0	Pyrene	0.99	U
56-55-3	Benzo(a)anthracene	0.99	U
218-01-9	Chrysene	0.99	U
91-58-7	2-Chloronaphthalene	0.99	U
207-08-9	Benzo(k)fluoranthene	0.99	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EPV152

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HEPA12W

Matrix: (soil/water) WATER Lab Sample ID: 990087501

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N533

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/18/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.36	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV252

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876018

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ312

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/29/99

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	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV212

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HRFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: SN514

Level: (low/med) LOW DATA VALIDATION Date Received: 12/06/99

% Moisture: not dec. _____ COPY Date Analyzed: 12/17/99

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/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.35	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV262

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876017

Sample wt/vol: 1000 (g/mL) ML Lab File ID: ZZZ311

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/29/99

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	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV312

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900375015

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N534

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/18/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.33	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

3FV312

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876001

Sample wt/vol: 1010 (g/mL) ML Lab File ID: 7ZZ209

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/28/99

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
205-99-2	Benzo(b)fluoranthene	0.99	U
53-70-3	Dibenz(a,h)anthracene	0.99	U
50-32-8	Benzo(a)pyrene	0.99	U
91-20-3	Naphthalene	0.99	U
208-96-8	Acenaphthylene	0.99	U
83-32-9	Acenaphthene	0.99	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.99	U
86-73-7	Fluorene	0.99	U
191-24-2	Benzo(g,h,i)perylene	0.99	U
85-01-8	Phenanthrene	0.99	U
120-12-7	Anthracene	0.99	U
206-44-0	Fluoranthene	0.99	U
129-00-0	Pyrene	0.99	U
56-55-3	Benzo(a)anthracene	0.99	U
218-01-9	Chrysene	0.99	U
91-58-7	2-Chloronaphthalene	0.99	U
207-08-9	Benzo(k)fluoranthene	0.99	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV322

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875016

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N535

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/18/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.80	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

5FV322

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876003

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ307

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/29/99

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	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV332

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875017

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N536

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/18/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.31	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV332

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876002

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ306

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/29/99

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	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV342

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875018

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: SN537

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/18/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.37	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV342

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876005

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ308

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/29/99

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	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV352

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875019

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N538

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/18/99

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/L	Q	
71-43-2	Benzene	1.0	U	UJ A03
108-88-3	Toluene	0.28	J	J
100-41-4	Ethylbenzene	1.0	U	UJ
1330-20-7	Xylenes (total)	3.0	U	UJ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV352

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876004

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ212

Level: (low/med) LOW DATA VALIDATION Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/28/99

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
205-99-2	Benzo(b)fluoranthene		1.0	U
53-70-3	Dibenz(a,h)anthracene		1.0	U
50-32-8	Benzo(a)pyrene		1.0	U
91-20-3	Naphthalene		1.0	U
208-96-8	Acenaphthylene		1.0	U
83-32-9	Acenaphthene		1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene		1.0	U
86-73-7	Fluorene		1.0	U
191-24-2	Benzo(g,h,i)perylene		1.0	U
85-01-8	Phenanthrene		1.0	U
120-12-7	Anthracene		1.0	U
206-44-0	Fluoranthene		1.0	U
129-00-0	Pyrene		1.0	U
56-55-3	Benzo(a)anthracene		1.0	U
218-01-9	Chrysene		1.0	U
91-58-7	2 Chloronaphthalene		1.0	U
207-08-9	Benzo(k)fluoranthene		1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV362

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875020

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: SN539

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/18/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	UJ A03
108-88-3	Toluene	0.28	J	J
100-41-4	Ethylbenzene	1.0	U	UJ
1330-20-7	Xylenes (total)	3.0	U	UJ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV362

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876010

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ218

Level: (low/med) LOW DATA VALIDATION Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/28/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV412

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N516

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	81.8	
108-88-3	Toluene	0.42	J
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	31.5	

11/5/11

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV412

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876008

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ216

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/28/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV422

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N517

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.4	
108-88-3	Toluene	0.44	J
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	0.36	J

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV422

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876007

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ215

Level: (low/med) LOW DATA VALIDATION Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/28/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW424
DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA1 MS 2/4/00

Matrix: (soil/water) WATER Lab Sample ID: 9900878011

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8N433

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/16/99

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/L	Q	
71-43-2	Benzene	2.6		
108-88-3	Toluene	0.54	J	
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	0.35	JB	U F01,F06

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV424 DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA14W

Matrix: (soil/water) GROUND WAT Lab Sample ID: 9900878001

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 7Y608

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BPV432

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875007

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N518

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q	
71-43-2	Benzene	0.60	J	J
108-88-3	Toluene	0.70	J	J
100-41-4	Ethylbenzene	0.22	J	J
1330-20-7	Xylenes (total)	3.0	U	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV432

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876006

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 7ZZ214

Level: (low/med) LOW DATA VALIDATION Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/28/99

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
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91-58-7	2-Chloronaphthalene	0.98	U
207-08-9	Benzo(k)fluoranthene	0.98	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV441

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA1 gfw ms 2/4/00

Matrix: (soil/water) WATER Lab Sample ID: 9900878002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8N434

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q	
71-43-2	Benzene	0.29	J	J
108-88-3	Toluene	0.42	J	
100-41-4	Ethylbenzene	0.16	J	
1330-20-7	Xylenes (total)	3.0	U	UJ

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV442

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA14W

Matrix: (soil/water) GROUND WAT Lab Sample ID: 9900878002

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7Y509

Level: (low/med) LOW DATA VALIDATION Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV452

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA1 JN 1/5 2/4/00

Matrix: (soil/water) WATER Lab Sample ID: 9906578003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8N435

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q	
71-43-2	Benzene	0.24	J	J
108-88-3	Toluene	1.0	U	U
100-41-4	Ethylbenzene	1.0	U	
1330-20-7	Xylenes (total)	3.0	U	

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV452

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA14W

Matrix: (soil/water) GROUND WAT Lab Sample ID: 9900878003

Sample wt/vol: 1010 (g/mL) ML Lab File ID: 7Y610

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	0.99	U
53-70-3	Dibenz(a,h)anthracene	0.99	U
50-32-8	Benzo(a)pyrene	0.99	U
91-20-3	Naphthalene	0.99	U
208-96-8	Acenaphthylene	0.99	U
83-32-9	Acenaphthene	0.99	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.99	U
86-73-7	Fluorene	0.99	U
191-24-2	Benzo(g,h,i)perylene	0.99	U
85-01-8	Phenanthrene	0.99	U
120-12-7	Anthracene	0.99	U
206-44-0	Fluoranthene	0.99	U
129-00-0	Pyrene	0.99	U
56-55-3	Benzo(a)anthracene	0.99	U
218-01-9	Chrysene	0.99	U
91-58-7	2-Chloronaphthalene	0.99	U
207-08-9	Benzo(k)fluoranthene	0.99	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV462

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N519

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q
71-43-2	Benzene	0.21	J
108-88-3	Toluene	0.79	J
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV462

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W.1

Matrix: (soil/water) WATER Lab Sample ID: 9900876019

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 4D108

Level: (low/med) LOW DATA VALIDATION Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) COPY Date Extracted: 01/05/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/17/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV512

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA07W

Matrix: (soil/water) WATER Lab Sample ID: 9900851007

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N318

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. _____ Date Analyzed: 12/15/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	1.0	U	
100-41-4	Ethylbenzene	1.0	U	
1330-20-7	Xylenes (total)	3.0	U	

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV512

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA06W

Matrix: (soil/water) WATER Lab Sample ID: 9900850006

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y413

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/16/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV522

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA07W

Matrix: (soil/water) WATER Lab Sample ID: 9900851008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N319

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. _____ DATA VALIDATION Date Analyzed: 12/15/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV522

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA06W

Matrix: (soil/water) WATER Lab Sample ID: 9900850007

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y414

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/16/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV532

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFAC7W

Matrix: (soil/water) WATER Lab Sample ID: 9900851009

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: SN425

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. DATA VALIDATION COPY Date Analyzed: 12/16/99

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/L	Q	
71-43-2	Benzene	1.0	U	UJ
108-88-3	Toluene	0.51	J	J
100-41-4	Ethylbenzene	1.0	U	UJ
1330-20-7	Xylenes (total)	3.0	U	UJ

A03/A05

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV532

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA06W

Matrix: (soil/water) WATER Lab Sample ID: 9900850008

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y415

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/03/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/16/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BPV542

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBPA07W

Matrix: (soil/water) WATER Lab Sample ID: 990085101.0

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N426

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. _____ Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

UJ A03, A05

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV542

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA06W

Matrix: (soil/water) WATER Lab Sample ID: 9900850009

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y416

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/16/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV552

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFAC7W

Matrix: (soil/water) WATER Lab Sample ID: 9900851011

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N427

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. _____ Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.58	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV552

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA06W

Matrix: (soil/water) WATER Lab Sample ID: 9900850010

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y417

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/16/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV562

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA07W

Matrix: (soil/water) WATER Lab Sample ID: 9900851012

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N428

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. _____ Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

UJ A03,A05

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV562

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA06W

Matrix: (soil/water) WATER Lab Sample ID: 9900850011

Sample wt/vol: 1010 (g/mL) ML Lab File ID: 5Y418

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: _____ decanted: (Y/N) Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/16/99

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
205-99-2	Benzo(b)fluoranthene	0.99	U
53-70-3	Dibenz(a,h)anthracene	0.99	U
50-32-8	Benzo(a)pyrene	0.99	U
91-20-3	Naphthalene	0.99	U
208-96-8	Acenaphthylene	0.99	U
83-32-9	Acenaphthene	0.99	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.99	U
86-73-7	Fluorene	0.99	U
191-24-2	Benzo(g,h,i)perylene	0.99	U
85-01-8	Phenanthrene	0.99	U
120-12-7	Anthracene	0.99	U
206-44-0	Fluoranthene	0.99	U
129-00-0	Pyrene	0.99	U
56-55-3	Benzo(a)anthracene	0.99	U
218-01-9	Chrysene	0.99	U
91-58-7	2-Chloronaphthalene	9.9	U
207-08-9	Benzo(k)fluoranthene	0.99	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV564 DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA07W

Matrix: (soil/water) WATER Lab Sample ID: 9900851313

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N429

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: not dec. _____ Date Analyzed: 12/16/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	UJ A03,A05
108-88-3	Toluene	0.58	J	J
100-41-4	Ethylbenzene	0.17	J	J
1330-20-7	Xylenes (total)	3.0	U	UJ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV564

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA06W

Matrix: (soil/water) WATER Lab Sample ID: 9900850012

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 5Y419

Level: (low/med) LOW Date Received: 12/03/99

% Moisture: _____ decanted: (Y/N) Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/16/99

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
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91-58-7	2-Chloronaphthalene	9.8	U
207-08-9	Benzo(k)fluoranthene	0.98	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV612

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864013

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N430

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. DATA VALIDATION Date Analyzed: 12/17/99

GC Column: DB-624 ID: 0.25 (mm) COPY Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	4.4	
108-88-3	Toluene	0.56	J
100-41-4	Ethylbenzene	0.44	J
1330-20-7	Xylenes (total)	2.7	J

J A05 A03

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV612

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864013

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Z104

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: _____ decanted: COPY Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/20/99 use

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

UJ GOZ

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV622

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864114

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N431

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q	
71-43-2	Benzene	0.26	J	J
108-88-3	Toluene	0.46	J	
100-41-4	Ethylbenzene	0.11	J	
1330-20-7	Xylenes (total)	3.0	U	UJ

A05 A03

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV622

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864014

Sample wt/vol: 1000 (g/mL) ML Lab File ID: SY542

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N) COPY Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV632

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864015

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N432

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. _____ DATA VALIDATION COPY Date Analyzed: 12/17/99

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/L	Q	
71-43-2	Benzene	1.0	U	UJ A05 A03
108-88-3	Toluene	0.43	J	J
100-41-4	Ethylbenzene	1.0	U	UJ
1330-20-7	Xylenes (total)	3.0	U	UJ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV632

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864015

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Z105

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/20/99 usl

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

UJ Go2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV642

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864016

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N433

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	J	UJ A05 AC3
108-88-3	Toluene	0.45	J	J
100-41-4	Ethylbenzene	1.0	U	UJ
1330-20-7	Xylenes (total)	3.0	U	UJ

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV642

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864016

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y544

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV652

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA11W

Matrix: (soil/water) WATER Lab Sample ID: 9900865001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N434

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q		
71-43-2	Benzene	1.0	U	UJ	A05 A03
108-88-3	Toluene	0.47	J	J	↓
100-41-4	Ethylbenzene	0.16	J	J	↓
1330-20-7	Xylenes (total)	3.0	U	UJ	↓

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV652

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864012

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y540

Level: (low/med) LOW DATA VALIDA... Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV662

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA11N

Matrix: (soil/water) WATER Lab Sample ID: 9900865002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N435

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. DATA VALIDATION COPY Date Analyzed: 12/17/99

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/L	Q	
71-43-2	Benzene	1.0	U	UJ A05 A03
108-88-3	Toluene	0.44	J	J
100-41-4	Ethylbenzene	0.15	J	J
1330 20-7	Xylenes (total)	3.0	U	UJ

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV662

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864011

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y539

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV712

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA11W

Matrix: (soil/water) WATER Lab Sample ID: 9900865009

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N506

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	0.60	J
100-41-4	Ethylbenzene	0.10	J
1330-20-7	Xylenes (total)	0.33	J

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV712

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864004

Sample wt/vol: 1010 (g/mL) ML Lab File ID: 5Y532

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/17/99

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
205-99-2	Benzo(b)fluoranthene	0.99	U
53-70-3	Dibenz(a,h)anthracene	0.99	U
50-32-8	Benzo(a)pyrene	0.99	U
91-20-3	Naphthalene	0.99	U
208-96-8	Acenaphthylene	0.99	U
83-32-9	Acenaphthene	0.99	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.99	U
86-73-7	Fluorene	0.99	U
191-24-2	Benzo(g,h,i)perylene	0.99	U
85-01-8	Phenanthrene	0.99	U
120-12-7	Anthracene	0.99	U
206-44-0	Fluoranthene	0.99	U
129-00-0	Pyrene	0.99	U
56-55-3	Benzo(a)anthracene	0.99	U
218-01-9	Chrysene	0.99	U
91-58-7	2-Chloronaphthalene	9.9	U
207-08-9	Benzo(k)fluoranthene	0.99	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV722

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA11W

Matrix: (soil/water) WATER Lab Sample ID: 9900865010

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: SN507

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	UJ A05 A03
108-88-3	Toluene	0.35	J	J
100-41-4	Ethylbenzene	1.0	U	UJ
1330-20-7	Xylenes (total)	3.0	U	UJ

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV722

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864005

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 5Y533

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91-58-7	2-Chloronaphthalene	9.8	U
207-08-9	Benzo(k)fluoranthene	0.98	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV732

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA11W

Matrix: (soil/water) WATER Lab Sample ID: 9900865011

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N508

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	0.23	J
108-88-3	Toluene	0.70	J
100-41-4	Ethylbenzene	0.12	J
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV732

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864006

Sample wt/vol: 1010 (g/mL) ML Lab File ID: 5Y534

Level: (low/med) LOW DATA VALIDATION Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N) _ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	0.99	U
53-70-3	Dibenz(a,h)anthracene	0.99	U
50-32-8	Benzo(a)pyrene	0.99	U
91-20-3	Naphthalene	0.99	U
208-96-8	Acenaphthylene	0.99	U
83-32-9	Acenaphthene	0.99	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.99	U
86-73-7	Fluorene	0.99	U
191-24-2	Benzo(g,h,i)perylene	0.99	U
85-01-8	Phenanthrene	0.99	U
120-12-7	Anthracene	0.99	U
206-44-0	Fluoranthene	0.99	U
129-00-0	Pyrene	0.99	U
56-55-3	Benzo(a)anthracene	0.99	U
218-01-9	Chrysene	0.99	U
91-58-7	2-Chloronaphthalene	9.9	U
207-08-9	Benzo(k)fluoranthene	0.99	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV742

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA11W

Matrix: (soil/water) WATER Lab Sample ID: 9900865012

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N509

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. DATA VALIDATION Date Analyzed: 12/17/99

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/L	Q	
71-43-2	Benzene	0.31	J	J
108-88-3	Toluene	0.58	J	J
100-41-4	Ethylbenzene	1.0	U	kJ
1330-20-7	Xylenes (total)	3.0	U	UJ

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV742

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864007

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 5Y535

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/04/99

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.5	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV744 DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA11W

Matrix: (soil/water) WATER Lab Sample ID: 9900865013

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N510

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: not dec. _____ DATA VALIDATION COPY Date Analyzed: 12/17/99

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/L	Q		
71-43-2	Benzene	0.28	J	J	A05 A05
108-88-3	Toluene	0.70	J	J	
100-41-4	Ethylbenzene	1.0	U	UJ	
1330-20-7	Xylenes (total)	3.0	U	UJ	

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV744 DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA10W

Matrix: (soil/water) WATER Lab Sample ID: 9900864008

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 5Y536

Level: (low/med) LOW Date Received: 12/04/99

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	10.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV752

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N512

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q
71-43-2	Benzene	0.25	J
108-88-3	Toluene	0.74	J
100-41-4	Ethylbenzene	0.12	J
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV752

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876016

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ310

Level: (low/med) LOW DATA VALIDATION Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) COPY Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/29/99

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	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

4

FORM I SV-1 OLM03.0

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV762

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA12W

Matrix: (soil/water) WATER Lab Sample ID: 9900875002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: SN513

Level: (low/med) LOW Date Received: 12/06/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.56	J	J
100-41-4	Ethylbenzene	0.15	J	J
1330-20-7	Xylenes (total)	3.0	U	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFV762

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA13W

Matrix: (soil/water) WATER Lab Sample ID: 9900876015

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 7ZZ309

Level: (low/med) LOW DATA VALIDATION Date Received: 12/06/99

% Moisture: _____ decanted: (Y/N) COPY Date Extracted: 12/07/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/29/99

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	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

SURFACE WATER ANALYTICAL DATA SHEETS

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0117

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFAL6W

Matrix: (soil/water) WATER Lab Sample ID: 9900901001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8N436

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	u
108-88-3	Toluene	1.0	U	
100-41-4	Ethylbenzene	1.0	U	
1330-20-7	Xylenes (total)	3.0	U	

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0117

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901001

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 7Y611

Level: (low/med) LOW DATA VALIDATION Date Received: 12/07/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91-58-7	2-Chloronaphthalene	0.98	U
207-08-9	Benzo(k)fluoranthene	0.98	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0217

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HEPA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8N437

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	0.17	J
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0217

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901002

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 7Y612

Level: (low/med) LOW DATA VALIDATION Date Received: 12/07/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91 58-7	2-Chloronaphthalene	0.98	U
207 08-9	Benzo(k)fluoranthene	0.98	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0317

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8N438

Level: (low/med) LOW DATA VALIDATION Date Received: 12/07/99

% Moisture: not dec. _____ COPY Date Analyzed: 12/17/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0317

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901003

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 7Y613

Level: (low/med) LOW DATA VALIDATION Date Received: 12/07/99

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91-58-7	2-Chloronaphthalene	0.98	U
207-08-9	Benzo(k)fluoranthene	0.98	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0417

