

FINAL



FORSUM

CORRECTIVE ACTION PLAN

Part A



3d Inf Div (Mech)

**Underground Storage Tank 116
Building 9002
Facility Identification Number: 9-025112
Hunter Army Airfield, Georgia**

Prepared for



U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT

Contract No. DACA21-95-D-0022
Delivery Order 0019

February 1999

98-201P(PPT-8Fiery)/020399



DOCUMENT 11.1

FINAL

**CORRECTIVE ACTION PLAN - PART A REPORT
FOR
UNDERGROUND STORAGE TANK 116
BUILDING 9002
FACILITY IDENTIFICATION NUMBER: 9-025112
HUNTER ARMY AIRFIELD, GEORGIA**

Prepared for:

**U.S. Army Corps of Engineers - Savannah District
and
Fort Stewart Directorate of Public Works
Under Contract Number DACA21-95-D-0022
Delivery Order 0019**

Prepared by:

**Science Applications International Corporation
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831**

February 1999

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

	<u>Page</u>
LIST OF ABBREVIATIONS AND ACRONYMS	v
I. PLAN CERTIFICATION	1
A. UST Owner/Operator Certification	1
B. Registered Professional Engineer or Professional Geologist Certification	1
II. INITIAL RESPONSE REPORT	2
A. Initial Abatement	2
B. Free Product Removal	2
C. Tank History	3
D. Initial Site Characterization.....	3
1. Regulated Substance Released.....	3
2. Source(s) of Contamination	3
3. Local Water Resources	4
a. Groundwater Pollution Susceptibility Area	4
b. Public and Non-Public Water Supplies.....	4
c. Surface Water Supplies and Sewers	4
4. Impacted Environmental Media.....	4
a. Soil Impacted	4
b. Groundwater Impacted.....	5
c. Surface Water Impacted.....	6
d. Point of Withdrawal Impacted	6
5. Other Geologic/Hydrogeologic Data	6
a. Depth to Groundwater.....	6
b. Groundwater Flow Direction	6
c. Hydraulic Gradient.....	6
d. Geophysical Province	6
e. Unique Geologic/Hydrogeological Conditions.....	6
6. Corrective Action Completed or In-Progress.....	6
a. Underground Storage Tank System Closure.....	6
b. Excavation and Treatment/Disposal of Backfill Materials and Native Soils	7
7. Site Ranking.....	7
8. Conclusions and Recommendations	7
a. No Further Action Required	7
b. Monitoring Only	7
c. CAP-B	7
III. MONITORING ONLY PLAN	8
A. Monitoring Points.....	8
B. Period/Frequency of Monitoring and Reporting	8
C. Monitoring Parameters	8
D. Milestone Schedule	8
E. Scenarios for Site Closure or CAP-Part B.....	8

IV. SITE INVESTIGATION PLAN	8
A. Proposed Investigation of Horizontal and Vertical Extent of Contamination	8
1. Soil	8
2. Groundwater	9
a. Free Product	9
b. Dissolved Phase	9
3. Surface Water	9
B. Proposed Investigation of Vadose Zone and Aquifer Characteristics.....	9
V. PUBLIC NOTICE.....	10
VI. CLAIM FOR REIMBURSEMENT	10

List of Appendices

APPENDIX I: REPORT FIGURES	I-1
Figure 1. Location Map of Hunter Army Airfield, Chatham County, Georgia	I-3
Figure 2. Site Plan for the UST 116, Building 9002 Site Investigation.....	I-4
Figure 3a. Topographic Quadrangle Map of Hunter Army Airfield and Surrounding Area.....	I-5
Figure 3b. Detailed Map Showing Public and Private Drinking Water Sources and Surface Water Bodies at Hunter Army Airfield	I-6
Figure 3c. Detailed Map Showing Public and Private Drinking Water Sources in Areas Adjacent to Hunter Army Airfield	I-7
Figure 4. Soil Quality Map of the UST 116, Building 9002 Site	I-9
Figure 5. Groundwater Quality Map of the UST 116, Building 9002 Site.....	I-10
Figure 6. Potentiometric Surface Map of the UST 116, Building 9002 Site.....	I-11
Figure 7. UST System Closure Sampling Locations at the UST 116, Building 9002 Site	I-12
Figure 8. Proposed Additional Boring/Monitoring Well Locations	I-13
Figure 9. Tax Map of Hunter Army Airfield and Vicinity, Chatham County, Georgia	I-15
APPENDIX II: REPORT TABLES	II-1
Table 1. Free Product Removal	II-3
Table 2a. Soil Analytical Results (Volatile Organic Compounds)	II-4
Table 2b. Soil Analytical Results (Polynuclear Aromatic Hydrocarbons).....	II-5
Table 3a. Groundwater Analytical Results (Volatile Organic Compounds).....	II-6
Table 3b. Groundwater Analytical Results (Polynuclear Aromatic Hydrocarbons).....	II-7
Table 4. Groundwater Elevations	II-8
Table 5a. UST System Closure - Soil Analytical Results (Volatile Organic Compounds)	II-9
Table 5b. UST System Closure - Soil Analytical Results (Polynuclear Aromatic Hydrocarbons)	II-10
Table 6a. UST System Closure - Groundwater Analytical Results (Volatile Organic Compounds).....	II-11
Table 6b. UST System Closure - Groundwater Analytical Results (Polynuclear Aromatic Hydrocarbons)	II-11

APPENDIX III:	WATER RESOURCES SURVEY DOCUMENTATION.....	III-1
APPENDIX IV:	SOIL BORING LOGS	IV-1
APPENDIX V:	SOIL LABORATORY RESULTS	V-1
APPENDIX VI:	ALTERNATE THRESHOLD LEVEL (ATL) CALCULATIONS	VI-1
APPENDIX VII:	MONITORING WELL DETAILS.....	VII-1
APPENDIX VIII:	GROUNDWATER LABORATORY RESULTS	VIII-1
APPENDIX IX:	CONTAMINATED SOIL DISPOSAL MANIFESTS.....	IX-1
APPENDIX X:	SITE RANKING FORM.....	X-1
APPENDIX XI:	COPIES OF PUBLIC NOTIFICATION LETTERS AND CERTIFIED RECEIPTS OR NEWSPAPER NOTICE	XI-1
APPENDIX XII:	GUST TRUST FUND REIMBURSEMENT APPLICATION AND CLAIM FOR REIMBURSEMENT	XII-1

Attachments

A	TECHNICAL APPROACH	A-1
B	REFERENCES	B-1

List of Abbreviations and Acronyms

ACE	Anderson Columbia Environmental, Inc.
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	data 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
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
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
VOC

Underground Storage Tank Management Program
volatile organic compound

THIS PAGE INTENTIONALLY LEFT BLANK

CORRECTIVE ACTION PLAN PART A

Facility Name: UST 116, Building 9002 Street Address: Posey Street

Facility ID: 9-025112 City: Savannah County: Chatham Zip Code: 31406

Latitude: 32°00'33"N Longitude: 81°06'58"W

Submitted by UST Owner/Operator:

Name: Thomas C. Fry/Environmental Branch

Company: U.S. Army/HQ 3d, Inf. Div. (Mech)

Address: DPW ERD ENV. Br. (Fry)
1557 Frank Cochran Drive

City: Fort Stewart State: Georgia

Zip Code: 31314-4928

Telephone: (912) 767-1078

Prepared by Consultant/Contractor:

Name: C. Allison Bailey

Company: SAIC

Address: P.O. Box 2502

City: Oak Ridge State: TN

Zip Code: 37831

Telephone: (423) 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: 03/01/99

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: John B. Reeves, P.E.

Signature: John B. Reeves

Date: 1-22-99



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 underground storage tank (UST) 116, Building 9002 site. Therefore, contaminant migration and release prevention, fire and vapor mitigation, or emergency free product removal were not performed prior to, or during, the removal of UST 116.

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)

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

FORMER UST SYSTEMS (if applicable)

<u>Tank ID Number</u>	<u>Capacity (gal)</u>	<u>Substance Stored</u>	<u>Date Removed</u>
116	150	gasoline	September 26, 1996

D. Initial Site Characterization

(Figure 1: Vicinity/Location Map)

(Figure 2: Site Plan)

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

Characterization of petroleum-related contamination at the site was initiated during UST system closure activities on September 26, 1996, by Anderson Columbia Environmental, Inc. (ACE). After removal of the UST 116, the ancillary piping was purged and closed in place by filling with grout. One soil sample (8102-TK116-S1) was collected from the bottom of the tank pit at an approximate depth of 12 feet (Figure 7). In addition, a groundwater sample was collected (8102-TK116-GW) when groundwater invaded the tank pit. The soil sample did not contain contaminant concentrations that exceeded Georgia Environmental Protection Division (GA EPD) applicable soil threshold levels (i.e., Table A, column 2). However, concentrations of benzene, toluene, and ethylbenzene were detected in groundwater above their respective maximum contaminant levels (MCLs). In addition, elevated concentrations of polynuclear aromatic hydrocarbons (PAHs) were detected in the groundwater sample (Tables 6a and 6b).

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 the approximate location of the former UST and associated ancillary piping, a detailed schematic diagram is not available. During tank removal activities by ACE, holes in the tank were not reported. Therefore, the major source of contamination at the UST 116, Building 9002 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: 3,270 feet
ii. Nearest down-gradient public water supply located within: 6,240 feet
iii. Nearest non-public water supply located within: 16,800 feet
iv. Nearest down-gradient non-public water supply located within: >16,800 feet
- c. Surface Water Bodies and sewers:
i. Nearest surface water located within: 1,010 feet
ii. Nearest down-gradient surface water located within: 1,600 feet
iii. Nearest storm or sanitary sewer located within: 40 feet
iv. Depth to bottom of sewer at a point nearest the plume: 4.0 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.

Continuous direct-push soil cores were collected at 2.0-foot intervals during the installation of five boreholes (J-1 through J-4 and J-7). Field headspace gas analyses were performed on each sample to determine organic vapor concentration. Two soil samples were collected from each borehole for chemical analysis of total benzene, toluene, ethylbenzene, and xylene (BTEX), TPH gasoline-range organics/diesel-range organics (GROs/DROs), and PAHs. In boreholes where organic vapors were detected, one sample was collected from the 2.0-foot interval where the highest vapor concentration was recorded, and the other from the 2.0-foot interval located immediately above the saturated zone. If organic vapors were not detected, one sample was collected from the 2.0-foot interval directly below ground surface (BGS), and the other from the 2.0-foot interval above the saturated zone. In addition, an undisturbed (Shelby-tube) soil sample (J-6) was collected and analyzed for geotechnical parameters to determine vadose zone and aquifer characteristics at the site. The results are presented in Appendix VI, Table VI-A. Refer to Attachment A for complete documentation of the technical approach implemented during this investigation.

i. Soil contamination above applicable threshold levels?

YES _____ NO X

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

ii. ATLs calculated?

YES _____ NO X

If yes, present ATLs.

iii. If ATL's calculated, is soil contamination above ATL's?

YES _____ NO _____ N/A X

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 each borehole location (J-1 through J-4 and J-7), 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. At the vertical profile location (J-5), discrete groundwater samples were collected every 10 feet below the water table down to approximately 55 feet BGS (the estimated depth of the Hawthorn confining unit). Although the Hawthorn unit was not encountered at 55 feet BGS, 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. Refer to Attachment A for complete documentation of the technical approach used to collect groundwater samples.

i. Groundwater contamination above MCLs? YES _____ NO X

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

YES _____ NO X

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

- 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.

- d. *Point of Withdrawal Impacted?* YES _____ NO _____ N/A X
If Yes, indicate concentration(s) of water sample(s) taken from withdrawal point(s).

5. Other Geologic/Hydrogeologic Data

- a. *Depth to Groundwater:* 3.14 to 4.43 feet BGS (Table 4: Groundwater Elevations)
b. *Groundwater Flow Direction:* west (Figure 6: Potentiometric Surface Map)
c. *Hydraulic Gradient:* 0.083 feet/feet
d. *Geophysical Province:* Coastal Plain
e. *Unique geologic/hydrogeological conditions:* None

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 removed UST 116 on September 26, 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 was then closed in place by filling with grout. A backhoe was used to excavate down to the tank top. After the tank atmosphere was tested with a combustible gas indicator, all accessible tank openings were capped and the tank was lifted from the excavation pit.

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

Check one: *No UST removal performed* _____

Returned to UST excavation _____

Excavated soils treated or disposed off site X

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

Approximately 51.6 tons of soil were removed from the Building 9002 site and stockpiled at the ACE temporary soil containment area located at Hunter Army Airfield (HAAF) where it was tested in accordance with the disposal facility requirements. The soil was transported to Kedesh, Inc., Highway 84, Ludowici, GA 31316. The Installation has records of all manifests and weight tickets for the total project. However, site-specific information is not available.

7. Site Ranking:

Environmental Site Sensitivity Score: _____ 0
(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 _____
(provide justification)

The groundwater and soil analytical data collected during the Corrective Action Plan (CAP)-Part A investigation are sufficient to define the nature and extent of petroleum contamination at the site. The results of the investigation indicate that site conditions do not exceed groundwater maximum contaminant levels (MCLs) or the applicable soil threshold levels (see Tables 2 and 3). Therefore, further investigation of the UST 116, Building 9002 Site is not required.

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

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

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 X

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

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

1. Soil

N/A X

2. Groundwater

a. Free Product

N/A X

b. Dissolved phase

NA X

3. Surface Water

N/A X

B. Proposed Investigation of Vadose Zone And Aquifer Characteristics:

V. PUBLIC NOTICE

(Figure 9. Tax Map)

(Appendix XI: Copies of public notification letters & certified return receipts or newspaper notice if approved)

UST 116, Building 9002, Facility ID: 9-025112, is located at 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.

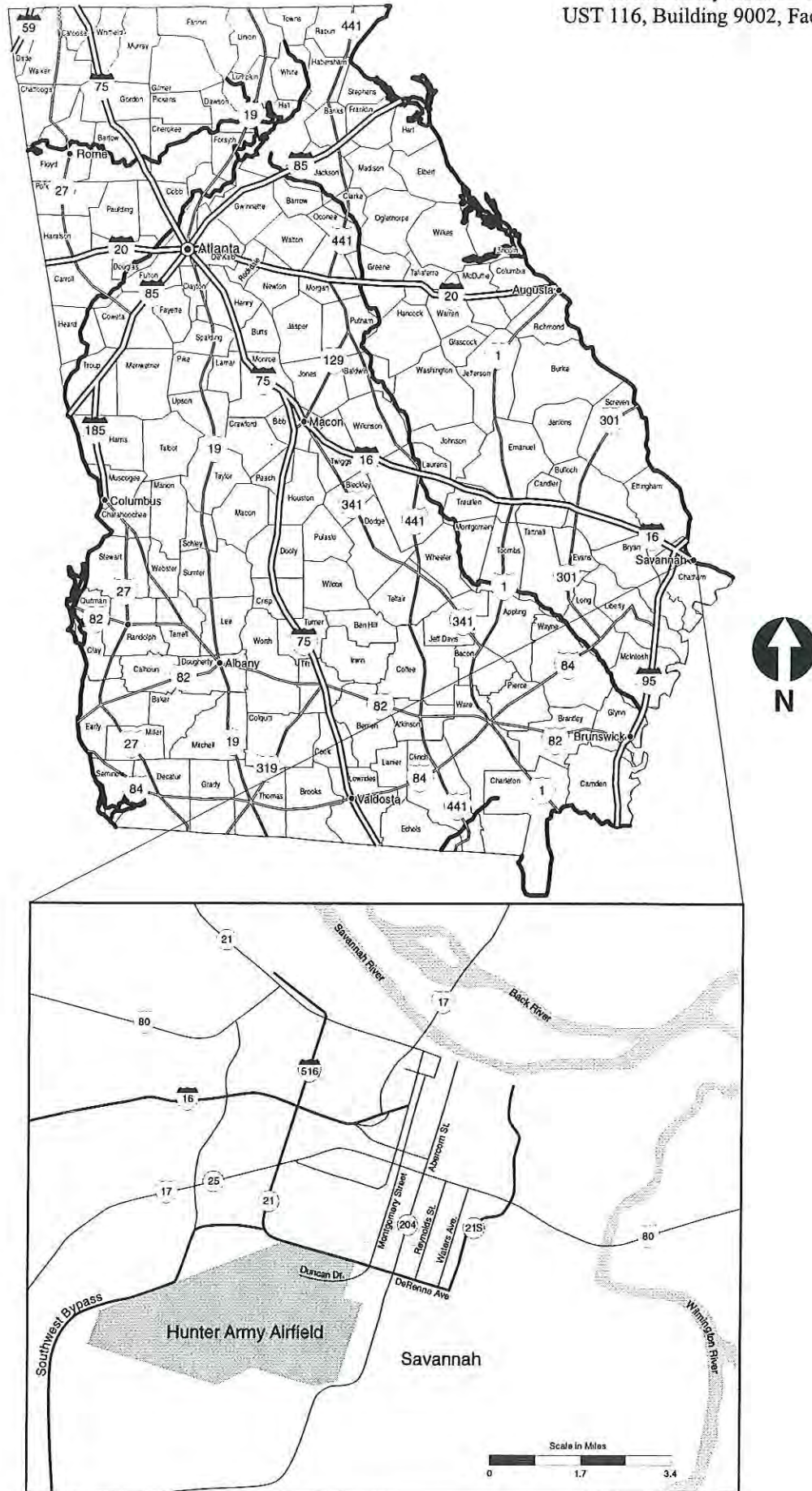
VI. CLAIM FOR REIMBURSEMENT (for GUST Trust Fund sites only): N/A X
(Appendix XII: GUST Trust Fund Reimbursement Application and Claim for reimbursement)

The HAAF is a federally owned facility and has funded the investigation for the UST 116, Building 9002 site, Facility ID: 9-025112, using Environmental Restoration Account funds. Application for Georgia Underground Storage Tank Trust Fund reimbursement is not being pursued at this time.

