APPENDIX V:

FATE AND TRANSPORT MODELING RESULTS

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FATE AND TRANSPORT MODELING

Fate and transport modeling for Underground Storage Tank (UST) 100A was conducted based upon the analytical data obtained from 14 monitoring wells screened in the surficial groundwater (March 2009).

Benzene was the primary constituent modeled because, historically, only this contaminant has ever been detected above its respective screening criteria, the In-Stream Water Quality Standard (IWQS) of 51 µg/L for groundwater and the soil threshold level of 0.800 mg/kg in soil. However, the maximum concentration of benzene detected in the surficial groundwater in March 2009 was 44.8 µg/L at MW14, which is below the IWQS. Table V-1 presents a summary of the inputs for the modeling for benzene in groundwater. The groundwater results for benzene from calendar year 2009 were used to validate and/or update the transport model, as discussed below.

The Analytical Transient 1-, 2-, 3-Dimensional model (GSC 1998; Yeh 1981) was run utilizing the March 2009 sampling results. The results of the modeling indicate that benzene migration from UST 100A is not expected to be of concern at the nearest receptor location (man-made drainage ditch, approximately 450 ft southwest of the site). The benzene concentration is not expected to ever exceed a concentration of 1 µg/L beyond 50 ft downgradient from MW14 (Figure V-1 and Table V-2). At a distance of 10 ft downgradient from MW14, the modeled expected concentration of approximately 40 µg/L is below the IWQS of 51 µg/L. The dilution attenuation factors calculated for UST 100A are presented in Table V-2, and the results of modeling the concentration of benzene below the source are shown in Figure V-2.

References

GSC (General Sciences Corporation) 1996. *RISKPRO®'s SESOIL for Windows*, General Sciences Corporation, Laurel, Maryland.

Yeh, G. T., 1981. *AT123D: Analytical Transient One-, Two-, and Three-Dimensional Simulation of Waste Transport in the Aquifer System*, Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee, Publication No. 1439.

Table V-1. Summary of Input Parameters Used for AT123D Modeling of Benzene, UST 100A, Northwest of Building 1340

Parameter	March 2009
Release Rate (mg/hr)	Variable (0 to 3.1)
Plume Size (m × m)	17 × 3
Bulk Density (g/cc)	1.69
Effective Porosity (%)	20
Hydraulic Conductivity (m/hr)	0.055
Hydraulic Gradient (m/m)	0.0073
Kd (L/kg)	0.5589
Longitudinal Dispersivity (m)	16
Transverse Dispersivity (m)	6
Vertical Dispersivity (m)	1
Molecular Diffusion (m^2/hr)	3.53E-06
Biodegradation Rate (hr^{-1})	4.01E-05

AT123D = Analytical Transient 1-, 2-, 3-Dimensional (model).
UST = Underground storage tank.

Table V-2. Dilution Attenuation Factors, UST 100A, Northwest of Building 1340

Distance to Receptor (ft)	Predicted Maximum Concentration of Benzene in Groundwater		Dilution Attenuation Factor	
	Soil Source (µg/L)	Plume Source (µg/L)	Soil Source (µg/L)	Plume Source (µg/L)
0	69.5	48.40	1.00	1.00
3	67.9	34.60	1.02	1.40
7	57.7	24.40	1.20	1.98
10	40.3	17.30	1.72	2.80
13	26.3	12.30	2.64	3.93
16	17.6	8.80	3.95	5.50
20	11.8	6.30	5.89	7.68
23	7.9	4.60	8.82	10.52
26	5.3	3.3	13.24	14.67
30	3.6	2.4	19.41	20.17
33	2.5	1.8	28.37	26.89
39	1.2	1.0	57.92	49.90
49	0.4	0.4	172.89	121.00

UST = Underground storage tank.

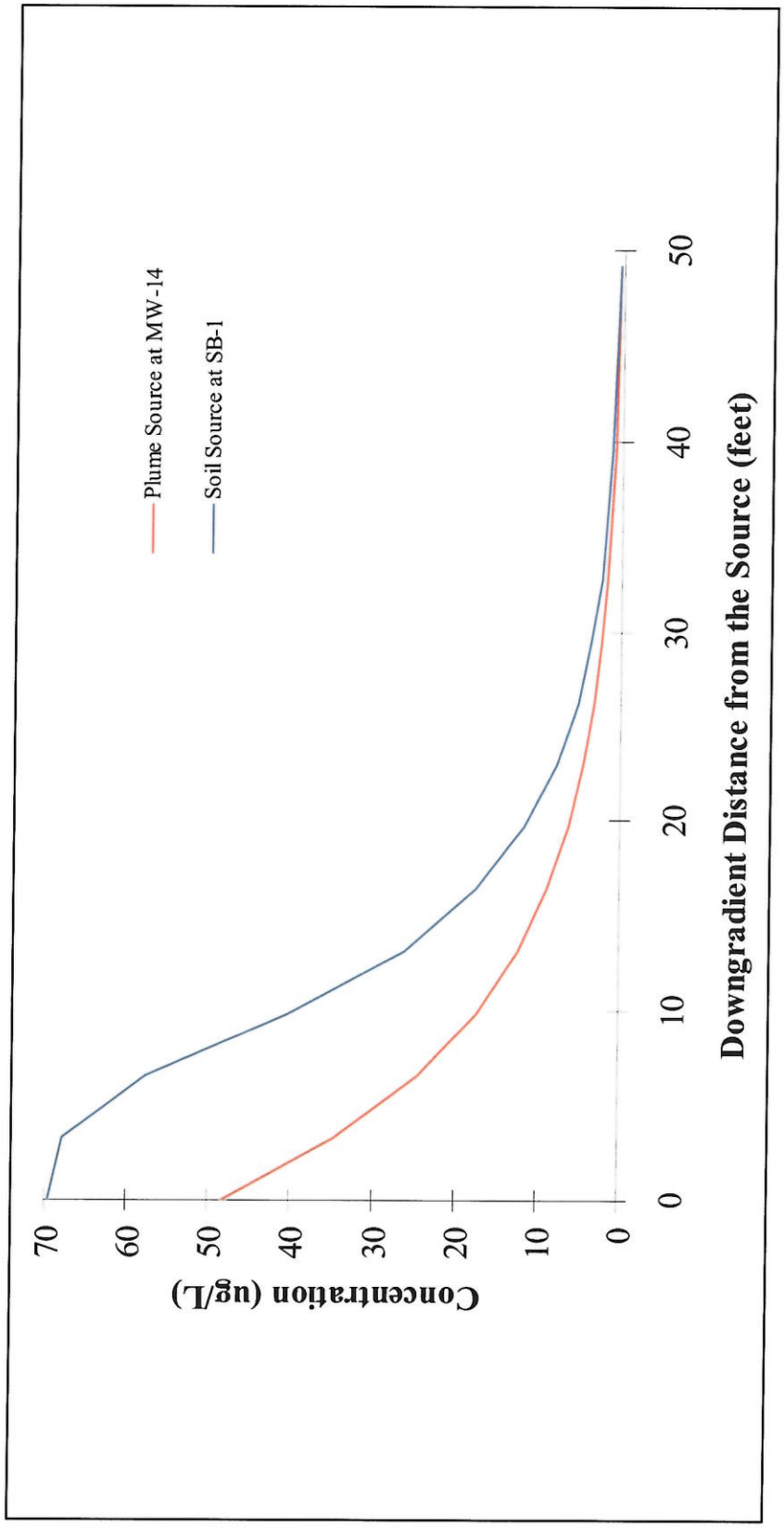

Figure V-1. Modeled Concentration of Benzene in the Groundwater versus Downgradient Distance from the Sources (Soil Contamination at SB1 and Groundwater Plume Source Near MW14), UST 100A, Northwest of Building 1340

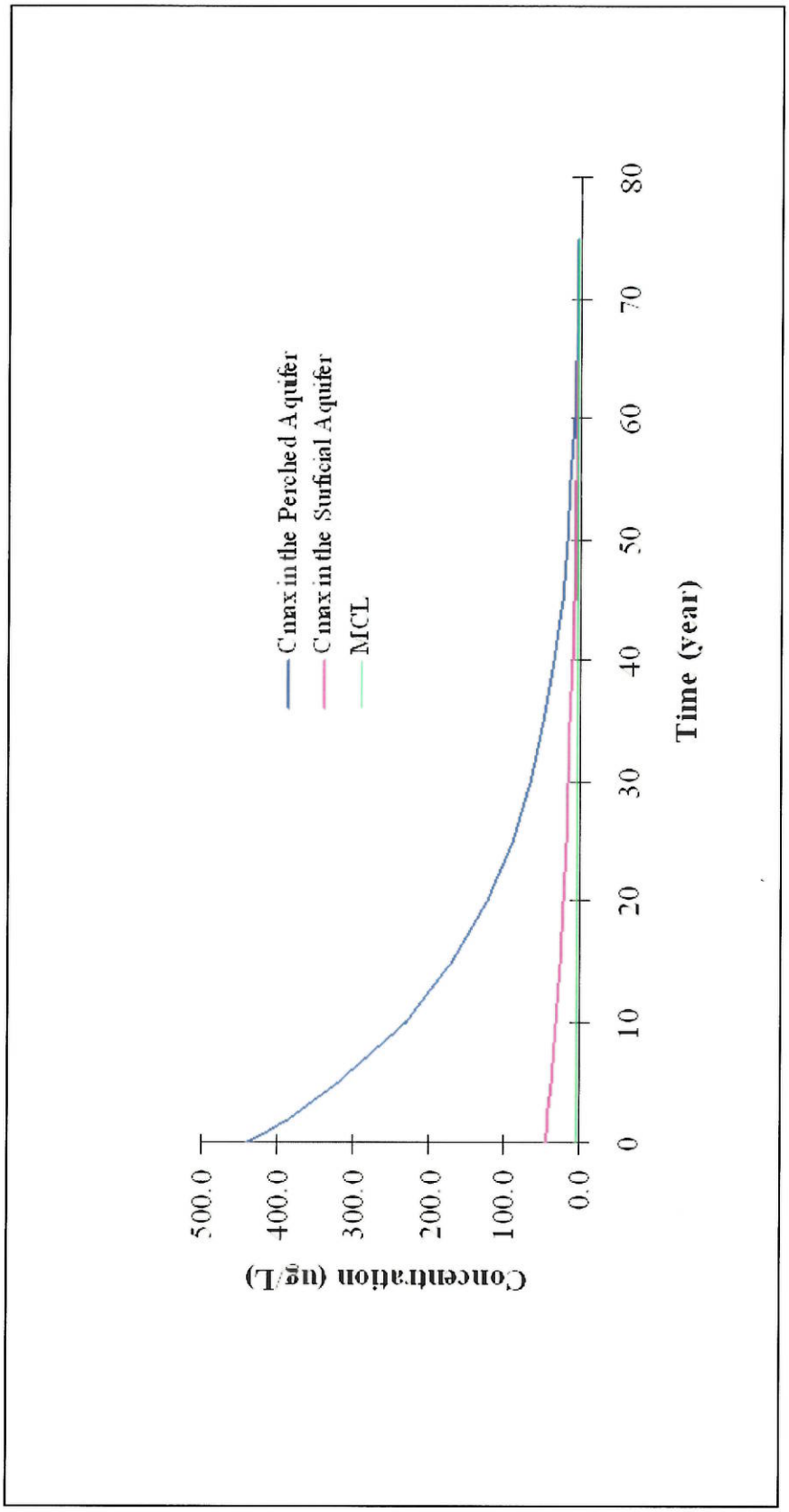

Figure V-2. Predicted Concentration of Benzene in Groundwater Below the Source Using AT123D Modeling (Time 0 = March 2009), UST 100A

APPENDIX VI:

ALTERNATE CONCENTRATION LIMIT AND ALTERNATE THRESHOLD LEVEL CALCULATIONS

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ALTERNATE CONCENTRATION LIMIT CALCULATIONS

The groundwater data collected during 2008 and 2009 were screened against the In-Stream Water Quality Standards (IWQSs) to determine constituents of potential concern (COPCs).

Benzene was determined to be a COPC for groundwater at the site and was selected as the indicator chemical for fate and transport (F&T) modeling. Seasonal Soil Compartment (SESOIL) modeling was performed to predict the leaching of benzene from soil to groundwater, and Analytical Transient 1-, 2-, 3-Dimensional (AT123D) modeling was used to predict horizontal migration of groundwater. The nearest receptor location is a storm drain located 120 ft southeast of the site; as the invert elevation [61.5 ft below ground surface (bgs)] is below the water table, this utility may represent a potential pathway.

The maximum concentration of benzene detected in perched groundwater at the site was 441 µg/L at SB-31 (based on calendar year 2008 data). The maximum concentration of benzene detected in the surficial groundwater was 44.8 µg/L at MW14. The contaminants in the perched groundwater represent a source of contamination to the underlying surficial groundwater aquifer. The perched groundwater is separated from the surficial groundwater by a thin layer of clay (approximately 2 to 3 ft thickness) encountered at depths of approximately 8 to 12 ft BGS, which inhibits the direct contact to this perched source. However, the perched contaminants continue to impact the underlying surficial groundwater through slow continuous leaching of low levels of contamination.

The modeling indicated that the benzene concentration is not expected to ever exceed a concentration of 5 µg/L beyond 50 ft downgradient from MW14, much less the IWQS of 51 µg/L. The modeling results for benzene estimated a dilution attenuation factor (DAF) of 121. The approach for calculating the alternate concentration limit (ACL) would be to utilize the DAF to the downgradient receptor in conjunction with the IWQS. However, this would produce an unrealistically high benzene ACL. As a result, a more conservative DAF of 10 was selected to calculate ACLs for volatile organic compounds. The compound-specific regulatory levels were used in conjunction with the DAF to develop constituent-specific ACLs that are presented in Table VI-1.

Benzene has never been detected above the ACL in either the surficial groundwater at the site or the perched groundwater.

Table VI-1. Alternate Concentration Limits for Contaminants in Groundwater

Contaminant	Regulatory Level (µg/L)	DAF	ACL[a] (µg/L)	Maximum Observed Concentration, 2009 (µg/L)
Benzene	51[b]	10[c]	510	44.8

[a] ACL = Regulatory level × DAF.
[b] In-Stream Water Quality Standard (February 2009).
[c] DAF = 10 for volatile organic compounds (conservative selection).
ACL = Alternate concentration limit.
DAF = Dilution attenuation factor based on predicted concentration at the source divided by predicted concentration at the receptor.

ALTERNATE THRESHOLD LEVEL CALCULATIONS

The soil boring data collected during 2007 and 2008 were screened against the soil threshold level (Table A, Column B) to determine COPCs. Benzene was identified as a COPC for soil at the site.

Benzene was selected as the indicator chemical for F&T modeling. SESOIL modeling was performed to predict the leaching of benzene from soil to groundwater, and AT123D modeling was used to predict horizontal migration of groundwater to the potential receptors. The calculation of alternate threshold levels (ATLs) for soil is presented below and summarized in Table VI-2. Benzene has never been detected above its calculated ATL in soil borings at Underground Storage Tank 100A.

The ATL for benzene can be calculated using the following steps:

Step 1 – Calculate the fractional organic carbon (f_{cs}) content of the contaminated soil:

$$f_{cs} = 0.0069 \text{ (site-specific value).}$$

Step 2 – Calculate the contaminant concentration in soil pore water (C_w) directly in contact with contaminated soil:

$$C_w = \frac{C_s}{K_{oc} \times f_{cs}}$$

where

C_s = average concentration in soil above the water table,

K_{oc} = organic carbon partitioning coefficient [Georgia Underground Storage Tank (GUST) Corrective Action Plan (CAP)–Part A Guidance, Appendix I, Table 1],

f_{cs} = fractional organic carbon content (calculated in step 1).

Contaminant	C_s (mg/kg)	K_{oc} (mL/g)	f_{cs} (dimensionless)	C_w (mg/L)
Benzene	0.864[a]	81	0.0069	1.55

[a] Maximum concentration detected in soil utilized as a conservative value (SB-01, September 2005).

Step 3 – Calculate the DAF for migration of leachate (DAF_l) to the water table based on the SESOIL-predicted maximum contaminant concentration in groundwater:

$$DAF_l = \frac{C_w}{C_{max,w}}$$

where

C_w = concentration in soil pore water directly in contact with contaminated soil,

$C_{max,w}$ = SESOIL-predicted maximum concentration in the leachate at the water table interface.