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8N439

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q	
71-43-2	Benzene	1.0	U	u
108-88-3	Toluene	1.0	U	
100-41-4	Ethylbenzene	1.0	U	
1330-20-7	Xylenes (total)	3.0	U	

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0417

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901004

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 7Y614

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91-58-7	2-Chloronaphthalene	0.98	U
207-08-9	Benzo(k)fluoranthene	0.98	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0617

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8N440

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. DATA VALIDATION COPY Date Analyzed: 12/17/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0617

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901005

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 7Y615

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 12/07/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0717

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8N441

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. _____ DATA VALIDATION COPY Date Analyzed: 12/17/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0717

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901011

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 7Y616

Level: (low/med) LOW DATA VALIDATION Date Received: 12/07/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/18/99

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
205-99-2	Benzo(b)fluoranthene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
91-20-3	Naphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
86-73-7	Fluorene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF081

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFAL6W

Matrix: (soil/water) WATER Lab Sample ID: 9909901907

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8N510

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0817

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901012

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 7Y617

Level: (low/med) LOW DATA VALIDATION Date Received: 12/07/99

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/19/99

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	
205-99-2	Benzo(b)fluoranthene	0.98	U	U
53-70-3	Dibenz(a,h)anthracene	0.98	U	
50-32-8	Benzo(a)pyrene	0.98	U	
91-20-3	Naphthalene	0.98	U	
208-96-8	Acenaphthylene	0.98	U	
83-32-9	Acenaphthene	0.98	U	
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U	
86-73-7	Fluorene	0.98	U	
191-24-2	Benzo(g,h,i)perylene	0.98	U	
85-01-8	Phenanthrene	0.98	U	
120-12-7	Anthracene	0.98	U	
206-44-0	Fluoranthene	0.98	U	
129-00-0	Pyrene	0.98	U	
56-55-3	Benzo(a)anthracene	0.98	U	
218-01-9	Chrysene	0.98	U	
91-58-7	2-Chloronaphthalene	0.98	U	
207-08-9	Benzo(k)fluoranthene	0.98	U	✓

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0917

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8N509

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. DATA VALIDATION COPY Date Analyzed: 12/17/99

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/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0917

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901013

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 7Y618

Level: (low/med) LOW DATA VALIDATION Date Received: 12/07/99

% Moisture: _____ decanted: (Y/N) Y Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/19/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0 ul

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91-58-7	2-Chloronaphthalene	0.98	U
207-08-9	Benzo(k)fluoranthene	0.98	U

UJ G02

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0919
DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901009

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8N508

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: not dec. _____ Date Analyzed: 12/17/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	3.0	U

u

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BF0919 DUPLICATE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HBFA16W

Matrix: (soil/water) WATER Lab Sample ID: 9900901014

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 7Y619

Level: (low/med) LOW Date Received: 12/07/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 12/09/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 12/19/99

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
205-99-2	Benzo(b)fluoranthene	0.98	U
53-70-3	Dibenz(a,h)anthracene	0.98	U
50-32-8	Benzo(a)pyrene	0.98	U
91-20-3	Naphthalene	0.98	U
208-96-8	Acenaphthylene	0.98	U
83-32-9	Acenaphthene	0.98	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.98	U
86-73-7	Fluorene	0.98	U
191-24-2	Benzo(g,h,i)perylene	0.98	U
85-01-8	Phenanthrene	0.98	U
120-12-7	Anthracene	0.98	U
206-44-0	Fluoranthene	0.98	U
129-00-0	Pyrene	0.98	U
56-55-3	Benzo(a)anthracene	0.98	U
218-01-9	Chrysene	0.98	U
91-58-7	2-Chloronaphthalene	0.98	U
207-08-9	Benzo(k)fluoranthene	0.98	U

APPENDIX IX

CONTAMINATED SOIL DISPOSAL MANIFESTS

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All soil removed during the underground storage tank (UST) removal effort for this site was returned to the UST excavation by Anderson Columbia Environmental, Inc. Therefore, soil disposal manifests do not exist for the Former UST 117, Facility ID:9-025113*1 site.

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APPENDIX X

SITE RANKING FORM

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SITE RANKING FORM

Facility Name: Former UST 117, Building 7002 **Ranked by:** C. Allison Bailey

County: Chatham **Facility ID #:** 9-025113*1 **Date Ranked:** 04/21/00

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

CAP-Part A sample BFF 2211, boring SB-22

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

CAP-Part A sample BFF 2211, boring SB-22

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. 50) + (B. 25) = (75) x (C. 10) = (D. 750)

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" - 1 ft. = 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 = 500
- ☐ >10,000 µg/L = 1,500

Fill in the blanks: (E. 0) + (F. 50) = (G. 50)

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	= 2,000
☐	≤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

I. Non-Public Water Supply

☐	Impacted	= 1,000
☐	≤100'	= 500
☐	>100' - 500'	= 25
☐	>500' - ¼ mi	= 5
☐	>¼ - ½ mi	= 2
☒	>½ mi	= 0

For lower susceptibility areas only:

☐	>¼ 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.

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'	= 2

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. 50) + (K. 0) = L. 50

(G. 50) x (L. 50) = M. 2500

(M. 2500) + (D. 750) = N. 3250

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. 3250) x (P. 1) = (3250) + (Q. 0)

= 3250

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 4,200 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 FORMER UST 117, BUILDING 7002, SITE

According to Wilkes et al. (1974), the soil common at the Bulk Fuel Facility consists of the Chipley-Urban land complex (Cuc). This complex contains 40 to 70 percent Chipley soils and 20 to 40 percent Urban Land soils. The surface layer of this complex is very dark grayish brown to gray, with the underlying layer being olive brown to light yellowish brown mottled with gray.

A seasonal high water table is 15 to 36 inches below the surface. In places, the soil profile has been altered due to the cutting, filing, and grading activities resulting from urban development (Wilkes et al. 1974).

During direct-push sampling events at the Former UST 117 site, three major unconsolidated sediment types were encountered (Figures 4b and 4c, Appendix I). These include: (1) poorly graded sand with silt; (2) clay with silt and sand; and (3) moderately to well graded, clean quartz sand.

Groundwater encountered at the site 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 the Surficial Aquifer (and associated groundwater plumes) located beneath the Former UST 117 site and identified water supply withdrawal points.

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FIGURES

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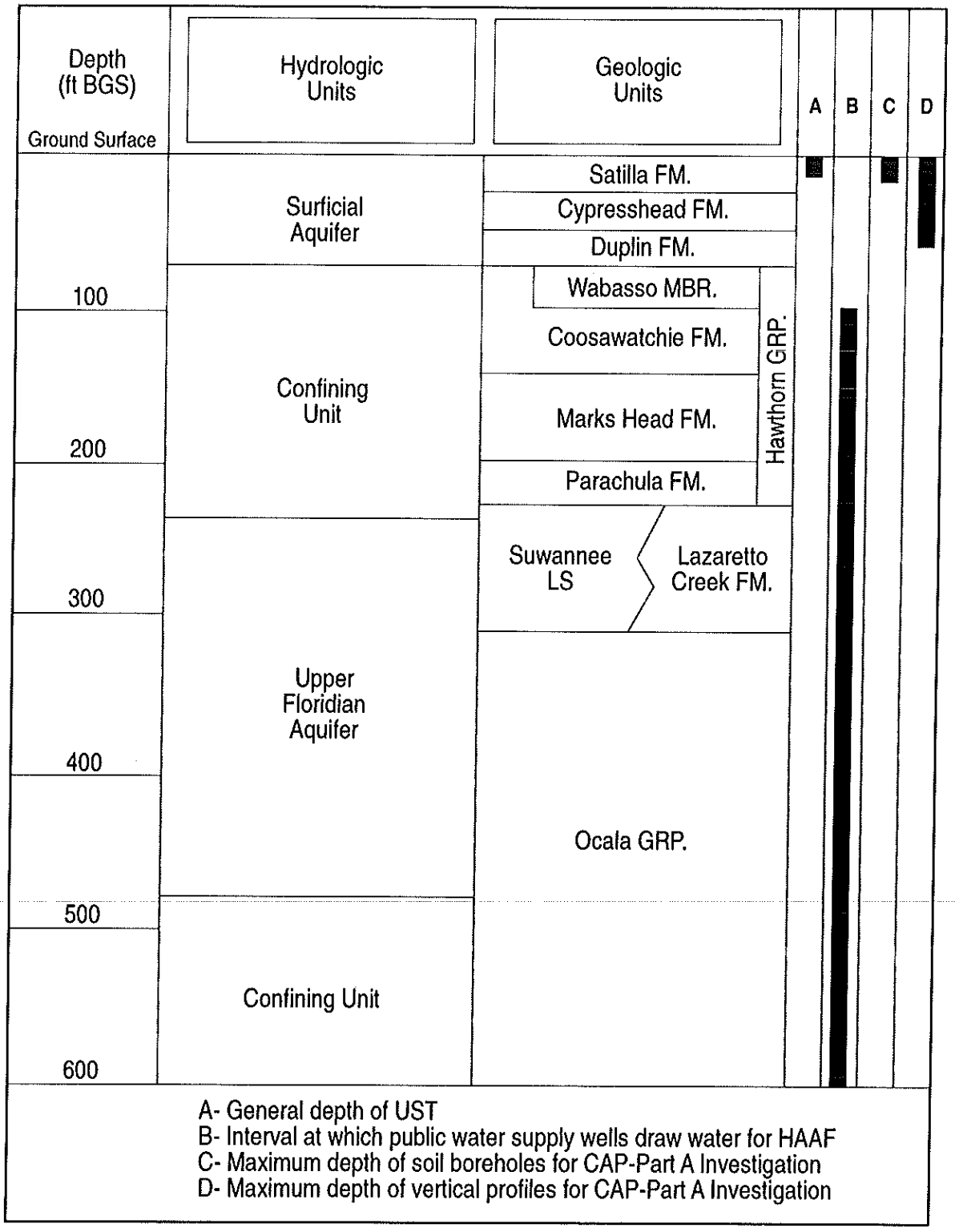


Figure X-A. Generalized Stratigraphy of Chatham County, Georgia

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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

STATE OF GEORGIA
CHATHAM COUNTY

Personally appeared before me, JOAN T. JENKINS, to me known, who being sworn, deposes and says:

That she/he is the * CLASSIFIED ADV. SUPV. of Southeastern Newspaper Corporation, a Georgia corporation, doing business in Chatham County, Georgia under the trade name of Savannah Morning News, a daily newspaper published in said county;

That she/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, published on May 7, 2000, May 14 2000, _____, 2000, _____, 2000, _____, 2000, and finds that the following advertisement, to-wit:

PUBLIC NOTICE
Notification of Corrective Action Plan Underground Storage Tank Release(s).
HUNTER ARMY AIRFIELD
Savannah, Georgia
The United States Army Corps of Engineers and Fort Stewart Directorate of Public Works have prepared a Corrective Action Plan (CAP) - Part A report to assess the environmental impact of petroleum related release(s) from the former underground storage tank (UST) 117, Building 7002, Facility ID: 9-025113*1 site located at the Bulk Fuel Facility, Hunter Army Airfield, Savannah, Ga. This report will be submitted to the Georgia Environmental Protection Division on or about June 5, 2000. The Georgia rules for UST management require notification if the publication most directly affected by the plan. If you would like a copy of the plan, please contact:
Commander, Headquarters 3rd Infantry Division (Mechanized) and Fort Stewart, Environmental Branch (attn: T. Rutland), Directorate of Public Works, Building 1137, 1550 Frank Cochran Dr., Fort Stewart, Ga. 31314-4928
A copy of the requested plan will be mailed at a nominal copying and shipping fee.
To make comments on this plan or to examine the Georgia Environmental Protection Division's files, contact the Corrective Action Unit, Underground Storage Tank Management Program, Environmental Protection Division, at 404-362-2687. The Underground Storage Tank Management Program will accept public comments on the CAP-Part A report 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 104, Atlanta, Ga. 30354

Appeared in each of said editions.

Joan T. Jenkins
(Deponent)

Sworn to and subscribed
Before me this 15 day
of May, 2000

Lillie D. Fay
Notary Public, Chatham County, Ga.

LILLIE D. FAY
Notary Public, Chatham County, Ga.
My Commission Expires April 8, 2001

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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 Former Underground Storage Tank 117, Building 7002 site, Facility ID: 9-025113*1, 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

A soil gas survey was conducted at the Bulk Fuel Facility in January 1999 to identify areas of significant contaminant concentration (SAIC 1999b). The soil gas survey identified distinct continuous soil gas contaminant plumes for combined polyaromatic hydrocarbons (PAHs), benzene, total petroleum hydrocarbons–diesel-range organics (TPH-DRO), and total petroleum hydrocarbons–gasoline-range organics (TPH-GRO) with areas of significant contaminant concentrations ("hot spots") identified around Pumping Stations 7002 and 7008; aboveground storage tanks (ASTs) 7001, 7003, 7005, and 7009; and the rail spur (Figure A-1). The most significant areas of contamination were determined to be associated with AST 7003 and Pumping Station 7002, where the highest concentrations of benzene and areas of free product were noted. Based on the results of the investigation activities, optimal sample locations were determined for this Corrective Action Plan (CAP)-Part A investigation (Figure 2, Appendix I).

Sediment and surface water sampling activities were also conducted as part of the soil gas survey investigation. A total of 21 sediment and surface water samples were collected from Lamar Canal in May 1999 to assess the potential impact of petroleum contaminants from the Bulk Fuel Facility (SAIC 1999b). The surface water and sediment samples were collected from co-located positions in the canal from 100 feet upgradient of the Bulk Fuel Facility to downstream of the intersection of Lamar Canal with Perimeter Road near the 117th Georgia Air Guard Base using 125-, 250-, and 500 foot sample intervals (Figure A-2). The evaluation of the surface water data indicated that petroleum-related compounds were not impacting the Lamar Canal surface water. However, the evaluation of the sediment data indicated that at multiple isolated sampling locations downstream of the Bulk Fuel Facility, the sediment contained petroleum-related compounds (SAIC 1999b). Based on the results of investigation activities, it was recommended that additional sediment and surface water samples be collected at nine locations adjacent to the Bulk Fuel Facility and along Lamar Canal (Figure 10, Appendix I).

The overall objective of this project was to provide the services required to produce a CAP for the subject underground storage tank (UST) site per the requirement of the Georgia Environmental Protection Division (EPD). The field activities included the installation of 31 soil borings/monitoring wells and 6 vertical profile borings and the collection of soil, groundwater, sediment, and surface water samples. 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 soil, groundwater, and sediment and surface water sampling and monitoring well installation. The direct-push borings were drilled and monitoring wells 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 geologist, 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 26 soil boreholes. During the direct-push drilling, all sampling devices were pushed to required depths using 4.0- and 3.0-foot push rods. During the borehole installation, 4.0-foot soil cores were collected continuously from ground surface to the top of the water table.

Because the areas around ASTs 7001 and 7003 were not accessible with the Geoprobe, a total of five borings (SB-17, SB-20, SB-21, SB-22, and SB-23) were sampled and installed using a 2-inch-diameter bucket hand auger with 5-foot extensions. During the borehole installation, the bucket auger was advanced in 2-foot intervals with the soil from each 2-foot interval collected for sampling purposes.

2.1.2 Sample Collection

Soil samples from the Geoprobe borings 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.

Soil samples from the hand auger borings were collected by advancing the bucket auger in 2-foot intervals and homogenizing the soil in a stainless steel bowl. A sample was collected for possible laboratory analysis from the homogenized portion. After each 2-foot interval was sampled, the bucket portion of the hand auger, along with the used portion of the extension rod, was decontaminated before continuing with the borehole advancement. This sampling process was continued until the top of the water table was encountered.

Soil was collected from the entire 2-foot interval in order to collect a representative sample. The portion of the sample designated for volatile organic analyses was collected first using Encore samplers, followed by placement of the remaining portion of the sample into the containers designated for other types of analyses using a stainless steel spoon. 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 airtight 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. Information regarding the soil sample selection criteria for off-site shipment to a laboratory for chemical analysis is presented in Section 3.1 of the project Sampling and Analysis Plan (SAIC 1999a). 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 the 26 Geoprobe 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.

After each hand auger boring was completed, a 1.0-inch inside diameter (ID) polyvinyl chloride (PVC) casing with a 10-foot screen interval was installed. Collection of the groundwater samples from the hand auger borings was accomplished through the installed section of the well screen. As a result, the groundwater was collected from a 10-foot interval.

Groundwater samples were also collected from six vertical profile Geoprobe borings using the same sampling methodology as described for the direct-push borings. For these borings, groundwater samples were collected at intervals of every 5 feet starting 5 feet below the saturated zone to a maximum depth of 43 feet from each boring to determine the vertical extent of groundwater contamination.

Water for each type of boring 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 permanent monitoring well was installed in each of the Geoprobe borings. The permanent wells were constructed of 1.0-inch ID PVC casing with a 10-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 PVC casing of the monitoring wells. 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 monitoring well 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 using an electric interface probe. Initially, the indicator probe was lowered into each monitoring well 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 MONITORING WELL INSTALLATION

Following the collection of the groundwater sample, a 1-inch PVC monitoring well, with a 10-foot screened section, was installed in each of the 26 borings accordance with Section 4.1.2.2 of the Field Sampling Plan (SAIC 1998). For the hand auger borings, the monitoring wells were installed after the boring was completed to the total depth. The monitoring wells were developed according to the procedures and methodology presented in Section 4.1.2.4.11 of the Field Sampling Plan (SAIC 1998). After at least 24 hours, 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

The vertical profile boreholes were abandoned 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 SEDIMENT AND SURFACE WATER SAMPLING

2.5.1 Sediment Samples

A total of nine sediment samples were collected from the recommended locations using a trowel (SD-01 through SD-09) and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), TPH-DRO, TPH-GRO, and PAH compounds (Figure 10, Appendix I).

No compounds were reported above the detection limit at sample locations SD-01 and SD-07. BTEX, TPH-DRO, TPH-GRO and PAH compounds were detected in sediment samples collected from locations SD-02 through SD-06, SD-08, and SD-09 (Tables 7a and 7b, Appendix II). However, only benzene and toluene were reported above the applicable soil threshold levels (Table A, column 1) at location SD-03. Benzene was reported at a concentration of <0.154 mg/kg, which is above its soil threshold level of 0.005 mg/kg, and toluene was reported at a concentration of <2.81 mg/kg, which is above its soil threshold level of 0.400 mg/kg. Ethylbenzene and xylene were also detected; however, their concentrations were below their respective soil threshold levels. It should be noted that, due to the elevated toluene concentration in the sample, the volatile reporting limits were not achieved causing the detection limits for the volatile compounds to exceed the applicable soil threshold limits. Therefore, the concentrations have been reported as less than the elevated detection limits. Sample SD-3 was collected from the portion of Lamar Canal located south of the Bulk Fuel Facility near a point where a storm drain from ASTs discharges into the canal.