APPENDIX I

REPORT FIGURES

THIS PAGE INTENTIONALLY LEFT BLANK



31-102797-063

Figure 1. Location Map of Hunter Army Airfield, Chatham County, Georgia

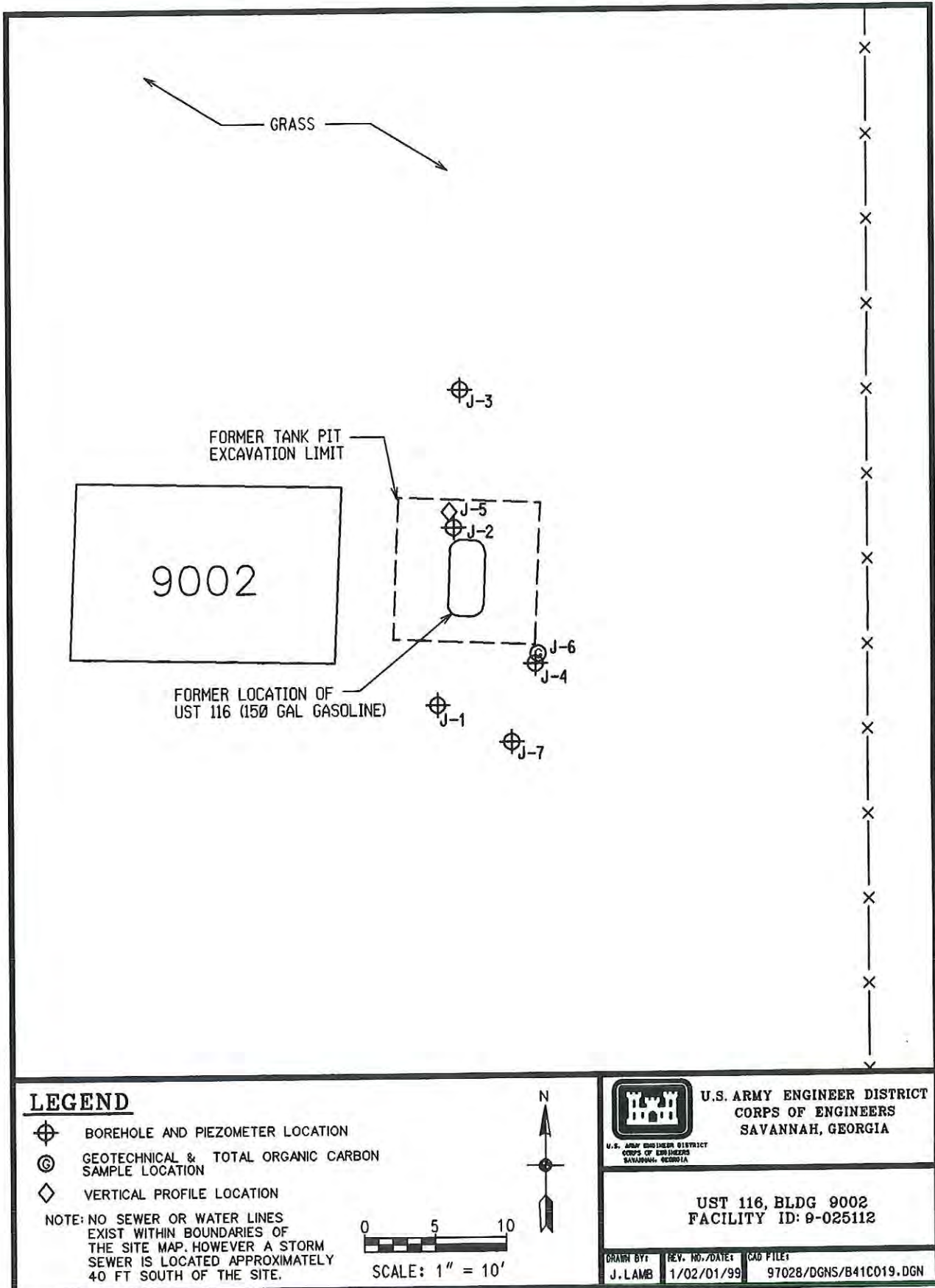
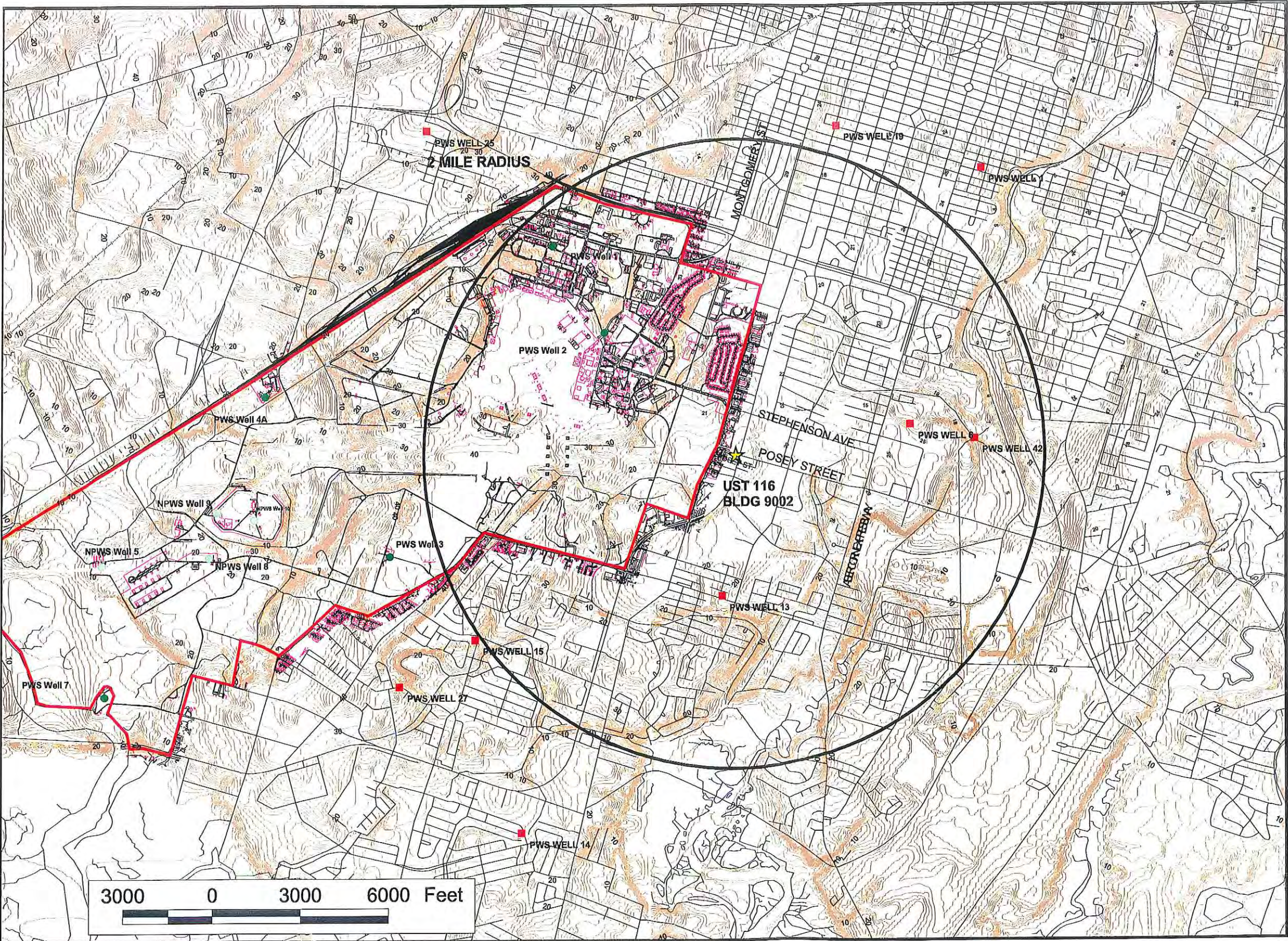


Figure 2. Site Plan for the UST 116, Building 9002 Site Investigation



- 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 minute Topographic Quad sheets; Boroughs, 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 Port Stewart.



SAIC
Science Applications
International Corporation

UST 116, BLDG 9002
FACILITY ID: 9-025112

REVISION	DRAWN BY:	CHKD BY:	DATE:
0	M.Norris	A. Bailey	11/16/98

FILE REFERENCES	
051rds_polyline	burroughsctrf
051hyd_polyline	isleofhopectrf
051rr	savannahctrf
hunterarea	gardencityctrf
	trveh.dgn
	bggen.dgn

SHT 1 of 1
DRAWING #

G:\97028ust116.APR
ARCVIEW PROJECT NAME

Figure 3a. Topographic Quadrangle Map of Hunter Army Airfield and Surrounding Area

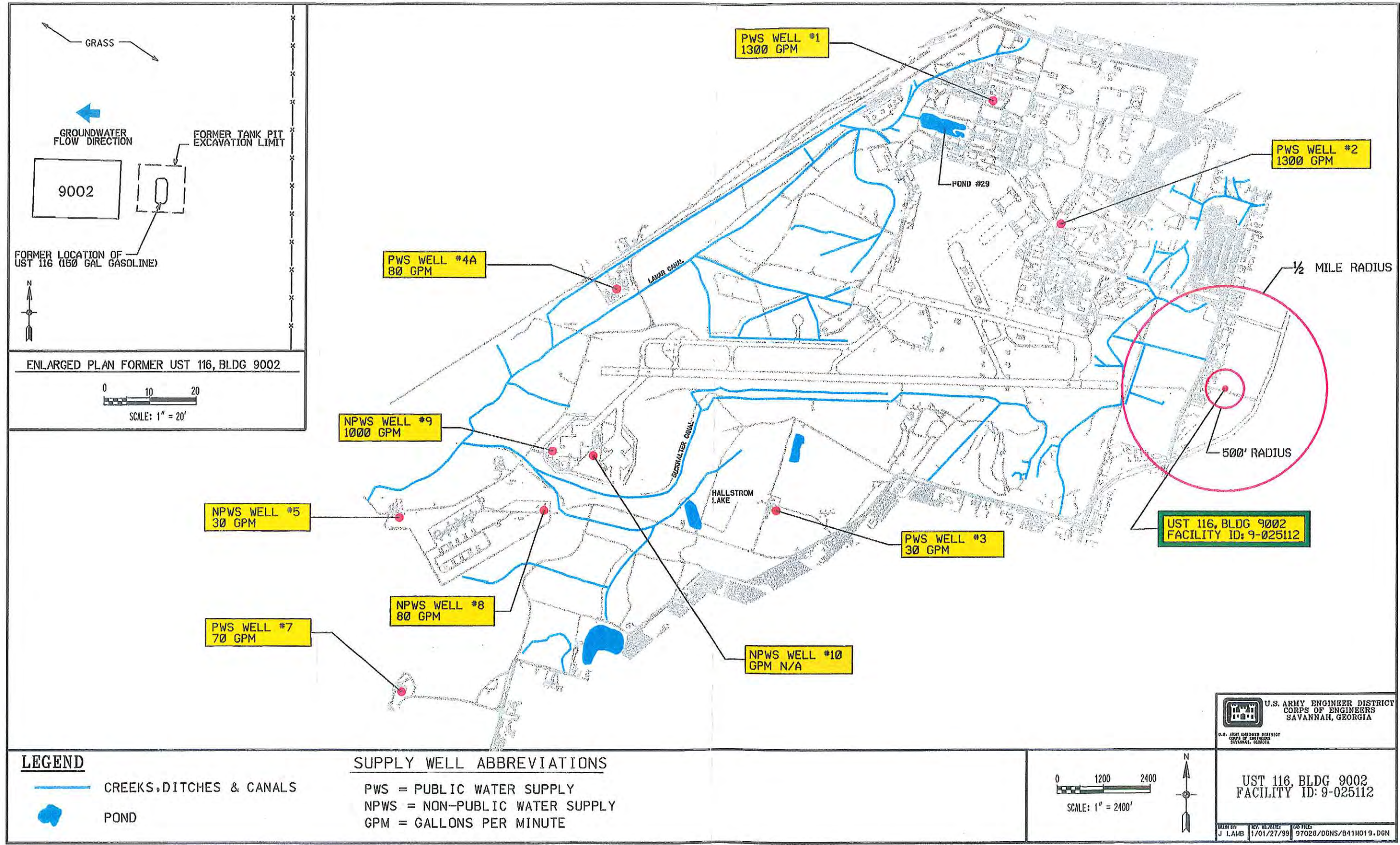


Figure 3b. Detailed Map Showing Public and Private Drinking Water Sources and Surface Water Bodies at Hunter Army Airfield