Contaminant	C_w (mg/L)	$C_{max,w}$ (mL/g)	DAF_I (dimensionless)
Benzene	1.55	0.81	1.91

Step 4 – Calculate the ATL:

$$ATL = (K_{oc})(f_{cs})(C_{std})(DAF_I)(DAF_w)$$

where

K_{oc} = organic carbon partitioning coefficient (GUST CAP–Part A Guidance, Appendix I, Table 1),

C_{std} = applicable water quality standard or ACL.

Table VI-2. Calculation of Alternate Threshold Levels for Contaminated Soil

Constituent	K_{oc} (mL/g)	f_{cs}	C_{std} (mg/L)	DAF_I	DAF_w	Calculated ATL (mg/kg)
Benzene	81	0.0069	0.051[a]	1.91[b]	20[c]	1.1

[a] In-Stream Water Quality Standard (February 2009).
[b] Average dilution attenuation factor (DAF) for benzene over the various layers in the soil column.
[c] Assumes a more conservative DAF of 20 for lateral migration of benzene in groundwater.
ATL = Alternate threshold level (soil).
C_{std} = Applicable water quality standard or alternate concentration limit.
DAF_I = DAF for vertical migration of leachate.
DAF_w = DAF for horizontal migration of water.
f_{cs} = Fractional organic carbon.
K_{oc} = Organic carbon partitioning coefficient.

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APPENDIX VII:

SITE RANKING FORM

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SITE RANKING FORM

Facility Name: UST 100A, Building 1349 **Ranked by:** M.T. Bogucki

County: Liberty **Facility ID #:** 9-089080 **Date Ranked:** 08/13/2009

SOIL CONTAMINATION

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

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

* *1999 sample from MW10 (37.8 mg/kg), 0-1 ft bgs.*

B. Total Benzene -
Maximum Concentration found on the site

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

** *2005 sample from SB-01 (0.864 mg/kg), 10-12 bgs.*

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

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

Fill in the blanks: **(A. 50) + (B. 10) = (60) x (C. 10) = (D. 600)**

GROUNDWATER CONTAMINATION

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

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

* *No evidence of product observed in March 2009.*

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

☐	≤5 µg/L	= 0
*☒	>5 - 100 µg/L	= 5
☐	>100 - 1,000 µg/L	= 50
☐	>1,000 - 10,000 µg/L	= 500
☐	>10,000 µg/L	= 1500

* *March 2009 Sample from well MW14 (44.8 µg/L).*

Fill in the blanks: **(E. 0) + (F. 5) = (G. 5)**

Facility Name: UST 100A, Building 1349 **County:** Liberty **Facility ID #:** 9-089080

POTENTIAL RECEPTORS (MUST BE FIELD-VERIFIED)

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

H. Public Water Supply

☐	Impacted	= 2000
☐	≤500'	= 500
☐	>500' - ¼ mi	= 25
☐	¼ mi - 1 mi	= 10
☐	>1 mi - 2 mi	= 2
☐	> 2 mi	= 0
For lower susceptibility areas only:		
**☒	>1 mi	= 0

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

** For justification that withdrawal point is not hydraulically connected, see attached text.

I. Non-Public Water Supply

☐	Impacted	= 1000
☐	≤100'	= 500
☐	>100' - 500'	= 25
☐	>500' - ¼ mi	= 5
☐	>¼ - ½ mi	= 2
☒	>½ mi	= 0
For lower susceptibility areas only:		
☐	>¼ mi	= 0

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

☐	Impacted	= 500
* ☒	≤500'	= 50
☐	>500' - 1,000'	= 5
☐	>1,000'	= 2

Underground utilities.

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

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

Fill in the blanks: (H. 0) + (I. 0) + (J. 50)+ (K. 0) = L. 50

(G. 5) x (L. 50) = M. 250

(M. 250) + (D. 600) = N. 850

P. **SUSCEPTIBILITY AREA MULTIPLIER**

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

☒ All other sites = 1

Q. **EXPLOSION HAZARD**

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

☐ Yes = 200,000

☒ No = 0

Fill in the blanks: (N. 850) x (P. 1) = (850) + (Q. 0)

= 850 (based on historical soil samples and 2009 groundwater samples)
ENVIRONMENTAL SENSITIVITY SCORE

ADDITIONAL GEOLOGIC AND HYDROGEOLOGIC DATA

The following provides supplemental information to Item H of the Site Ranking Form. It also presents details related to the geologic and hydrogeologic conditions at Fort Stewart that support Fort Stewart's determination that the water withdrawal points located at the site are not hydraulically connected to the surficial aquifer.

1.0 REGIONAL AND LOCAL GEOLOGY

Fort Stewart is located within the Coastal Plain phy siographic province. This province is ty pified by nine southeastward-dipping strata that increase in thickness from 0 ft at the Fall Line, located approximately 150 miles inland from the Atlantic coast, to approxim ately 4,200 ft at the coast. State geologic records describe a probable petroleum exploration well (the No. 1 Jelks-Rogers) located in the region as encountering crystalline basement rocks at a depth of 4,254 ft below ground surface (BGS). This well provides the most complete record for Cretaceous, Tertiary, and Quaternary sedimentary strata in the region.

The Cretaceous section was found to be approximately 1,970 ft thickand dominated by clastics. The Tertiary section was found to be approximately 2,170 ft thick and dominated by limestone, with a 175-ft-thick cap of dark green phosphatic clay. This clay is regionally extensive and is known as the Hawthorn Group. The interval from approximately 110 ft to the surface is Quaternary in age and composed primarily of sand with interbeds of clay or silt. This section is undifferentiated into separate formations (Herrick and Vochis 1963).

State geologic records contain inform ation regarding a well drilled in October 1942, 1.8 m iles north of Flemington at Liberty Field of Camp Stewart (now known as Fort Stewart).This well is believed to have been an artesian well located approxim ately 1/4 m ile north of the runway at Wright Arm y Airfield within the Fort Stewart Military Reservation. The log for this well describes a 410-ft section, the lowermost 110 ft of which consisted predom inantly of lim estone sediment, above which 245 ft of dark green phosphatic clay typical of the Hawthorn Group were encountered. Th e uppermost portion of the section was found to be Quaternary-age interbedded sands and clay s. The top 15 ft of this sedim ent were described as sandy clay (Herrick and Vochis 1963).

The surface soil located throughout theFort Stewart garrison area consistsof Stilson loamy sand. The surface layer of this soil is ty pically dark grayish-brown loamy sand measuring approximately 6 in. in depth. The surface lay er is underlain by m aterial consisting of pale yellow loamy sand and extends to a depth of approximately 29 in. The subsoil is predominantly sandy clay loam and extends to a depth of 72 in. or more (Herrick and Vochis 1963).

2.0 REGIONAL AND LOCAL HYDROGEOLOGY

The hy drogeology in the vicinity of Fort Stewart is dom inated by two aquifers referred to as the Principal Artesian and the surficial aquifers. The Principal Artesian Aquifer is the lowermost hydrologic unit and is regionally extensive from South Carolina through Georgia, Alabam a, and m ost of Florida. Known elsewhere as the Floridan, this aquifer is com posed primarily of Tertiary-age limestone, including the Bug Island Formation, Ocala Group, and Suwannee Limestone. These formations are approximately 800 ft thick, and groundwater from this aquifer is used primarily for drinking water (Arora 1984).

The uppermost hydrologic unit is the surficial aquifer,which consists of widely varying amounts of sand and clay ranging from 55 to 150 ft in thickness. This aquifeis used primarily for domestic lawn and agricultural

irrigation. The top of the water table rangesfrom approximately 2 to 10 ft BGS (Geraghtyand Miller 1993). The base of the aquifer corresponds to the top of the underlying dense clay of the Hawthorn Group. The Hawthorn Group was not encountered during drilling at this site but is believed to be located at 40 to 50 ft BGS; therefore, the effective aquifer thickness would be approximately 35 to 45 ft. Soil surveys for Liberty and Long Counties describe the occurrence of a perched water table within the Stilson loamy sands present within Fort Stewart (Looper 1980).

The confining layer for the Principal Artesian Aquifer is the phosphatic clay of the Hawthorn Group and ranges in thickness from 15 to 90 ft. The vertical hydraulic conductivity of this confining unit is onthe order of 10^{-8} cm/sec. There are minor occurrences of aquifer material within the Hawthorn Group; however, they have limited use (Miller 1990). The Hawthorn Group has beendivided into three formations: Coosawhatchie, Markshead, and Parachula, listed from youngest to oldest.

The Coosawhatchie Formation is composed predominantly of clay but also has sandyclay, argillaceous sand, and phosphorite units. The formation is approximately 170 ft thick in the Savannah, Georgia, area. This unit disconformably overlies the Markshead Formation and is distinguished from the underlying unit by dark phosphatic clays or phosphorite in the lower part and fine-grained sand in the upper part.

The Markshead Formation is approximately 70 ft thick in the Savannah, Georgia, area and consists of light-colored phosphatic, slightly dolomitic, argillaceous sand to fine-grained sandy clay with scattered beds of dolostone and limestone.

The Parachula Formation consists of sand, clay, limestone, and dolomite and is approximately 10 ft thick in the Savannah, Georgia, area. The Parachula Formation generally overlies the Suwannee Limestone in Georgia.

Groundwater encountered at all the underground storage tank (UST) investigtion sites is part of the surficial aquifer system. Based on the fact that all public and non-public water supply wells draw water from the Principal Artesian (Floridan) Aquifer and that the Hawthorn confining unit separates the Principal Artesian Aquifer from the surficial aquifer, it is concluded that there is no hydraulic interconnection between the surficial aquifer (and associated groundwater plumes, if applicable) located beneath former UST sites and identified water supply withdrawal points at Fort Stewart.

3.0 REFERENCES

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

Geraghty and Miller 1993. *RCRA Facility Investigation Work Plan, Fort Stewart, Georgia.*

Herrick, S.M., and R.C. Vochis 1963. *Subsurface Geology of the Georgia Coastal Plain*, Georgia Geologic Survey Information Circular 25.

Looper, Edward E. 1980. *Soil Survey of Liberty and Long Counties, Georgia*, U. S. Department of Agriculture, Soil Conservation Service.

Miller, James A. 1990. *Groundwater Atlas of the United States*, U. S. Department of the Interior, U. S. Geological Survey, Hydrologic Inventory Atlas 730G.

APPENDIX VIII:

BORING LOGS AND WELL DIAGRAMS

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BORING LOGS AND WELL DIAGRAMS – 1998 AND 1999

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HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DISTRICT: Savanah COE	3. HOLE NUMBER: TS-GP-01
4. PROJECT: Ft. Stewart 16 SWMU's	5. DRILL SUBCONTRACTOR: RE, Wright	6. SHEET: 1 of 3
7. NAME OF DRILLER: Al Root	8. LOCATION: SWMU-27F	
9. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 2" dia. macrocore sampler w/Acetate liners, Stainless steel spoons, peristaltic pump w/HDPE tubing	10. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 5400	
	11. HOLE LOCATION: NAD-83 E-821509.30', N-694392.37'	
	12. SURFACE ELEVATION: NAVD-88 63.71'	
	13. DATE STARTED: 1/18/98	14. DATE COMPLETED: 1/18/98
15. OVERBURDEN THICKNESS: N/A	16. DEPTH GROUNDWATER ENCOUNTERED: 12.0'	
17. DEPTH DRILLED INTO ROCK: —	18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 8.10' (0:10)	
19. TOTAL DEPTH OF HOLE: 16.0'	20. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	

21. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	22. TOTAL NUMBER OF CORE BOXES: N/A
	—	—	

23. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	24. TOTAL CORE RECOVERY: N/A %
	2	—	Lead	SVOC		

25. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	26. SIGNATURE OF INSPECTOR
			Piezometer	Frank Finch

LOCATION SKETCH/COMMENTS: see page #39

SCALE:

PROJECT	HOLE NO
Ft. Stewart 16 SWMU's	TS-GP-01

RTRW DRILLING LOG

PROJECT: 16 SWMU's | INSPECTOR: | HOLE NUMBER: TJ-GP-01 | SHEET: 2 of 3

TYPE (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0.0	~~Silty SAND~~ TSL 1/18/98 SAND with some silt (SW-SM), olive (5Y5/3), nonplastic, soft, moist	Ø.5			
	1.0'					
	2.0'		1.6			
	3.0'	3.0'				
		~~B.0~~ TSL 1/18/98 Silty SAND with traces of clay (SM), olive (5Y4/3), nonplastic, soft, moist				
	4.0'		Ø.Ø			
	5.0'					
	6.0'		1.6			
	7.0'					
	8.0'					
		8.5'	6.8		TS1111 Ø940	
	9.0'	Sandy CLAY (CL), white (5Y8/1), slightly plastic, medium stiff, moist				

PROJECT 16 SWMU's | INSPECTOR | HOLE NO. 25-GP-01 | SHEET 3 of 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	9.0'					
	10'		1.1			
	11'					
		11.5' Silty SAND (SM), white (5Y 8/1), nonplastic, very soft, moist 12.0'-16.0': Wet				12.0'-16.0': Wet
	12'					
	13'					
	14'					
	15'					
	16'	Bottom of Boring = 16.0'				

PROJECT Ft. Stewart VIII-7 SWMU's HOLE NO. 25-GP-01

HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DISTRICT: Savannah COE	HOLE NUMBER: 7J-GP-02
	3. DRILL SUBCONTRACTOR: N/A	SHEET 1 OF 2
4. PROJECT: Ft. Stewart Georgia 16 SWMU's	5. LOCATION: SWMU # 27 F	
6. NAME OF DRILLER: Andy Knickerbocker	7. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe	
8. SIZE AND TYPE OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe - Macrosampler 6-7822	8. HOLE LOCATION: 7J-GP-02 E-821527.80' N-684329.47' NAD-83	
	9. SURFACE ELEVATION: NAVD-88 68.50'	
	10. DATE STARTED: 2/3/98	11. DATE COMPLETED: 2/3/98
12. OVERBURDEN THICKNESS: N/A	13. DEPTH GROUNDWATER ENCOUNTERED: ~9.75' BGL	
13. DEPTH DRILLED INTO ROCK: N/A	14. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE: ~14.75' BGL	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	

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

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	✓	Lead	SVOC			N/A
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
			piezometer	Todd Eckroy		

LOCATION SKETCH/COMMENTS: See Page 29 SCALE:

PROJECT: Ft. Stewart 16 SWMU's

HOLE NO.: 7J-GP-02

ENG FORM 5056-R, AUG 94

(Proponent CECW-EG)

(Signature and Date) etc.)