2.5.2 Surface Water Samples

Only eight surface water samples were collected from the nine recommended sampling locations because there was no water present at location SD-05 at the time of sampling (Figure 10, Appendix I). The samples were collected using a decontaminated dipper and transferred directly into laboratory-provided sample jars. The surface water samples were analyzed for BTEX and PAH compounds (Tables 8a and 8b, Appendix II). Only benzene was detected in one surface water sample collected (location SD-2) at a concentration of 0.17 µg/L, which is well below the In-Stream Water Quality Standard of 71.28 µg/L and the MCL of 5.0 µg/L. No other compounds were detected in the remaining seven surface water samples.

2.6 SURVEYING

A topographic survey of the horizontal and vertical locations of all soil boreholes and groundwater monitoring wells 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 and co-located sediment/surface water location were surveyed to the closest 1.0 foot and referenced to the State Plane Coordinate System. Ground elevations and top of casing elevations were surveyed to the closest 0.01 foot. Elevations were referenced to the National Geodetic Vertical Datum of 1983.

2.7 DECONTAMINATION PROCEDURES

Decontamination of equipment used for soil and groundwater sampling was conducted at the investigation site. Non-dedicated equipment was decontaminated after each use. The 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, isopropyl alcohol rinse, and ASTM Type I or equivalent water rinse. The sampling equipment was then allowed to air dry and was wrapped in plastic.

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.

2.8 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 846-8260B, for PAH by method SW 846-8270, and for TPH by method SW 846-8015 (modified). TPH analysis included both GROs and DROs. Groundwater samples were analyzed for BTEX by method SW 846-8260B 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. Duplicates were submitted to GEL.

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 bubble wrap 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.

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ATTACHMENT B

REFERENCES

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Anderson Columbia Environmental, Inc. (ACE), 1997. *Closure Report for Used Oil Tank #117 at Building 7002, Facility ID: 9-025113*1, 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.

ASTM (American Society for Testing and Materials), 1995. *Standard Guide for Risk-based Corrective Action Applied at Petroleum Release Sites*, ASTM E 1739-95, approved September 10, 1995.

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.*

Earth Tech, Inc., 1999. *Final Closure Report, Bulk Fuel Facility, UST #131, Non-regulated UST, 3rd Infantry Division, Hunter Army Airfield,* Advanced Infrastructure Management Technologies, Oak Ridge, Tennessee, Contract No. DE-AC05-84OR21400.

Earth Tech, Inc., 2000. *Final Monitoring Well Installation Report, Bulk Fuel Facility (HAA-09) Facility Identification Number 9-025113, 3rd Infantry Division, Hunter Army Airfield, Georgia*, Advanced Infrastructure Management Technologies, Oak Ridge, Tennessee, Contract No. DE-AC05-84OR21400.

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.

Hetrick, D. M., C. C. Travis, P. S. Shirley, and E. L. Etnier, 1986. *Model Predictions of Watershed Hydrologic Components: Comparison and Verification,* Water Resources Bulletin, pp. 803–810.

Hetrick, D. M., and C. C. Travis, 1988. *Model Predictions of Watershed Erosion Components*, Water Resources Bulletin, pp. 413–419.

Hetrick, D. M., C. C. Travis, S. K. Leonard, and R. S. Kinerson, 1989. *Qualitative Validation of Pollutant Transport Components of an Unsaturated Soil Zone Model (SESOIL)*, ORNL/TM-10672, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

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, 1999a.*Addendum #4 to the Sampling and Analysis Plan for the CAP-Part A and B Investigations for Former USTs, at Hunter Army Airfield, Georgia,* U.S. Army Corps of Engineers, Savannah District, Contract No. DACA21-95-D-0022, Delivery Order 0051.

SAIC, 1999b. *Soil Gas Survey Report for the Bulk Fuel Facility (HAA-09) at Hunter Army Airfield, Georgia*, U.S. Army Corps of Engineers, Savannah District, Contract No. DACA21-95-D-0022, Delivery Order 0033.

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.

APPENDIX I

REPORT FIGURES

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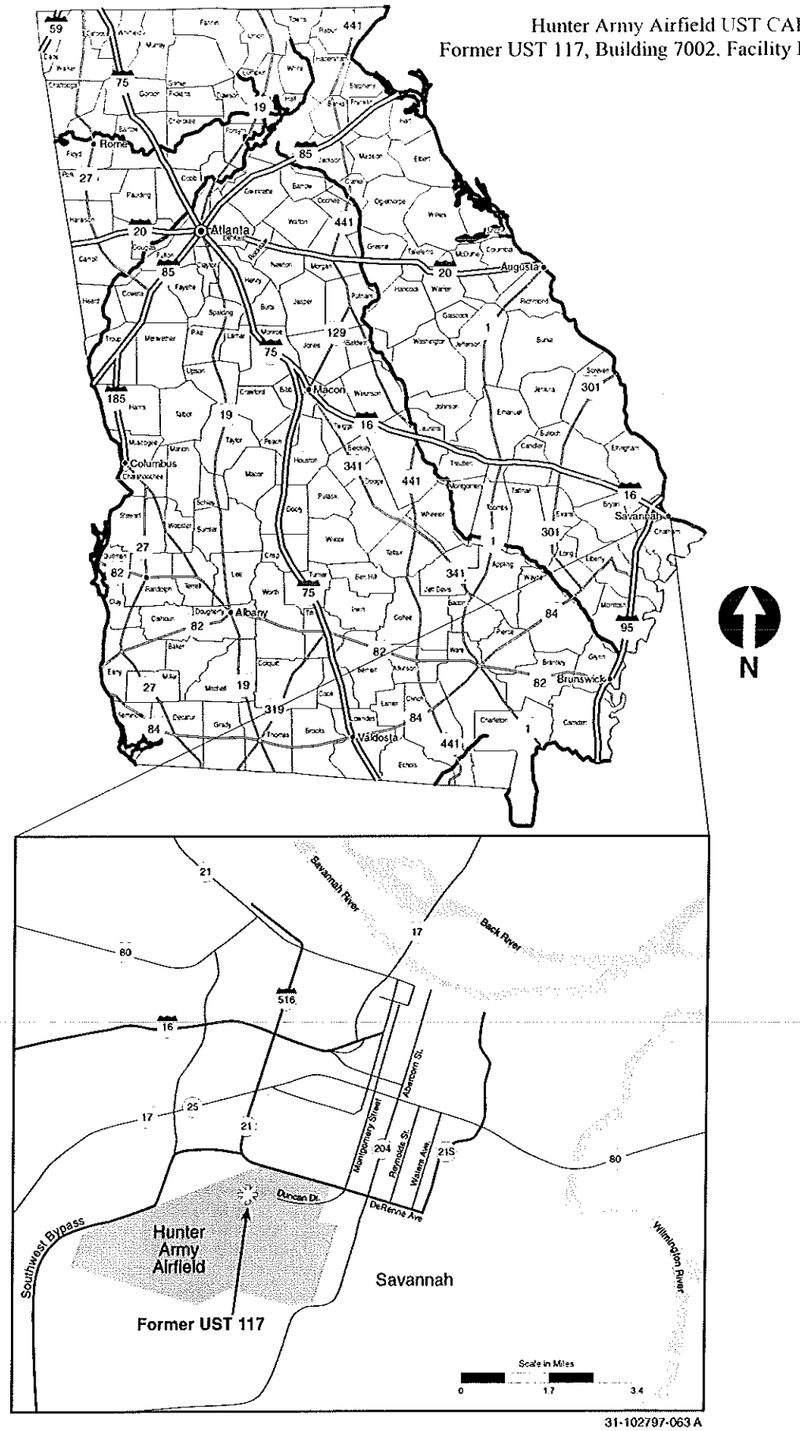


Figure 1. Regional Map of Georgia Showing Location of Former UST 117, Hunter Army Airfield, Georgia

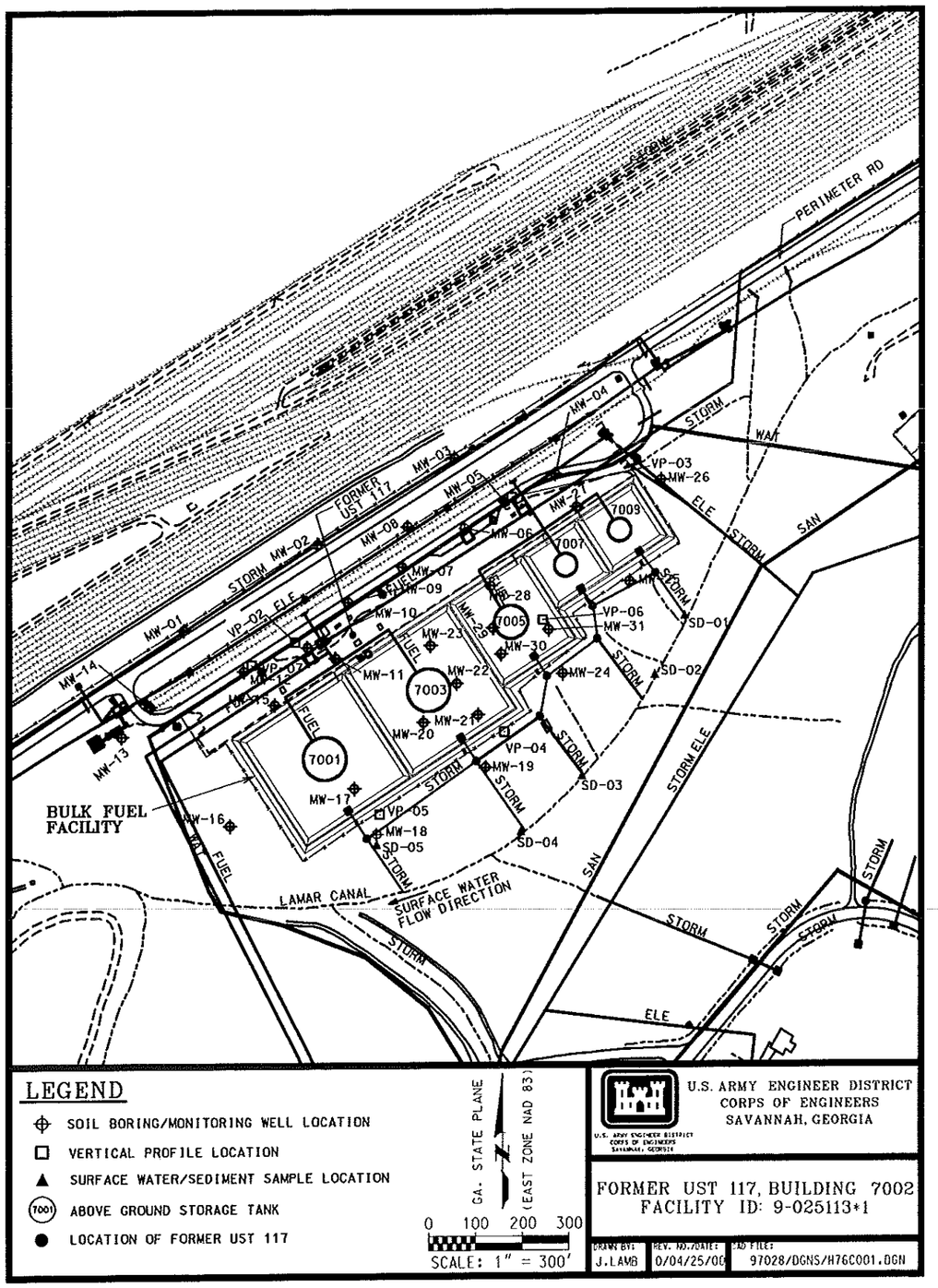
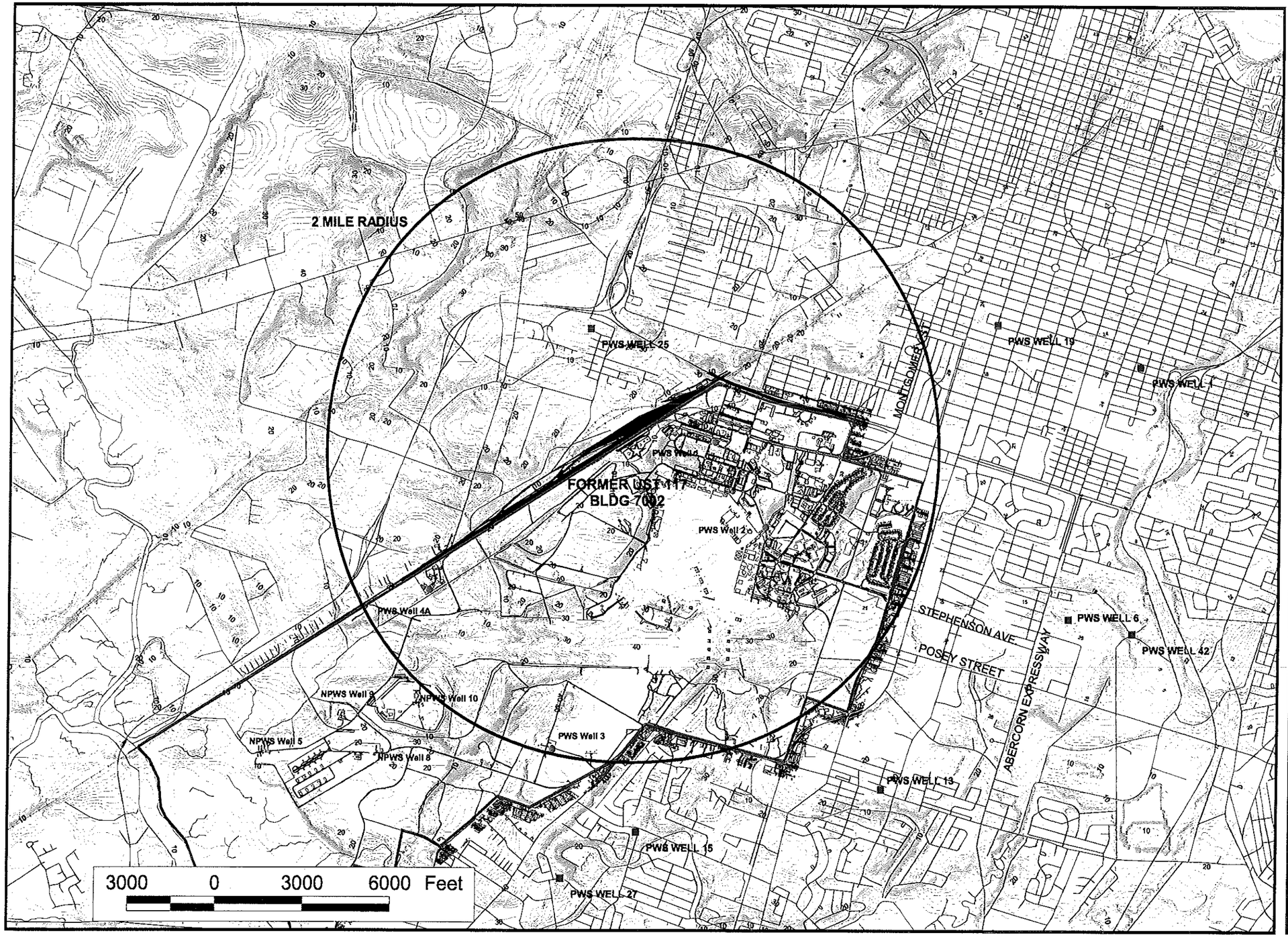


Figure 2. Site Plan for the Former UST 117, Building 7002 Site



Legend:

- Hunter Army Airfield Boundary
- Surface Water (streams/rivers/drains)
- Railroad
- Roads (primary)
- Buildings and Planimetric Features
- Ground Contour (1 FT Intervals)
- HAAF Non-Public Water Supply Well
- HAAF Public Water Supply Well
- City of Savannah Public Water Supply Well

NOTE:

Contours were created from Digital Elevation Models translated from http://mapping.usgs.gov/, which were obtained from the following U.S.G.S. 7.5 minuteTopographic Quad sheets: Borroughs, Isle of Hope, Savannah, and Garden City. Roads, surface water, and railroad were translated from http://www.gis.state.ga.us/. Hunter Army Airfield BaseMap received as Microstation files from Fort Stewart.

N

GA State Plane NAD83 (feet)

SAIC
Science Applications International Corporation

FORMER UST 117, BLDG 7002
FACILITY ID: 9-025113*1

REVISION	DRAWN BY:	CHKD BY:	DATE:
0	M. Norris	A. Bailey	10/15/98
1	K. Cutshaw	A. Bailey	04/20/00
2	K. Cutshaw	A. Bailey	05/08/00
3	K. Cutshaw	A. Bailey	05/23/00

FILE REFERENCES

051rds_polyline	burroughsctrf
051hyd_polyline	isleofhopectrf
051rr	savannahctrf
hunterarea	gardencityctrf
	trveh.dgn
	bggen.dgn

SHT 1 of 1 — DRAWING #

g:\97028\projects\hunterust117.apr — ARCVIEW PROJECT NAME

Figure 3a. Topographic Quadrangle Map of Hunter Army Airfield and Surrounding Area

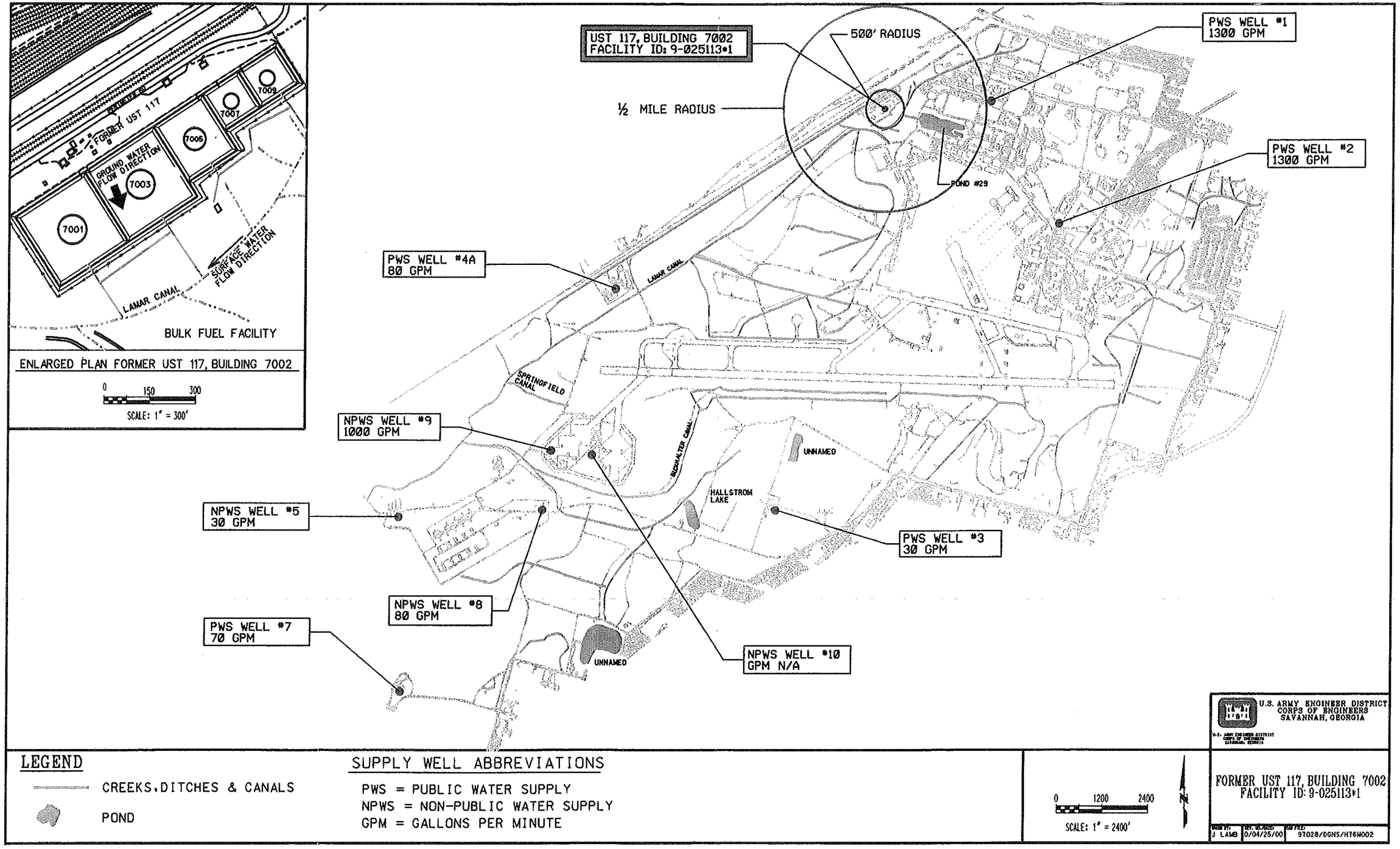


Figure 3b. Detailed Map Showing Public and Private Drinking Water Sources and Surface Water Bodies at Hunter Army Airfield