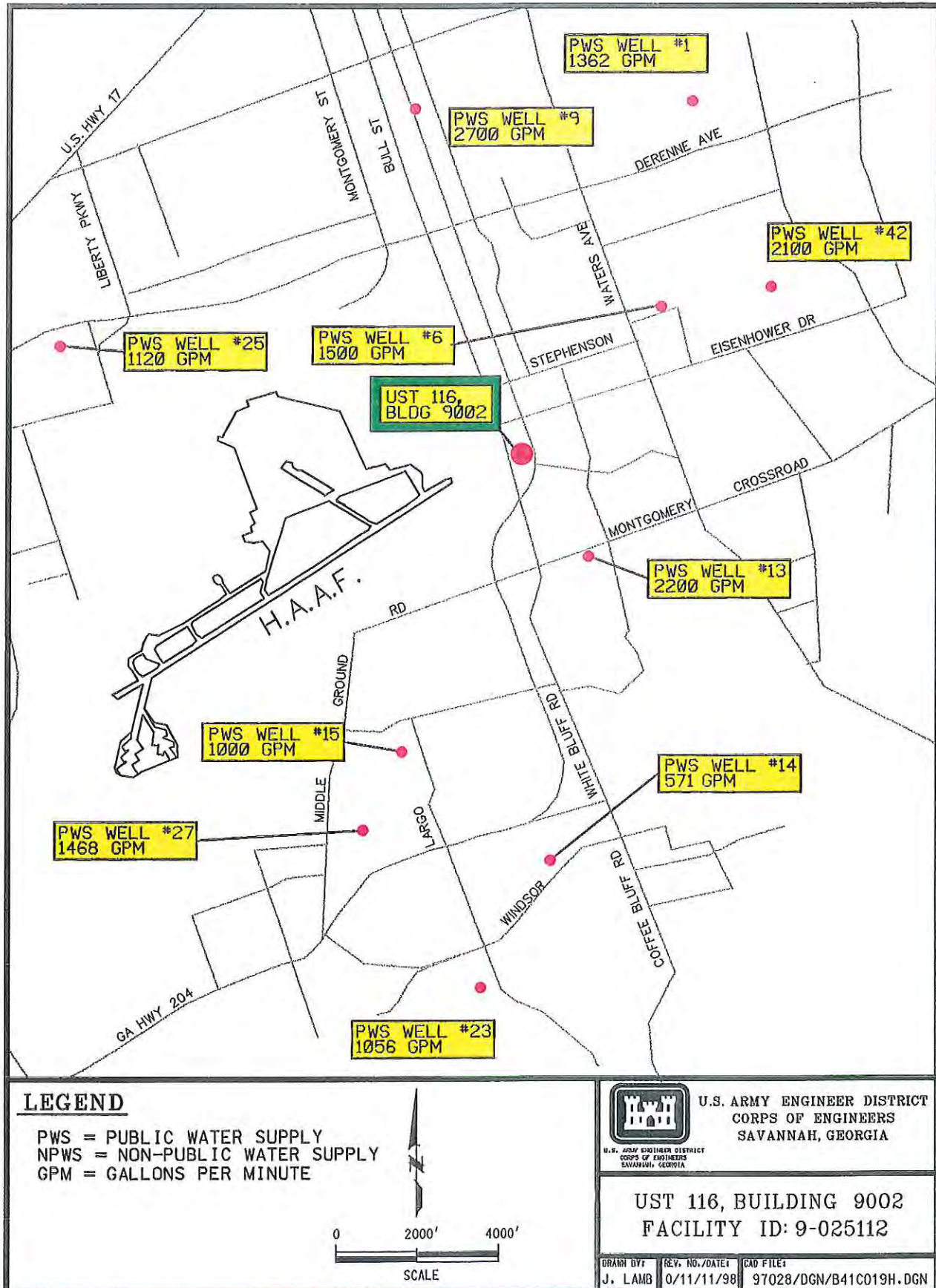


Figure 3c. Detailed Map Showing Public and Private Drinking Water Sources
in Areas Adjacent to Hunter Army Airfield

THIS PAGE INTENTIONALLY LEFT BLANK

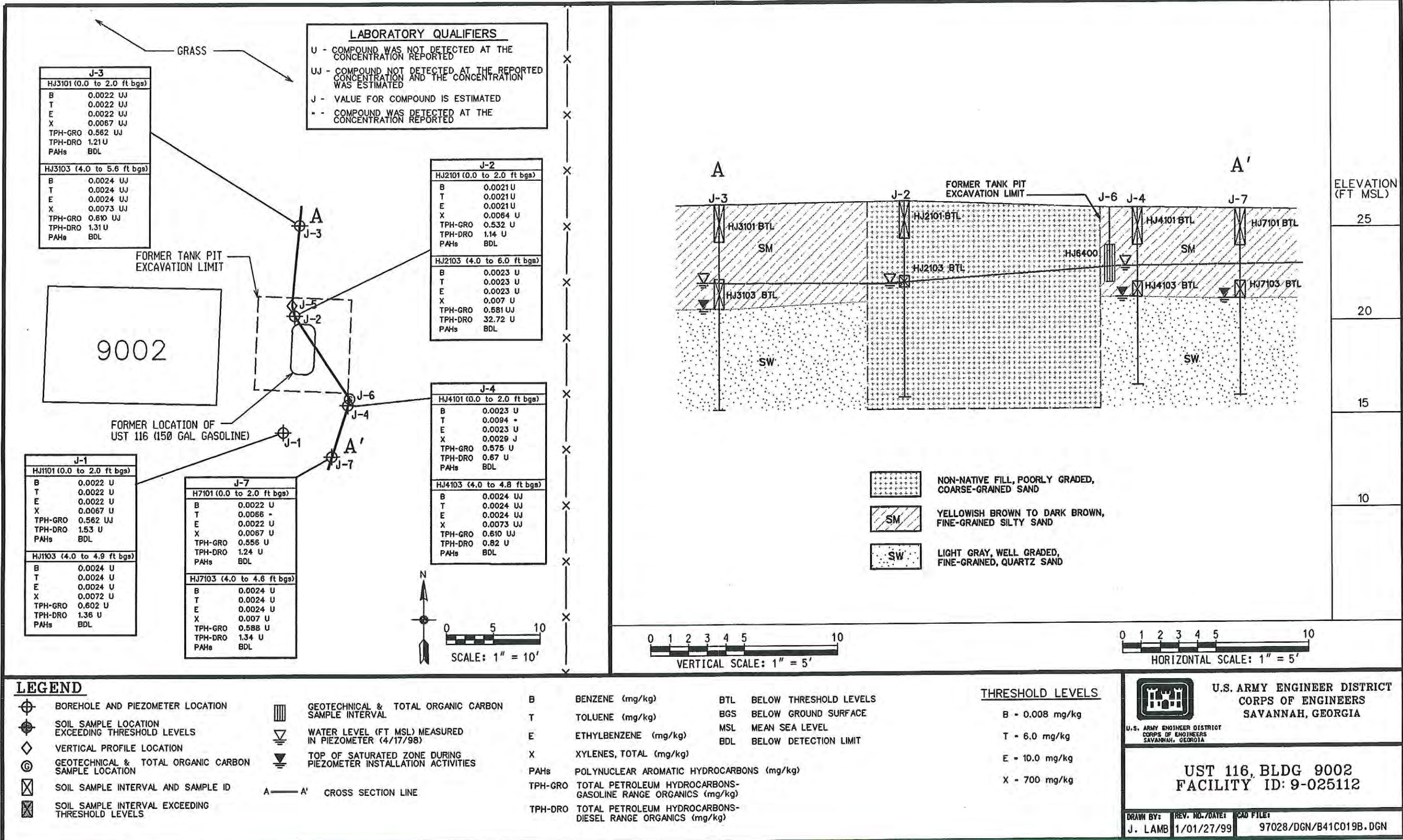


Figure 4. Soil Quality Map of the UST 116, Building 9002 Site

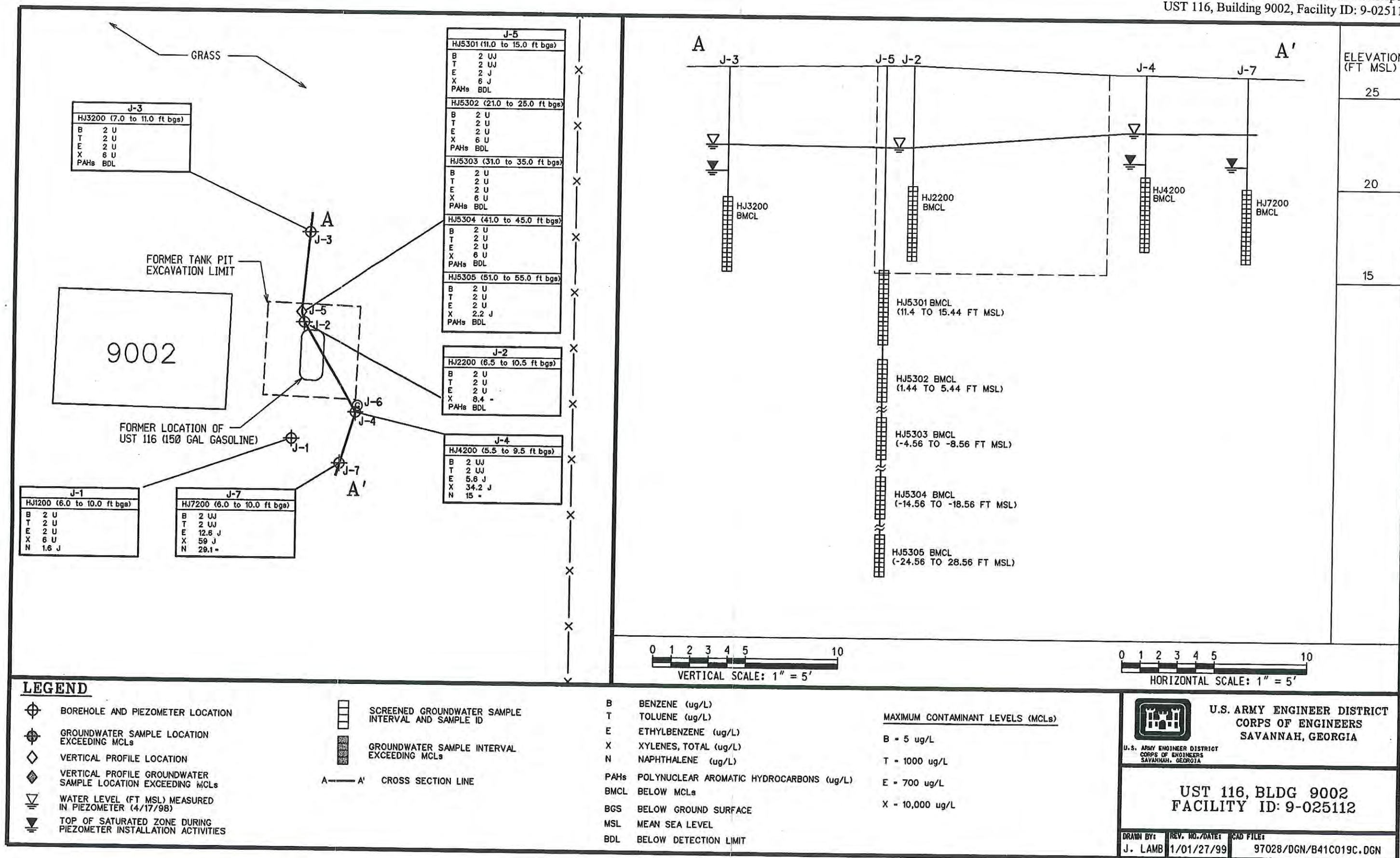


Figure 5. Groundwater Quality Map of the UST 116, Building 9002 Site

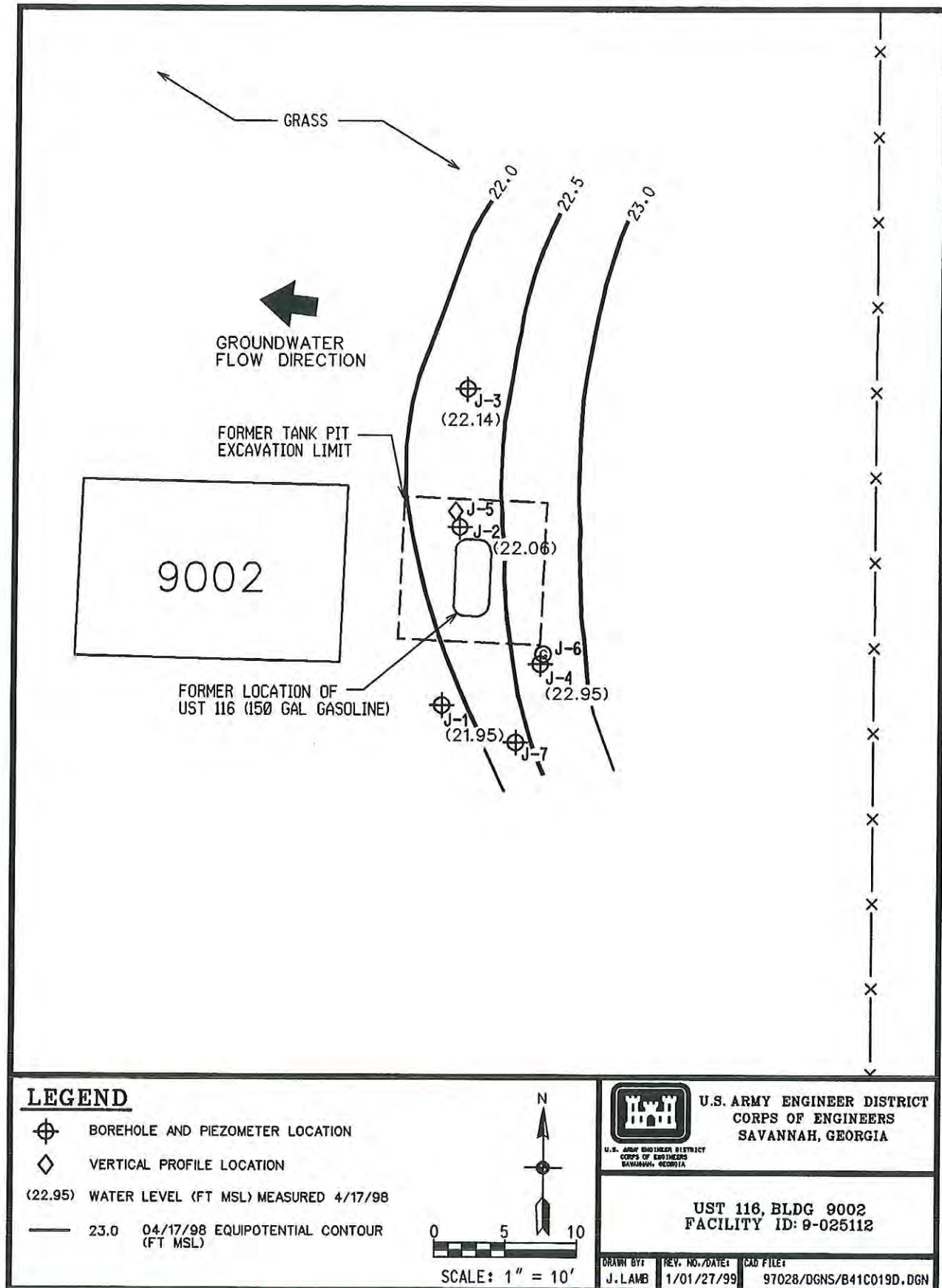


Figure 6. Potentiometric Surface Map of the UST 116, Building 9002 Site

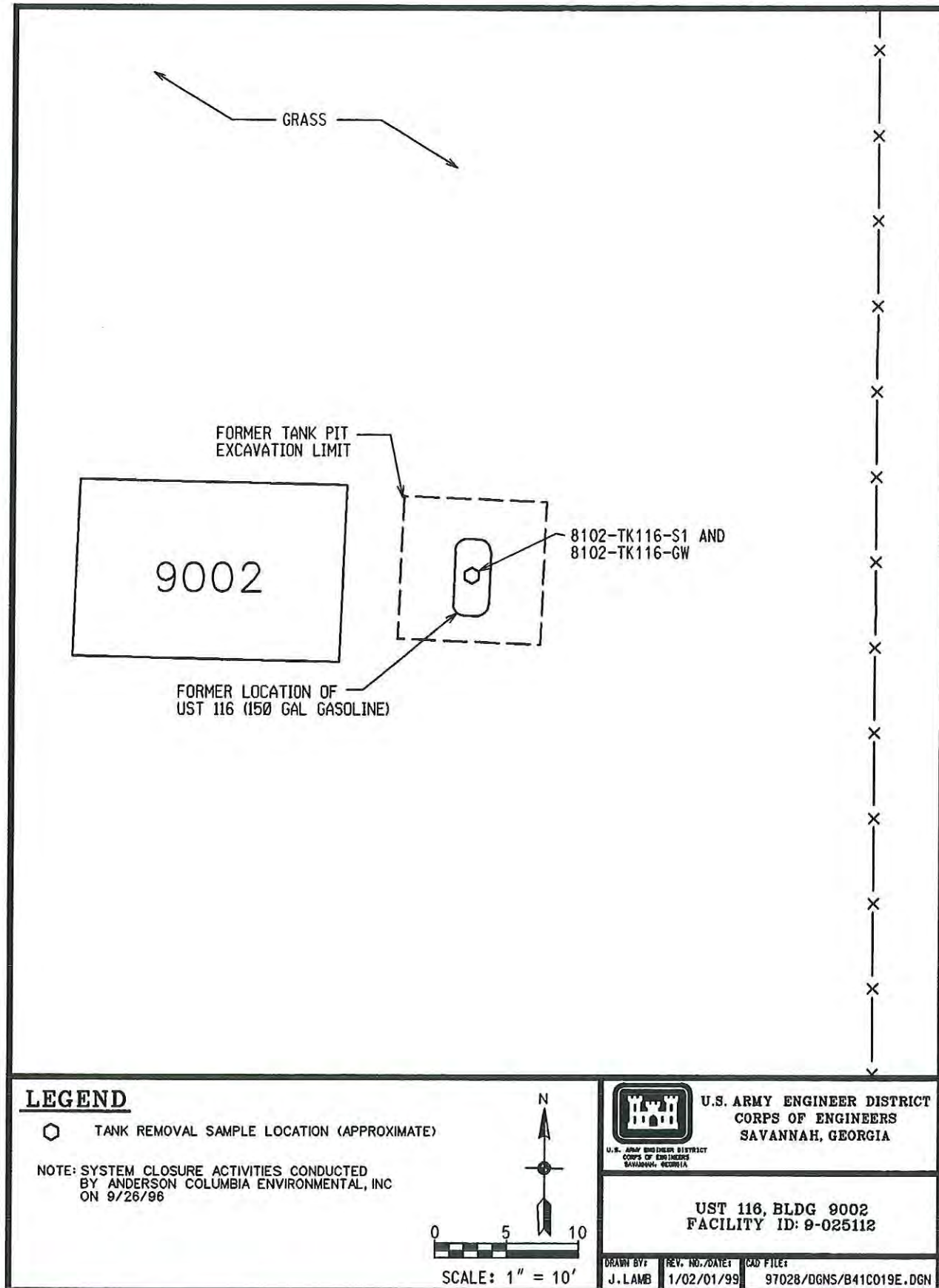


Figure 7. UST System Closure Sampling Locations at the UST 116, Building 9002 Site