H1RW DRILLING LOG

PROJECT: 16 SWMU's | INSPECTOR: | HOLE NUMBER: 7J-GP-02 | SHEET: 2 OF 2

FEET (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0	GRASS ROOT ZONE (0-0.2') SAME AS BELOW				MACRO CORE (0-10')
		WELL GRADED SAND WITH SILT: SW-SM FINE GRAINED SAND, YELLOWISH BROWN 10YR 5/4, SOFT				PIEZOMETER SET (14.15 - 9.75')
	1		0.0 ppm			
		SANDY SILT: ML, VERY FINE SAND, SOFT, DARK BROWN 7.5 YR 3/3, LENSED WITH YELLOWISH RED 5YR 5/8				
		WELL GRADED SAND WITH SILT: SW-SM DARK YELLOWISH BROWN 10YR 3/6, FINE TO MED. GRAINED SAND, SOFT, MOIST, LENSED WITH: SMALL < 1cm CLAY-FAT CH LIGHT GREY 10YR 7/1 AND VERY FINE TO MED SAND WITH SILT SW-SM, SOFT, VERY DARK BROWN 10YR 2/2, MEDIUM GRAINED				
	2		0.0 ppm			
	3		0.0 ppm			
	4		0.0 ppm			
		TOE				
	5		0.2 ppm		1127 SAMPLE 7J-GP-02	
		SANDY SILT: ML, SOFT, MOIST/SATURATED, VERY DARK GRAY 10YR 3/1, FINE TO MED. GRAINED SAND	0.7 ppm			
	6		0.2 ppm			-SATURATED
		SANDY FAT CLAY: CH, PALE YELLOW 5Y 7/3 POORLY GRADED SAND, SOFT, SATURATED, LENSED WITH: MED. TO COARSE GRAINED WELL GRADED SAND WITH SILT SW-SM AND POORLY GRADED SAND WITH SILT 5Y 3/2				
	7		0.1 ppm			
	8		0.7 ppm			
	9		0.4 ppm			
			0.2 ppm			
	10					

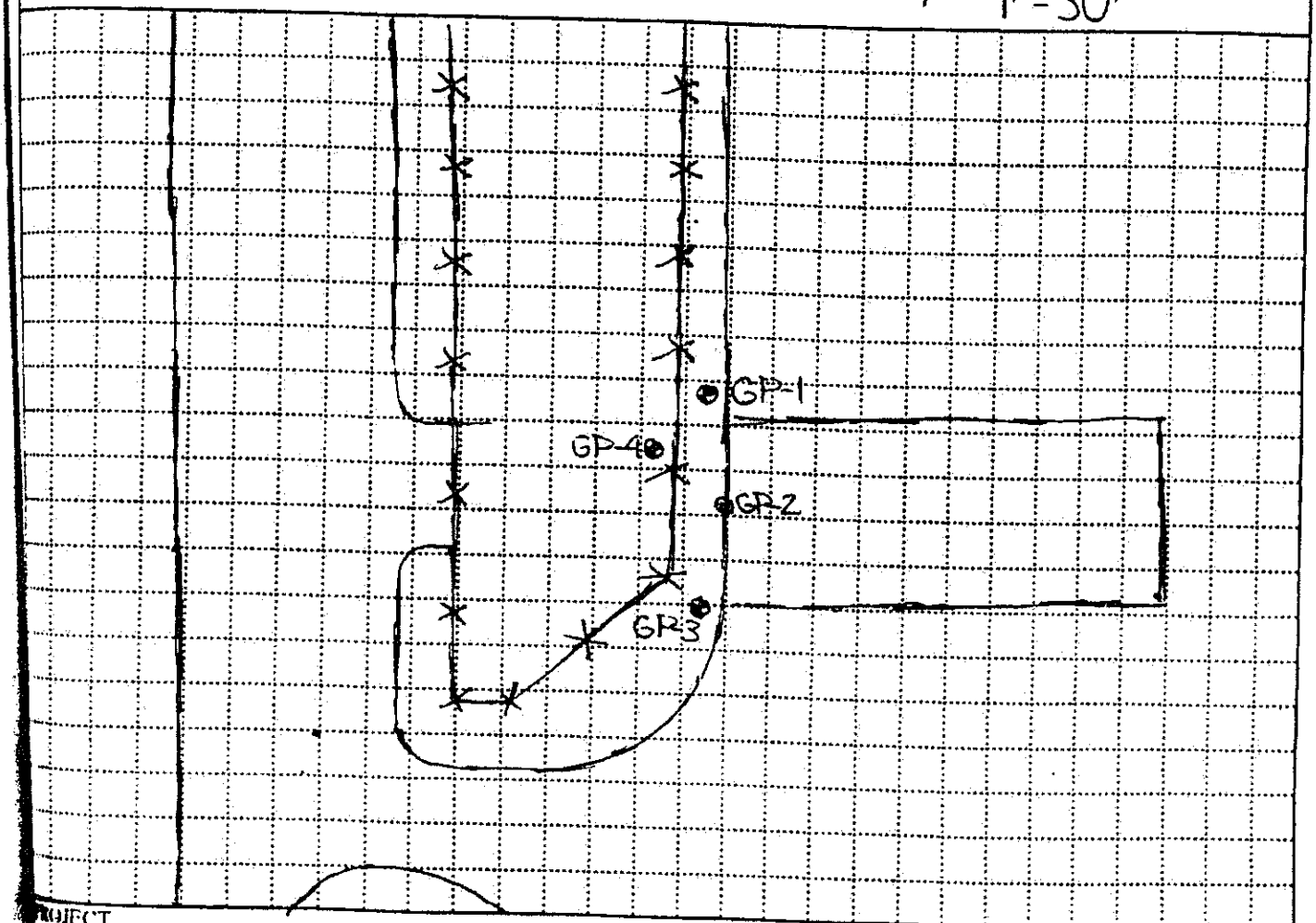
HTRW DRILLING LOG

1 COMPANY NAME: SAIC	2 DISTRICT: Savannah COE	HOLE NUMBER: TS-GP-03
	3 DRILL SUBCONTRACTOR: R.E. Wright	SHEET 1 OF 3
4 PROJECT: Ft. Stewart 16 SWMU's	5 LOCATION: SWMU-27F	
6 NAME OF DRILLER: Al Root	7 MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 5400	
8 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 2" dia. Macrocore sampler w/ Acetate liners	9 HOLE LOCATION: E-821538.38', N-684358.35' NAD-83	
	10 SURFACE ELEVATION: NAVD-88 67.97'	
	11 DATE STARTED: 1/17/98	12 DATE COMPLETED: 1/17/98
13 OVERBURDEN THICKNESS: NA	14 DEPTH GROUNDWATER ENCOUNTERED: 11.4'	
15 DEPTH DRILLED INTO ROCK:	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 7.13' (@ 10)	
17 TOTAL DEPTH OF HOLE: 12.0'/14.1'	18 OTHER WATER LEVEL MEASUREMENTS (SPECIFY):	

19 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	20 TOTAL NUMBER OF CORE BOXES			
			NA			
21 SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	22 TOTAL CORE RECOVERY %
	2	Lead/TCLP	SVOC			NA
23 DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	24 SIGNATURE OF INSPECTOR		
			Piezometer	Paul J. Smith		

LOCATION SKETCH/COMMENTS

SCALE: 1" = 50'



PROJECT: Ft. Stewart 16 SWMU's

HOLE NO: TS-GP-03

ENG FORM 5056-R, AUG 94

(Proponent CECW-EG)

QA CHECK BY: _____ (Signature and Date)

etc.)

PROJECT Ft. Stewart | INSPECTOR | 75-GP-03 | SHEET 2 of 3

USCS (A)	DEPTH (ft)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	1.0'	~~Clayey SAND~~ PSL 1/17/98 SAND with some clay (SW-SC), slightly plastic, soft, moist	3.4			Hydrocarbon odor From 1.0'-12.0'
	2.0'		5.5			
	3.0'					
	4.0'		44.5			
	5.0'					
	5.8'					
	6.0'	~~Clayey SAND~~ PSL 1/17/98 Sandy CLAY (CL), medium plastic, medium stiff, moist, pale yellow (5Y 7/4)	311.		75 1321 1610	
	7.0'	7.1'-7.3': Black wet layer w/petroleum odor				
		7.5'-8.0': Mottled clay				
	8.0'		178			
	9.0'	Continued on next page				

PROJECT Ft. Stewart | VIII-M / WMU's | HOLE NO. 75-GP-03

PROJECT 16 SWMU's | INSPECTOR | TJ-GP-03 | SHEET 3 of 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	9.0'					
	10.0'	10.0'-10.5': Mottled	303			
	11.0'					
		11.9'				
	12.0'	Fine to medium SAND w/ some silt (SW-SM), yellow (5Y 7/6), nonplastic, wet				
		Bottom of Boring = 12.0'				

PROJECT Ft. Stewart VIII-12 16 SWMU's HOLE NO. TJ-GP-03

HTRW DRILLING LOG

1. COMPANY NAME: SAIC.	2. DISTRICT: Savannah COE 2. DRILL SUBCONTRACTOR: N/A	HOLE NUMBER: 7J-GP-04 SHEET: 1 OF 2
3. PROJECT: Ft. Stewart, Georgia 16 SWMU's	4. LOCATION: SWMU #27F	
5. NAME OF DRILLER: Hardy Knickerbocker	6. MANUFACTURER'S DESIGNATION OF DRILL: GEOPROBE	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe - Macro sampler 6.7' Rod	8. HOLE LOCATION: 7A-GP-04 E - 821513.22', N - 684375.51', NAD-83	
	9. SURFACE ELEVATION: NAVD-88 67.86'	
	10. DATE STARTED: 2/3/98	11. DATE COMPLETED: 2/3/98
12. OVERBURDEN THICKNESS: NA	15. DEPTH GROUNDWATER ENCOUNTERED: ~9.5 BGL	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE: ~14.5' BGL	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES: NA — DISTURBED — UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A	

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY: N/A
22. DISPOSITION OF HOLE	✓ BACKFILLED	✓ MONITORING WELL	SVOC			
			OTHER (SPECIFY): piezometer	23. SIGNATURE OF INSPECTOR: Jane Cody		

LOCATION SKETCH/COMMENTS: See page 29 SCALE:

PROJECT: Ft. Stewart 16 SWMU's

HOLE NO: 7J-GP-04

FTRW DRILLING LOG

PROJECT: 16 SWMU's | INSPECTOR: | HOLE NUMBER: 7J-GP-04 | SHEET: 2 of 2

USCS (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0	VERY COARSE SAND / GRAVEL SUB-BASE				MACRO CORE (0–10')
	1	WELL GRADED SAND WITH SILT: SW-SM, SOFT, VERY FINE GRAINED SAND, YELLOWISH RED 5YR 5/6	0.0 ppm			PIEZOMETER SET (9.5–14.5' BGL)
	2	POORLY GRADED SAND WITH CLAY: SP-SC, FIRM, STRONG BROWN 7.5YR 5/6 TO 7.5YR 5/8, LENSED WITH SANDY LEAN CLAY: CL < 2cm	0.0 ppm			
	3		0.0 ppm			
	4		0.0 ppm			
	5		0.0 ppm			
	6	SANDY LEAN CLAY: CL, COARSE SAND, HARD, YELLOW 10YR 8/8	0.0 ppm			
	7		0.0 ppm			
	8	LEAN CLAY WITH SAND: CL, HARD, VERY FINE SAND ~ 5% GRADING DOWNWARD TO ~ 25% VERY FINE SAND, WHITE N2.5 8/1			1210 7J-GP-04 COLLECTED 8-10' BGL	
	9					
		VERY FINE SAND: SW, SATURATED RAPID DILATENCY, WHITE 2.5 Y 8/1				

HTRW DRILLING LOG

DISTRICT: USACE - Savannah

HOLE NUMBER: 27F-MW-01

SHEET 1 OF 4

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Miller Drilling Company

3. PROJECT: Fort Stewart

4. LOCATION: 3rd Engineers

5. NAME OF DRILLER: Darren Penn /

6. MANUFACTURERS DESIGNATION OF DRILL: Mobile B-59 / CME-85

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: For S. Casing ⇒ 8¼" ID auger - Sch. 80 PVC (6.6' long) 2" Split Spoons (2' long)

8. HOLE LOCATION: See map. 27F-MW1 N684433.25 E821537.79

9. SURFACE ELEVATION: TOC 69.16

10. DATE STARTED: 10/9/99

11. DATE COMPLETED:

12. OVERBURDEN THICKNESS: N/A

13. DEPTH DRILLED INTO ROCK: N/A

14. TOTAL DEPTH OF HOLE: 21 FT

15. DEPTH GROUNDWATER ENCOUNTERED:

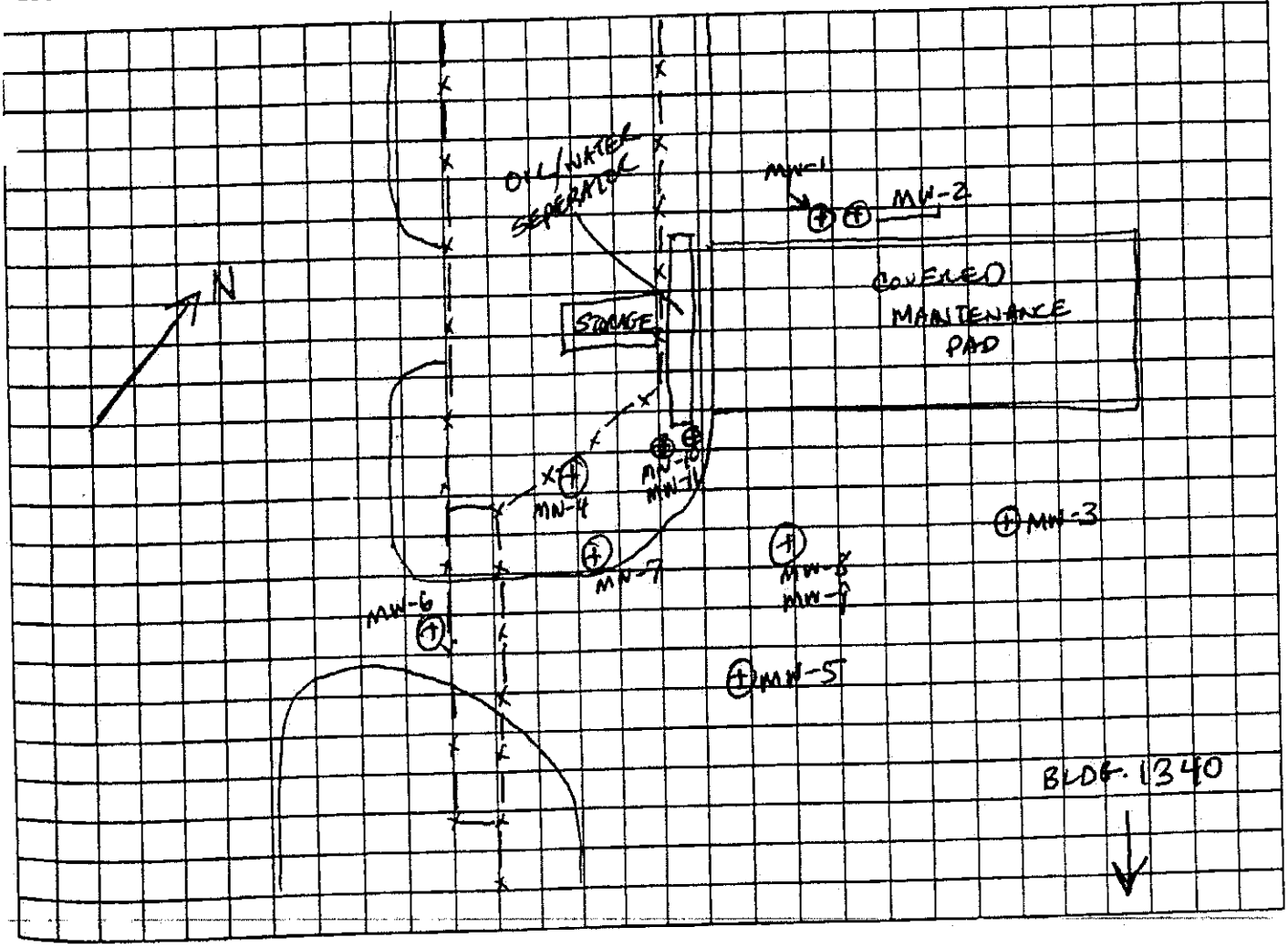
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED:

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	RCRA METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	8 VOC / TAL				
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
		2" ID		H Smith		

LOCATION SKETCH/COMMENTS

SCALE: 1" = 50'



breathing zone, venting compressed air, etc.)