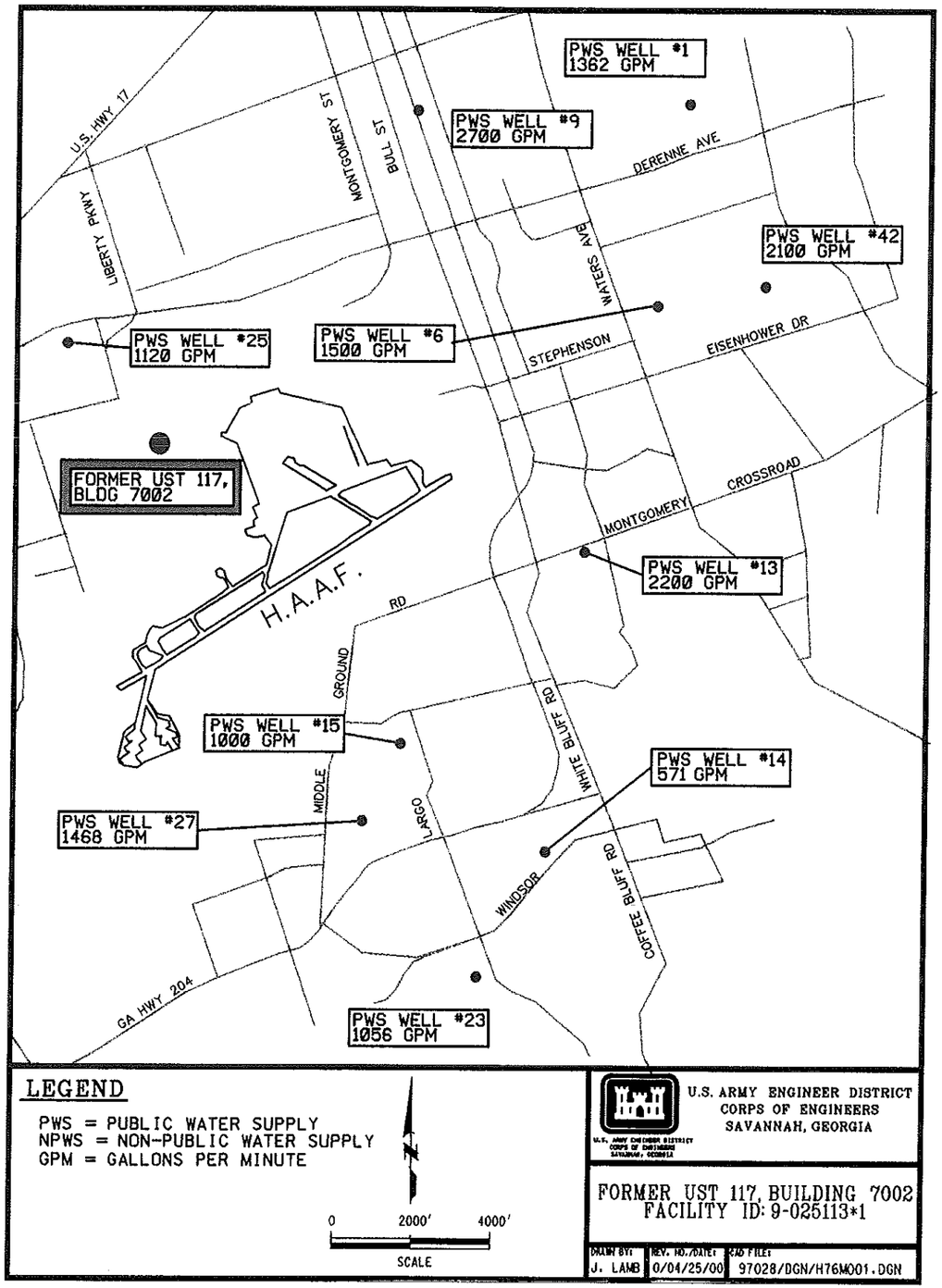
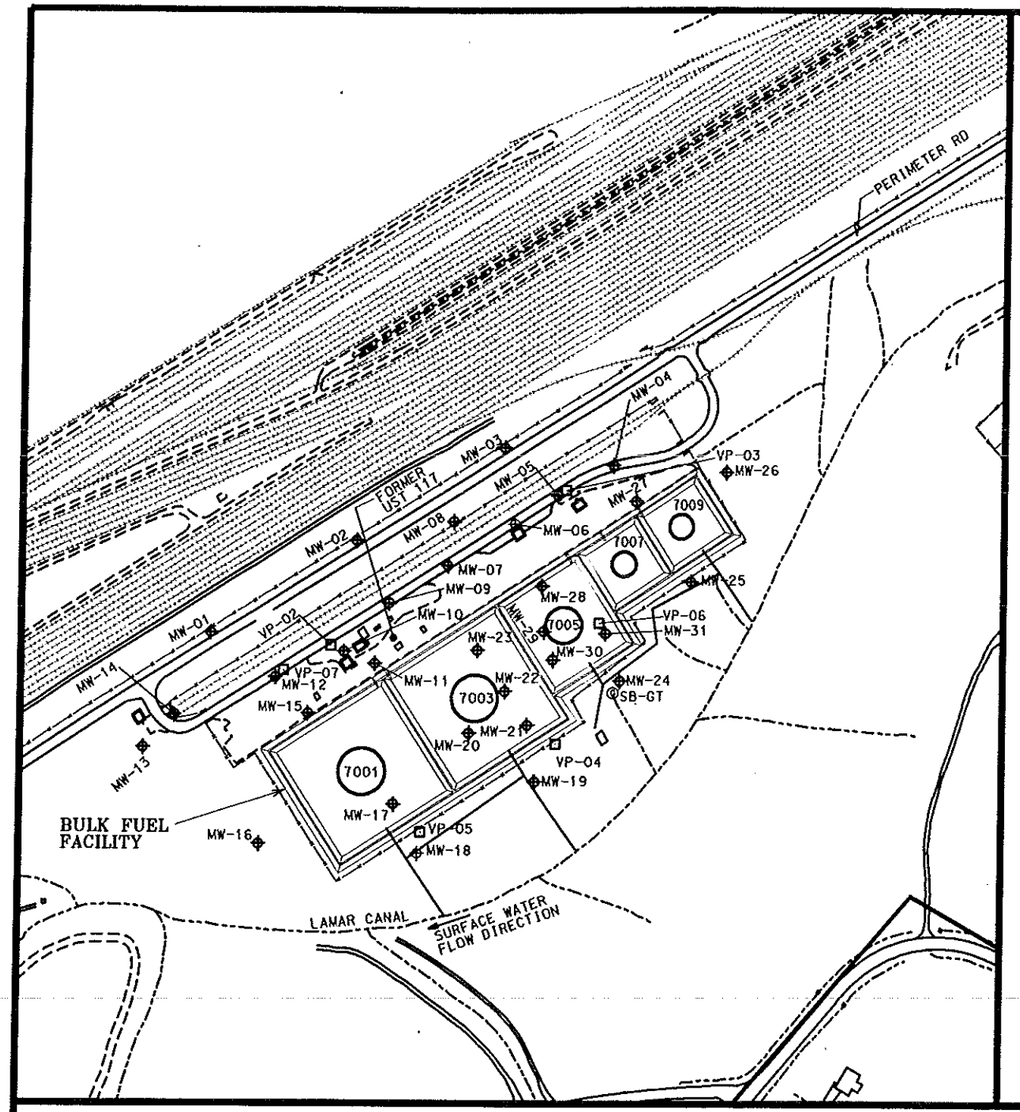


Figure 3c. Detailed Map Showing Public and Private Drinking Water Sources in Areas Adjacent to Hunter Army Airfield

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MW-01
BF0111 (4.7 to 6.7 ft bgs)

B	0.0006	J
T	0.0029	-
E	0.0010	U
X	0.0029	U
DRO	2.0000	U
GRO	0.1240	U
P	BDL	

MW-02
BF0211 (6.0 to 8.0 ft bgs)

B	0.0011	-
T	0.0010	U
E	0.0010	U
X	0.0030	U
DRO	1.4	U
GRO	0.1220	U
P	BDL	

MW-03
BF0311 (6.0 to 8.0 ft bgs)

B	0.0011	U
T	0.0025	-
E	0.0011	U
X	0.0033	U
DRO	1.2	U
GRO	0.1190	U
P	BDL	

MW-04
BF0411 (8.0 to 9.1 ft bgs)

B	0.0010	U
T	0.0010	J
E	0.0010	U
X	0.0030	U
DRO	2.7000	UJ
GRO	0.1220	U
P	BDL	

MW-05
BF0511 (5.5 to 7.5 ft bgs)

B	0.0010	U
T	0.0010	U
E	0.0010	U
X	0.0031	U
DRO	2.2000	UJ
GRO	0.1280	U
P	BDL	

MW-06
BF0611 (8.8 to 10.4 ft bgs)

B	0.0013	U
T	0.0013	U
E	0.0013	U
X	0.0038	U
DRO	1.2000	U
GRO	0.1220	U
P	BDL	

MW-07
BF0711 (1.5 to 3.0 ft bgs)

B	<1.3600	
T	<1.3600	
E	<1.3600	
X	<4.0400	
DRO	74.0000	-
GRO	2.3300	-
N	0.0841	-

MW-08
BF0811 (1.1 to 3.1 ft bgs)

B	0.0010	U
T	0.0010	U
E	0.0010	U
X	0.0031	U
DRO	1.4000	UJ
GRO	0.1140	U
P	BDL	

MW-09
BF0911 (0.55 to 2.0 ft bgs)

B	<0.1100	
T	<0.1100	
E	<0.1100	
X	<0.3310	
DRO	11.2000	J
GRO	27.2000	-
P	BDL	

MW-10
BF1011 (2.0 to 3.5 ft bgs)

B	<0.1640	
T	<0.1640	
E	0.3330	-
X	0.4000	J
DRO	136.0000	-
GRO	290.0000	-
N	0.2680	-

MW-11
BF1111 (1.0 to 3.0 ft bgs)

B	0.0010	J
T	0.001	J
E	0.0014	U
X	0.0044	U
DRO	0.7700	U
GRO	0.1120	U
P	BDL	

MW-12
BF1211 (0.5 to 2.5 ft bgs)

B	0.0005	J
T	0.0007	J
E	0.0008	J
X	0.0010	J
DRO	0.5100	UJ
GRO	0.1970	-
P	BDL	

MW-13
BF1311 (7.0 to 8.9 ft bgs)

B	0.0006	J
T	0.0010	U
E	0.0011	U
X	0.0033	U
DRO	1.1000	U
GRO	0.0700	-
P	BDL	

MW-14
BF1411 (0.5 to 2.5 ft bgs)

B	0.0045	-
T	0.0009	J
E	0.0008	J
X	0.0005	J
DRO	6.5000	-
GRO	0.5920	-
P	BDL	

MW-15
BF1511 (1.5 to 3.5 ft bgs)

B	0.0013	U
T	0.0013	U
E	0.0013	U
X	0.0038	U
DRO	0.9900	U
GRO	0.1200	U
B(B)F	0.0404	-
B(K)F	0.136	-

MW-16
BF1611 (4.3 to 6.3 ft bgs)

B	0.0010	U
T	0.0010	U
E	0.0010	U
X	0.0031	U
DRO	0.9200	U
GRO	0.1230	U
P	BDL	

MW-17
BF1711 (2.0 to 4.0 ft bgs)

B	<0.1050	
T	<0.1050	
E	0.7920	-
X	3.9000	-
DRO	87.4000	-
GRO	223.0	-
N	0.3500	-

MW-18
BF1811 (4.1 to 6.1 ft bgs)

B	0.0011	U
T	0.0009	J
E	0.0011	U
X	0.0034	U
DRO	1.8000	U
GRO	0.1210	U
P	BDL	

MW-19
BF1911 (6.0 to 8.0 ft bgs)

B	0.0006	J
T	0.0044	-
E	0.0010	U
X	0.0030	U
DRO	1.6000	U
GRO	0.1200	U
P	BDL	

MW-20
BF2013 (2.0 to 4.0 ft bgs)

B	0.0382	J
T	0.1000	UJ
E	0.8450	-
X	4.480	-
DRO	425	-
GRO	2450.0000	-
N	0.6810	-

MW-21
BF2111 (4.0 to 6.0 ft bgs)

B	0.0011	U
T	0.0011	U
E	0.0011	U
X	0.0034	UJ
DRO	2.9000	UJ
GRO	0.1290	U
P	BDL	

MW-22
BF2211 (0.0 to 2.0 ft bgs)

B	1.1300	-
T	0.4040	-
E	13.6000	J
X	74.8000	-
DRO	3420.0000	J
GRO	4520.0000	J
FL	0.1540	-
N	14.2000	-

MW-23
BF2311 (2.0 to 4.0 ft bgs)

B	0.0010	U
T	0.0010	U
E	0.0010	U
X	0.0030	U
DRO	2.1000	UJ
GRO	0.1320	-
P	BDL	

MW-24
BF2411 (4.0 to 6.0 ft bgs)

B	0.0008	J
T	0.0054	-
E	0.0012	U
X	0.0036	U
DRO	7.7000	J
GRO	0.1800	-
P	BDL	

MW-25
BF2511 (5.6 to 7.6 ft bgs)

B	0.0009	J
T	0.0025	-
E	0.0012	U
X	0.0035	U
DRO	1.4000	U
GRO	0.3050	-
P	BDL	

MW-26
BF2611 (1.2 to 3.2 ft bgs)

B	0.0012	U
T	0.0012	U
E	0.0012	U
X	0.0035	U
DRO	0.5900	U
GRO	0.1310	U
P	BDL	

MW-27
BF2711 (5.0 to 7.0 ft bgs)

B	0.0012	U
T	0.0011	J
E	0.0012	U
X	0.0037	U
DRO	2.0000	U
GRO	0.2110	-
P	BDL	

MW-28
BF2811 (2.0 to 2.8 ft bgs)

B	0.0014	U
T	0.0005	J
E	0.0009	J
X	0.0043	U
DRO	2.5000	U
GRO	1.6900	-
P	BDL	

MW-29
BF2911 (4.0 to 5.7 ft bgs)

B	0.0009	J
T	0.0015	-
E	0.0006	J
X	0.2790	-
DRO	2.6000	U
GRO	0.8710	-
P	BDL	

MW-30
BF3011 (4.0 to 5.9 ft bgs)

B	0.0011	U
T	0.0011	U
E	0.0011	U
X	0.0033	U
DRO	1.9000	U
GRO	0.0939	J
P	BDL	

MW-31
BF3111 (4.0 to 5.7 ft bgs)

B	0.0015	U
T	0.0015	U
E	0.0015	U
X	0.0044	U
DRO	1.5000	U
GRO	0.2970	-
P	BDL	

LABORATORY QUALIFIERS

U - COMPOUND WAS NOT DETECTED AT THE CONCENTRATION REPORTED

UJ - COMPOUND NOT DETECTED AT THE REPORTED CONCENTRATION AND THE CONCENTRATION WAS ESTIMATED

J - VALUE FOR COMPOUND IS ESTIMATED

= - COMPOUND DETECTED AT THE CONCENTRATION REPORTED

BOLD VALUES EXCEED APPLICABLE GUST SOIL THRESHOLD LEVELS

LEGEND

- SOIL BORING/MONITORING WELL LOCATION
- VERTICAL PROFILE LOCATION
- GEOTECHNICAL SAMPLE LOCATION
- (7001) ABOVEGROUND STORAGE TANK
- LOCATION OF FORMER UST 117

B	BENZENE (mg/kg)
T	TOLUENE (mg/kg)
E	ETHYLBENZENE (mg/kg)
X	XYLENES, TOTAL (mg/kg)
GRO	TOTAL PETROLEUM HYDROCARBONS-GASOLINE RANGE ORGANICS (mg/kg)
DRO	TOTAL PETROLEUM HYDROCARBONS-DIESEL RANGE ORGANICS (mg/kg)
P	PAHs (mg/kg)
B(B)F	BENZO(B)FLUORANTHENE (mg/kg)
B(K)F	BENZO(K)FLUORANTHENE (mg/kg)
FL	FLUORANTHENE (mg/kg)
N	NAPHTHALENE (mg/kg)
BDL	BELOW DETECTION LIMIT
BGS	BELOW GROUND SURFACE

SOIL THRESHOLD LEVELS
- B - 0.005 mg/kg
- T - 0.400 mg/kg
- E - 0.370 mg/kg
- X - 20.0 mg/kg
- B(B)F - 0.820 mg/kg
- B(K)B - 1.60 mg/kg

ALTERNATE THRESHOLD LEVELS
- B - 0.387 mg/kg
- T - 12.210 mg/kg
- E - 61.850 mg/kg
- X - 74.6 mg/kg

GA. STATE PLANE (EAST ZONE NAD 83)
N
0 100 200 300
SCALE: 1" = 300'