**NOT APPLICABLE FOR THE UST 116, BUILDING 9002,
FACILITY ID: 9-025112 SITE INVESTIGATION**

Figure 8. Proposed Additional Boring/Monitoring Well Locations

THIS PAGE INTENTIONALLY LEFT BLANK

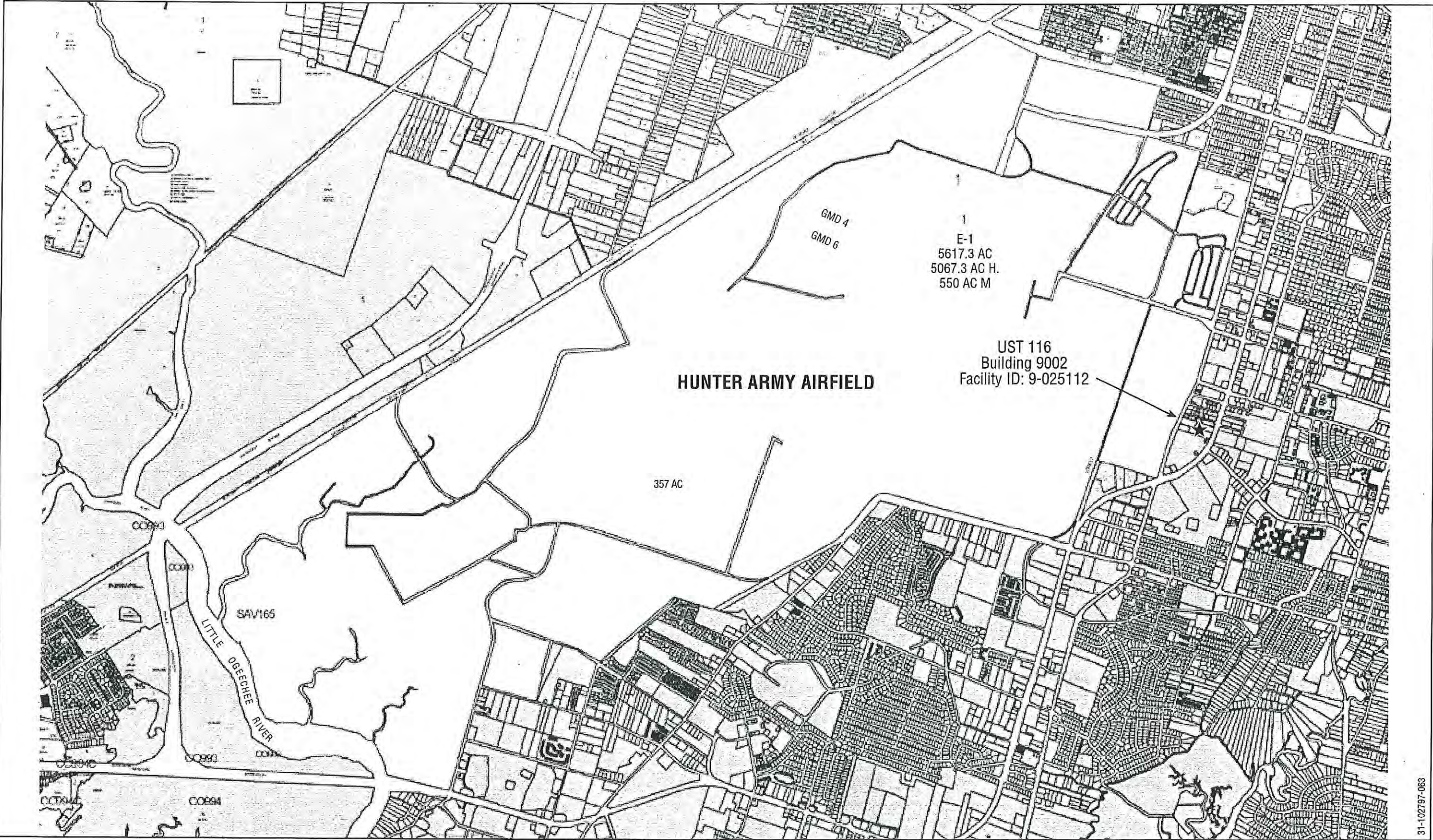


Figure 9. Tax Map of Hunter Army Airfield and Vicinity, Chatham County, Georgia



THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX II

REPORT TABLES

THIS PAGE INTENTIONALLY LEFT BLANK

UST 116, Building 9002
Hunter Army Airfield
Chatham County, Facility ID: 9-025112

TABLE 1: FREE PRODUCT REMOVAL

Monitoring Well Number: N/A				
Date of Measurement	Groundwater Elev. (ft MSL)	Product Thickness ¹ (ft)	Corrected Water Elev. (ft MSL)	Product Removed (gal)
TOTAL				NONE ¹

Monitoring Well Number: N/A				
Date of Measurement	Groundwater Elev. (ft MSL)	Product Thickness ¹ (ft)	Corrected Water Elev. (ft MSL)	Product Removed (gal)
TOTAL				NONE ¹

NOTE: ¹Free product was not found.
MSL - mean sea level.

UST 116, Building 9002
Hunter Army Airfield
Chatham County, Facility ID: 9-025112

TABLE 2a: SOIL ANALYTICAL RESULTS³
(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 ² (mg/kg)	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)
J-1	HJ1101	0.0 to 2.0	04/16/98	0.0022 U	0.0022 U	0.0022 U	0.0067 U	BDL	1.53 U	0.562 UJ
J-1	HJ1103	4.0 to 4.9	04/16/98	0.0024 U	0.0024 U	0.0024 U	0.0072 U	BDL	1.36 U	0.602 U
J-2	HJ2101	0.0 to 2.0	04/16/98	0.0021 U	0.0021 U	0.0021 U	0.0064 U	BDL	1.14 U	0.532 U
J-2	HJ2103	4.0 to 6.0	04/16/98	0.0023 U	0.0023 U	0.0023 U	0.007 U	BDL	32.72 U	0.581 UJ
J-3	HJ3101	0.0 to 2.0	04/16/98	0.0022 UJ	0.0022 UJ	0.0022 UJ	0.0067 UJ	BDL	1.21 U	0.562 UJ
J-3	HJ3103	4.0 to 5.6	04/16/98	0.0024 UJ	0.0024 UJ	0.0024 UJ	0.0073 UJ	BDL	1.31 U	0.610 UJ
J-4	HJ4101	0.0 to 2.0	04/16/98	0.0023 U	0.0094 =	0.0023 U	0.0029 J	0.0123	0.67 U	0.575 U
J-4	HJ4103	4.0 to 4.8	04/16/98	0.0024 U	0.0024 U	0.0024 U	0.0073 U	BDL	0.82 U	0.610 U
J-4	HJ4110 ⁴	4.0 to 4.8	04/16/98	0.0025 U	0.0025 U	0.0025 U	0.0074 U	BDL	0.63 U	0.617 U
J-7	HJ7101	0.0 to 2.0	04/20/98	0.0022 U	0.0066 =	0.0022 U	0.0067 U	0.0066	1.24 U	0.556 U
J-7	HJ7111 ⁵	0.0 to 2.0	04/20/98	0.0023 U	0.0067 =	0.0023 U	0.0068 U	0.0067	1.9 U	0.568 U
J-7	HJ7103	4.0 to 4.6	04/20/98	0.0024 U	0.0024 U	0.0024 U	0.007 U	BDL	1.34 U	0.588 U
Applicable Standards ¹				0.008	6.000	10	700	NRC	NRC	NRC

NOTE:

¹Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 2).

²The 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.

³All field work and analytical sampling were performed prior to the release of the new GA DNR Corrective Action Plan (CAP)-Part A Guidance (i.e., May 1998); therefore, the new analytical methods specified were not used.

⁴Duplicate sample for sample collected from location J-4 at a depth of 4.0 to 4.8 feet BGS.

⁵Duplicate sample for sample collected from location J-7 at a depth of 0.0 to 2.0 feet BGS.

BDL - Below 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 the compound was detected at the concentration reported.

UST 116, Building 9002
Hunter Army Airfield
Chatham County, Facility ID: 9-025112

TABLE 2b: SOIL ANALYTICAL RESULTS³
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (mg/kg)				Total PAHs (mg/kg)
				BDL ²	BDL ²	BDL ²	BDL ²	
J-1	HJ1101	0.0 to 2.0	04/16/98					BDL ²
J-1	HJ1103	4.0 to 4.9	04/16/98					
J-2	HJ2101	0.0 to 2.0	04/16/98					
J-2	HJ2103	4.0 to 4.6	04/16/98					
J-3	HJ3101	0.0 to 2.0	04/16/98					
J-3	HJ3103	4.0 to 5.6	04/16/98					
J-4	HJ4101	0.0 to 2.0	04/16/98					
J-4	HJ4103	4.0 to 4.8	04/16/98					
J-4	HJ4110 ⁴	4.0 to 4.8	04/16/98					
J-7	HJ7101	0.0 to 2.0	04/20/98					
J-7	HJ7111 ⁵	0.0 to 2.0	04/20/98					
J-7	HJ7103	4.0 to 4.6	04/20/98					
Applicable Standards ¹								
NRC								

NOTE:

¹Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 2).

²BDL - Below detection limit; PAH compounds were not detected above the laboratory detection limit. Refer to Appendix V, Table V-A, for a complete list of PAH results.

³All field work and analytical sampling were performed prior to the release of the new GA DNR Corrective Action Plan (CAP)-Part A Guidance (i.e., May 1998); therefore, the new analytical methods specified were not used.

⁴Duplicate sample for sample collected from location J-4 at a depth of 4.0 to 4.8 feet BGS.

⁵Duplicate sample for sample collected from location J-7 at a depth of 0.0 to 2.0 feet BGS.

BGS - Below ground surface.

NRC - No regulatory criteria.

PAHs - Polynuclear aromatic hydrocarbons.

UST 116, Building 9002
Hunter Army Airfield
Chatham County, Facility ID: 9-025112

TABLE 3a: GROUNDWATER ANALYTICAL RESULTS⁴
(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)
J-1	HJ1200	6.0 to 10.0	04/16/98	2 U	2 U	2 U	6 U	BDL ²
J-2	HJ2200	6.5 to 10.5	04/16/98	2 U	2 U	2 U	8.4 =	8.4
J-3	HJ3200	7.0 to 11.0	04/16/98	2 U	2 U	2 U	6 U	BDL ²
J-4	HJ4200	5.5 to 9.5	04/16/98	2 UJ	2 UJ	5.6 J	34.2 J	39.8
J-5	HJ5301	11.0 to 15.0	04/16/98	2 U	2 U	2 U	6 U	BDL ²
J-5	HJ5302	21.0 to 25.0	04/16/98	2 U	2 U	2 U	6 U	BDL ²
J-5	HJ5303	31.0 to 35.0	04/16/98	2 U	2 U	2 U	6 U	BDL ²
J-5	HJ5304	41.0 to 45.0	04/16/98	2 U	2 U	2 U	6 U	BDL ²
J-5	HJ5305	51.0 to 55.0	04/16/98	2 U	2 U	2 U	2.2 J	2.2
J-7	HJ7200	6.0 to 10.0	04/20/98	2 UJ	2 UJ	12.6 J	59 J	71.6
J-7	HJ7210	6.0 to 10.0	04/20/98	2 UJ	2 UJ	2.5 J	9.8 J	12.3
Applicable Standards ¹				5	1,000	700	10,000	NRC

NOTE: ¹U.S. Environmental Protection Agency maximum contaminant level.

²BDL - Below detection limit.

³The 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.

⁴All field work and analytical sampling were performed prior to the release of the new Georgia Department of Natural Resources (GA DNR) Corrective Action Plan (CAP)-Part A Guidance (i.e., May 1998); therefore, the new analytical methods specified were not used.

BGS - Below ground surface.

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.

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.

UST 116, Building 9002
Hunter Army Airfield
Chatham County, Facility ID: 9-025112

TABLE 3b: GROUNDWATER ANALYTICAL RESULTS⁴
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (µg/L)			Total PAHs ³ (µg/L)
				Naphthalene	BDL ²	BDL ²	
J-1	HJ1200	6.0 to 10.0	04/16/98	1.6 J			1.6
J-2	HJ2200	6.5 to 10.5	04/16/98	10.1 U			BDL ²
J-3	HJ3200	7.0 to 11.0	04/16/98	10.2 U			BDL ²
J-4	HJ4200	5.5 to 9.5	04/16/98	15 =			15
J-5	HJ5301	11.0 to 15.0	04/16/98	10.3 U			BDL ²
J-5	HJ5302	21.0 to 25.0	04/16/98	10 U			BDL ²
J-5	HJ5303	31.0 to 35.0	04/16/98	10 U			BDL ²
J-5	HJ5304	41.0 to 45.0	04/16/98	10 U			BDL ²
J-5	HJ5305	51.0 to 55.0	04/16/98	10 U			BDL ²
J-7	HJ7200	6.0 to 10.0	04/20/98	29.1 =			29.1
J-7	HJ7210 ⁵	6.0 to 10.0	04/20/98	39.9 =			39.9
Applicable Standards ¹				NRC			NRC

NOTE: ¹U.S. Environmental Protection Agency maximum contaminant level.
²BDL - 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.
³The 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.
⁴All field work and analytical sampling were performed prior to the release of the new Georgia Department of Natural Resources (GA DNR) Corrective Action Plan (CAP)-Part A Guidance (i.e., May 1998); therefore, the new analytical methods specified were not used.
⁵Duplicate sample for sample collected from location J-7 at a depth of 6.0 to 10.0 feet BGS.
BGS - Below ground surface.
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.
= - Indicates the compound was detected at the concentration reported.