(Signature and Date)

PROJECT: Fort Stewart USTs | INSPECTOR Heather Smith | SHEET ___ OF ___

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	SC- Clayey Sand Med → fine gr. Sand angular → Subrounded MOIST, Soft to Firm Predominantly 5YR7/1 LT Grey mottled w/ 10YR 5/6 yellowish red	(Headspace 0-2'BGS) 0.5 ppm		0.0' Samp. ID # TJ1171 @1535	RUN #1 RUN 2' Rec. 1.25' Loss .75'
	1	Loss			1.0	RUN from Bottom of Concrete Concrete Plug .83' above B.S.
	2	Same as above - Wet (but only because water was used to core the concrete here this morning - Not Natural G.W.	(Headspace 2-4'BGS) 3.1 ppm			RUN #2 RUN 2.0 Rec 2.0 Loss 0
	3	CL- Lean Clay w/ Some Sand high Plasticity, moist, soft to firm SM- Silty Sand - black? (5YR2/1) Grey (same color as above) dry, soft (10YR7/1)		3.1 geotech	3.0 Samp. ID# TJ1172	
	4	SM - Silty Sand med → fine gr. Sub.rounded-subang. 10YR 3/3 dk brown wet - due to coring.		4.0	@1550	Both sections are SM from 3.1 → 3.6 but there is a DISTINCT color change between the 2 @
	5	SC - Clayey Sand. ~40% clayey ~60% Sand Med. grains - (predominantly) Some cs (10%) Some Fine (10%) Med. plasticity → high plasticity 10YR 6/1 GREY	(Headspace 4-6'BGS) 2.0 ppm			RUN #3 RUN 2.0 Rec 1.5 Loss 0.5
	6	Loss				SET SURFACE CASING
	7					
	8					
	8.6	8.6': CLAY (CL); LIGHT GRAY (2.5Y 7/1), WITH RED MOTTLING STREAKING, STIFF, MED TO HIGH PLASTICITY, MOIST				CLAY AT 8.6' BASED ON LOG FROM 27F-MW2
	9					
	10					

HTRW DRILLING LOG 27F-MW2

PROJECT: Fort Stewart USTs | INSPECTOR L. MERCADO | SHEET 3 OF 4

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	10	10': CLAYEY SAND (SC), LIGHT GRAY (5Y 7/1), F-SAND ROUNDED, SLIGHT PLASTICITY, MOIST				BASED ON LOG FROM LMM 10/11/99 WELL 27F-MW2
	11	11': SANDY CLAY (CL), LIGHT GRAY (5Y 7/1), F-SAND, SLIGHT PLASTICITY, MOIST				
	12	12': CLAYEY SAND (SC), LIGHT GRAY (5Y 7/1), F-M SAND, SUBROUNDED, ~~LOOSE~~ MED. DENSE, WET. LMR 10/11/99				▽ GW ENCOUNTERED AT 12 FT.
	13					
	14	13.5': SAND (SP), YELLOW (2.5Y 7/6), F-M SAND, SUBROUNDED, LOOSE SAND, LITTLE TO NO FINES, WET.				
	15					
	16					2" SCH-40 PVC WELL SET AT 19.65 FT
	17	16': SAND (SP), YELLOW (2.5Y 7/6), F-M SAND, SUBROUNDED, LOOSE, LITTLE TO NO FINES.				
	18	18': INCREASE IN GRAIN SIZE				
	19					
	20					

HTRW DRILLING LOG

PROJECT: Fort Stewart USTs

INSPECTOR L. Mercado

SHEET 4 OF 4

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
						HSA TO 21 FT
	21	END OF BORING				
	22					
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					

HTRW DRILLING LOG

DISTRICT: USACE - Savannah

HOLE NUMBER: 27F-MW2

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: MDC

SHEET ___ OF ___

3. PROJECT: Fort Stewart

4. LOCATION: SWMU 27F

5. NAME OF DRILLER: B. UPCHURCH

6. MANUFACTURERS DESIGNATION OF DRILL: CME-85

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4 1/4" HSA; 5' CONTINUOUS SAMPLER

8. HOLE LOCATION: 27F-MW2

9. SURFACE ELEVATION: TOC 69.27 N 684435.72 E 821540.10

10. DATE STARTED: 10/10/99

11. DATE COMPLETED: 10/10/99

12. OVERBURDEN THICKNESS: N/A

13. DEPTH DRILLED INTO ROCK: N/A

14. TOTAL DEPTH OF HOLE: 45 FT

15. DEPTH GROUNDWATER ENCOUNTERED: ~12 FT

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

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):

18. GEOTECHNICAL SAMPLES: DISTURBED | UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

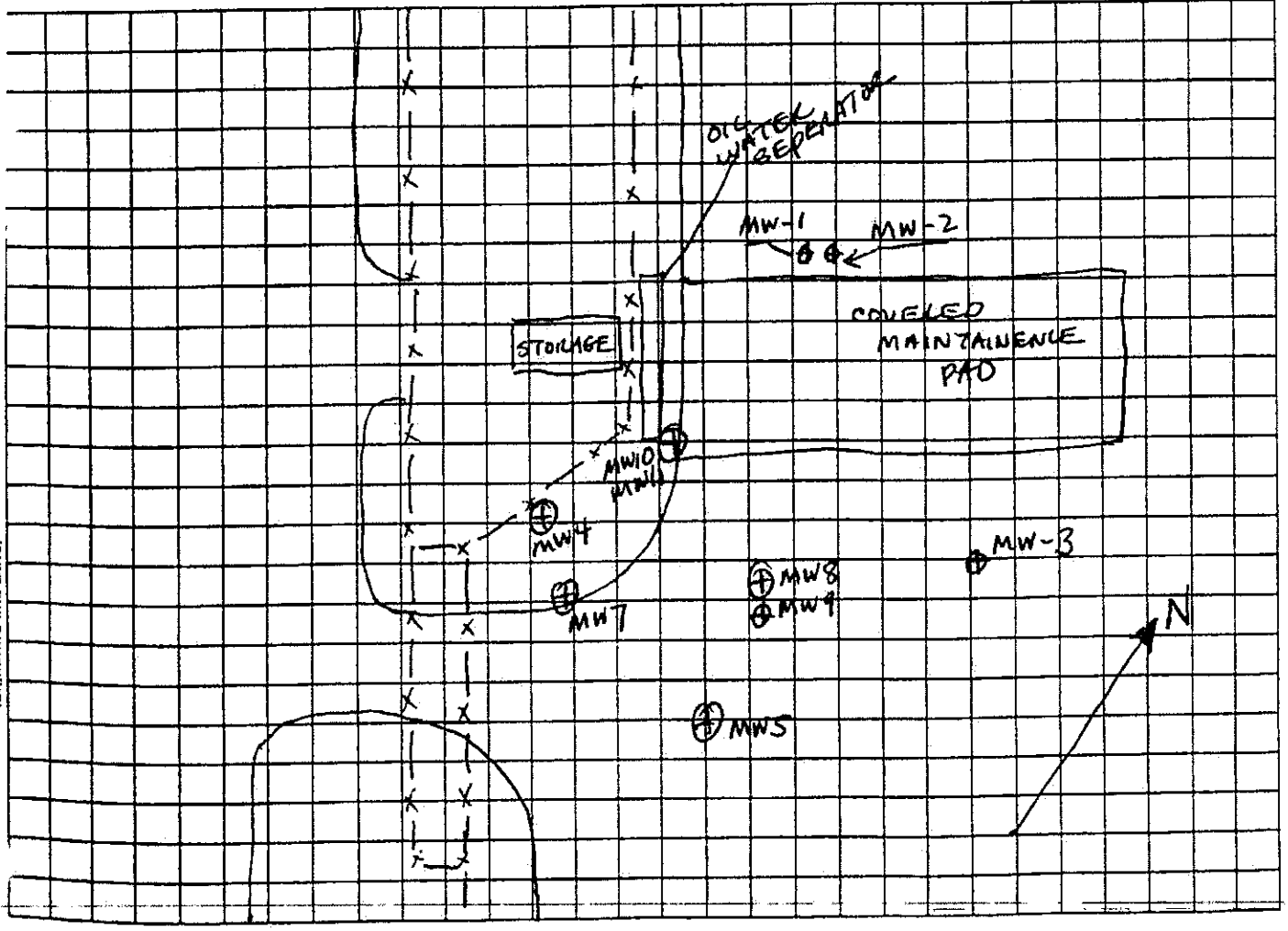
20. SAMPLES FOR CHEMICAL ANALYSIS: VOC: X | METALS: RCRA | OTHER (SPECIFY): SVOC | OTHER (SPECIFY): | OTHER (SPECIFY): | 21. TOTAL CORE RECOVERY %

22. DISPOSITION OF HOLE: BACKFILLED | MONITORING WELL | OTHER (SPECIFY): 2" PVC

23. SIGNATURE OF INSPECTOR: L. Mucak

LOCATION SKETCH/COMMENTS

SCALE: 1" = 50'



breathing zone, venting compressed air, etc.)

(Signature and Date)

UA CHEC

HTRW DRILLING LOG 27F-MW4 HOLE NUMBER 4

PROJECT: Fort Stewart USTs INSPECTOR L. MERCADO SHEET OF

DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0-0.85': CONCRETE FROM MOTOR POOL				
1	0.85': CLAYEY SAND(SC): LIGHT GRAY(5YR 7/1) & RED (2.5YR 4/8), F-SAND, TO M-SAND, DENSE, SLIGHT PLASTICITY, DRY	0.85-2.5 (3.2)	1-2' SOIL SAMPLES TJ1271 TJ1221 @ 1245		0.85-5': (4.15/4.15)
2					
3	2.6': CLAYEY SAND(SC), MOTTLED LIGHT GRAY(5YR 7/1) RED (2.5YR 4/8) & YELLOWISH BROWN (10YR 5/8), F-M SAND, SLIGHT PLASTICITY, DRY.	2.5-5' (2.8)	2.5-5' SOIL SAMPLE TJ1272 @ 1320		
4	3.2': SILTY SAND(SM), VERY DARK GRAY (10YR 3/1), F-SAND, WITH SOME SILT(~20%), DRY.				
5	4.2': SILTY SAND(SM), LIGHT YELLOWISH BROWN (2.5Y 6/4), AS ABOVE, MOIST.	5-7.5' (0.6)			5-10': (4.8/5)
6	5': SANDY CLAY(CL), LIGHT GRAY (2.5Y 7/1) & OLIVE YELLOW (2.5Y 6/6), F-M SAND, SLIGHT PLASTICITY, MOIST.				
7	7': SANDY CLAY(CL), AS ABOVE BUT MOTTLED WITH REDDISH BROWN (5YR 4/4), MOIST.	7.5-10' (0.4)			
8					
9	8.6': CLAY(CL), LIGHT GRAY (2.5Y 7/1) WITH RED (10R 5/6) MOTTLING/STREAKS, STIFF, MED TO HIGH PLASTICITY, MOIST.				

HTRW DRILLING LOG — 27F-MW2 — HOLE NUMBER

PROJECT: Fort Stewart USTs — INSPECTOR L. MERCADO — SHEET OF

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	10	10': CLAYEY SAND (SC), LIGHT GRAY (5Y 7/1), F-SAND, ROUNDED, SLIGHT TO NO PLASTICITY, MOIST.		10-12 (0.7)		10-15': (3.7/5)
	11	11': SANDY CLAY (CL), LIGHT GRAY (5Y 7/1), F-SAND, SLIGHT PLASTICITY, MOIST.				
	12					▽ GW ENCOUNTERED AT 12 FT
	13	12': CLAYEY SAND (SC), LIGHT GRAY (5Y 7/1), F-M SAND, SUBROUNDED, MED DENSE, WET				
	14	13.5': SAND (SP), LIGHT GRAY (5Y 7/1), F-SAND, SUBROUNDED, LOOSE SAND, LITTLE TO NO FINES, WET.				
	15					15-20': (NO RECOVERY)
	16	16': SAND (SP), YELLOW (2.5Y 7/6), F-M SAND, SUBROUNDED, LOOSE SAND, LITTLE TO NO FINES, WET.				
	17					
	18	18': INCREASE GRAIN SIZE				
	19					
	20					

HTRW DRILLING LOG

27F-MW2

HOLE NUMBER

PROJECT: Fort Stewart USTs

INSPECTOR L. MERCADO

SHEET OF

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	20	20': SAND(SP), YELLOW (2.5Y 7/6), M-SAND, SUB-ROUNDED, LOOSE, WET.				20-25': (NO RECOVERY)
	21					
	22					
	23					
	24					
	25	25': SAND(SP), PALE YELLOW (2.5Y 8/4), F-M SAND, LOOSE, SUBROUNDED, WET.				25-30': (1.5/5)
	26					
	27	27': SAND(SP), GREENISH GRAY (10Y 6/1), F-M SAND, LOOSE SUBROUNDED, WET.				
	28					
	29					
	30					

HTRW DRILLING LOG — 27F-MW2 — HOLE NUMBER

PROJECT: Fort Stewart USTs — INSPECTOR L. MERCADO — SHEET OF

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSAPCE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	30	30': SAND (SP), GREENISH GRAY (10Y6/1), F-M SAND, LOOSE, SUBROUNDED, WET.				30-35': (0.5/5)
	31					
	32					
	33					
	34					
	35					35-40': (0/5)
	36					
	37			37-40' GEOTECH SAMPLE NO. 7J1273 @ 1615		
	38					
	39	39': SAND (SP), AS ABOVE WITH TRACE OF COARSE SAND, WET.				
	40					

HTRW DRILLING LOG	27F-MW2	HOLE NUMBER
ROJECT: Fort Stewart USTs	INSPECTOR L. MERCADO	SHEET OF

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		40': SANDY CLAY (CL), LIGHT GREENISH GRAY (5GY 7/1) F-CRS SAND, STIFF, SLIGHT PLASTICITY, ~~WET~~ MOIST. LMM 10/10/99				40-45': (5/5) (HAWTHORNE?)
	41	41': CLAYEY SAND (SC), LIGHT GREENISH GRAY (5GY 7/1), F-CRS SAND, ROUNDED, DENSE, SLIGHT TO NO PLASTICITY, MOIST.				
	42					
	43	43-45': CLAYEY SAND (SC), AS ABOVE WITH TRACE OF BIVALVE SHELL FRAGMENTS, MOIST.				
	44	45': END OF BORING				
	45					
	46					
	47					
	48					
	49					
	50					

48

HTRW DRILLING LOG

DISTRICT: USACE - Savannah

HOLE NUMBER: ZTF-MW-63(TJ)

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Miller Drilling Company

SHEET 1 OF 4

3. PROJECT: Fort Stewart

4. LOCATION: 3rd Engineers Brigade Motorpool.

5. NAME OF DRILLER: Doug Bishop

6. MANUFACTURERS DESIGNATION OF DRILL: CME 75

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: CME Model 75 Drill rig; 4¼-in. ID, Hollow-stem augers, with 9-in. diam. bit, 3½-in. ID x 5-Ft spl. + spoons.

8. HOLE LOCATION: E. of covered Maint. pad. N 684392.10

9. SURFACE ELEVATION: TOC 68.45 ft E 821630.44

10. DATE STARTED: 10-10-99

11. DATE COMPLETED: 10-10-99

12. OVERBURDEN THICKNESS: N/A

15. DEPTH GROUNDWATER ENCOUNTERED: 14 Ft BGS

13. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 12.3 Ft BTOC - 7.7 Ft BGS / 2 hrs.