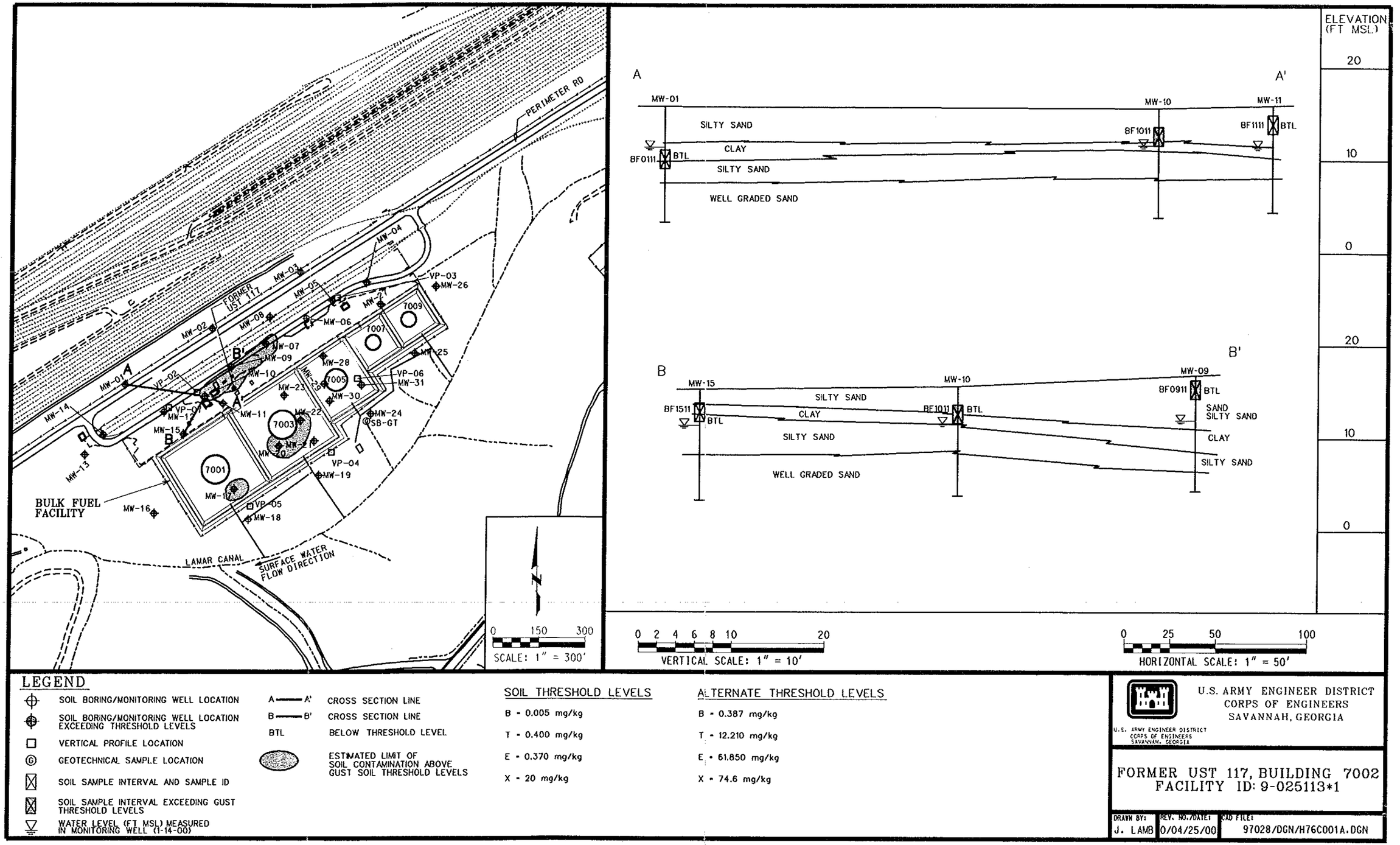
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FORMER UST 117, BUILDING 7002
FACILITY ID: 9-025113*1

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Figure 4a. Soil Quality Map for the Former UST 117 Site



LEGEND

- SOIL BORING/MONITORING WELL LOCATION
- SOIL BORING/MONITORING WELL LOCATION EXCEEDING THRESHOLD LEVELS
- VERTICAL PROFILE LOCATION
- GEOTECHNICAL SAMPLE LOCATION
- SOIL SAMPLE INTERVAL AND SAMPLE ID
- SOIL SAMPLE INTERVAL EXCEEDING GUST THRESHOLD LEVELS
- WATER LEVEL (FT MSL) MEASURED IN MONITORING WELL (1-14-00)
- A —— A' CROSS SECTION LINE
- B —— B' CROSS SECTION LINE
- BTL BELOW THRESHOLD LEVEL
- ESTIMATED LIMIT OF SOIL CONTAMINATION ABOVE GUST SOIL THRESHOLD LEVELS

SOIL THRESHOLD LEVELS	ALTERNATE THRESHOLD LEVELS
B = 0.005 mg/kg	B = 0.387 mg/kg
T = 0.400 mg/kg	T = 12.210 mg/kg
E = 0.370 mg/kg	E = 61.850 mg/kg
X = 20 mg/kg	X = 74.6 mg/kg

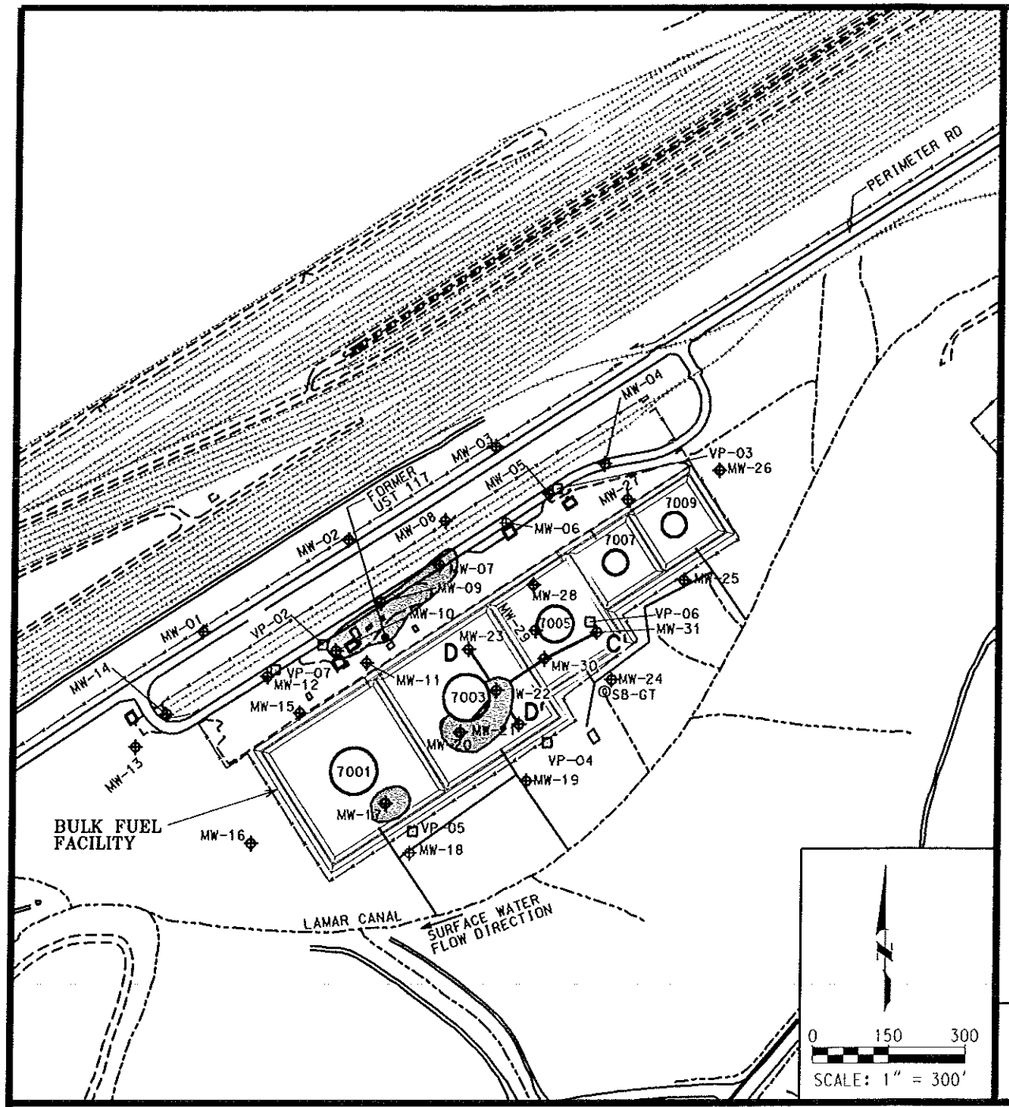
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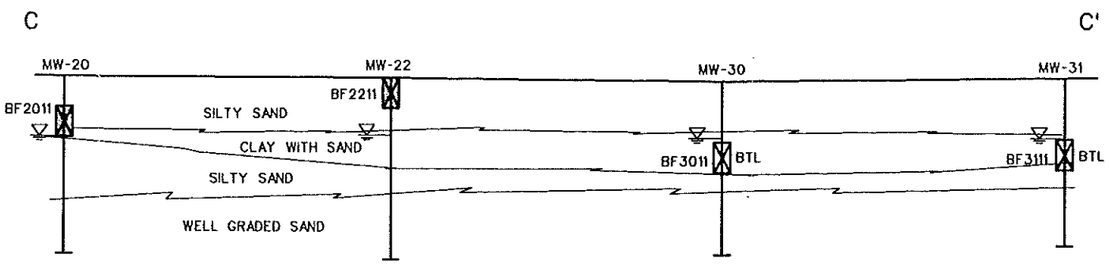
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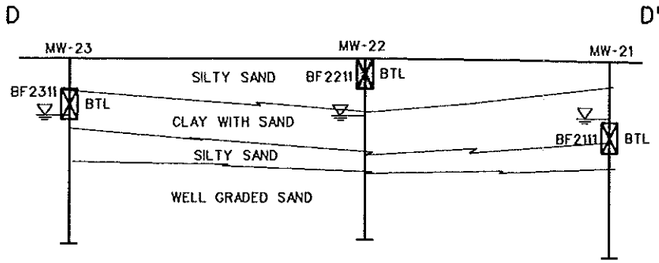
FORMER UST 117, BUILDING 7002
FACILITY ID: 9-025113*1

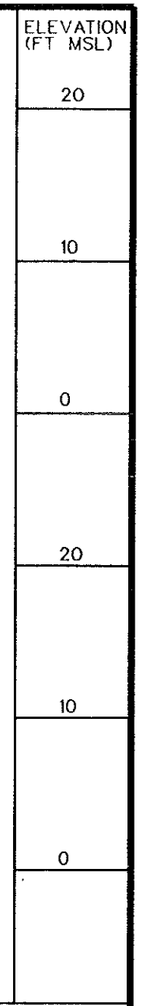
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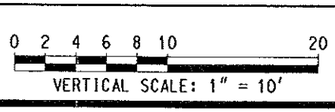
Figure 4b. Vertical and Horizontal Extent of Soil Contamination along Cross-section Lines A-A' and B-B'

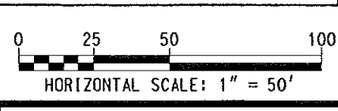












LEGEND

- SOIL BORING/MONITORING WELL LOCATION
- SOIL BORING/MONITORING WELL LOCATION EXCEEDING THRESHOLD LEVELS
- VERTICAL PROFILE LOCATION
- GEOTECHNICAL SAMPLE LOCATION
- SOIL SAMPLE INTERVAL AND SAMPLE ID
- SOIL SAMPLE INTERVAL EXCEEDING GUST THRESHOLD LEVELS
- WATER LEVEL (FT MSL) MEASURED IN MONITORING WELL (1-14-00)
- C —— C' CROSS SECTION LINE
- D —— D' CROSS SECTION LINE
- BTL BELOW THRESHOLD LEVEL
- ESTIMATED LIMIT OF SOIL CONTAMINATION ABOVE GUST SOIL THRESHOLD LEVELS

SOIL THRESHOLD LEVELS	ALTERNATE THRESHOLD LEVELS
B = 0.005 mg/kg	B = 0.387 mg/kg
T = 0.400 mg/kg	T = 12.210 mg/kg
E = 0.370 mg/kg	E = 61.850 mg/kg
X = 20 mg/kg	X = 74.6 mg/kg

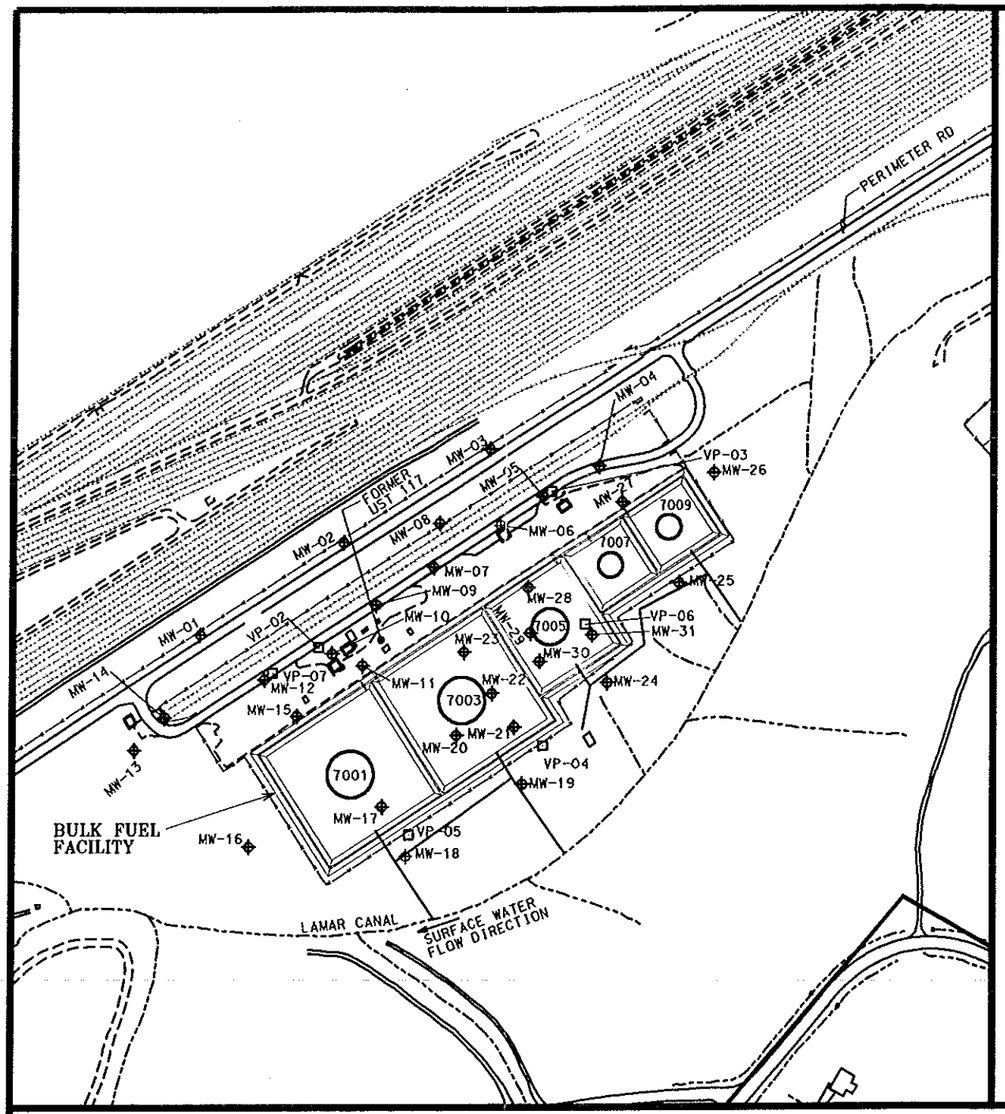
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SAVANNAH, GEORGIA

FORMER UST 117, BUILDING 7002
FACILITY ID: 9-025113*1

DRAWN BY:	REV. NO./DATE:	CAD FILE:
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Figure 4c. Vertical and Horizontal Extent of Soil Contamination along Cross-section Lines C-C' and D-D'



MW-01	
BF0112 (6.7 to 11.7 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-02	
BF0212 (8.0 to 13.0 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-03	
BF0312 (8.0 to 13.0 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-04	
BF0412 (8.5 to 12.5 ft bgs)	
B	1.00 U
T	0.33 J
E	1.00 U
X	3.00 U
P	BDL

MW-05	
BF0512 (8.0 to 12.0 ft bgs)	
B	1.00 U
T	0.51 J
E	1.00 U
X	3.00 U
P	BDL

MW-06	
BF0612 (8.0 to 12.0 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-07	
BF0712 (6.5 to 10.5 ft bgs)	
B	1.00 U
T	1.00 J
E	4.40 =
X	2.10 J
N	5.8 =

MW-08	
BF0812 (6.5 to 11.5 ft bgs)	
B	1.00 UJ
T	1.00 UJ
E	1.00 UJ
X	3.00 UJ
P	BDL

MW-09	
BF0912 (4.5 to 12.5 ft bgs)	
B	1.00 UJ
T	0.42 J
E	1.40 =
X	3.00 U
P	BDL

MW-10	
BF1012 (6.0 to 10.0 ft bgs)	
B	4.80 =
T	0.53 J
E	9.50 =
X	3.80 =
N	41.20 U

MW-11	
BF1112 (6.0 to 10.0 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-12	
BF1212 (8.0 to 12.0 ft bgs)	
B	1.00 UJ
T	0.36 J
E	1.00 UJ
X	3.00 UJ
P	BDL

MW-13	
BF1312 (12.5 to 16.5 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-14	
BF1412 (7.2 to 12.2 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-15	
BF1512 (6.0 to 10.0 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	1.30 J
P	BDL

MW-16	
BF1612 (6.3 to 11.3 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-17	
BF1712 (3.4 to 12.5 ft bgs)	
B	0.44 J
T	1.00 U
E	2.00 =
X	14.20 =
P	BDL

MW-18	
BF1812 (6.1 to 11.1 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-19	
BF1912 (8.0 to 13.0 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-20	
BF2012 (2.2 to 11.70 ft bgs)	
B	0.60 J
T	1.00 =
E	3.10 =
X	21.00 =
N	2.00 =

MW-21	
BF2112 (3.4 to 12.9 ft bgs)	
B	130.00 =
T	2.80 =
E	14.70 =
X	710.00 =
N	18.30 =

MW-22	
BF2212 (2.4 to 11.9 ft bsg)	
B	653 =
T	0.86 J
E	88.70 =
X	352.00 =
N	101.00 =
P	BDL

MW-23	
BF2312 (2.7 to 12.19 ft bgs)	
B	1.10 =
T	1.00 U
E	0.48 J
X	1.40 J
P	BDL

MW-24	
BF2412 (2.5 to 12.5 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-25	
BF2512 (7.6 to 12.6 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-26	
BF2612 (7.2 to 12.2 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-27	
BF2712 (7.0 to 12.0 ft bgs)	
B	1.00 UJ
T	1.00 UJ
E	1.00 UJ
X	3.00 UJ
P	BDL

MW-28	
BF2812 (7.5 to 12.5 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-29	
BF2912 (5.7 to 10.7 ft bgs)	
B	1.00 UJ
T	0.40 J
E	1.00 UJ
X	376 J
P	BDL

MW-30	
BF3012 (5.9 to 10.9 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

MW-31	
BF3112 (5.7 to 10.7 ft bgs)	
B	1.00 U
T	1.00 U
E	1.00 U
X	3.00 U
P	BDL

LEGEND

- SOIL BORING/MONITORING WELL LOCATION
- VERTICAL PROFILE LOCATION
- (7001) ABOVE GROUND STORAGE TANK
- LOCATION OF FORMER UST 117