UST 116, Building 9002
Hunter Army Airfield
Chatham County, Facility ID: 9-025112

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)
J-1	04/17/98	26.29	27.99	5.0 to 10.0	N/A	6.04	N/A	N/A	21.95
J-2	04/17/98	26.49	27.72	5.5 to 10.5	N/A	5.66	N/A	N/A	22.06
J-3	04/17/98	26.33	27.72	6.0 to 11.0	N/A	5.58	N/A	N/A	22.14
J-4	04/17/98	26.09	27.84	4.5 to 9.5	N/A	4.89	N/A	N/A	22.95
J-7	04/21/98	26.00	26.0	5.0 to 10.0	N/A	4.30	N/A	N/A	21.70

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

UST 116, Building 9200
Hunter Army Airfield
Chatham County, Facility ID: 9-025112

TABLE 5a: UST SYSTEM CLOSURE¹ - 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-DRO (mg/kg)	TPH-GRO (mg/kg)
8102-TK116-S1	12.0	09/26/96	BDL	BDL	BDL	BDL	BDL	BDL	N/A
Applicable Standards ²			0.008	6	10	700	NRC	NRC	NRC

NOTE: ¹Underground storage tank system closure performed by Anderson Columbia Environmental, Inc. (1996).

²Georgia Department of Natural Resources Applicable Soil Threshold Levels (i.e., Table A, column 2).

BDL - Below detection limit.

BGS - Below ground surface.

BTEX - Benzene, toluene, ethylbenzene, and xylene.

NRC - No regulatory criteria.

TPH-DRO - Total petroleum hydrocarbons-diesel-range organics.

TPH-GRO - Total petroleum hydrocarbons-gasoline-range organics.

UST 116, Building 9002
Hunter Army Airfield
Chatham County, Facility ID: 9-025112

TABLE 5b: UST SYSTEM CLOSURE¹ - 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-TK116-S1	12.0	09/26/96					BDL
Applicable Standards ²							NRC

NOTE: ¹Underground storage tank system closure performed by Anderson Columbia Environmental, Inc. (1996).

²Georgia Department of Natural Resources Applicable Soil Threshold Levels (i.e., Table A, column 2).

BDL - Below detection limit.

BGS - Below ground surface.

NRC - No regulatory criteria.

PAHs - Polynuclear aromatic hydrocarbons.

UST 116, Building 9002
Hunter Army Airfield
Chatham County, Facility ID: 9-025112

**TABLE 6a: UST SYSTEM CLOSURE¹ – 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)
8102-TK116-GW	12.0 ³	9/26/96	880	5,630	1,410	9,490	17,410
Applicable Standards ²			5	1,000	700	10,000	NRC

**TABLE 6b: UST SYSTEM CLOSURE¹ – GROUNDWATER
ANALYTICAL RESULTS
(POLYNUCLEAR AROMATIC HYDROCARBONS)**

Sample Location	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (µg/L)			Total PAHs (µg/L)
			Naphthalene	2-Methylnaphthalene	Pyrene	
8102-TK116-GW	12.0 ³	9/26/96	2,220	1,580	100	3,900
Applicable Standards ²			NRC	NRC	NRC	NRC

NOTE: ¹UST system closure performed by Anderson Columbia Environmental, Inc. (1996).
²U.S. Environmental Protection Agency maximum contaminant levels.
³As reported by Anderson Columbia Environmental, Inc. (1996), a groundwater sample was collected from the bottom of the tank pit excavation (approximately 12 feet BGS) when groundwater invaded the tank pit.
BDL - Below detection limit.
BGS - Below ground surface.
NRC - No regulatory criteria.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX III

WATER RESOURCES SURVEY DOCUMENTATION

THIS PAGE INTENTIONALLY LEFT BLANK

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 for all the Hunter Army Airfield (HAAF) UST investigation sites in April, May, and June 1998. 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 3890 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 5000 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 1000-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 5000-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 3a, 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 1477 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, 48,00 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 canals exist throughout HAAF. Most of these canals drain southwest into the Little Ogeechee River, which is part of the Lower Ogeechee watershed. The remaining drainage canals 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 are at least partially enclosed in culverts.

1.3 POTENTIAL RECEPTOR SURVEY SUMMARY OF THE UST 116, BUILDING 9002 SITE

A field potential receptor survey was conducted for the UST 116, Building 9002 site on April 30, 1998. The site and adjacent areas were surveyed for locations of surface water bodies, utility lines, and basements. Basements do not exist in the buildings adjacent to the site. Additional information, provided by the FS DPW and the City of Savannah Bureau of Water Operations, 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 UST 116, Building 9002 Site

The UST 116, Building 9002 site is located approximately 3,270 feet southeast (cross-gradient) of the City of Savannah Well 13, which is located on Montgomery Street (Figure 3c, Appendix I). Therefore, the UST 116, Building 9002 site is classified as being greater than 500 feet to a withdrawal point. Well 13 is part of the main public water supply system for the City of Savannah. This well is part of the public water supply system serving the population of the City of Savannah (Table III-B). Based on the estimated nature and extent of petroleum-related groundwater contamination at the site, there is no indication that Well 13 has been impacted (Figure 3c, Appendix I). Therefore, collection and analysis of groundwater samples from Well 13 is not recommended.

1.3.2 Surface Water Bodies Near the UST 116, Building 9002 Site

A drainage ditch is located approximately 1,600 feet west (downgradient) of the UST 116, Building 9002 site. There is no indication that this drainage ditch has been impacted by the site.

TABLES

THIS PAGE INTENTIONALLY LEFT BLANK

CAP-Part A UST Investigation Sites
Hunter Army Airfield, Chatham County

**TABLE III-A. WATER SUPPLY WELL INFORMATION PROVIDED
BY THE FORT STEWART 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	1300	525	7500	Public
1205	2	1941	600	250	1300	525	7500	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	1000	Unk	Unk	Non-public
8464	10	Unk	Unk	Unk	Unk	N/A	N/A	Non-public

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

CAP-Part A UST Investigation Sites
Hunter Army Airfield, Chatham County

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	1006	300	1362	Unk	Unk	Public
6	Unk	750	240	1500	Unk	Unk	Public
9	Unk	710	267	2700	Unk	Unk	Public
13	Unk	1000	270	2200	Unk	Unk	Public
14	Unk	800	338	571	Unk	Unk	Public
15	Unk	414	252	1000	Unk	Unk	Public
23	Unk	639	320	1056	Unk	Unk	Public
25	Unk	540	287	1120	Unk	Unk	Public
27	Unk	550	321	1468	Unk	Unk	Public
42	Unk	550	260	2100	Unk	Unk	Public

NOTE: gpm - Gallons per minute.
TBD - To be determined.
Unk - Unknown.

¹All wells are part of the same public water supply system serving the population of the City of Savannah.

APPENDIX IV

SOIL BORING LOGS

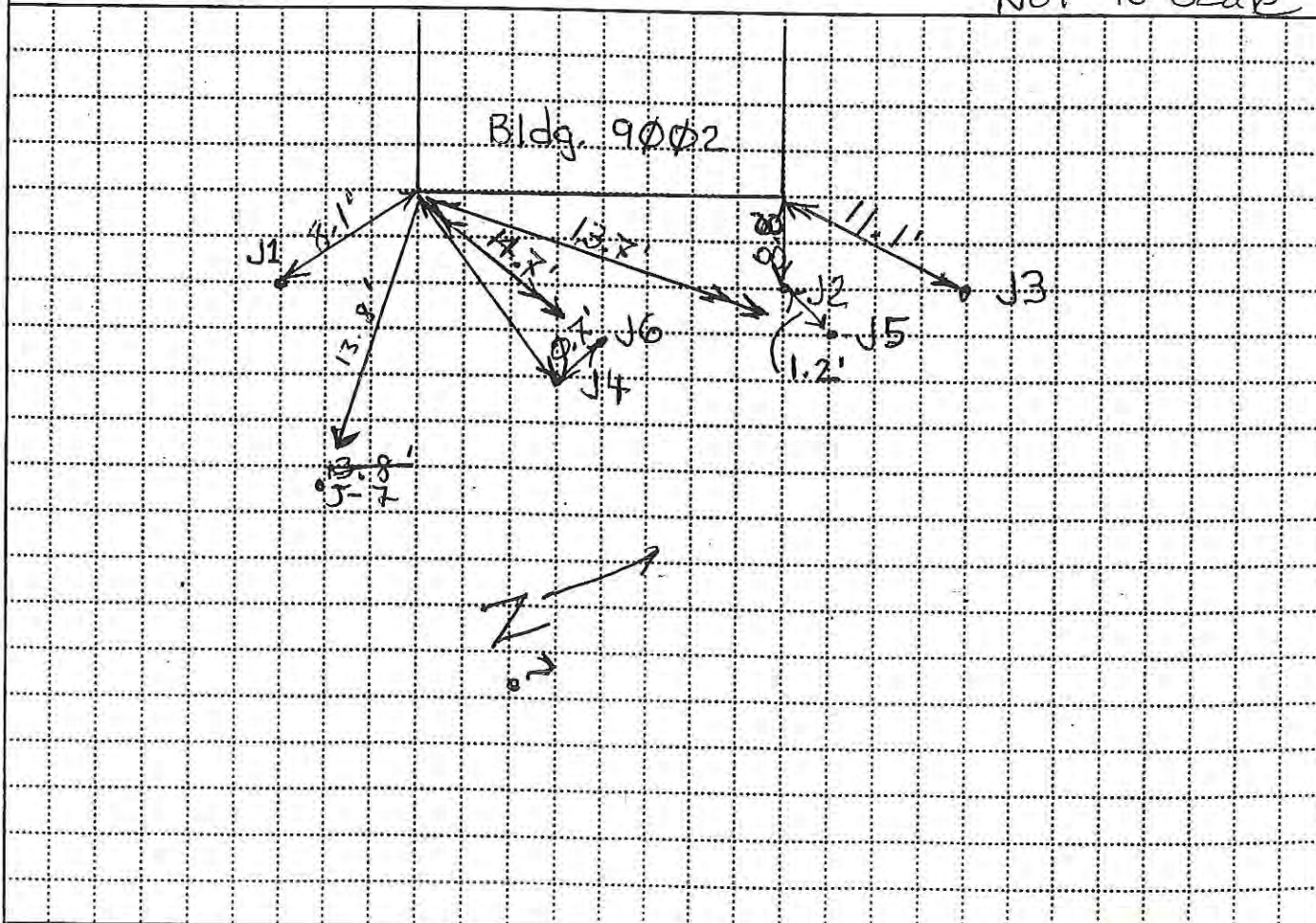
THIS PAGE INTENTIONALLY LEFT BLANK

HTRW DRILLING LOG		DISTRICT USCOE Savannah		HOLE NUMBER J1	
1. COMPANY NAME SAIC		2. DRILL SUBCONTRACTOR RE Wright (SAIC)		SHEET 1 OF 1	
3. PROJECT Hunter AAF CAP Part A UST Sites		4. LOCATION Bldg 9002 Tank 116			
5. NAME OF DRILLER Andy Knickerbocker		6. MANUFACTURER'S DESIGNATION OF DRILL Geoprobe Salina KA			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" dia macrocore		8. HOLE LOCATION J1			
9. SURFACE ELEVATION TBD		10. DATE STARTED 4-16-98			
11. DATE COMPLETED 4-16-98		12. OVERBURDEN THICKNESS NA			
13. DEPTH DRILLED INTO ROCK NA		15. DEPTH GROUNDWATER ENCOUNTERED 4.9'			
14. TOTAL DEPTH OF HOLE 8' 9.9' by 15' 9.9'		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED see water level log			
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) see water level log		18. GEOTECHNICAL SAMPLES			
DISTURBED NA		UNDISTURBED NA		19. TOTAL NUMBER OF CORE BOXES NA	
20. SAMPLES FOR CHEMICAL ANALYSIS 5:1 / water		21. TOTAL CORE RECOVERY % 81		22. DISPOSITION OF HOLE 1.2' monitor	
23. SIGNATURE OF INSPECTOR John B. Rives					

LOCATION SKETCH/COMMENTS

SCALE:

not to scale



PROJECT Hunter AAF CAP Part A UST Sites	HOLE NO. J1
---	-----------------------

ITEM (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)
	0'	0' to 0.1 Sand backfill Silty Sand (SM) 0.1 to 1.1 15% Silty Fine grained soft gradual	0' to 2' head space 580	0' to 2' HJ1101
		5YR3/2 dark reddish brown grading to 10YR6/4 light yellowish brown	head space 2' to 4' 25" 13	
4'		4.0' to 4.9' Same as above	4' to 5' head space	4' to 4.9' HJ1103
		WT		Start 1020 end 1025 drilled 4' recovered 4'
8'				

PROJECT

ROLL NO

HTRW DRILLING LOG		DISTRICT		USCOE Savannah		J2	
1. COMPANY NAME SAIC		2. DRILL SUBCONTRACTOR R E Wright (SAIC)		SHEET 1		SHEETS 1	
3. PROJECT Hunter AAF CAP Part A UST sites		4. LOCATION Bldg 9002 Tank 116					
5. NAME OF DRILLER Andy Knickerbocker		6. MANUFACTURERS DESIGNATION OF DRILL Geoprobe Salina KA					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" dia macrocore 2		8. HOLE LOCATION J2					
4' Acrylic liner, 1/2" to 1/4" cap 4.6 ft punch rods 3' & 4' large bore rods = 3' x 1.5" Green 3.5' x 1.5" dia		9. SURFACE ELEVATION TBD					
12. OVERBURDEN THICKNESS NA		10. DATE STARTED 4-16-98		11. DATE COMPLETED 4-16-98			
13. DEPTH DRILLED INTO ROCK NA		15. DEPTH GROUNDWATER ENCOUNTERED 6.0'					
14. TOTAL DEPTH OF HOLE 8' 11.0 ft by 2		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 6.0 ft					
18. GEOTECHNICAL SAMPLES NA		19. TOTAL NUMBER OF CORE BOXES NA					
20. SAMPLES FOR CHEMICAL ANALYSIS Soil/GW		DISTURBED NA		UNDISTURBED NA		21. TOTAL CORE RECOVERY % 46	
22. DISPOSITION OF HOLE Reamers		BACKFILLED NA		MONITORING WELL NA		OTHER (SPECIFY) NA	
				23. SIGNATURE OF INSPECTOR John B. Reamer			
LOCATION SKETCH/COMMENTS		SCALE:					
See page 55							
PROJECT HAAF UST		HOLE NO. J2					

DEPTH (ft)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	REPTECH SAMPLE OR CORE BOX NO (E)
0 to 1.7' poorly graded sand (SP) 10YR6/6 brownish yellow	0 to 2' head space Ø	NA	0 to 2' HJ21Ø1
2' to 4' head space Ø	4' to 6' head space Ø	NA	4' to 6' HJ24Ø3
WT			
8			

Start 1040
end 1045
drilled 4'
recovered 1.7

Start 1050
end 1055
drilled 4'
recovered 2.0'

PROJECT HAAF UST

HOLE NO J-2

HTRW DRILLING LOG		DISTRICT		USCOE Savannah		J3	
1. COMPANY NAME SAIC		2. DRILL SUBCONTRACTOR RE Wright (SAIC)		SHEET 1 of 1		SHEETS	
3. PROJECT Hunter AAF CAP Part A UST Sites		4. LOCATION Bldg 9002 Tank 116		6. MANUFACTURERS DESIGNATION OF DRILL Geoprobe Saliva KA		8. HOLE LOCATION J3	
5. NAME OF DRILLER Andy Knickerbocker		7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" dia macrocoring		9. SURFACE ELEVATION TBD		10. DATE STARTED 4-16-98	
11. DATE COMPLETED 4-16-98		12. OVERBURDEN THICKNESS NA		13. DEPTH DRILLED INTO ROCK NA		14. TOTAL DEPTH OF HOLE 8' 10.6 ft	
15. DEPTH GROUNDWATER ENCOUNTERED 5.6'		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED See water level log		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) See water level log		18. GEOTECHNICAL SAMPLES	
DISTURBED NA		UNDISTURBED NA		19. TOTAL NUMBER OF CORE BOXES NA		20. SAMPLES FOR CHEMICAL ANALYSIS	
Soil/Water		2/1		2/1		2/1	
21. DISPOSITION OF HOLE Backfilled		2/1		2/1		2/1	
22. SIGNATURE OF INSPECTOR John B. Reeves		2/1		2/1		2/1	
23. SCALE:		2/1		2/1		2/1	
LOCATION SKETCH/COMMENTS							
See page 55							
PROJECT Hunter AAF CAP Part A UST Sites				HOLE NO. J3			