14. TOTAL DEPTH OF HOLE: 25.0 Ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):

18. GEOTECHNICAL SAMPLES: DISTURBED / UNDISTURBED

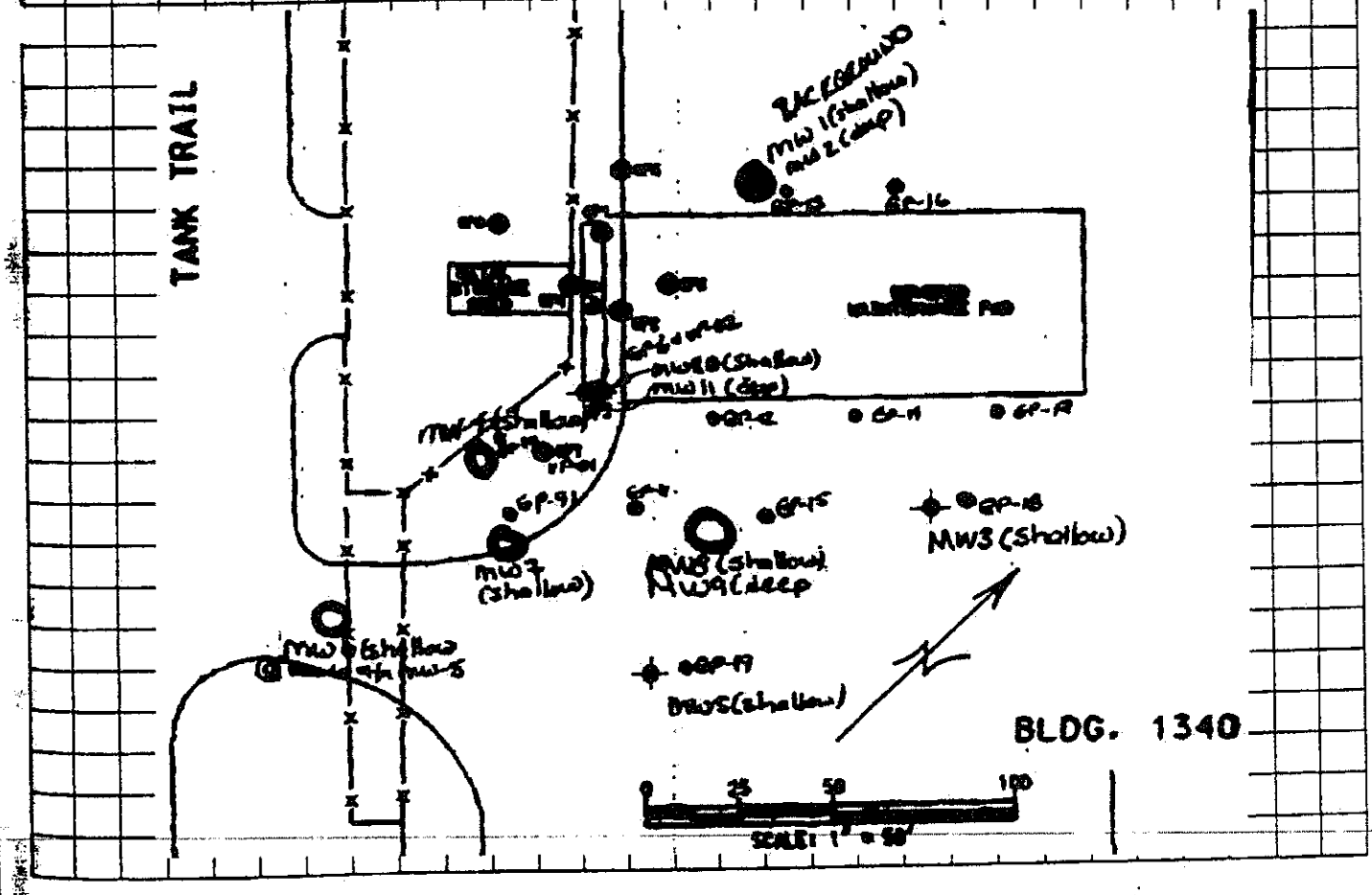
19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	X	X	SVOC			

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

LOCATION SKETCH/COMMENTS

SCALE: 1-in. = 50 Ft



PROJECT: Fort Stewart USTs | INSPECTOR Timothy Coffey | SHEET 2 OF 4

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH. SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete pavement	N/A	N/A	N/A	
	1	Lt. red (10R 6/6) sandy clay: moist, mottled, mod plast.	1.3ppm		TJ1371	Drill: 4.3 Ft Recover: 3.2 Ft
	2	Lt. yell-brn (10YR 6/4) silty gravel sand: moist, F-to C-grnd, loosely packed.				
	3	Black (10YR 2/1) silty sand Dry, F-grnd, ~~dark top~~, massive, loosely packed.	7.5ppm	N/A	N/A	
	4	V. pale brn (10YR 8/3) sand: dry, massive, F-grnd, dark top, loose.				
	5	No Recovery	N/A		N/A	
	6	Gray (10YR 6/1) and Lt yell-brn (10YR 6/4) sandy clay: moist, plastic, mottled to stratified	1.8ppm		N/A	Drill: 5.0 Ft Recover: 5.0 Ft
	7			N/A		
	8					
	9	gray and Lt. red sandy clay: moist, stiff, plastic, mottled.	76ppm		TJ1372	
	10					

HTRW DRILLING LOG

HOLE NUMBER 27F-MW-05S

PROJECT: Fort Stewart USTs | INSPECTOR Timothy Coffey | SHEET 3 OF 4

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Gray clay: moist, stiff plastic, thinly laminated/ stratified	13ppm.	N/A	N/A	Drill: 5.0 Ft Recover: 4.2 Ft
	12	V. pale brn: clay sand: wet, stratified/ thin-lam, F-grnd.		751373		
	13	Yellow (10YR 7/6) clay sand: wet, mottled, graded, F- to C-grnd, mod. packed to loose.	1.3ppm		N/A	Coarse sand bed.
	14					Water @ 14 Ft
	15	No Recovery	N/A	N/A	N/A	
	16	Yellow (10YR 8/6) clay Silt: wet, F- to M-grnd, sl. plastic.				No sampling, lith from cuttings.
	17			751373		
	18		N/A		N/A	
	19					
	20					

HTRW DRILLING LOG

HOLE NUMBER 21F-MW-07

PROJECT: Fort Stewart USTs

INSPECTOR Timothy Coffey

SHEET 4 OF 4

51

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	21	Yellow clay sand (as above)		751373		
	22		N/A	N/A	N/A	
	23					
	24					
	25					TD = 25.0 ft.
	26					
	27					
	28					
	29					
	30					

HTRW DRILLING LOG

DISTRICT: USACE - Savannah

HOLE NUMBER: 27F-MW-04

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Miller

SHEET 1 OF ___

3. PROJECT: Fort Stewart

4. LOCATION: 27F

5. NAME OF DRILLER:

6. MANUFACTURERS DESIGNATION OF DRILL: Mobil B-59

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4¼" ID HSA 5ft continuous split spoon

8. HOLE LOCATION: See Map Below

9. SURFACE ELEVATION: TOC 68.02 ft N 684325.34 E 821527.60

10. DATE STARTED: 11 Oct 99

11. DATE COMPLETED: 11 Oct 99

12. OVERBURDEN THICKNESS: NA

15. DEPTH GROUNDWATER ENCOUNTERED:

13. DEPTH DRILLED INTO ROCK: NA

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 7.4 / 4 hrs (auger string @ 15 ft bls)

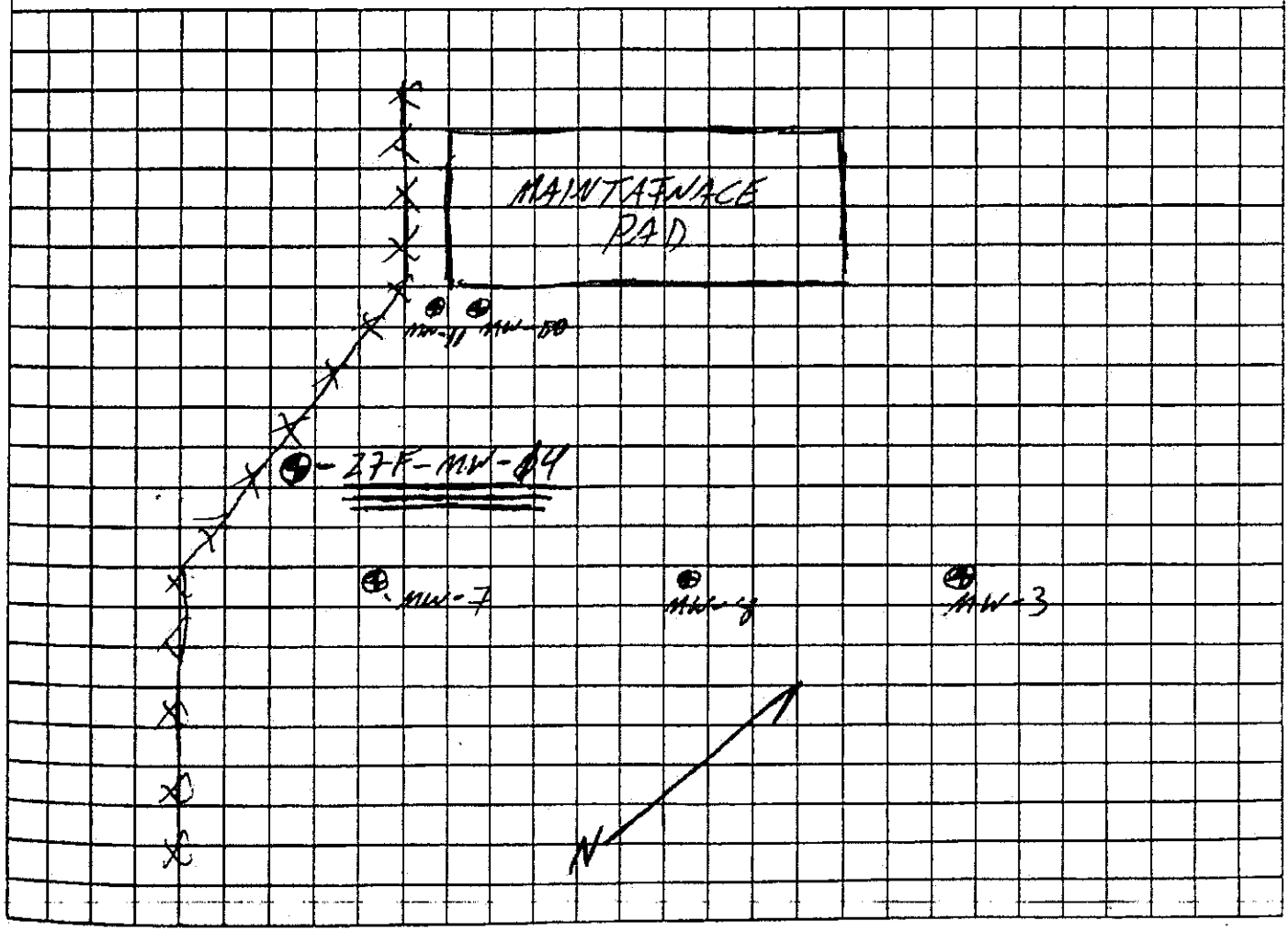
14. TOTAL DEPTH OF HOLE: 18.0 ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	✓		SVOA			
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
		✓				

LOCATION SKETCH/COMMENTS

SCALE: NA



• NOTE TYPE OF MONITORING (i.e., borehole cuttings, monitoring well atmos., soil core, breathing zone, venting compressed air, etc.)

(Signature and Date)

QA CHEC.

HTRW DRILLING LOG

PROJECT: Fort Stewart USTs | INSPECTOR Brad Baker | SHEET 1 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	SAND; sand: med ~85% silt~15%; Lt Brownish Gray 10YR6/2; subrounded; mod sorted; soft; non plastic; moist roots present (SM)	0.2 ppm		0-1 ft ID: FJ1471 0930 hrs	Run #1 0-5 ft 3.4 ft recovery
	1	CLAYEY SAND; sand: med-coarse ~70%, clay ~30%; Lt Brownish Gray 10YR6/2 variegated red and yellowish orange; subrounded; poorly sorted; firm low plasticity; moist (SC)		NA		
	2					
	3	SAND; sand: fine-med ~85% silt~15%, DK Gray Lt Brown 10YR4/2 banded dk brown and light Gray; mod sorted; soft-firm; non plastic; moist (SM)	0.6 ppm			
	4					
	5	SAND; CLAY; sand: med-coarse ~40% clay ~60%; Yellow 10YR8/6 w/wisps of lt. gray clay; subrounded; poorly sorted; firm med plasticity; moist; (CL)			FJ1442 R.insate 5.0-6.9 ft ID: FJ1472 1010 hrs	0935 Rinsate sample collected prior to 5-10 ft run. DI H2O thru sample decon split spoon Run #2 5-10 ft 1.9 ft recovery
	6		0.6 ppm			
	7	SAND; med-coarse ~80%, silt ~20%, Yellow 10YR8/6 w/thick wisps of Med red and lt. gray; subrounded; mod sorted; firm; non plastic; moist (SM)		NA		
	8					
	9					
	10					

HTRW DRILLING LOG

HOLE NUMBER ZFF-MW-[illegible]

PROJECT: Fort Stewart USTs | INSPECTOR [illegible] | SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	No Recovery	NA	NA	NA	Run #3 10 - 15 ft - 12.0 ft bls drilling became soft - BZ - 0.0 ppm cuttings 70.0 ppm @ 13 ft bls - Outside of spoon wet bottom 2.5 ft. ∴ 12.5 ft bls - 1040 hrs. H_2O heard @ 9.5 ft bls - No free product or saturated soils throughout sample intervals - 1120 hrs - H_2O @ 8.3 ft bls auger string @ 15.0 ft
	12					
	13					
	14					
	15	Drilled Out	14.2 ppm	Bag Sample 15-16 ft bls 1500 hrs		1445 H_2O @ 7.4 ft bls
	16		NA		NA	
	17					
	18	TD = 18.0 ft bls.				
	19					
	20					

HTRW DRILLING LOG

DISTRICT: USACE - Savannah

HOLE NUMBER: 27F-MW-05(15)

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Miller Drilling Company

SHEET 1 OF 3

3. PROJECT: Fort Stewart

4. LOCATION: 3rd Engineers Brigade Motorpool.

5. NAME OF DRILLER: Doug Bishop

6. MANUFACTURERS DESIGNATION OF DRILL: CME 75

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: CME Model 75 Drill rig; 4 1/4-in. ID Hollow-stem augers, with 9-in. diam. bit; 3 1/2-in. ID x 5-ft split-spoon samplers

8. HOLE LOCATION: E. of covered maint. pad.

9. SURFACE ELEVATION: TOC 67.99 ft N 689514.94 E 821614.36

10. DATE STARTED: 10-10-99

11. DATE COMPLETED: 10-10-99

12. OVERBURDEN THICKNESS: N/A

13. DEPTH DRILLED INTO ROCK: N/A

14. TOTAL DEPTH OF HOLE: 20.0 Ft

15. DEPTH GROUNDWATER ENCOUNTERED: 13.5 Ft BGS

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

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):

18. GEOTECHNICAL SAMPLES: DISTURBED / UNDISTURBED

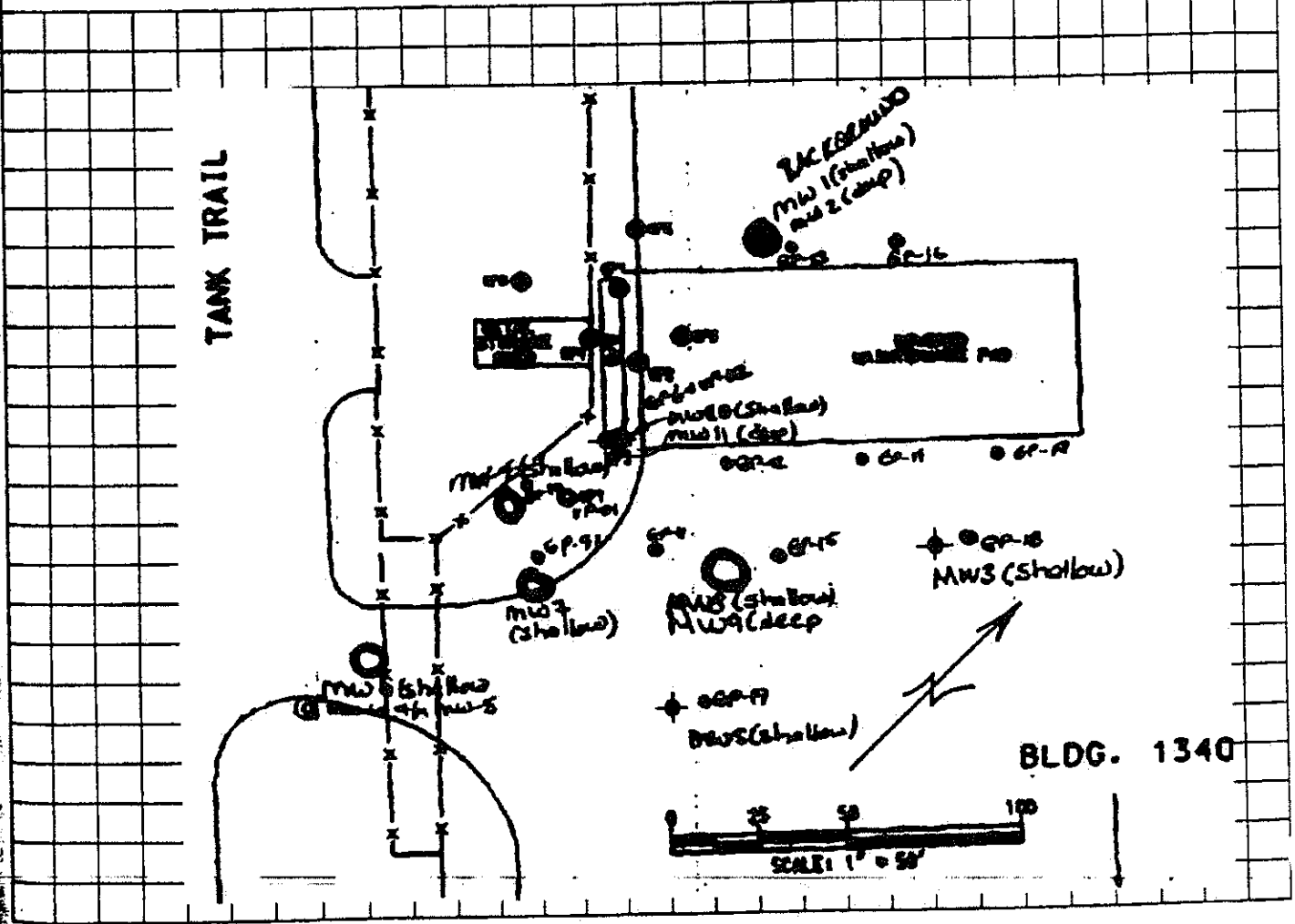
19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	X	X	SVOC			

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		X		Timothy Coffey

LOCATION SKETCH/COMMENTS

SCALE: 1-in. = 50 Ft.