B	BENZENE (ug/L)
T	TOLUENE (ug/L)
E	ETHYLBENZENE (ug/L)
X	XYLENES, TOTAL (ug/L)
P	PAHs (ug/L)
N	NAPHTHALENE (UG/L)
VP	VERTICAL PROFILE
BDL	BELOW DETECTION LIMIT
BGS	BELOW GROUND SURFACE

BOLDED VALUES EXCEED MCLS

LABORATORY QUALIFIERS

U - COMPOUND WAS NOT DETECTED AT THE CONCENTRATION REPORTED

UJ - COMPOUND NOT DETECTED AT THE REPORTED CONCENTRATION AND THE CONCENTRATION WAS ESTIMATED

J - VALUE FOR COMPOUND IS ESTIMATED

= - COMPOUND DETECTED AT THE CONCENTRATION REPORTED

MAXIMUM CONTAMINANT LEVELS (MCLs)

BENZENE =5 ug/L
TOLUENE =1000 ug/L
ETHYLBENZENE =700 ug/L
XYLENES, TOTAL =10,000 ug/L

ALTERNATE CONCENTRATION LEVELS

BENZENE =634.4 ug/L
NAPHTHALENE =57.85 ug/L

GA. STATE PLANE (EAST ZONE NAD 83)

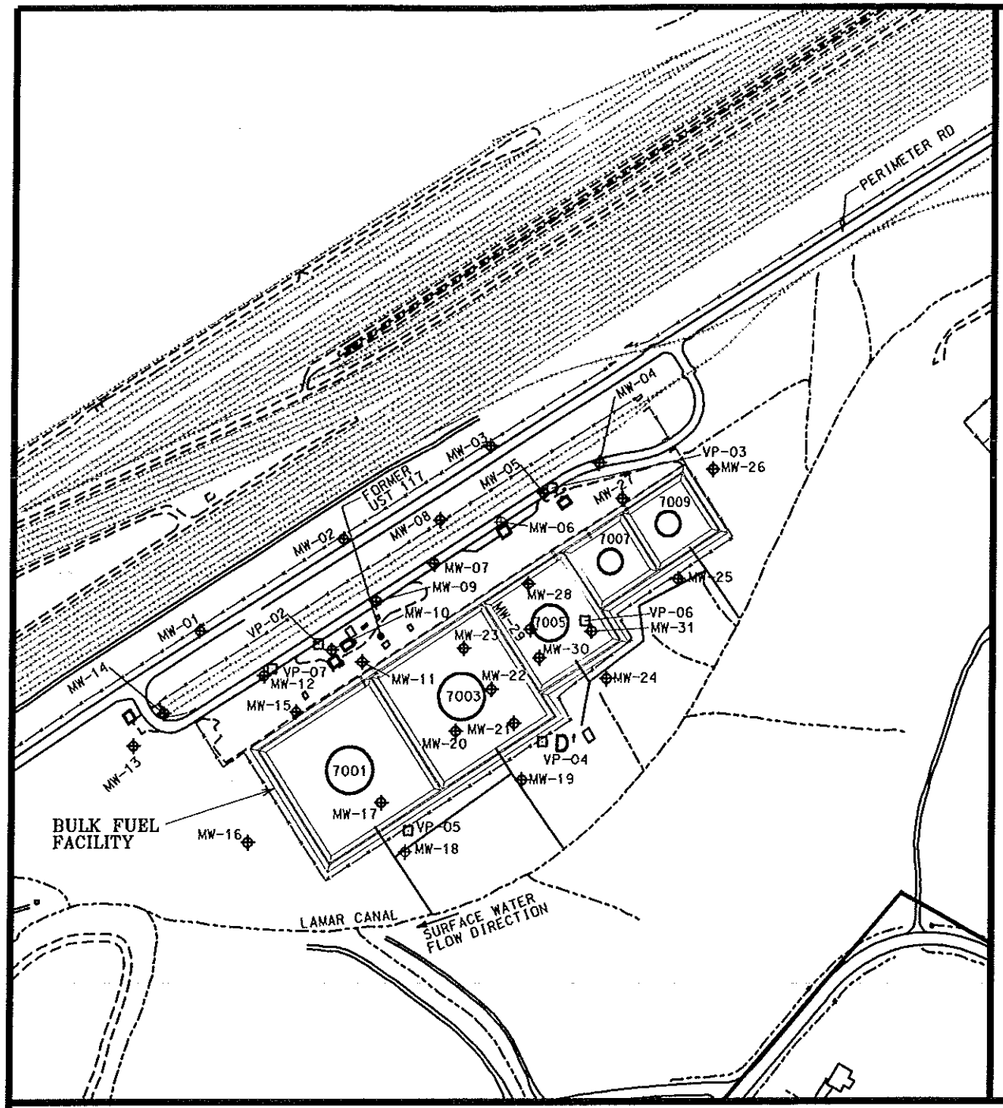
0 100 200 300
SCALE: 1" = 300'

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FORMER UST 117, BUILDING 7002
FACILITY ID: 9-025113*1

DRAWN BY:	REV. NO./DATE:	CAD FILE:
J. LAMB	1/05/30/00	97028/DGN/H76C001H.DGN

Figure 5a. Groundwater Quality Map of the Former UST 117, Building 7002 Site



VP-02		
BFV212	(12.0 to 17.0 ft bgs)	
B	1.00	U
T	0.42	J
E	1.00	U
X	3.00	U
P	BDL	
BFV222	(17.0 to 22.0 ft bgs)	
B	1.00	U
T	1.00	U
E	1.00	U
X	3.00	U
P	BDL	
BFV232	(22.0 to 27.0 ft bgs)	
B	1.00	U
T	0.30	J
E	1.00	U
X	3.00	U
P	BDL	
BFV242	(27.0 to 32.0 ft bgs)	
B	0.22	J
T	0.46	J
E	1.00	U
X	3.00	U
P	BDL	
BFV252	(32.0 to 37.0 ft bgs)	
B	1.00	U
T	0.36	J
E	1.00	U
X	3.00	U
P	BDL	
BFV262	(37.0 to 42.0 ft bgs)	
B	1.00	U
T	0.35	J
E	1.00	U
X	3.00	U
P	BDL	

VP-03		
BFV312	(12.0 to 17.0 ft bgs)	
B	1.00	U
T	0.33	J
E	1.00	U
X	3.00	U
P	BDL	
BFV322	(17.0 to 22.0 ft bgs)	
B	1.00	U
T	0.80	J
E	1.0	U
X	3.00	U
P	BDL	
BFV332	(22.0 to 27.0 ft bgs)	
B	1.00	U
T	0.31	J
E	1.00	U
X	3.00	U
P	BDL	
BFV342	(27.0 to 32.0 ft bgs)	
B	1.00	U
T	0.37	J
E	1.00	U
X	3.00	U
P	BDL	
BFV352	(32.0 to 37.0 ft bgs)	
B	1.00	UJ
T	0.28	J
E	1.00	UJ
X	3.00	UJ
P	BDL	
BFV362	(37.0 to 42.0 ft bgs)	
B	1.00	UJ
T	0.28	J
E	1.00	UJ
X	3.00	UJ
P	BDL	

VP-04		
BFV412	(13.0 to 18.0 ft bgs)	
B	81.80	=
T	0.42	J
E	1.00	U
X	31.50	=
P	BDL	
BFV422	(18.0 to 23.0 ft bgs)	
B	1.40	=
T	0.44	J
E	1.00	U
X	0.36	J
P	BDL	
BFV432	(23.0 to 28.0 ft bgs)	
B	0.60	J
T	0.70	J
E	0.22	J
X	3.00	U
P	BDL	
BFV442	(28.0 to 33.0 ft bgs)	
B	0.29	J
T	0.42	J
E	0.16	J
X	3.00	UJ
P	BDL	
BFV452	(33.0 to 38.0 ft bgs)	
B	0.24	J
T	1.00	U
E	1.00	U
X	3.00	U
P	BDL	
BFV462	(38.0 to 43.0 ft bgs)	
B	0.21	J
T	0.79	J
E	1.00	U
X	3.00	U
P	BDL	

VP-05		
BFV512	(12.5 to 17.5 ft bgs)	
B	1.00	U
T	1.00	U
E	1.00	U
X	3.00	U
P	BDL	
BFV522	(17.5 to 22.5 ft bgs)	
B	1.00	U
T	1.00	U
E	1.00	U
X	3.00	U
P	BDL	
BFV532	(22.5 to 27.5 ft bgs)	
B	1.00	UJ
T	0.51	J
E	1.00	UJ
X	3.00	UJ
P	BDL	
BFV542	(27.5 to 32.5 ft bgs)	
B	1.00	UJ
T	1.00	UJ
E	1.00	UJ
X	3.00	UJ
P	BDL	
BFV552	(32.5 to 37.5 ft bgs)	
B	1.00	U
T	0.58	J
E	1.00	U
X	3.00	U
P	BDL	
BFV562	(37.5 to 42.5 ft bgs)	
B	1.00	U
T	1.00	U
E	1.00	U
X	3.00	U
P	BDL	

VP-06		
BFV612	(13.0 to 18.0 ft bgs)	
B	4.40	J
T	0.56	J
E	0.44	J
X	2.70	J
P	BDL	
BFV622	(18.0 to 23.0 ft bgs)	
B	0.26	J
T	0.46	J
E	0.11	J
X	3.00	UJ
P	BDL	
BFV632	(23.0 to 28.0 ft bgs)	
B	1.00	UJ
T	0.43	J
E	1.00	UJ
X	3.00	UJ
P	BDL	
BFV642	(28.0 to 33.0 ft bgs)	
B	1.00	UJ
T	0.45	J
E	1.00	UJ
X	3.00	UJ
P	BDL	
BFV652	(33.0 to 38.0 ft bgs)	
B	1.00	UJ
T	0.47	J
E	0.16	J
X	3.00	UJ
P	BDL	
BFV662	(38.0 to 43.0 ft bgs)	
B	1.00	UJ
T	0.44	J
E	0.15	J
X	3.00	UJ
P	BDL	

VP-07		
BFV712	(12.0 to 17.0 ft bgs)	
B	1.00	UJ
T	0.60	J
E	0.10	J
X	0.33	J
P	BDL	
BFV722	(17.0 to 22.0 ft bgs)	
B	1.00	UJ
T	0.35	J
E	1.00	UJ
X	3.00	UJ
P	BDL	
BFV732	(22.0 to 27.0 ft bgs)	
B	0.23	J
T	0.70	J
E	0.12	J
X	3.0	UJ
P	BDL	
BFV742	(27.0 to 32.0 ft bgs)	
B	0.31	J
T	0.58	J
E	1.00	UJ
X	3.00	UJ
P	BDL	
BFV752	(32.0 to 37.0 ft bgs)	
B	0.25	J
T	0.56	J
E	0.12	J
X	3.00	UJ
P	BDL	
BFV762	(37.0 to 42.0 ft bgs)	
B	1.0	U
T	0.56	J
E	0.15	J
X	3.0	U
P	BDL	

LEGEND

- SOIL BORING/MONITORING WELL LOCATION
- VERTICAL PROFILE LOCATION
- (7001) ABOVE GROUND STORAGE TANK
- LOCATION OF FORMER UST 117

B	BENZENE (ug/L)
T	TOLUENE (ug/L)
E	ETHYLBENZENE (ug/L)
X	XYLENES, TOTAL (ug/L)
P	PAHs (ug/L)
VP	VERTICAL PROFILE
BDL	BELOW DETECTION LIMIT
BGS	BELOW GROUND SURFACE

BOLDED VALUES EXCEED MCLS

LABORATORY QUALIFIERS

- U - COMPOUND WAS NOT DETECTED AT THE CONCENTRATION REPORTED
- UJ - COMPOUND NOT DETECTED AT THE REPORTED CONCENTRATION AND THE CONCENTRATION WAS ESTIMATED
- J - VALUE FOR COMPOUND IS ESTIMATED
- = - COMPOUND DETECTED AT THE CONCENTRATION REPORTED

MAXIMUM CONTAMINANT LEVELS (MCLs)

BENZENE =5 ug/L
TOLUENE =1000 ug/L
ETHYLBENZENE =700 ug/L
XYLENES, TOTAL =10,000 ug/L

ALTERNATE CONCENTRATION LEVELS

BENZENE =634.4 ug/L
NAPHTHALENE =57.85 ug/L

GA. STATE PLANE (EAST ZONE NAD 83)

0 100 200 300
SCALE: 1" = 300'

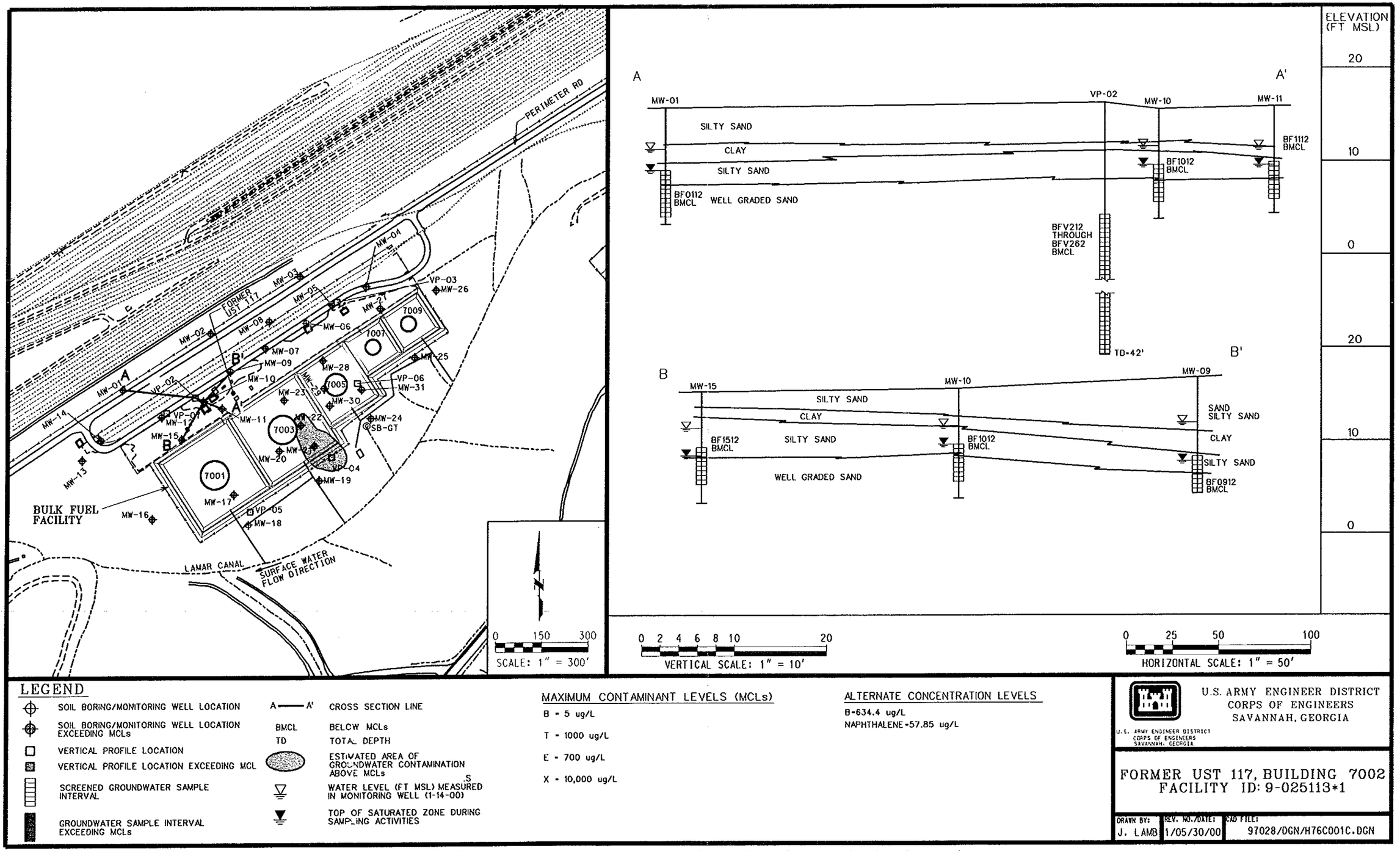
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SAVANNAH, GEORGIA

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SAVANNAH, GEORGIA

FORMER UST 117, BUILDING 7002
FACILITY ID: 9-025113*1

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J. LAMB	0/04/25/00	97028/DGN/H76C001J.DGN

Figure 5b. Groundwater Quality Map for Vertical Profile Borings at the Former UST 117, Building 7002 Site



LEGEND

- SOIL BORING/MONITORING WELL LOCATION
- SOIL BORING/MONITORING WELL LOCATION EXCEEDING MCLs
- VERTICAL PROFILE LOCATION
- VERTICAL PROFILE LOCATION EXCEEDING MCL
- SCREENED GROUNDWATER SAMPLE INTERVAL
- GROUNDWATER SAMPLE INTERVAL EXCEEDING MCLs
- A —— A' CROSS SECTION LINE
- BMCL BELOW MCLs
- TD TOTAL DEPTH
- ESTIMATED AREA OF GROUNDWATER CONTAMINATION ABOVE MCLs
- WATER LEVEL (FT MSL) MEASURED IN MONITORING WELL (1-14-00)
- TOP OF SATURATED ZONE DURING SAMPLING ACTIVITIES

MAXIMUM CONTAMINANT LEVELS (MCLs)