DEPTH (A)	DESCRIPTION OF MATERIALS (B)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	
0 to 2'	Silty Sand (SM) 15% silt fine grained soft gradual 5 YR 3/2 dark reddish brown 10 YR 6/4 light yellowish brown	head space 0 to 2' Ø	NA	0 to 2' HJ31Ø1 Start 1115 end 112Ø drilled 4' recovered 2.Ø'
4.Ø to 4.6	Same as above	4' to 6' Ø	NA	4' to 6' HJ31Ø3 Start 1125 end 113Ø drilled 4' recovered 4'
10 YR 7/2 light gray sand (SW) Very fine grained wet soft WT		head space		
8'				

PROJECT

HAAAF UST

IV-8

HOLE NO

J3

HTRW DRILLING LOG		DISTRICT	
1. COMPANY NAME SAIC		USACE Savannah	
2. DRILL SUBCONTRACTOR RE Wright (SAIC)		J4	
3. PROJECT Hunter AAF CAP Part A UST Sites		4. LOCATION Bldg 9002 Tank J4	
5. NAME OF DRILLER Andy Knickerbocker		6. MANUFACTURERS DESIGNATION OF DRILL Geoprobe Salina KA	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" dia macrocone		8. HOLE LOCATION J4	
9. SURFACE ELEVATION TBD		10. DATE STARTED 4-16-98	
11. DATE COMPLETED 4-16-98		12. OVERBURDEN THICKNESS NA	
13. DEPTH DRILLED INTO ROCK NA		14. TOTAL DEPTH OF HOLE 9.8'	
15. DEPTH GROUNDWATER ENCOUNTERED 4.8'		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED see water level log	
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) see water level log		18. GEOTECHNICAL SAMPLES NA	
19. TOTAL NUMBER OF CORE BOXES NA		20. SAMPLES FOR CHEMICAL ANALYSIS Soil / water	
21. TOTAL CORE RECOVERY % 84		22. DISPOSITION OF HOLE Piezometer	
23. SIGNATURE OF INSPECTOR John B. Reeves		24. LOCATION SKETCH/COMMENTS See page 55	

SCALE:

PROJECT

Hunter AAF CAP Part A UST Sites

HOLE NO.

J4

ENG FORM 5056-R, AUG 94

(Proponent: CECW-EG)

77

116A (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	
	0'	0 to 0.2 Top soil 0.2 to 1.2 10YR3/2 Very dark grayish brown fine grained sand to 10YR5/8 yellowish brown fine grained silty sand with 15% silt (SM.)	0 to 2' head space 0	0 to 2' HJ4101 NA	Start 12:40 end 12:45 drilled 4' recovered 2.4'
	4'	4.0' to 4.8' Same as above WT	4' to 5' head space 130	4' to 6' HJ4103 NA	Start end drilled 4' recovered 4'
	8'				

PROJECT

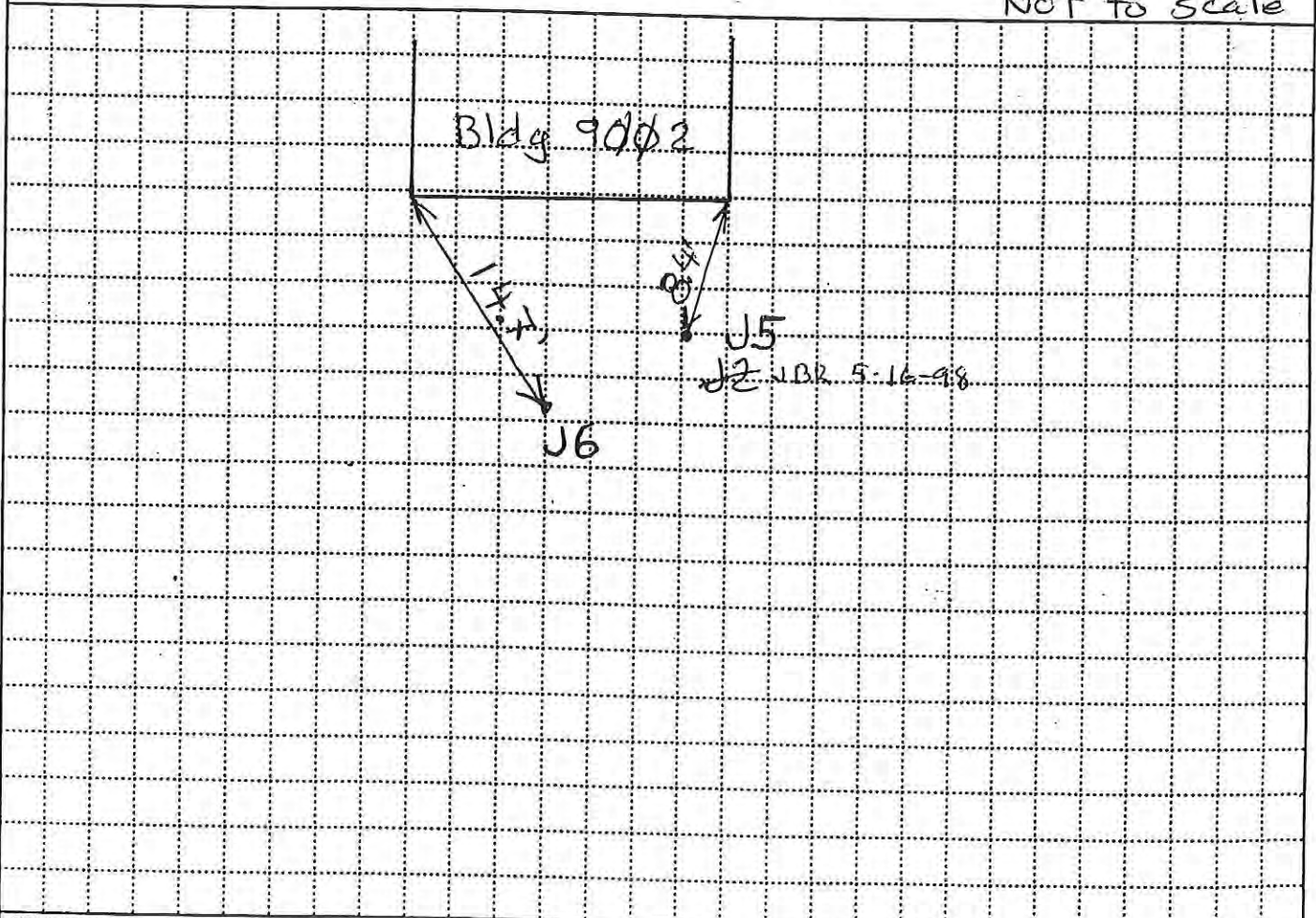
ROLL NO

HTRW DRILLING LOG		DISTRICT USACE Savannah		HOLE NUMBER J5+J6	
1. COMPANY NAME SAIC		2. DRILL SUBCONTRACTOR RE Wright (SAIC)		SHEET 1 OF 2	
3. PROJECT Hunter AAF CAP Part A UST Sites		4. LOCATION Bldg. 9002 Tank 116			
5. NAME OF DRILLER Andy Knickerbocker		6. MANUFACTURERS DESIGNATION OF DRILL Geoprobe Salina KA			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" dia macrocore accrete liner = 4' long steel to drive cap = 4.6' long; push rods = 3' and 4' long; large bore rods = 3' long and 1.5" diam; screen = 3.5' length		8. HOLE LOCATION J5 & J6 see sketch below			
		9. SURFACE ELEVATION TBD			
		10. DATE STARTED 4-16-98		11. DATE COMPLETED 4-16-98	
12. OVERBURDEN THICKNESS NA		15. DEPTH GROUNDWATER ENCOUNTERED 5'			
13. DEPTH DRILLED INTO ROCK NA		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED See water level log			
14. TOTAL DEPTH OF HOLE 55' BGS		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) See water level log			
18. GEOTECHNICAL SAMPLES NA	DISTURBED NA	UNDISTURBED 1	19. TOTAL NUMBER OF CORE BOXES NA		
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR John B. Reeves	
vertical profile	☒	NA	NA		

LOCATION SKETCH/COMMENTS

SCALE:

Not to scale



PROJECT Hunter AAF CAP Part A UST Tanks	HOLE NO. J5+J6
--	-----------------------

DEPTH (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	
	0'				78
5'		— WT —			
10'					
15'					
20'					
25'					
30'					
35'					
40'					
45'					
50'					

WT

sampld interval

10' below ground water surface
Sample HJ5301 taken
11-15' BGS

sampld interval

20' below ground water surface
Sample HJ5302 collected
21-25' BGS

sampld interval

30' below groundwater surface
Sample HJ5303 collected
31-35' BGS

sampld interval

40' below groundwater surface
sample HJ5304 collected
41-45' BGS

50' below groundwater surface
Sample HJ5305 collected

UST Investigation 51-55' BGS

sampld interval

HTRW DRILLING LOG		DISTRICT		USACE Savannah		D-6 J-7	
1. COMPANY NAME SAIC		2. DRILL SUBCONTRACTOR RE Wright (SAIC)		SHEET		SHEETS	
3. PROJECT Hunter AAF CAP Part A UST Sites		4. LOCATION Area J Building 9002, TK 116 Bldg 1346 Tank 108		5. NAME OF DRILLER Andy Knickerbocker		6. MANUFACTURERS DESIGNATION OF DRILL Geoprobe Saliva KS	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" dia macrocore. acetate inner = 4' length; shoe to drive cap = 4.6'; large bore foot = 3' lg.; 1.5" diam screen length = 3.5'		8. HOLE LOCATION ~ 1/4" 1-6 J-7		9. SURFACE ELEVATION TBD		10. DATE STARTED 4-20-98	
11. DATE COMPLETED 4-20-98		12. OVERBURDEN THICKNESS NA		13. DEPTH DRILLED INTO ROCK NA		14. TOTAL DEPTH OF HOLE 10.0 ft BGS	
15. DEPTH GROUNDWATER ENCOUNTERED 12.0 ft BGS 4.6 ft BGS		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED See water level log		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) See water level log		18. GEOTECHNICAL SAMPLES DISTURBED NA UNDISTURBED NA	
19. TOTAL NUMBER OF CORE BOXES NA		20. SAMPLES FOR CHEMICAL ANALYSIS Soil / water 3 / 6		21. TOTAL CORE RECOVERY % 3 / 6		22. DISPOSITION OF HOLE BACKFILLED NA MONITORING WELL 3 / 6	
23. SIGNATURE OF INSPECTOR M. Hall		24. SIGNATURE OF DRILLER A. Hall		25. SIGNATURE OF SUPERVISOR A. Hall		26. SIGNATURE OF QUALITY ASSURANCE A. Hall	
LOCATION SKETCH/COMMENTS See p. 55 LOGBOOK #8 (J-1) SCALE: NOT TO SCALE							
See page 113 log book #5 (vertical profile) for location of D6 see							
PROJECT Hunter AAF CAP Part A UST Sites				HOLE NO. D-6			

49

DEPTH (ft)	DESCRIPTION OF MATERIALS (ft)	FIELD SCREENING RESULTS (U)	GEOTECH SAMPLE OR CORE BOX NO (E)
1.0	SILTY FINE SAND ANGULAR TO SUBANGULAR QUARTZ GRAINS, poorly sorted (Bimodal). 20% silt Moist, soft; olive brown (2.54/4/4) ----- gradational contact	φ-Z HS = 42 ppm	HJ71φ1 HJ7111 (DUP)
2.0	Moist very fine grained sand; 5% - 10% silt, soft; moderately to well sorted, quartz grains angular to subangular		
3.0	NO RECOVERY 2.4 - 4.0		
4.0	SAME AS ABOVE (sand) ----- W.T. ----- 4.6	4.0 - 4.6 HS = 0 ppm	HJ71φ3
5.0			
6.0	----- gradational contact fine-grained, well sorted, subangular to subrounded quartz sand. wet (Sat- urated and soft); little to no silt		
7.0			
8.0			
9.0	Steel screened interval 6.0 - 10.0 for collection of water samples		HJ72φφ (Dup) HJ721φ (Split) HJ722φ
10.0	TD = 10.0 ft BGS		

Start: 150φ
Stop: 1505
Drilled: 4.0 ft
Recovery: 2.4 ft

NOTE: Did not have
to use hammer
on geoprobe rig.
PID screening of
entire interval
immediately after
pull revealed no
ORA READING =

Start: 151φ
Stop: 1515
Drilled: 4.0 ft
Recovery: 4.0 ft

NOTE: Did not have
to hammer on
geoprobe rig.

Start: 1515
Stop: 152φ
Drilled: 2.0 ft
Screened
Interval: 6.0
- 10.0

Water color is
light gray to tan;
pulled from sand

PROJECT

HAAF- CAP A UST SITES

HOLE NO

J-7

APPENDIX V

SOIL LABORATORY REPORTS

THIS PAGE INTENTIONALLY LEFT BLANK

UST 116, Building 9002
Hunter Army Airfield
Chatham County, Facility ID: 9-025112

TABLE V-A. SUMMARY OF SOIL ANALYTICAL RESULTS³

Location Sample ID Date Collected Depth (ft BGS)	Applicable Standards ¹	J-1 HJ1101 04/16/98 0.0 to 2.0	J-1 HJ1103 4/16/98 4.0 to 4.9	J-2 HJ2101 4/16/98 0.0 to 2.0	J-2 HJ2103 4/16/98 4.0 to 6.0	J-3 HJ3101 4/16/98 0.0 to 2.0	J-3 HJ3103 4/16/98 4.0 to 5.6	J-4 HJ4101 4/16/98 0.0 to 2.0
VOCs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	0.008	0.0022 U	0.0024 U	0.0021 U	0.0023 U	0.0022 UJ	0.0024 UJ	0.0023 U
Toluene	6.00	0.0022 U	0.0024 U	0.0021 U	0.0023 U	0.0022 UJ	0.0024 UJ	0.0094 =
Ethylbenzene	10.00	0.0022 U	0.0024 U	0.0021 U	0.0023 U	0.0022 UJ	0.0024 UJ	0.0023 U
Xylenes	700.00	0.0067 U	0.0072 U	0.0064 U	0.007 U	0.0067 UJ	0.0073 UJ	0.0029 J
TPH-DRO	NRC	1.53 U	1.36 U	1.14 U	32.72 U	1.21 U	1.31 U	0.67 U
TPH-GRO	NRC	0.562 UJ	0.602 U	0.532 U	0.581 UJ	0.562 UJ	0.610 UJ	0.575 U
PAHs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2-Chloronaphthalene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Acenaphthene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Acenaphthylene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Anthracene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Benzo(a)anthracene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Benzo(a)pyrene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Benzo(b)fluoranthene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Benzo(g,h,i)perylene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Benzo(k)fluoranthene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Chrysene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Dibenzo(a,h)anthracene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Fluoranthene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Fluorene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Indeno(1,2,3-cd)pyrene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Naphthalene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Phenanthrene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U
Pyrene	N/A ²	0.370 U	0.402 U	0.355 U	0.388 U	0.374 U	0.406 U	0.383 U

NOTE: ¹Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 2).

²Not applicable; the health-based threshold level exceeds the expected soil concentration under free product conditions.

³All field work and analytical sampling were performed prior to the release of the new GA DNR Corrective Action Plan (CAP)-Part A Guidance (i.e., May 1998); therefore, the new analytical methods specified were not used.