HTRW DRILLING LOG

PROJECT: Fort Stewart USTs | INSPECTOR Timothy Coffey | SHEET 2 OF 3 | 64

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete Pavement	N/A	N/A	N/A	
	1	Lt. red (10R 6/6) sandy clay; moist, sl. plastic (50% clay / 50% sand), fine grnd, mottled.	6.6ppm		TJ1571	Drill. 4.4 Ft Recover. 3.9 Ft
	2					
	3	Black (10YR 2/1) silty sand w/clay; dry, F grnd, massive, rel. stiff (~30% clay)	10.1ppm	N/A	TJ1572	
	4	Pale yellow (2.5Y 7/3) sandy clay (see below)				
	5	No Recovery	N/A		N/A	
	5	Pale yellow sandy clay; moist, mottled, stiff, plastic.	1.1ppm	N/A	N/A	Drill. 5.0 Ft Recover. 4.5 Ft
	7	Gray (10YR 7/1) and red (10R 4/6) sandy clay.				
	8	Lt. green-gray (10GY 7/1) Sandy clay; moist, strata/thinly lam, very stiff, plastic.	1.0ppm		N/A	
	9	More sand/silt than clay.		TJ1573		
	10	No Recovery	N/A	N/A	N/A	

HTRW DRILLING LOG

HOLE NUMBER 27F-MW06

PROJECT: Fort Stewart USTs | INSPECTOR Timothy Coffey | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Very pale brn (10YR 8/2) sand: wet, massive, F-grnd, pretty,	N/A	731573	N/A	Drill: 5.0 Ft Recover: 2.6 Ft
	12					
	13	No Recovery	N/A	N/A	N/A	Water @ 13.5 Ft.
	14					
	15	Very pale brn sand (as above)				No core, lith. from cuttings.
	16					
	17		N/A	731573	N/A	
	18					
	19			N/A		
	20					TD = 20.0 Ft

HTRW DRILLING LOG

DISTRICT: USACE - Savannah

HOLE NUMBER: 27F-MW-06(TF)

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Miller Drilling Co

SHEET 1 OF __

3. PROJECT: Fort Stewart

4. LOCATION: 3rd Engineering

5. NAME OF DRILLER: Darren Penn

6. MANUFACTURERS DESIGNATION OF DRILL: Mobil B-59

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4¼" Augers 5' long 4" split spoon samplers

8. HOLE LOCATION: see map

9. SURFACE ELEVATION: TOC 67.88 N 684253.33 E 821526.08

10. DATE STARTED: 10/11/99

11. DATE COMPLETED: 10/11/99

12. OVERBURDEN THICKNESS: greater than TD

15. DEPTH GROUNDWATER ENCOUNTERED: 9.1' BGS = Sand wet

13. DEPTH DRILLED INTO ROCK: NA

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 7.75 after ~2 min of piercing clay zone

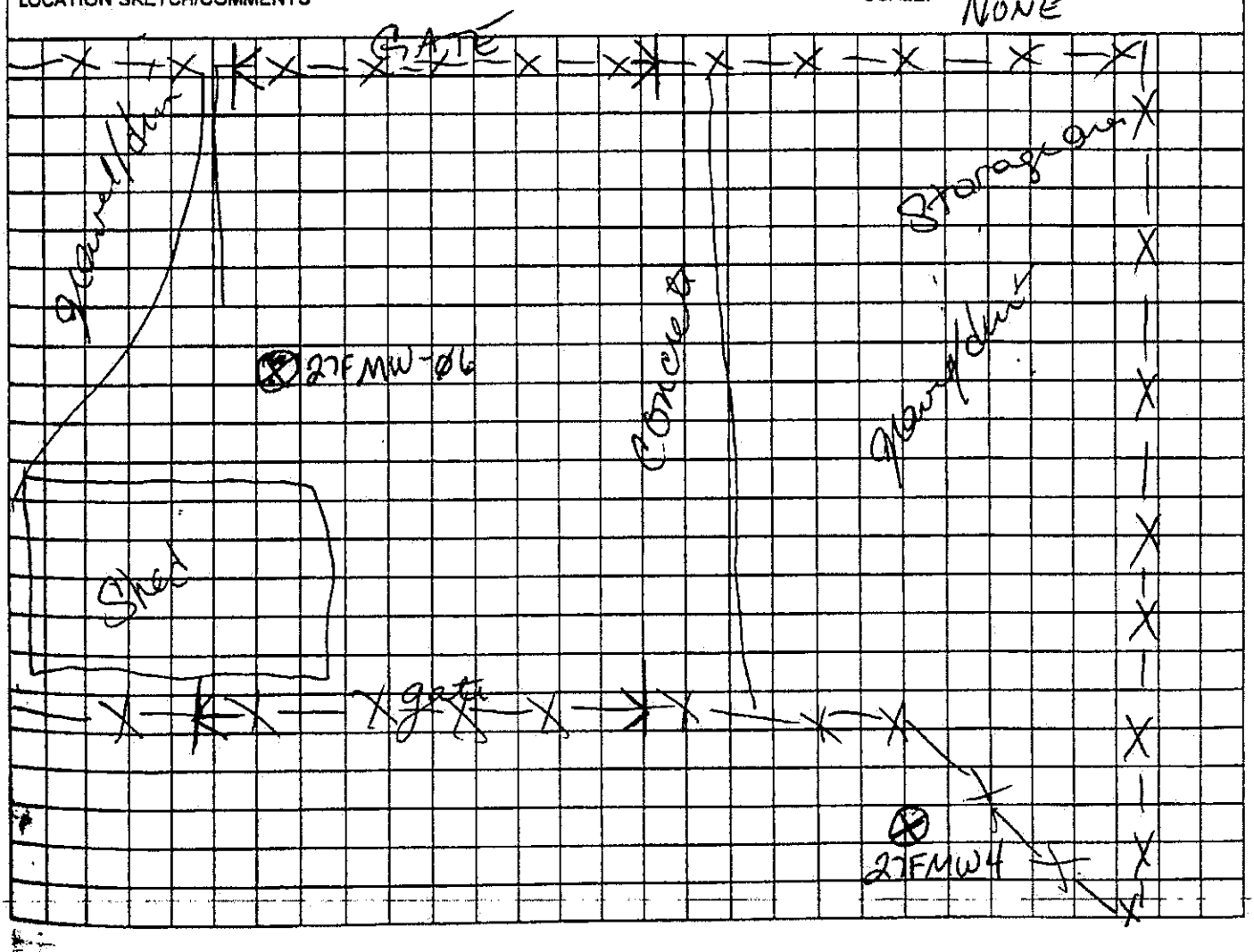
14. TOTAL DEPTH OF HOLE: 24' BGS

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 7.25' BGS ~30 min. after setting well.

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: NA			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	RCRA METALS / SVOCs	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY: NA
	X					
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: Heather A Sanville		
		X				

LOCATION SKETCH/COMMENTS

SCALE: NONE



breathing zone, venting compressed air, etc.)

(Signature and Date)

HTRW DRILLING LOG — Heather Smith — HOLE NUMBER 27F-MW03

PROJECT: Fort Stewart USTs — INSPECTOR — SHEET 2 OF 5

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete core			Sample ID # 7J1671 @1215 1.0	RUN #1 RUN 5' Rec. 3.1 + .6 concrete Loss 1.3' FILL
	Ø1	SC - Clayey Sand. w/ Silt ~15% lean (Hard) clay nodules intermixed w/ Base mtrl. & ~20% fat clay ? ~ 50% med → cs. grained angular Sand. ~15% silt/fines	2.2 ppm			lt. grey = lean clay nodes.
	Ø2	Mottled colur - predominantly 5YR 5/4 Reddish brown w/ 5YR dk. reddish brown, 5YR 7/1 grey	3/3			
		SM - Silty Sand med → fine Subrounded → Subangular grains, Soft dry, nonplastic 10YR 3/1 very dk. grey w/some 10YR 7/1 grey streaks.	5.3 ppm			
	Ø3	SC - Clayey Sand - hard dry ~5% fine Sand, med. gr. lean clay.				SC clay layer is Soft. 10YR 3/1 v. dk. grey
	Ø4	SM - Silty Sand. Med → fine grained, Sub rounded → Subangular Sands dry to slightly moist. 10YR 6/4 light yellowish brown				NO ODOR ON THIS RUN
		Loss				
	Ø5	SM - Silty Sand - as above.				
		CL - Lean Clay w/ Sand. firm, hard, high plasticity, 5YR 7/1 lt. grey. Slightly Mottled w/ 5YR 3/3 dk. reddish brown, & 10YR 5/4 yellowish brown	2.3 ppm			RUN #2 RUN 5.0' Rec. 4.3 Loss 0.7
	Ø6					
	Ø7	Slightly moist [Where DRY - this clay breaks apart w/ blocky weathering]	2.5 ppm			
	Ø8	Sand is fine grained Subrounded. (~25% sand)			7.5-9.1 Sample ID # 7J1672 @1238	Water rose to 7.75' almost immediately after breaking clay seal. NO ODOR ON THIS RUN
	Ø9	Slightly moist				
		SM - Silty Sand - Saturated Soft, med → fine gr. Subrounded → Subangular			9.1	definate contact line @ 9.1' BGS hard lean clay to soft Saturated Sand.
		Loss				
	10	SM - Silty Sand - Saturated	2.3 ppm			

HTRW DRILLING LOG — Heather Smith — HOLE NUMBER 27F-MW-63

PROJECT: Fort Stewart USTs — INSPECTOR — SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (E)	REMARKS (G)
	11	SM - Silty Sands. ~~dense~~ wet soft Color = 10YR 4/3 brown No smell from cuttings fine → med. gr. Sands	over cuttings 1.2ppm			Log by cuttings only
	12					*NO ODOR DURING DRILLING NO PID HITS ON CUTTINGS OR B.Z OVER-SAMPLE-TIN
	13	gradually getting wetter & lighter in color....				
	14	SM - Silty Sand Saturated fine gr. Subrounded Sands.				unsure of exact contact, but just before last 5' RUN facies change to runny saturated fine Sands. (looks like cookie dough)
	15	10YR 7/6 yellow				
	16		headspace 1.8ppm	Sample ID 7J1623		
	17					
	18					
	19					
	20					B.O.B. 20.0

HTRW DRILLING LOG

DISTRICT: USACE - Savannah

HOLE NUMBER: 27F-MW-07

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Miller

SHEET 1 OF ___

3. PROJECT: Fort Stewart

4. LOCATION: 27F

5. NAME OF DRILLER: Darren Penn

6. MANUFACTURERS DESIGNATION OF DRILL: Mobil B-59

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Hollow Stem 4¼" ID Augers 5 ft continuous split spoon 8¼" ID HSA

8. HOLE LOCATION: See Map Below N 684315.20 E 821556.65

9. SURFACE ELEVATION: TOC 68.14 ft

10. DATE STARTED: 10 Oct 99

11. DATE COMPLETED: 10 Oct 99

12. OVERBURDEN THICKNESS: NA

15. DEPTH GROUNDWATER ENCOUNTERED: 9.5

13. DEPTH DRILLED INTO ROCK: NA

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

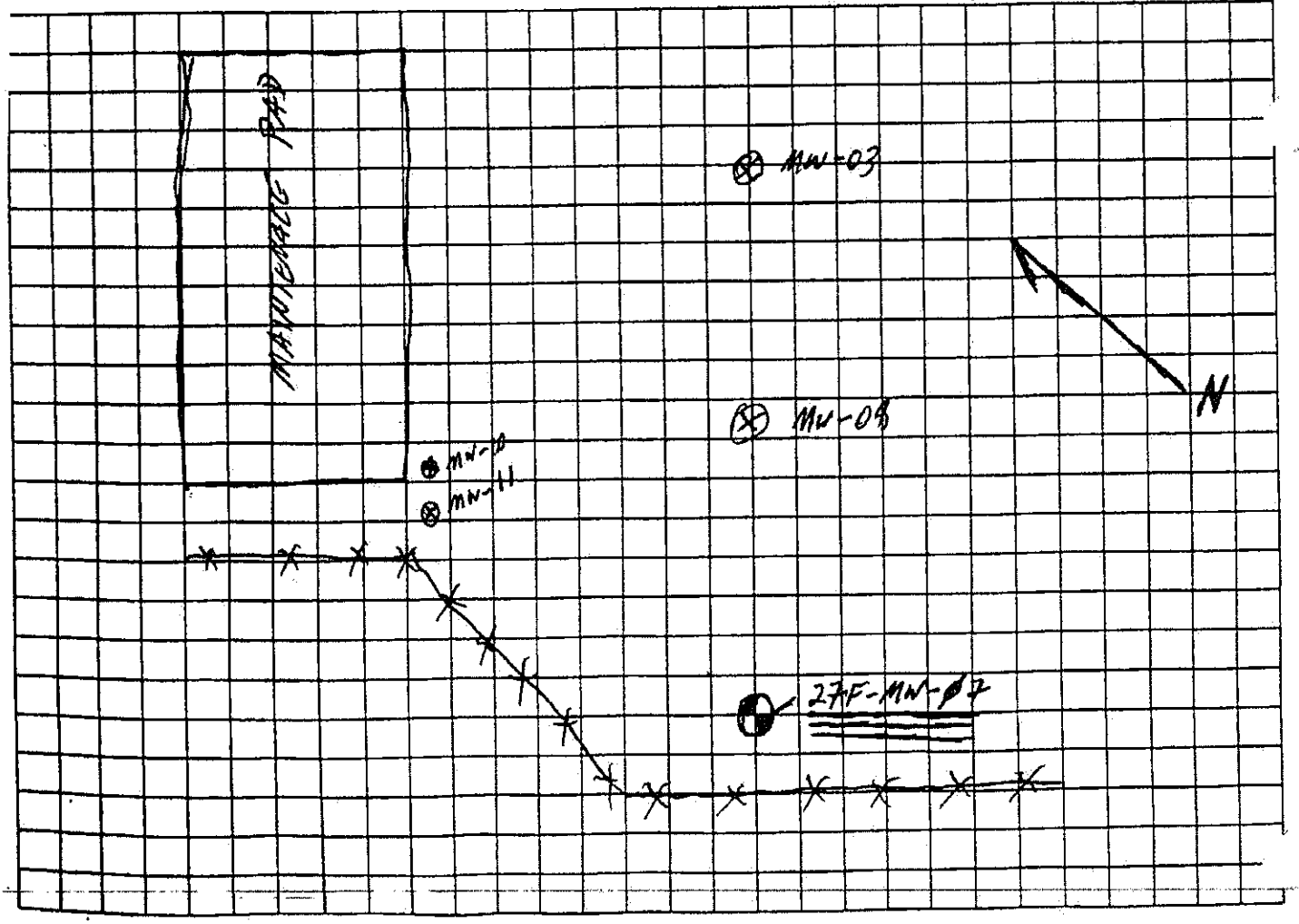
14. TOTAL DEPTH OF HOLE: 21.0 ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	✓	✓	TOC	SVOC		
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
		✓				

LOCATION SKETCH/COMMENTS

SCALE: NA



* NOTE TYPE OF MONITORING (i.e., borehole cuttings, monitoring well atmosphere, soil core, breathing zone, venting compressed air, etc.)