B = 5 ug/L

T = 1000 ug/L

E = 700 ug/L

X = 10,000 ug/L

ALTERNATE CONCENTRATION LEVELS

B=634.4 ug/L

NAPHTHALENE=57.85 ug/L

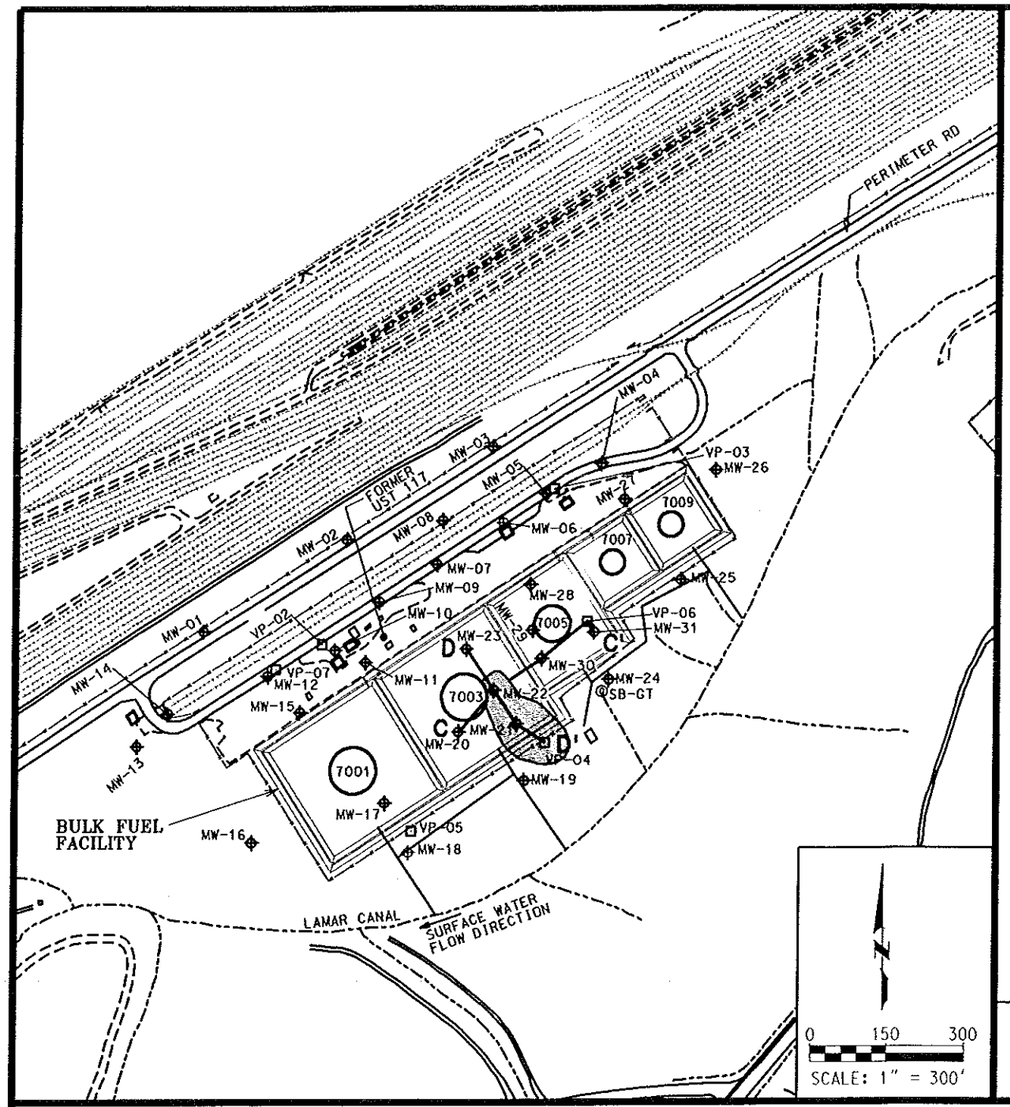
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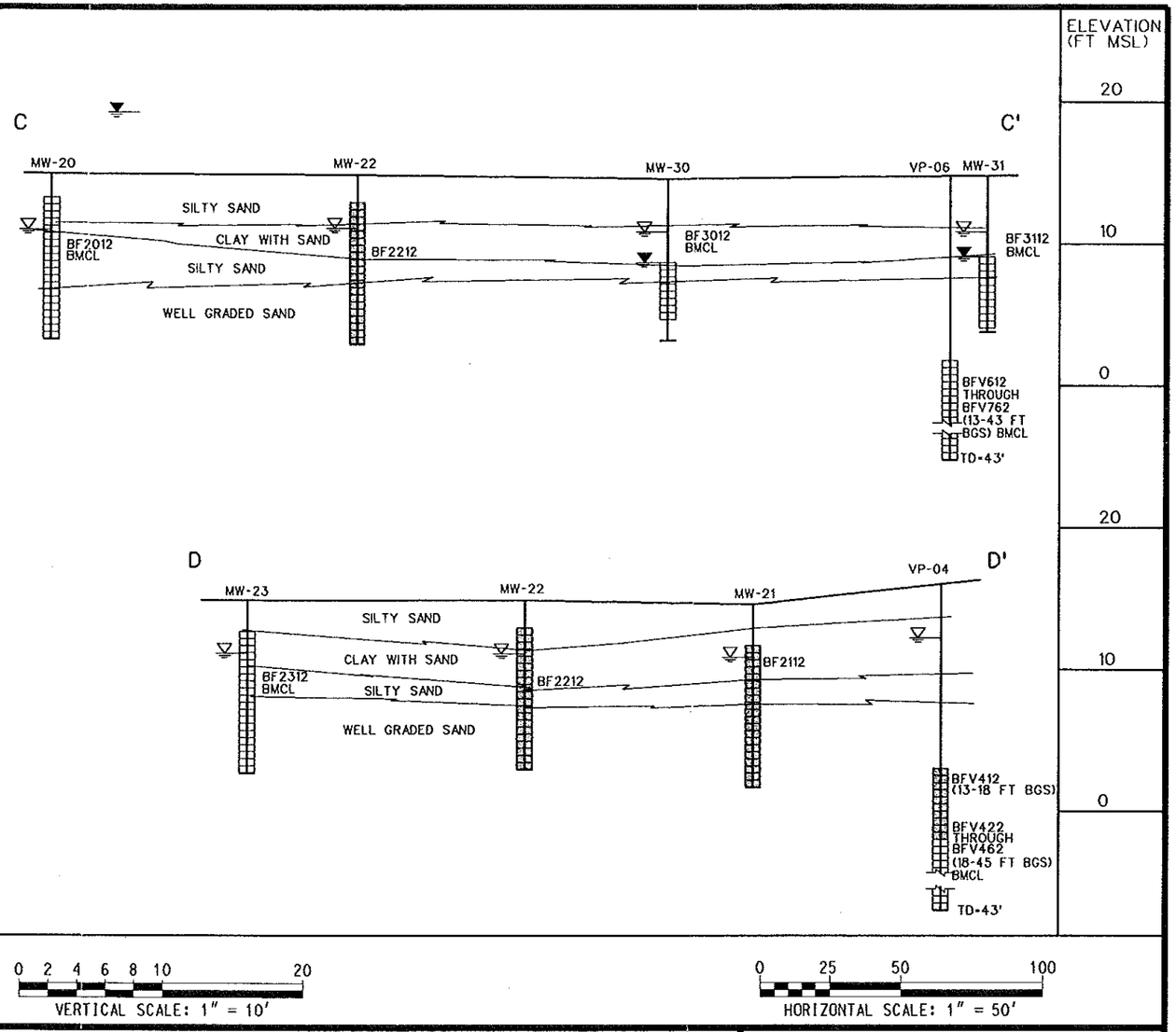
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FACILITY ID: 9-025113*1

DRAWN BY:	REV. NO./DATE	CAD FILE
J. LAMB	1/05/30/00	97028/DGN/H76C001C.DGN

Figure 5c. Vertical and Horizontal Extent of Groundwater Contamination along Cross-section Lines A-A' and B-B'





LEGEND

- SOIL BORING/MONITORING WELL LOCATION
- SOIL BORING/MONITORING WELL LOCATION EXCEEDING MCLs
- VERTICAL PROFILE LOCATION
- VERTICAL PROFILE LOCATION EXCEEDING MCL
- SCREENED GROUNDWATER SAMPLE INTERVAL
- GROUNDWATER SAMPLE INTERVAL EXCEEDING MCLs
- C——C' CROSS SECTION LINE
- BMCL BELOW MCLs
- TD TOTAL DEPTH
- ESTIMATED AREA OF GROUNDWATER CONTAMINATION ABOVE MCLs
- WATER LEVEL (FT MSL) MEASURED IN MONITORING WELL (1-14-00)
- TOP OF SATURATED ZONE DURING SAMPLING ACTIVITIES

MAXIMUM CONTAMINANT LEVELS (MCLs)

B = 5 ug/L
T = 1000 ug/L
E = 700 ug/L
X = 10,000 ug/L

ALTERNATE CONCENTRATION LEVELS

B=634.4 ug/L
NAPHTHALENE=57.85 ug/L

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SAVANNAH, GEORGIA

FORMER UST 117, BUILDING 7002
FACILITY ID: 9-025113*1

DRAWN BY:	REV. NO./DATE:	CAD FILE:
J. LAMB	1/05/30/00	97028/DGN/H76C001D.DGN

Figure 5d. Vertical and Horizontal Extent of Groundwater Contamination along Cross-section Lines C-C' and D-D'

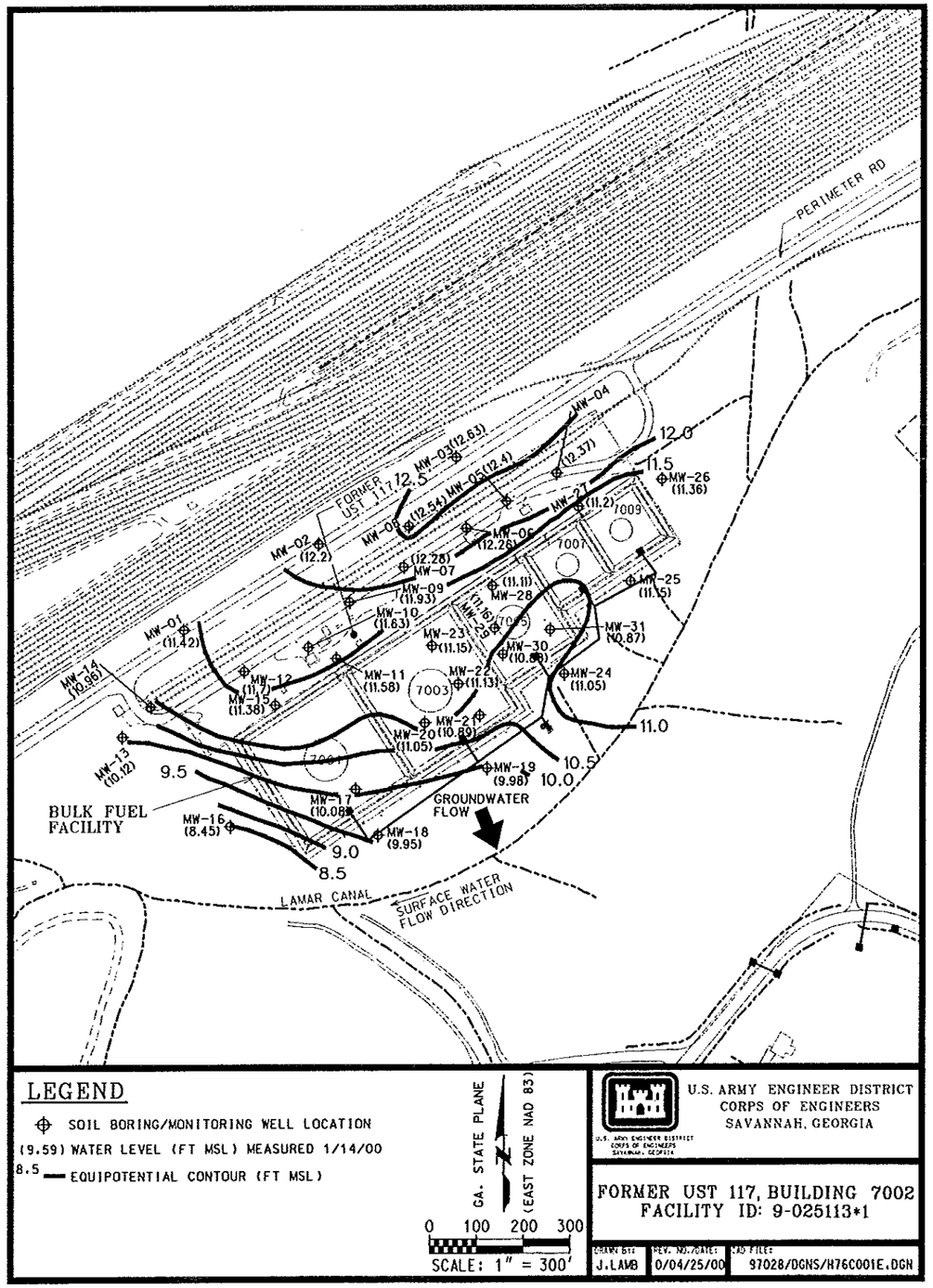


Figure 6. Potentiometric Surface Map for the Former UST 117, Building 7002 Site

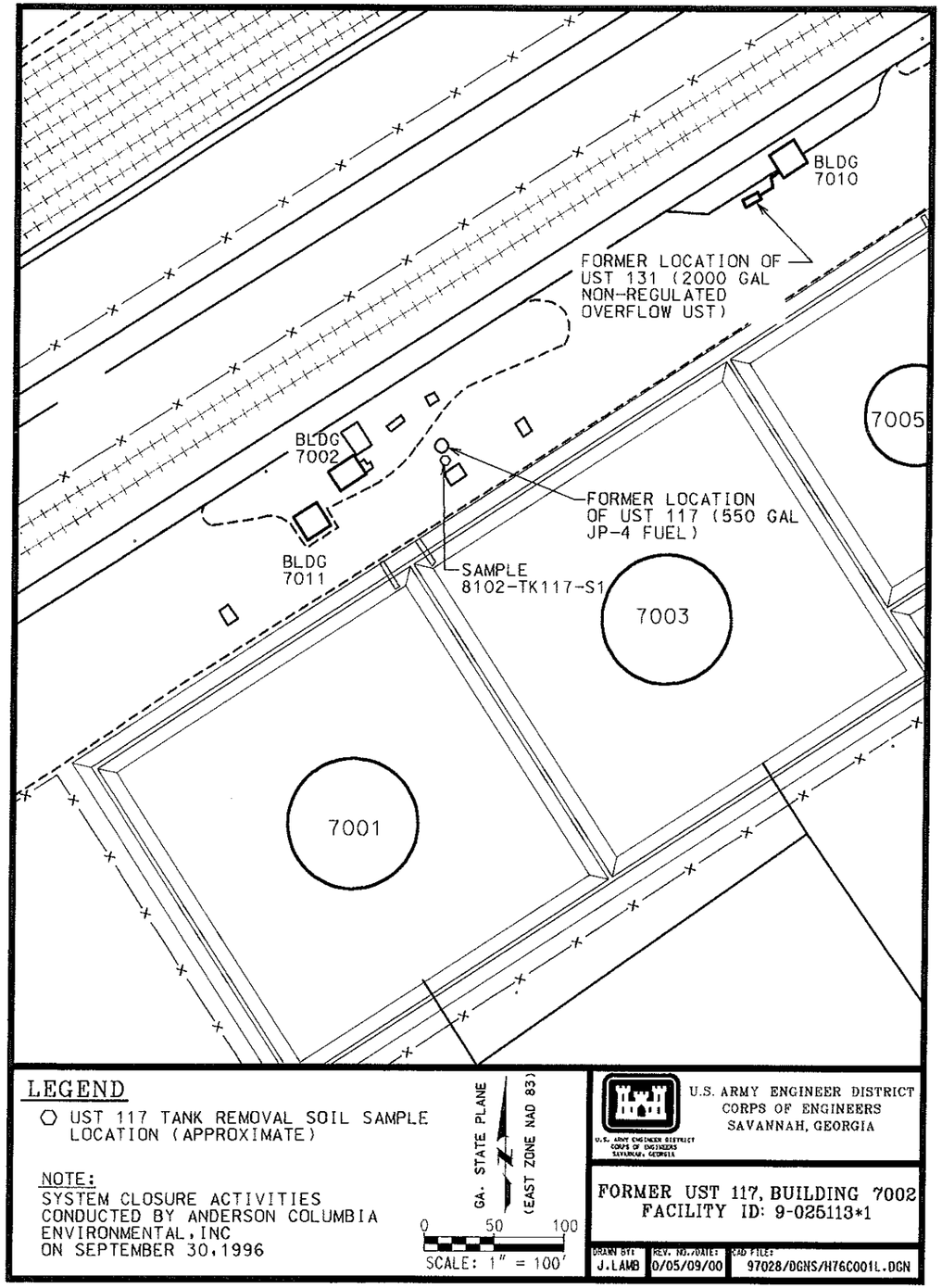


Figure 7. UST System Closure Sampling Location at the Former UST 117 Site

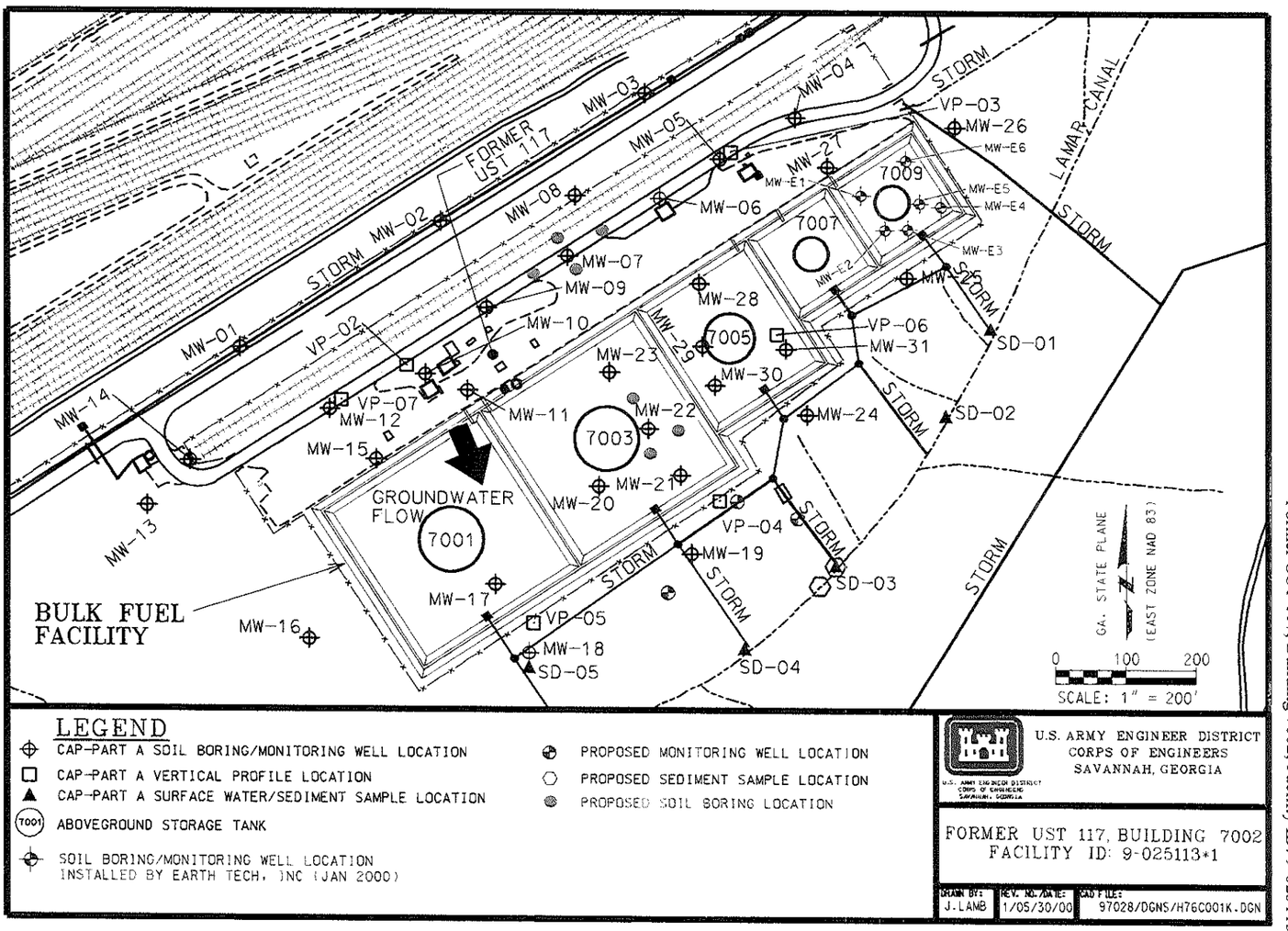


Figure 8. Proposed Additional Sampling Locations for the Former UST 117, Building 7002 Site