BGS - Below ground surface.

NRC - No regulatory criteria.

PAHs - Polynuclear aromatic hydrocarbons.

TPH-DRO - Total petroleum hydrocarbon-diesel-range organics.

TPH-GRO - Total petroleum hydrocarbon-gasoline-range organics.

VOCs - Volatile organic compounds.

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 RESULTS³ (continued)

Location Sample ID Date Collected Depth (ft BGS)	Applicable Standards ¹	J-4 HJ4103 04/16/98 4.0 to 4.8	J-4 HJ4110 ⁴ 04/16/98 4.0 to 4.8	J-7 HJ7101 04/20/98 0.0 to 2.0	J-7 HJ7111 ⁵ 04/20/98 0.0 to 2.0	J-7 HJ7103 04/20/98 4.0 to 4.6
VOCs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	0.008	0.0024 U	0.0025 U	0.0022 U	0.0023 U	0.0024 U
Toluene	6.00	0.0024 U	0.0025 U	0.0066 =	0.0067 =	0.0024 U
Ethylbenzene	10.00	0.0024 U	0.0025 U	0.0022 U	0.0023 U	0.0024 U
Xylenes	700.00	0.0073 U	0.0074 U	0.0067 U	0.0068 U	0.007 U
TPH-DRO	NRC	0.82 U	0.63 U	1.24 U	1.9 U	1.34 U
TPH-GRO	NRC	0.610 U	0.617 U	0.556 U	0.568 U	0.588 U
PAHs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2-Chloronaphthalene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Acenaphthene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Acenaphthylene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Anthracene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Benzo(a)anthracene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Benzo(a)pyrene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Benzo(b)fluoranthene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Benzo(g,h,i)perylene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Benzo(k)fluoranthene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Chrysene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Dibenzo(a,h)anthracene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Fluoranthene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Fluorene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Indeno(1,2,3-cd)pyrene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Naphthalene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Phenanthrene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U
Pyrene	N/A ²	0.406 U	0.406 U	0.365 U	0.376 U	0.386 U

NOTE: ¹Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 2).

²Not applicable; the health-based threshold level exceeds the expected soil concentration under free product conditions.

³All field work and analytical sampling were performed prior to the release of the new GA DNR Corrective Action Plan (CAP)-Part A Guidance (i.e., May 1998); therefore, the new analytical methods specified were not used.

⁴Duplicate sample for sample collected from location J-4 at a depth of 4.0 to 4.8 feet BGS.

⁵Duplicate sample for sample collected from location J-7 at a depth of 0.0 to 2.0 feet BGS.

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.

Laboratory Qualifier

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

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



Science Applications International Corporation
An Employee-Owned Company

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

CHAIN OF CUSTODY RECORD

COC NO.: 41698E

PROJECT NAME: CAP - Hunter AFB - Part A

PROJECT NUMBER: 0019

PROJECT MANAGER: Allison Bailey

Sampler (Signature)

(Printed Name)

REQUESTED PARAMETERS

LABORATORY NAME:

General Engineering Laboratory

LABORATORY ADDRESS:

2040 Savage Road
Charleston, SC 29417

PHONE NO: (803) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTX	PAH	DRP	GRO	TOC	No. of Bottles/Vials	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
HJ1101	4/16/98	1045	soil	X	X	X	X	X	2	580 ppm	0.0-2.0 PF
HJ2103	4/16/98	1055	soil	X	X	X	X	X	2	0.0 ppm	4.0-6.0 PF
HJ2101	4/16/98	1045	soil	X	X	X	X	X	2	0.0 ppm	0.0-2.0 PF
HJ3101	4/16/98	1120	soil	X	X	X	X	X	2	0.0 ppm	0.0-2.0 PF
HJ3104	4/16/98	1130	soil	X	X	X	X	X	2	0.0 ppm	0.0-2.0 PF
HJ3103	4/16/98	1130	soil	X	X	X	X	X	2	0.0 ppm	6.0-8.0 PF
									2	0.0 ppm	4.0-6.0 PF

RELINQUISHED BY: <i>Michael Hall</i>	DATE/TIME 4/16/98 1315	RECEIVED BY: <i>Debra S. B.</i>	DATE/TIME 4/16/98 1608	TOTAL NUMBER OF CONTAINERS: Cooler ID: 61	COOLER TEMPERATURE: 4°C
COMPANY NAME: SALC		COMPANY NAME: G.F.L.		FEDEX NUMBER: N/A	
RELINQUISHED BY: <i>John Hoover</i>	DATE/TIME 4/16/98 1315	RELINQUISHED BY:	DATE/TIME		
COMPANY NAME: G.F.L.		COMPANY NAME:			
RELINQUISHED BY: <i>John Hoover</i>	DATE/TIME 4/16/98 1630	RECEIVED BY:	DATE/TIME		
COMPANY NAME: G.F.L.		COMPANY NAME:			

THIS PAGE INTENTIONALLY LEFT BLANK



Science Applications International Corporation
An Employee-Owned Company

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

CHAIN OF CUSTODY RECORD

COC NO.: 4/698D

PROJECT NAME: CAP - Hunter AFB - Part A

PROJECT NUMBER: 0019

PROJECT MANAGER: Allison Bailey

Sampler (Signature) Mitchell Hall

(Printed Name) Mitchell Hall

REQUESTED PARAMETERS

LABORATORY NAME:
General Engineering Laboratory

LABORATORY ADDRESS:
2040 Savage Road
Charleston, SC 29417

PHONE NO: (803) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	DRP	GRO	TOC	No. of Bottles/Vials	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
HI1102	4/15/98	0905	Soil	X	X	X	X	X	2	NA	2.0 - 4.0 ft
HI1104	4/15/98	0915	Soil	X	X	X	X	X	2	NA	6.0 - 8.0 ft
HI4103	4/15/98	1305	Soil	X	X	X	X	X	2	NA	4.0 - 5.0 ft
HI4101	4/15/98	1245	Soil	X	X	X	X	X	2	NA	0.5 - 2.5 ft
HI3110	4/15/98	1125	Soil	X	X	X	X	X	2	NA	1.0 - 2.8 ft
HI2103	4/15/98	1045	Soil	X	X	X	X	X	2	NA	4.0 - 5.0 ft
HI2101	4/15/98	1030	Soil	X	X	X	X	X	2	NA	1.0 - 2.7 ft
HI8400	4/15/98	1350	Soil	X	X	X	X	X	1	NA	2-4 ft
HI3101	4/15/98	1125	Soil	X	X	X	X	X	2	NA	1.0 - 2.8 ft
HI3103	4/15/98	1135	Soil	X	X	X	X	X	2	NA	4.0 - 4.8 ft
HI5103	4/15/98	1415	Soil	X	X	X	X	X	2	NA	4.0 - 4.6 ft
HI5101	4/15/98	1400	Soil	X	X	X	X	X	2	NA	0.0 - 2.0 ft
HI1103	4/16/98	1025	Soil	X	X	X	X	X	2	NA	4.0 - 5.0 ft

RELINQUISHED BY: Mitchell Hall	Date/Time: 4/15/98	RECEIVED BY:	Date/Time: 4/15/98	TOTAL NUMBER OF CONTAINERS: 25	Cooler ID: 61	Cooler Temperature: 4°C
COMPANY NAME: SAIC		COMPANY NAME:				FEDEX NUMBER: NA

RECEIVED BY: Mitchell Hall	Date/Time: 4/16/98	RELINQUISHED BY:	Date/Time:
COMPANY NAME: SAIC	1315	COMPANY NAME:	
RECEIVED BY: Mitchell Hall	Date/Time: 4/16/98	RECEIVED BY:	Date/Time:
COMPANY NAME: SAIC	1630	COMPANY NAME:	

THIS PAGE INTENTIONALLY LEFT BLANK

THIS PAGE INTENTIONALLY LEFT BLANK



800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4000

CHAIN OF CUSTODY RECORD

COC NO.: 422987

PROJECT NAME: CAP - Hunter AFB - Part A

PROJECT NUMBER: 0019

PROJECT MANAGER: Allison Bailey

Sampler (Signature) *Robert H. Hall* (Printed Name) Mitchell Hall

REQUESTED PARAMETERS

LABORATORY NAME:
General Engineering Laboratory

LABORATORY ADDRESS:
2040 Savage Road
Charleston, SC 29417

PHONE NO: (803) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	Requested Parameters										No. of Bottles/Vials	OVA Screening	Observations, Comments, Special Instructions
				BTEX	PAH	DRB	GRO	TOC								
HJ7111	4/20/98	1505	Soil	X	X	X	X	X	X	X	X	X	X	2	42 ppm	0.0 - 2.0 ft B
HJ7101	4/20/98	1505	Soil	X	X	X	X	X	X	X	X	X	X	2	42 ppm	0.0 - 2.0 ft B
HJ7103	4/20/98	1515	Soil	X	X	X	X	X	X	X	X	X	X	2	0 ppm	4.0 - 4.6 ft B
HI9101	4/21/98	0830	Soil	X	X	X	X	X	X	X	X	X	X	2	2000 ppm	0.0 - 2.0 ft B
HI9111	4/21/98	0830	Soil	X	X	X	X	X	X	X	X	X	X	2	2000 ppm	0.0 - 2.0 ft B
HI9103	4/21/98	0840	Soil	X	X	X	X	X	X	X	X	X	X	2	2000 ppm	4.0 - 5.5 ft B
HI A101	4/21/98	1000	Soil	X	X	X	X	X	X	X	X	X	X	2	100 ppm	0.0 - 2.0 ft B
HI A103	4/21/98	1000	Soil	X	X	X	X	X	X	X	X	X	X	2	250 ppm	4.0 - 4.8 ft B
HI B111	4/21/98	1110	Soil	X	X	X	X	X	X	X	X	X	X	2	220 ppm	0.0 - 2.0 ft B
HI B103	4/21/98	1125	Soil	X	X	X	X	X	X	X	X	X	X	2	2000 ppm	4.0 - 4.6 ft B
HI B101	4/21/98	1110	Soil	X	X	X	X	X	X	X	X	X	X	2	220 ppm	0.0 - 2.0 ft B
HG7101	4/22/98	0930	Soil	X	X	X	X	X	X	X	X	X	X	2	2000 ppm	0.0 - 2.3 ft B
HG7111	4/22/98	0930	Soil	X	X	X	X	X	X	X	X	X	X	2	2000 ppm	0.0 - 2.3 ft B

RELINQUISHED BY: <i>Mitchell Hall</i>	Date/Time: 4/22/98	RECEIVED BY: <i>[Signature]</i>	Date/Time: 4/22/98	TOTAL NUMBER OF CONTAINERS: 26	Cooler Temperature: 4°C
COMPANY NAME: <i>SAI</i>		COMPANY NAME: <i>SAI</i>		Cooler ID: 538	FEDEX NUMBER: <i>NA</i>

RECEIVED BY: <i>[Signature]</i>	Date/Time: 4/22/98	RELINQUISHED BY: <i>[Signature]</i>	Date/Time: 1720
COMPANY NAME: <i>SAI</i>		COMPANY NAME: <i>SAI</i>	
RECEIVED BY: <i>[Signature]</i>	Date/Time: 4/23/98	RELINQUISHED BY: <i>[Signature]</i>	Date/Time: 1720
COMPANY NAME: <i>SAI</i>		COMPANY NAME: <i>SAI</i>	

THIS PAGE INTENTIONALLY LEFT BLANK



COC NO.: 42378A

THIS PAGE INTENTIONALLY LEFT BLANK

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ1101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA

Case No.: NA

SAS No.: NA

SDG No.: HA015S

Matrix: (soil/water) SOIL

Lab Sample ID: 9804404-01

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 2F506

Level: (low/med) LOW

Date Received: 04/16/98

% Moisture: not dec. 11

Date Analyzed: 04/24/98

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

Dilution Factor: 1.0

Soil Extract Volume: _____ (ml)

Soil Aliquot Volume: _____ (uL)

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Q

71-43-2-----	Benzene	2.2	U
108-88-3-----	Toluene	2.2	U
100-41-4-----	Ethylbenzene	2.2	U
1330-20-7-----	Xylenes (total)	6.7	U

↓

FORM I VOA

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Science Applications 16-APR-1998 SA

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

HJ1101

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-01

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 4E30028

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: 11 decanted: (Y/N) N Date Extracted: 04/23/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 04/29/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
---------	----------	---	---

-----Diesel Range Organics	1.53	CB	
----------------------------	------	----	--

V F01,
F06

FORM I SV

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ1101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA0155

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-01

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1F4014

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: not dec. 11 Date Analyzed: 04/23/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
---------	----------	---	---

-----Gasoline Range Organics	562	U	VJ 602
------------------------------	-----	---	--------

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ1101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA
Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S
Matrix: (soil/water) SOIL Lab Sample ID: 9804404-01
Sample wt/vol: 30.4 (g/mL) G Lab File ID: 4Q409
Level: (low/med) LOW Date Received: 04/16/98
% Moisture: 11 decanted: (Y/N) N Date Extracted: 04/21/98
Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 04/23/98
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	370 U	V ↓
91-58-7	2-chloronaphthalene	370 U	
208-96-8	acenaphthylene	370 U	
83-32-9	acenaphthene	370 U	
86-73-7	fluorene	370 U	
85-01-8	phenanthrene	370 U	
120-12-7	anthracene	370 U	
206-44-0	fluoranthene	370 U	
129-00-0	pyrene	370 U	
56-55-3	benzo (a) anthracene	370 U	
218-01-9	chrysene	370 U	
205-99-2	benzo (b) fluoranthene	370 U	
207-08-9	benzo (k) fluoranthene	370 U	
50-32-8	benzo (a) pyrene	370 U	
193-39-5	indeno (1,2,3-cd) pyrene	370 U	
53-70-3	dibenz (a,h) anthracene	370 U	
191-24-2	benzo (g,h,i) perylene	370 U	

FORM I SV-1

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ1103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA

Case No.: NA

SAS No.: NA

SDG No.: HA015S

Matrix: (soil/water) SOIL

Lab Sample ID: 9804404-17

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 2G2015

Level: (low/med) LOW

Date Received: 04/16/98

% Moisture: not dec. 17

Date Analyzed: 04/28/98

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

Dilution Factor: 1.0

Soil Extract Volume: _____ (ml)

Soil Aliquot Volume: _____ (uL)

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Q

71-43-2-----	Benzene	2.4	U
108-88-3-----	Toluene	2.4	U
100-41-4-----	Ethylbenzene	2.4	U
1330-20-7-----	Xylenes (total)	7.2	U

U
↓

FORM I VOA

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Science Applications 16-APR-1998 SA

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

HJ1103

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HAC15S

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-17

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 4E30055

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: 17 decanted: (Y/N) N Date Extracted: 04/23/98

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

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/KG

Q

-----Diesel Range Organics	1.36	JB
----------------------------	------	----

U F01,
F06

FORM I SV

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ1103RE

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-17

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1F5022

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: not dec. 17 Date Analyzed: 04/24/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	UG/KG	
-----	Gasoline Range Organics	602	U	U

USE

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ1103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA
Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S
Matrix: (soil/water) SOIL Lab Sample ID: 9804404-17
Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4R105
Level: (low/med) LOW Date Received: 04/16/98
% Moisture: 17 decanted: (Y/N) N Date Extracted: 04/21/98
Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 04/27/98
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
91-20-3	naphthalene	402	U	V
91-58-7	2-chloronaphthalene	402	U	
208-96-8	acenaphthylene	402	U	
83-32-9	acenaphthene	402	U	
86-73-7	fluorene	402	U	
85-01-8	phenanthrene	402	U	
120-12-7	anthracene	402	U	
206-44-0	fluoranthene	402	U	
129-00-0	pyrene	402	U	
56-55-3	benzo (a) anthracene	402	U	
218-01-9	chrysene	402	U	
205-99-2	benzo (b) fluoranthene	402	U	
207-08-9	benzo (k) fluoranthene	402	U	
50-32-8	benzo (a) pyrene	402	U	
193-39-5	indeno (1,2,3-cd) pyrene	402	U	
53-70-3	dibenz (a,h) anthracene	402	U	
191-24-2	benzo (g,h,i) perylene	402	U	