QA CHECK BY: _____ (Signature and Date)

HTRW DRILLING LOG

HOLE NUMBER GFT-MW01 4

PROJECT: Fort Stewart USTs | INSPECTOR Brad Baker | SHEET 1 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		CONCRETE SLAB 0 - 0.85 ft				
	1	SAND; med - fine ~80% silt 20%; Black 10YR 2/1; subrounded; poorly sorted; non plastic; soft; moist (SM)		actual 0.85 - 1.85 ft	1419 hrs 7J1771 labeled as 0.0 - 1.0 ft	0 - 5 ft run 0.0 ppm BZ
	2	SANDY CLAY; Sand: med - fine ~40% clay ~60%; Lt Red 2.5YR 7/6; variegated white and yellow; firm; subrounded; poorly sorted; moist (CL) med. plasticity	1.8 ppm			Bottom 1.0 ft of spoon (outside) is wet
	3	SAND; med - fine ~80% silt ~20%; GRAY 5Y 5/1; banded med. brown; subrounded; mod sorted; firm, non plastic; moist (SM)	45.6 ppm	NA	1425 7J1772 2.5 - 5.0 ft	Recovery 4.3 ft ∴ 100%
	4	SANDY CLAY; sand; med - fine ~35%, clay ~65%; Lt Org 7/1 banded yellow 10YR 8/6; subrounded; poorly sorted; med. plasticity; moist (CL)				
	5	~~Sample~~ SAME AS ABOVE ~~not run~~ (4.9 - 5.0 ft description) coarse grained sand FIRM				
	6		4.6			5 - 10 ft Run 50% Recovery (3.0 ft)
	7	Clayey SAND; sand ~70% med - coarse, clay ~30%; Red 10R 5/6 banded yellow 10YR 8/6; subrounded; poorly sorted. low plasticity; soft; moist (SC)		NA	NA	
	8	CLAY; sand: fine ~20%, clay ~80%; Lt Red 2.5YR 7/6; hard; poorly sorted; subrounded; med plasticity; moist				
	9					
	10					

HTRW DRILLING LOG

HOLE NUMBER GTF-MW-5

SHEET 2 OF 3

PROJECT: Fort Stewart USTs

INSPECTOR Brad Baker

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11					Run 10-15 ft
						0.0 recovery
						H_2O tagged @ 9.5 ft
						Tagged inside 15 ft auger string - TD @ 12.5 ft ∴ 2.5 ft of heaving soil
	12		NA	NA	NA	
	13					
	14					
	15	Drilled Out No Split Spoon				Lt Red - Brown saturated sands med - coarse
	16					
	17		NA	15 10 hr 17-18.0 ft 75/173 Bag Sample	NA	
	18					
	19					
	20					

HTRW DRILLING LOG

HOLE NUMBER ~~ZFF-MW97~~ 6

PROJECT: Fort Stewart USTs | INSPECTOR | SHEET 3 OF

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Drilled OUT no Split Spoon				Lt Red-Brown Saturated med-coarse sand
	21	TD = 21.0 Ft				
	22					
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					

HTRW DRILLING LOG

DISTRICT: USACE - Savannah

HOLE NUMBER: 29FMW-08

SHEET 1 OF 5

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Miller Drilling Company

3. PROJECT: Fort Stewart

4. LOCATION: 3rd Engineering

5. NAME OF DRILLER: Darren Penn

6. MANUFACTURERS DESIGNATION OF DRILL: Mobil B-59

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 2" split spoons; 4¼" augers; 8¼" augers.

8. HOLE LOCATION: See map N 681345.97 E 821585.83

9. SURFACE ELEVATION: TOC 68.34 ft

10. DATE STARTED: 10/9/99

11. DATE COMPLETED: 10/10/99

12. OVERBURDEN THICKNESS: greater than T.D.

15. DEPTH GROUNDWATER ENCOUNTERED: Soil wet @ 9.2

13. DEPTH DRILLED INTO ROCK: NA

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: WL up to 8.46 after 15 min

14. TOTAL DEPTH OF HOLE: 15' BGS.

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): WL @ 7.9' BGS after ~12 hrs.

18. GEOTECHNICAL SAMPLES: DISTURBED X; UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES: NA

20. SAMPLES FOR CHEMICAL ANALYSIS: VOC ~~BTEX~~; RCRA METALS SVOC/TOC; OTHER (SPECIFY); OTHER (SPECIFY); OTHER (SPECIFY)

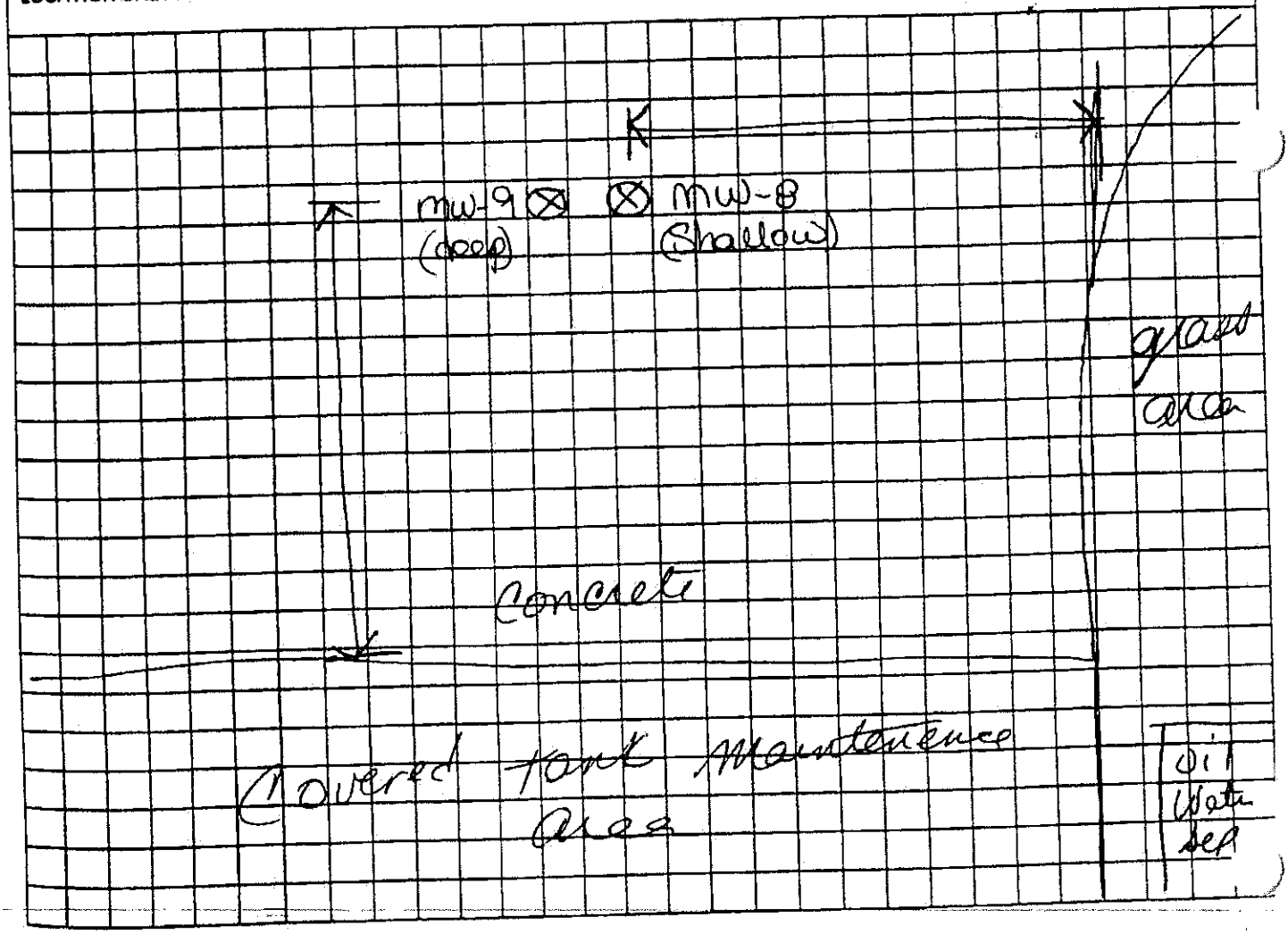
21. TOTAL CORE RECOVERY: ~~NA~~

22. DISPOSITION OF HOLE: BACKFILLED; MONITORING WELL X; OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR: Heather L Smith

LOCATION SKETCH/COMMENTS

SCALE: NONE



DA CHECK BY: _____ (Signature and Date)

* NOTE TYPE OF MONITORING (i.e., borehole cuttings, monitoring well atmosphere, soil core, breathing zone, venting compressed air, etc.)

HTRW DRILLING LOG — Heather Smith

HOLE NUMBER 27F-MW-B

PROJECT: Fort Stewart USTs | INSPECTOR | SHEET 2 OF 5

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete			Sample ID ϕ-1'	Concrete cored out earlier
	ϕ1	SC- Clayey Sand med→cs gr. sand w/ ~15% fines, angular→subrounded, low to med. plasticity, soft moist	ϕ.9 ppm			RUN #1 ϕ.7→2.45 Loss: .25'
	ϕ2	Predominantly 5YR7/1 lt. grey w/ mottled 10YR5/6 yellowish red.				
	ϕ3	SM Silty Sand 10YR2/1 Black soft, dry, nonplastic med gr, Subang. Sands	3.1 ppm			RUN #2 2.7 - 4.7
		Loss				
		gradational color change to: 10YR6/1 GREY Same mtrl as above.				
	ϕ4					
	ϕ5	SC- Clayey Sand med. gr. ang→ subrounded grains, med. plasticity Soft to slightly firm - Color mottled from 5YR7/1 lt. grey w/ 10YR5/6 yellowish red.	1.8 ppm			RUN #3 RUN 4.7 - 5.7 Resistance after ϕ.9' Rec: 45# Loss
		Loss				
	ϕ6					RUN #4 RUN 5.7→7.7 Rec 2' Loss ϕ Augered to 5.7' BGS Pass thru resistance run S.S. from 5.7-7.7
	ϕ7	SC- Clayey Sand w/ med→cs. gr., angular to subrounded in fat clay med→high plasticity Soft moist (firm from 7.1→7.7' BGS) Same color as above.	~~#5 soil~~			~~RUN~~ WL after 12 hrs
		CL - Lean Clay w/ fine gr. Sand. 5YR7/1 lt. grey.	30.7 ppm			RUN #5 RUN 7.7 - 9.7 WL after ~20 min
	ϕ8	SC- Clayey Sand fat clay w/ med.→cs. gr. sand ang.→subrounded grains. Soft moist 10YR7/1 lt. grey w/ 10YR5/6 yellowish red.		8½		
		CL - Lean Clay HARD/firm, dense, moist 5Y7/1 lt. grey high plasticity	30.4 ppm	geotech sample ID# 7J1873		
	ϕ9					
		SM Silty Sand	WL @ 9' BGS	10'	Same ID#	RUN #6 RUN 9.7→10.7
	10					

HTRW DRILLING LOG

HOLE NUMBER [illegible] 22

PROJECT: Fort Stewart USTs	INSPECTOR	SHEET 3 OF 5

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSAPCE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		SM - Silty Sand fine gr. Sand. Subrounded Saturated, soft, nonplastic 10R8/1 White	29.1 ppm		Sample ID# continued	Sample taken from Run #6 @ 10.7
	11 12 13	SM as above color Begins to change to brown - As depth increases Smell goes away in auger cuttings until it is gone ~13' bgs and entire cuttings are Brown.				Log w/ cuttings only 10.7-15.0 Run # 7 - 5' auger
	14 15	SM - Silty Sand Complete color change to 10YR7/2 lt. grey. No odor - Same mtel as above.				
	16 17 18 19 20	SM - Silty Sand med → cs. grained Subangular to angular grains Saturated soft, nonplastic 10YR7/2 light grey Strong odor from cuttings	headspace 29.3 ppm			~~B.O.B. 15.0' BGS~~ 10-11-99 Decided to make this a deep hole We will overdrill the set well & continue to set screen @ 30-40' BGS Run # 8

HTRW DRILLING LOG						HOLE NUMBER 27F-MW-08 23
PROJECT: Fort Stewart USTs		INSPECTOR Heather L Smith				SHEET 4 OF 5
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	20–21	Same as above				logging cuttings only
	21–22	SM-Silty Sand Saturated slight increase in cs. gr. mtr'.	over cuttings 15.7ppm			RUN # 9
	22–23	same color as above	headspace 33.6ppm BZ. Ø			
	23					
	24					
	25–26	Same as above				Logging Cuttings only
	26–27	SM- silty Sand Saturated smell decreases	over cuttings Ø.5ppm			RUN # 10
	27–28	color still 10YR 7/2 lt. grey	B.Z. Ø			headspace taken from composite of cuttings during 5' run.
	28–29		headspace 28.2ppm			
	29–30					

27E-MW-08

Depth	Core description	headspace PID	GeoTech Sample	analytical Samp	Remarks
	SM - Silty Sand Saturated	overcuttings 2.4ppm			RUN#
31	Color change to: 10YR7/4 Very pale brown	B.Z. Ø			headspace is a composite of Samples from entire 5' augar run.
32	Soft med→cs. gr material Subrounded→angular.	headspace 22.8			
33	ODOROUS!				RUN# 11
34					
35	Same material as above.	overcuttings Ø			RUN#12
36	Material in cuttings matched material as above,				
37	but material Stuck to the augars is a dk. greenish gray	B.Z. Ø			Material in cuttings looks exactly the same as the earlier 20'
38	fat clay w/ v.cs. angular grained sands & Shell fragments. high plasticity.				
39	contact is purely estimated. there was ~6' of stiff clay adheared to the augars from ~36-42' BGS.	headspace 25.6ppm			
40	I don't know how far we actually				

~~Same [illegible] above~~ augared in to this Hawthorne Formation. Best Guess [illegible]

B.O.B. 42' BGS

4'

HTRW DRILLING LOG

DISTRICT: USACE - Savannah

HOLE NUMBER: 27F-MW-09

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Miller Drilling Company

SHEET 1 OF 4

3. PROJECT: Fort Stewart

4. LOCATION: 3rd Engineering

5. NAME OF DRILLER: Darren Penn

6. MANUFACTURERS DESIGNATION OF DRILL: Model 59

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 7 3/4" ID augers; 3½ 4'-5' long sample barrels

8. HOLE LOCATION: See map.

9. SURFACE ELEVATION: TOC 68.46ft N 684347.37 E 821587.85

10. DATE STARTED: 10/8/99

11. DATE COMPLETED: 10/12/99

12. OVERBURDEN THICKNESS: greater than T.D.

15. DEPTH GROUNDWATER ENCOUNTERED: Cuttings saturated @

13. DEPTH DRILLED INTO ROCK: NA

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

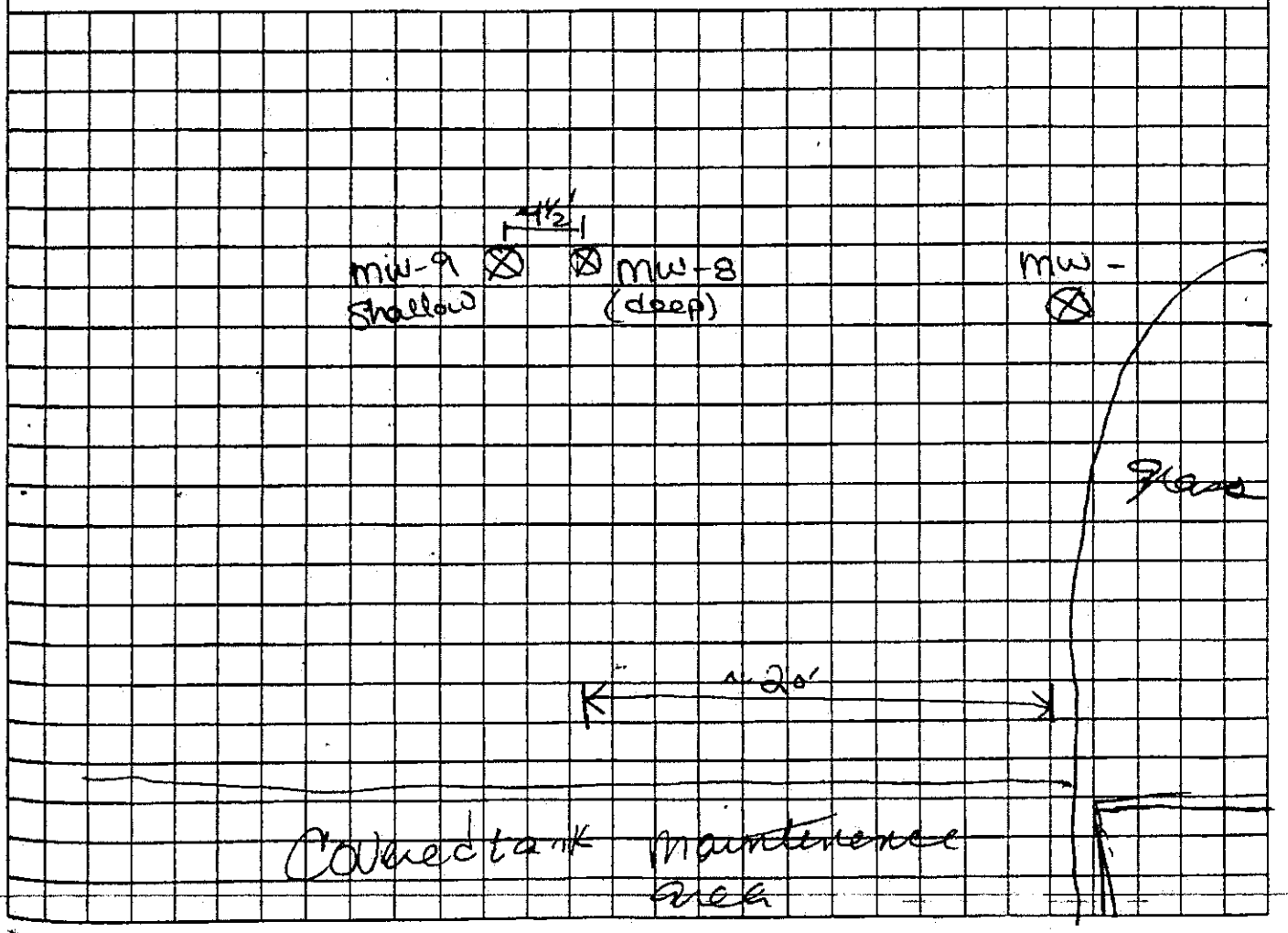
14. TOTAL DEPTH OF HOLE: 22.0' BGS

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):