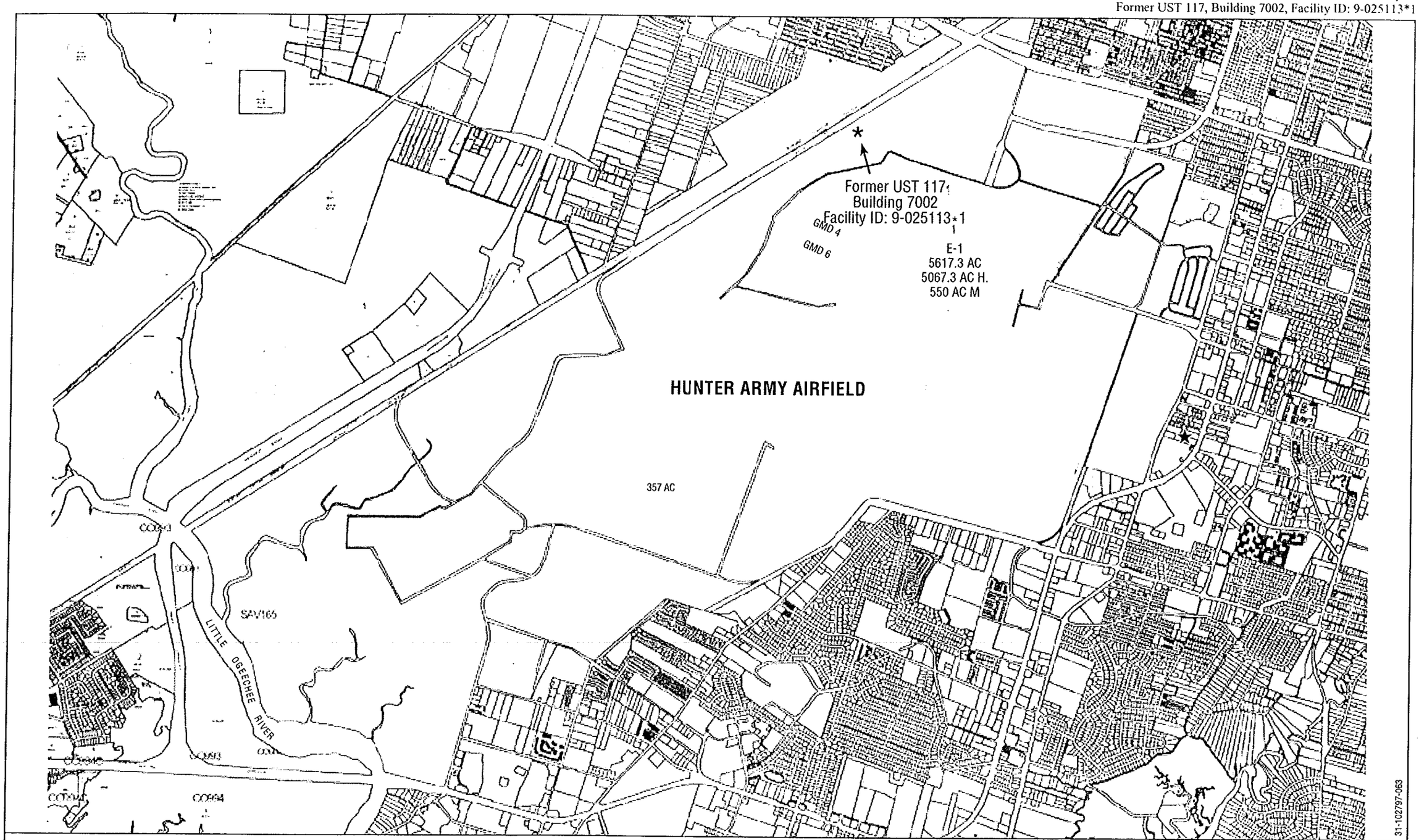
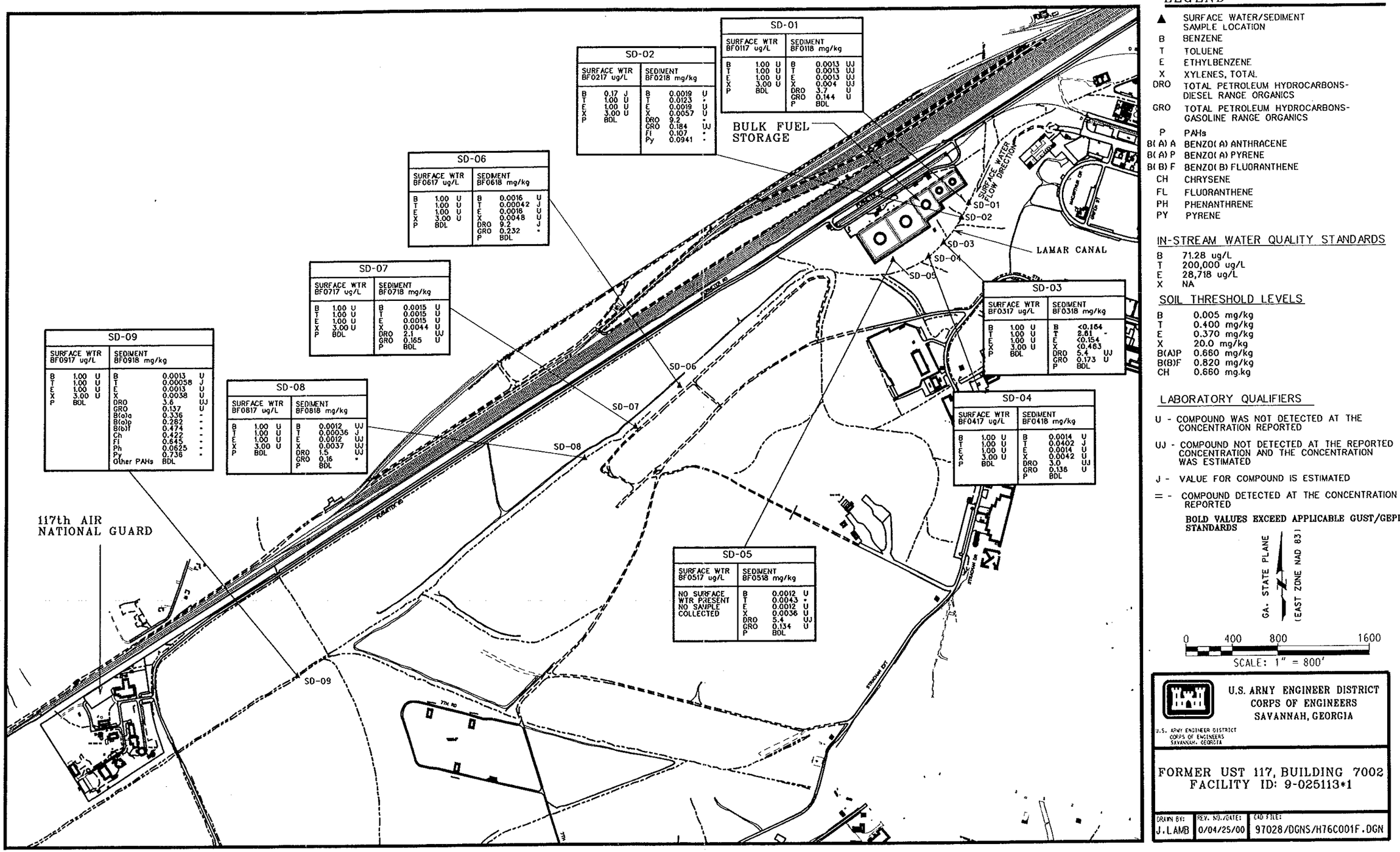


Figure 9. Tax Map of Hunter Army Airfield and Vicinity, Chatham County, Georgia


SD-01
SURFACE WTR BF0117 ug/L
SEDIMENT BF0118 mg/kg
B 1.00 U
T 1.00 U
E 1.00 U
X 3.00 U
P BDL
B 0.0013 UJ
T 0.0013 UJ
E 0.0013 UJ
X 0.004 UJ
DRO 3.7 U
GRO 0.144 U
P BDL
SD-02
SURFACE WTR BF0217 ug/L
SEDIMENT BF0218 mg/kg
B 0.17 J
T 1.00 U
E 1.00 U
X 3.00 U
P BDL
B 0.0019 U
T 0.0123 *
E 0.0019 U
X 0.0057 U
DRO 9.2 *
GRO 0.184 UJ
FL 0.107 *
Py 0.0941 *
SD-03
SURFACE WTR BF0317 ug/L
SEDIMENT BF0318 mg/kg
B 1.00 U
T 1.00 U
E 1.00 U
X 3.00 U
P BDL
B <0.164
T 2.81 -
E <0.154
X <0.463
DRO 5.4 UJ
GRO 0.173 U
P BDL
SD-04
SURFACE WTR BF0417 ug/L
SEDIMENT BF0418 mg/kg
B 1.00 U
T 1.00 U
E 1.00 U
X 3.00 U
P BDL
B 0.0014 U
T 0.0402 J
E 0.0014 U
X 0.0042 U
DRO 3.0 UJ
GRO 0.136 U
P BDL
SD-05
SURFACE WTR BF0517 ug/L
SEDIMENT BF0518 mg/kg
NO SURFACE WTR PRESENT NO SAMPLE COLLECTED
B 0.0012 U
T 0.0043 *
E 0.0012 U
X 0.0036 U
DRO 5.4 UJ
GRO 0.134 U
P BDL
SD-06
SURFACE WTR BF0617 ug/L
SEDIMENT BF0618 mg/kg
B 1.00 U
T 1.00 U
E 1.00 U
X 3.00 U
P BDL
B 0.0016 U
T 0.00042 J
E 0.0016 U
X 0.0048 U
DRO 9.2 *
GRO 0.232 *
P BDL
SD-07
SURFACE WTR BF0717 ug/L
SEDIMENT BF0718 mg/kg
B 1.00 U
T 1.00 U
E 1.00 U
X 3.00 U
P BDL
B 0.0015 U
T 0.0015 U
E 0.0015 U
X 0.0044 U
DRO 2.1 UJ
GRO 0.165 U
P BDL
SD-08
SURFACE WTR BF0817 ug/L
SEDIMENT BF0818 mg/kg
B 1.00 U
T 1.00 U
E 1.00 U
X 3.00 U
P BDL
B 0.0012 UJ
T 0.00036 J
E 0.0012 UJ
X 0.0037 UJ
DRO 1.5 *
GRO 0.16 *
P BDL
SD-09
SURFACE WTR BF0917 ug/L
SEDIMENT BF0918 mg/kg
B 1.00 U
T 1.00 U
E 1.00 U
X 3.00 U
P BDL
B 0.0013 U
T 0.00058 J
E 0.0013 U
X 0.0038 U
DRO 3.6 UJ
GRO 0.137 U
B(a)a 0.336 *
B(a)p 0.282 *
B(b)f 0.474 *
Ch 0.422 *
Fl 0.645 *
Ph 0.0625 *
Py 0.736 *
Other PAHs BDL
BULK FUEL STORAGE
LAMAR CANAL
SURFACE WATER FLOW DIRECTION
SD-01
SD-02
SD-03
SD-04
SD-05
SD-06
SD-07
SD-08
SD-09
117th AIR NATIONAL GUARD
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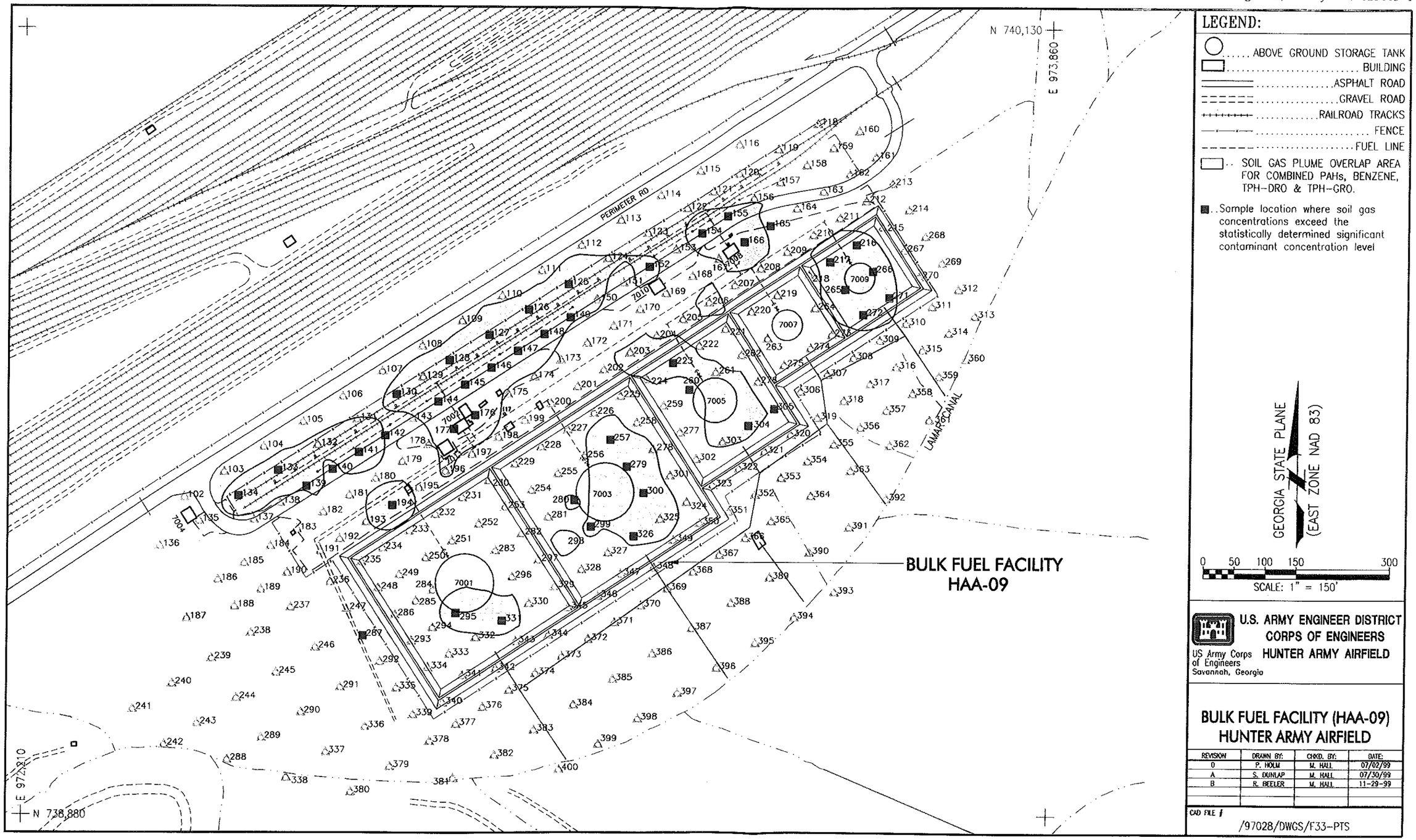


Figure A.1. Soil Gas Survey Results and Recommended CAP-Part A Sampling Locations

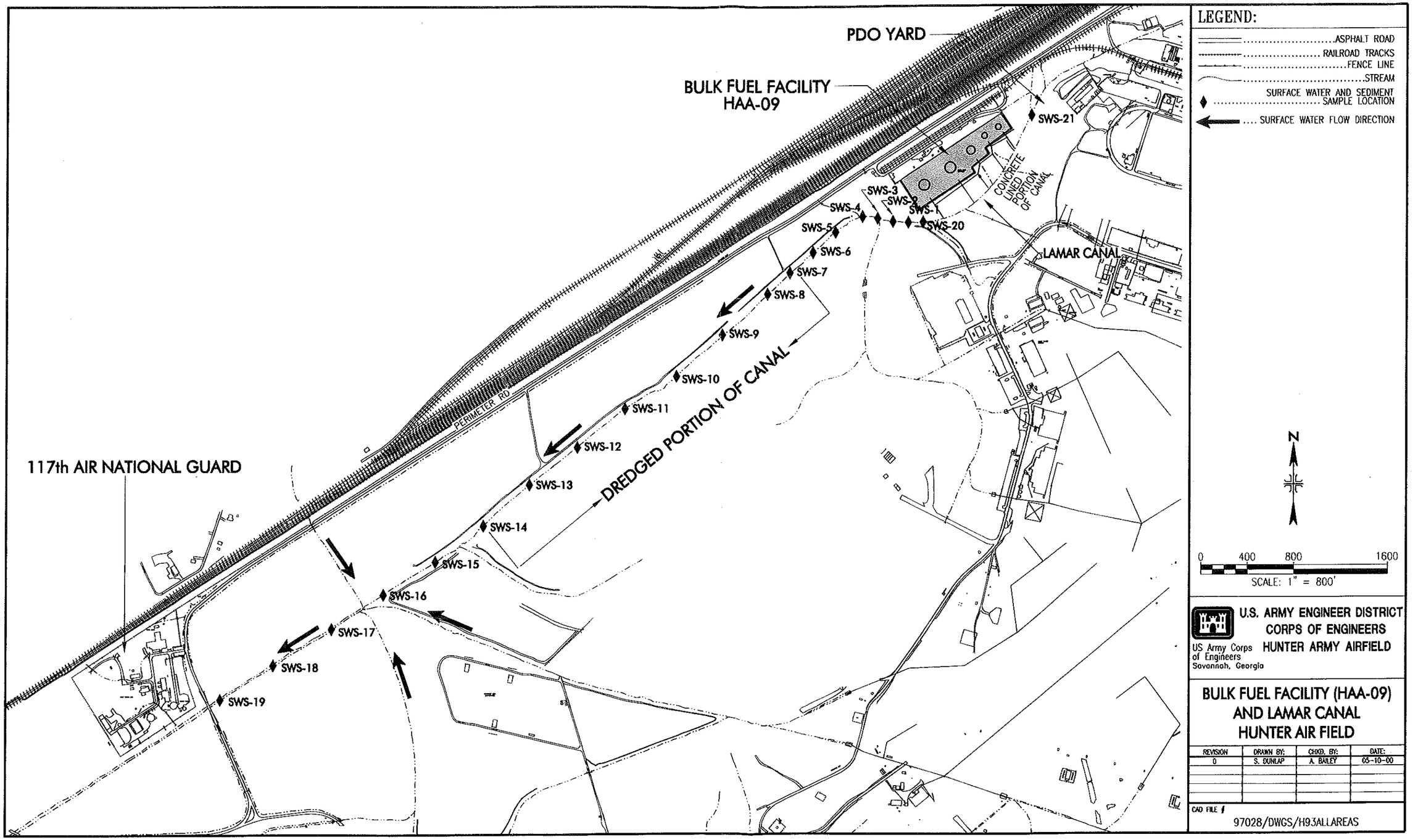


Figure A.2. Lamar Canal Sediment and Surface Water Sampling Locations Investigated During May 1999