FORM I SV-1

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ2101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-03

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2G2019

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: not dec. 6 Date Analyzed: 04/28/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	UG/KG	
71-43-2-----	Benzene	2.1	U	↓
108-88-3-----	Toluene	2.1	U	
100-41-4-----	Ethylbenzene	2.1	U	
1330-20-7-----	Xylenes (total)	6.4	U	

FORM I VOA

FORM 1 Science Applications
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 16-APR-1998 SA

Lab Name: GENERAL ENGINEERING LABOR Contract: NA
Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S
Matrix: (soil/water) SOIL Lab Sample ID: 9804404-03
Sample wt/vol: 30.4 (g/mL) G Lab File ID: 4E30042
Level: (low/med) LOW Date Received: 04/16/98
% Moisture: 6 decanted: (Y/N) N Date Extracted: 04/23/98
Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 04/29/98
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG		Q
-----	Diesel Range Organics	1.14	JB	

V F01,
F06

FORM I SV

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

HJ2101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-03

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1F4016

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: not dec. 6 Date Analyzed: 04/23/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	UG/KG	
-----	Gasoline Range Organics	532	U	U

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ2101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-03

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Q411

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: 6 decanted: (Y/N) N Date Extracted: 04/21/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 04/23/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
91-20-3	-----naphthalene	355	U	U
91-58-7	-----2-chloronaphthalene	355	U	
208-96-8	-----acenaphthylene	355	U	
83-32-9	-----acenaphthene	355	U	
86-73-7	-----fluorene	355	U	
85-01-8	-----phenanthrene	355	U	
120-12-7	-----anthracene	355	U	
206-44-0	-----fluoranthene	355	U	
129-00-0	-----pyrene	355	U	
56-55-3	-----benzo (a) anthracene	355	U	
218-01-9	-----chrysene	355	U	
205-99-2	-----benzo (b) fluoranthene	355	U	
207-08-9	-----benzo (k) fluoranthene	355	U	
50-32-8	-----benzo (a) pyrene	355	U	
193-39-5	-----indeno (1,2,3-cd) pyrene	355	U	
53-70-3	-----dibenz (a,h) anthracene	355	U	
191-24-2	-----benzo (g,h,i) perylene	355	U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ2103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-02

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2F509

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: not dec. 14 Date Analyzed: 04/24/98

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

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

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

71-43-2-----	Benzene	2.3	U
108-88-3-----	Toluene	2.3	U
100-41-4-----	Ethylbenzene	2.3	U
1330-20-7-----	Xylenes (total)	7.0	U

U
↓

DATA VALIDATION
COPY

FORM I VOA

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
Science Applications 16-APR-1998 SA

Lab Name: GENERAL ENGINEERING LABOR Contract: NA
Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S
Matrix: (soil/water) SOIL Lab Sample ID: 9804404-02
Sample wt/vol: 30.4 (g/mL) G Lab File ID: 4E30041
Level: (low/med) LOW Date Received: 04/16/98
% Moisture: 14 decanted: (Y/N) N Date Extracted: 04/23/98
Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 04/29/98
Injection Volume: 1.0 (uL) Dilution Factor: 10.0
GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	MG/KG	
-----	Diesel Range Organics	32.72	B	

u F01,
F07

FORM I SV

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ2103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA0159

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-02

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1F4015

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: not dec. 14 Date Analyzed: 04/23/98

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

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

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

-----Gasoline Range Organics	581	U
------------------------------	-----	---

FORM I VOA

Location: AREA J
Station : J-2

HJ2103 4.0 - 6.0 FT Field Sample Type: Grab Matrix: Soil Collected: 04/16/98

Sample Type	Gasoline Range Organics	Result	Units	Qualifiers Lab Data	Validation Code
REG	TPH-Gasoline Range Organics	581	UG/KG	U	UJ Gd2

Location: AREA J
Station : J-3

HJ3101 0.0 - 2.0 FT Field Sample Type: Grab Matrix: Soil Collected: 04/16/98

Sample Type	Gasoline Range Organics	Result	Units	Qualifiers Lab Data	Validation Code
REG	TPH-Gasoline Range Organics	562	UG/KG	U	UJ Gd2

HJ3103 4.0 - 5.6 FT Field Sample Type: Grab Matrix: Soil Collected: 04/16/98

Sample Type	Gasoline Range Organics	Result	Units	Qualifiers Lab Data	Validation Code
REG	TPH-Gasoline Range Organics	610	UG/KG	U	UJ Gd2

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

HJ2103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA
Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S
Matrix: (soil/water) SOIL Lab Sample ID: 9804404-02
Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Q410
Level: (low/med) LOW Date Received: 04/16/98
% Moisture: 14 decanted: (Y/N) N Date Extracted: 04/21/98
Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 04/23/98
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
91-20-3	-----naphthalene	388	U	U ↓
91-58-7	-----2-chloronaphthalene	388	U	
208-96-8	-----acenaphthylene	388	U	
83-32-9	-----acenaphthene	388	U	
86-73-7	-----fluorene	388	U	
85-01-8	-----phenanthrene	388	U	
120-12-7	-----anthracene	388	U	
206-44-0	-----fluoranthene	388	U	
129-00-0	-----pyrene	388	U	
56-55-3	-----benzo (a) anthracene	388	U	
218-01-9	-----chrysene	388	U	
205-99-2	-----benzo (b) fluoranthene	388	U	
207-08-9	-----benzo (k) fluoranthene	388	U	
50-32-8	-----benzo (a) pyrene	388	U	
193-39-5	-----indeno (1,2,3-cd) pyrene	388	U	
53-70-3	-----dibenz (a,h) anthracene	388	U	
191-24-2	-----benzo (g,h,i) perylene	388	U	

THIS PAGE INTENTIONALLY LEFT BLANK

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ3101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

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

SDG No.: HA015S

Matrix: (soil/water) SOIL

Lab Sample ID: 9804404-04

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 2F5016

Level: (low/med) LOW

Date Received: 04/16/98

% Moisture: not dec. 11

Date Analyzed: 04/24/98

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

Dilution Factor: 1.0

Soil Extract Volume: (ml)

Soil Aliquot Volume: (uL)

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Q

71-43-2-----	Benzene	2.2	U
108-88-3-----	Toluene	2.2	U
100-41-4-----	Ethylbenzene	2.2	U
1330-20-7-----	Xylenes (total)	6.7	U

VT 0.5
↓ ↓

FORM I VOA

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Science Applications 16-APR-1998 SA

HJ3101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-04

Sample wt/vol: 30.5 (g/mL) G Lab File ID: 4E30031

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: 11 decanted: (Y/N) N Date Extracted: 04/23/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 04/29/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
---------	----------	---	---

-----Diesel Range Organics	1.21	JB
----------------------------	------	----

V Fφ₁
Fφ₆

FORM I SV

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ3101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA0159

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-04

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1F505

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: not dec. 11 Date Analyzed: 04/24/98

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

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

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Q

-----Gasoline Range Organics	562	U
------------------------------	-----	---

FORM I VOA

Location: AREA J
Station: J-2

HJ2103 4.0 - 6.0 FT Field Sample Type: Grab Matrix: Soil Collected: 04/16/98

Sample Type	Gasoline Range Organics	Result	Units	Qualifiers Lab Data	Validation Code
REG	TPH-Gasoline Range Organics	581	UG/KG	U	US Gd2

Location: AREA J
Station: J-3

HJ3101 0.0 - 2.0 FT Field Sample Type: Grab Matrix: Soil Collected: 04/16/98

Sample Type	Gasoline Range Organics	Result	Units	Qualifiers Lab Data	Validation Code
REG	TPH-Gasoline Range Organics	562	UG/KG	U	US Gd2

HJ3103 4.0 - 5.6 FT Field Sample Type: Grab Matrix: Soil Collected: 04/16/98

Sample Type	Gasoline Range Organics	Result	Units	Qualifiers Lab Data	Validation Code
REG	TPH-Gasoline Range Organics	610	UG/KG	U	US Gd2

1B
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

HJ3101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA
 Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S
 Matrix: (soil/water) SOIL Lab Sample ID: 9804404-04
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Q412
 Level: (low/med) LOW Date Received: 04/16/98
 % Moisture: 11 decanted: (Y/N) N Date Extracted: 04/21/98
 Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 04/23/98
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	374 U	V ↓
91-58-7	2-chloronaphthalene	374 U	
208-96-8	acenaphthylene	374 U	
83-32-9	acenaphthene	374 U	
86-73-7	fluorene	374 U	
85-01-8	phenanthrene	374 U	
120-12-7	anthracene	374 U	
206-44-0	fluoranthene	374 U	
129-00-0	pyrene	374 U	
56-55-3	benzo (a) anthracene	374 U	
218-01-9	chrysene	374 U	
205-99-2	benzo (b) fluoranthene	374 U	
207-08-9	benzo (k) fluoranthene	374 U	
50-32-8	benzo (a) pyrene	374 U	
193-39-5	indeno (1,2,3-cd) pyrene	374 U	
53-70-3	dibenz (a,h) anthracene	374 U	
191-24-2	benzo (g,h,i) perylene	374 U	

THIS PAGE INTENTIONALLY LEFT BLANK

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ3103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S

Matrix: (soil/water) SOIL

Lab Sample ID: 9804404-05

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 2F5017

Level: (low/med) LOW

Date Received: 04/16/98

% Moisture: not dec. 18

Date Analyzed: 04/24/98

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

Dilution Factor: 1.0

Soil Extract Volume: _____ (ml)

Soil Aliquot Volume: _____ (uL)

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Q

71-43-2-----	Benzene	2.4	U
108-88-3-----	Toluene	2.4	U
100-41-4-----	Ethylbenzene	2.4	U
1330-20-7-----	Xylenes (total)	7.3	U

VJ cph
↓ ↓

QUALIFICATION

6.1

FORM I VOA

FORM 1 Science Applications 16-APR-1998 SA
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

HJ3103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-05

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 4E30032

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: 18 decanted: (Y/N) N Date Extracted: 04/23/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 04/29/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG		Q
	-----Diesel Range Organics	1.31	JB	

V F01,
F06

FORM I SV

CAP Invest. for former UST at Hunter Army Airfield

Hunter Army Airfield UST CAP-A Report
UST 116, Building 9002, Facility ID: 9-025112Location: AREA J
Station : J-2

HJ2103 4.0 - 6.0 FT Field Sample Type: Grab Matrix: Soil Collected: 04/16/98

Sample Type	Gasoline Range Organics	Result	Units	Qualifiers Lab Data	Validation Code
REG	TPH-Gasoline Range Organics	581	UG/KG	U	US Gd2

Location: AREA J
Station : J-3

HJ3101 0.0 - 2.0 FT Field Sample Type: Grab Matrix: Soil Collected: 04/16/98

Sample Type	Gasoline Range Organics	Result	Units	Qualifiers Lab Data	Validation Code
REG	TPH-Gasoline Range Organics	562	UG/KG	U	US Gd2

HJ3103 4.0 - 5.6 FT Field Sample Type: Grab Matrix: Soil Collected: 04/16/98

Sample Type	Gasoline Range Organics	Result	Units	Qualifiers Lab Data	Validation Code
REG	TPH-Gasoline Range Organics	610	UG/KG	U	US Gd2

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ3103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA0158

Matrix: (soil/water) SOIL Lab Sample ID: 9804404-05

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1F4018

Level: (low/med) LOW Date Received: 04/16/98

% Moisture: not dec. 18 Date Analyzed: 04/23/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/KG
-----	Gasoline Range Organics	610	U

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

H03103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA
Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA015S
Matrix: (soil/water) SOIL Lab Sample ID: 9804404-05
Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4Q413
Level: (low/med) LOW Date Received: 04/16/98
% Moisture: 18 decanted: (Y/N) N Date Extracted: 04/21/98
Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 04/23/98
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
91-20-3	-----naphthalene	406	U	U ↓
91-58-7	-----2-chloronaphthalene	406	U	
208-96-8	-----acenaphthylene	406	U	
83-32-9	-----acenaphthene	406	U	
86-73-7	-----fluorene	406	U	
85-01-8	-----phenanthrene	406	U	
120-12-7	-----anthracene	406	U	
206-44-0	-----fluoranthene	406	U	
129-00-0	-----pyrene	406	U	
56-55-3	-----benzo (a) anthracene	406	U	
218-01-9	-----chrysene	406	U	
205-99-2	-----benzo (b) fluoranthene	406	U	
207-08-9	-----benzo (k) fluoranthene	406	U	
50-32-8	-----benzo (a) pyrene	406	U	
193-39-5	-----indeno (1,2,3-cd) pyrene	406	U	
53-70-3	-----dibenz (a,h) anthracene	406	U	
191-24-2	-----benzo (g,h,i) perylene	406	U	

THIS PAGE INTENTIONALLY LEFT BLANK

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ4101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

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

SDG No.: HA017S

Matrix: (soil/water) SOIL

Lab Sample ID: 9804468-02

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 2G305

Level: (low/med) LOW

Date Received: 04/17/98

% Moisture: not dec. 13

Date Analyzed: 04/29/98

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

Dilution Factor: 1.0

Soil Extract Volume: _____ (ml)

Soil Aliquot Volume: _____ (uL)

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Q

71-43-2-----Benzene	2.3	U
108-88-3-----Toluene	9.4	
100-41-4-----Ethylbenzene	2.3	U
1330-20-7-----Xylenes (total)	2.9	J

5126

FORM 1 Science Applications
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 17-APR-1998 SA

HJ4101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA017S

Matrix: (soil/water) SOIL Lab Sample ID: 9804468-02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5A8008

Level: (low/med) LOW Date Received: 04/17/98

% Moisture: 13 decanted: (Y/N) N Date Extracted: 04/28/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
---------	----------	---	---

-----Diesel Range Organics	0.67	JB
----------------------------	------	----

U F01, F06

EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

HJ4101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA017S

Matrix: (soil/water) SOIL Lab Sample ID: 9804468-02

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1G4019

Level: (low/med) LOW Date Received: 04/17/98

% Moisture: not dec. 13 Date Analyzed: 04/30/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
---------	----------	---	---

-----Gasoline Range Organics	575	U	U
------------------------------	-----	---	---

FORM I VOA

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ4101

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA017S

Matrix: (soil/water) SOIL Lab Sample ID: 9804468-02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 1S111

Level: (low/med) LOW Date Received: 04/17/98

% Moisture: 13 decanted: (Y/N) N Date Extracted: 04/22/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/04/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

91-20-3-----	naphthalene	383	U
91-58-7-----	2-chloronaphthalene	383	U
208-96-8-----	acenaphthylene	383	U
83-32-9-----	acenaphthene	383	U
86-73-7-----	fluorene	383	U
85-01-8-----	phenanthrene	383	U
120-12-7-----	anthracene	383	U
206-44-0-----	fluoranthene	383	U
129-00-0-----	pyrene	383	U
56-55-3-----	benzo(a)anthracene	383	U
218-01-9-----	chrysene	383	U
205-99-2-----	benzo(b)fluoranthene	383	U
207-08-9-----	benzo(k)fluoranthene	383	U
50-32-8-----	benzo(a)pyrene	383	U
193-39-5-----	indeno(1,2,3-cd)pyrene	383	U
53-70-3-----	dibenz(a,h)anthracene	383	U
191-24-2-----	benzo(g,h,i)perylene	383	U

U
↓

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HJ4103

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HA017S

Matrix: (soil/water) SOIL Lab Sample ID: 9804468-04

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2G306

Level: (low/med) LOW Date Received: 04/17/98

% Moisture: not dec. 18 Date Analyzed: 04/29/98

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

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

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

71-43-2-----Benzene	2.4	U	U ↓
108-88-3-----Toluene	2.4	U	
100-41-4-----Ethylbenzene	2.4	U	
1330-20-7-----Xylenes (total)	7.3	U	

FORM I VOA