18. GEOTECHNICAL SAMPLES	DISTURBED X	~~UNDISTURBED~~	19. TOTAL NUMBER OF CORE BOXES: NA			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	RCRA METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY: NA
	X	8VOC	—	—	—	
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: Heather L. Smith		
	—	X	—			

LOCATION SKETCH/COMMENTS

SCALE: None



HTRW DRILLING LOG

PROJECT: Fort Stewart USTs | INSPECTOR: Heather Smith | HOLE NUMBER 21F-MW | SHEET 2 OF 4

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING - RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete Core				RUN 5.0' Rec. 4.4 Loss ~~0.6~~ 0.6 = Concrete
	1	SC - Clayey Sand fat clay, f. gr. Sand Subangular → angular Mottled Colors	0.6 ppm		1-0	
	2	Predominantly 5YR 6/1 grey w/ 5YR 5/6 yellowish red. & 5YR 3/2 dk reddish brown. Fill - dry, soft.				
	3	SM - Silty Sand.. med → fine gr. subrounded to Subangular grains dry Soft nonplastic 10YR 7/1 V. dk. grey	44.6 ppm			
	4	SM - Silty Sand. Med → fine gr. Subrounded to Subangular 10YR 6/2 lt. brownish grey				
	5	~~Very loose~~ dry, soft nonplastic				
	6	SC - Clayey Sand fat clay w/ Sand. Sub. ang. → subrounded. Soft, moist, Some lt. grey Lean clay nodules. 10YR 7/4 V. Pale Brown	103 ppm			
	7	CL Lean clay w/ Sand Lean Clay w/ ~30% Sand - med. to fine grained subangular to subrounded Sands				
	8	Soft to firm - Predominantly firm - Stiff clay 5Y 7/1 lt. grey			8.0	
	9	CL - lean clay w/ trace fine gr. Subrounded sand. firm, dense, moist high Plasticity lt. grey. 5Y 7/1 lt. grey	225 ppm			
	10					

HTRW DRILLING LOG

HOLE NUMBER 27F-MW-95

PROJECT: Fort Stewart USTs

INSPECTOR Heather Smith

SHEET 3 OF 4

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	10	CL - w/trace sand go above 5Y7/1 lt. grey MOIST	headspace from cuttings 144 ppm			No more coring - Logging from cuttings only.
	11	CL w/ Sand (increasing sand content over depth. Sand increased to med. gr. size 5Y6/1 grey Moist STRONG ODOR				unsure of exact depth of contact
	12	SC - ~~Sandy Clay~~ Clayey Sand predominantly fine gr. Sand. some med. gr. rounded to subrounded grains Cuttings Wet - ball up as leaving augers 5Y6/1 grey STRONG ODOR	headspace from cuttings 123 ppm			
	13					
	14					
	15	SM - Silty Sand Saturated med grained subang to subrounded grains Soft nonplastic ~~5Y6/1 grey~~ STRONG ODOR 10YR 7/4 Very pale brown	headspace from cuttings 61.5 ppm			unsure of exact contact depth due to travel time up augers. dashed line is best educated depth.
	16					
	17					
	18					
	19		headspace from cuttings 36.1 ppm			
	20					

HTRW DRILLING LOG

HOLE NUMBER 27F-MW-95

PROJECT: Fort Stewart USTs

INSPECTOR Heather L. Smith

SHEET 4 OF 4

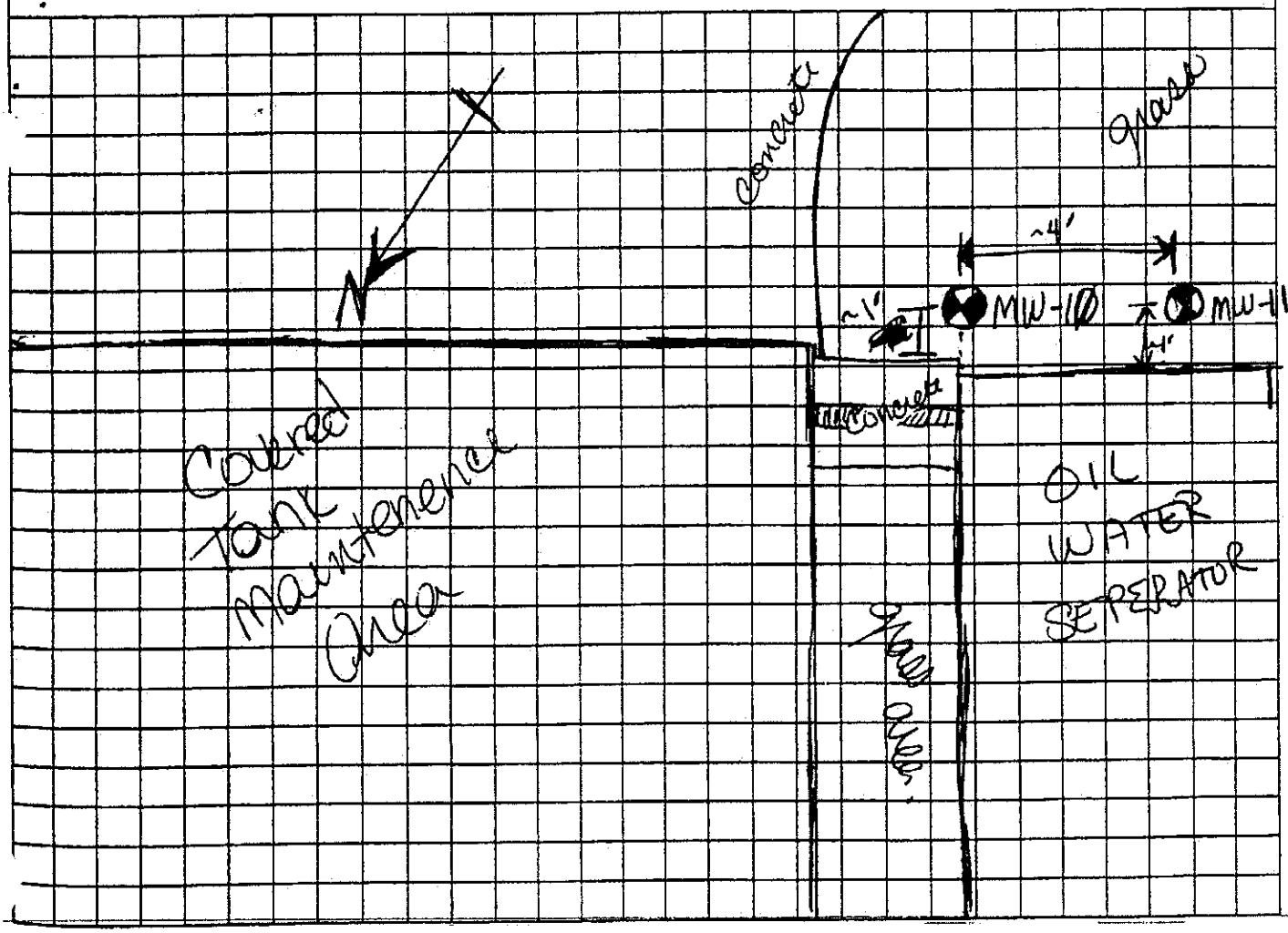
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	21	SM - Silty Sand as above				
	22					
	23	B.O.B. 22.0' BGS.				
	24					
	25					
	26					
	27					
	28					
	29					
	30					

HTRW DRILLING LOG

1. COMPANY NAME: SAIC	DISTRICT: USACE - Savannah	HOLE NUMBER: QFF-MW-10
	2. DRILL SUBCONTRACTOR: Miller Drilling Co.	SHEET 1 OF 4
3. PROJECT: Fort Stewart	4. LOCATION: 3rd Engineering	
5. NAME OF DRILLER: Darren Penn	6. MANUFACTURERS DESIGNATION OF DRILL: Mobil B-59	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Sch 80 12" ID PVC; 8¼" augers; 4¼" augers.	8. HOLE LOCATION: see map	
	9. SURFACE ELEVATION: TOC 68.70	N 684362.91 E 821540.80
	10. DATE STARTED: 10/10/99	11. DATE COMPLETED:
12. OVERBURDEN THICKNESS	15. DEPTH GROUNDWATER ENCOUNTERED:	
13. DEPTH DRILLED INTO ROCK	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED:	
14. TOTAL DEPTH OF HOLE	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):	

18. GEOTECHNICAL SAMPLES	DISTURBED		UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: NA			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC: BTEX	RCRA METALS: SVOC/TOC	OTHER (SPECIFY): —	OTHER (SPECIFY): —	OTHER (SPECIFY): —	21. TOTAL CORE RECOVERY: %	
22. DISPOSITION OF HOLE	BACKFILLED: —	MONITORING WELL: X	OTHER (SPECIFY): —	23. SIGNATURE OF INSPECTOR: Heather L Smith			

LOCATION SKETCH/COMMENTS — SCALE:



PROJECT: Fort Stewart USTs		INSPECTOR Heather Smith			SHEET 3 OF 4

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0–2	grass w/ rootlets/ topsoil SM - Silty Sand - DRY soft, med. grains subangular to subrounded 10YR4/4 dk. yellowish brown STRONG ODOR CH - Fat clay w/ Sand med plasticity, moist, soft 10YR6/1 grey	headspace 0.7 ppm		Sample #7J1A71 ~~BTEX~~ VOC (Encore) 8oz Jar @0910	RUN #1 RUN 2' Rec 2' Loss 0
	2–4	SC - Clayey Sand med → fine gr. sand subangular → subrounded moist, low plasticity. Moist, soft STRONG ODOR 10YR 3/1 v. dk. grey	headspace 1.4 ppm		Sample #7J1A74 ~~BTEX~~ VOC @0915 2-4' bgs	RUN #2 RUN 2.0' Rec 2.0 Loss 0
	4–6	SM - Silty Sand. SC - Clayey Sand (w/silt) med → fine gr. subrounded to subangular, soft, moist ~20% clay ~20% silt ~60% sand Moist, Soft 5Y 7/3 pale yellow (unsure of contact)	headspace 5.5 ppm		Sample ~~BTEX~~ VOC 4-6' bgs #7J1A75 @0930	RUN #3 RUN: 2.0 Rec: 1.1 Loss 0.9 LOSS
	6–8	SM - Silty Sand (product in sand zone) wet, med. grains subang. → subrounded. CL - lean clay layer firm wet mottled color ~15% sand — Stiff clay firm. SC - high plasticity clayey sand SM - Silty Sand Very ODOROUS, wet - looks like product in sand med. grains, subrounded → subang. Soft wet to saturated Loss	headspace (wet) 62.3 ppm		Sample ~~BTEX~~ VOC 6-8' bgs #7J1A76 @0940	RUN #4 RUN 2.0 Rec. 1.9 Loss 0.1 6.6- CL layer = 2.5YR3/6 dk red 10YR5/6 yellowish brown PRODUCT ON CORE Soil cuttings btwn 7½-9½' bgs read 7ppm→9ppm during augering Bz <5ppm.
	8–9	10YR 3/2 v. dk. greyish brown	headspace 8½-9' bgs 35.7 ppm		Sample ~~BTEX~~ (encore) & 8oz jar 7J1A72 @0941	RUN #5 RUN 1' Rec 1.8 extra due to slutt
	9–10	SC - Clayey Sand - CS gr angular sand w/ fat clay. sand 2.5YR 7/1 lt reddish grey w/ 10YR 5/2 greyish brown V. Strong odor Saturated w/ what smells like product! CL - Lean Clay Tight - fine gr sand <10% high plasticity 10YR 7/2 lt. grey firm moist SC - Clayey Sand lean clay w/ fine sand - low plasticity 10YR 7/2 lt. grey	headspace 9-10' bgs 39.5 ppm		Sample ~~BTEX~~ VOC (Encore) #7J1A77 @0950	RUN #6 RUN 1' Rec. 1.4 - slutt Product seems to sit on top of tight clean clay layer. sands were saturated with product → Band covered w/ oil

HTRW DRILLING LOG

HOLE NUMBER 27E-MW-105

PROJECT: Fort Stewart USTs | INSPECTOR | SHEET 3 OF 4

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	10	Very pale brown (10YR 7/3) sandy clay silt: wet, F-grnd sand. Returned in soupy mix, some clumps.		N/A		No core; Lithology from cuttings.
	11			Shelby tube sample		
	12	Sand increases w/ depth. Sand predominates.				
	13	clay sand or silty sand				
	14		N/A	N/A	N/A	
	15					
	16					
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

HOLE NUMBER [illegible] 54

PROJECT: Fort Stewart USTs	INSPECTOR	SHEET 4 OF 4

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Very pale brown silty sand/clay sand (as above).				
	21					
	22					TD = 22.0 ft
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					

HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: Miller Drilling Comp.	HOLE NUMBER 27F-MW-11 / SHEET 1 OF 5
3. PROJECT: Fort Stewart	4. LOCATION: 3rd Engineers	
5. NAME OF DRILLER: Darren Penn	6. MANUFACTURERS DESIGNATION OF DRILL: Mobil B-59	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4 1/4" augers, 8 1/4" augers	8. HOLE LOCATION: See map N 684358.83 E 821536.44	
	9. SURFACE ELEVATION: TOC 68.66 ft	
	10. DATE STARTED: 10/10/99	11. DATE COMPLETED:
12. OVERBURDEN THICKNESS	15. DEPTH GROUNDWATER ENCOUNTERED:	
13. DEPTH DRILLED INTO ROCK	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED:	
14. TOTAL DEPTH OF HOLE	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: NA				
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC: Encore's	METALS: RCRA 8 + SVOCs	OTHER (SPECIFY): —	OTHER (SPECIFY): —	OTHER (SPECIFY): —	21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL: X	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR			

LOCATION SKETCH/COMMENTS — SCALE: NONE

See map on page 33

Heather L. Smith 10/10/99

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PROJECT: Fort Stewart USTs | INSPECTOR Heather L Smith | SHEET 2 OF 5

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		grass/rootlets/topsoil	0-2' BGS		Sample ID# 7JJB71 VOC's SVOCs/RCRA Metals 1115	RUN#1 RUN: 2.0 REC: 2.0 LOSS: Ø
		SM - Silty Sand subrounded-soft, dry, med gr. subang. 7.5YR 4/4 Brown	Øppm			
	1	SC - Clayey Sand Med. gr. sand, low plasticity 7.5YR 5/6 strong brown				Ø1
		SM - Black 10YR 2/1 med→fine gr. subang→subrounded				
	2	SC - Clayey Sand w/silt Mottled med. gr. mottled w/ 2.5YR 3/4 (dk. reddish brown) 10YR 3/1 v. dk. gray				2
		SM - Silty Sand w/ some clay - low plasticity med→fine gr. sands Soft, moist 10YR 3/1 v. dk. gray	2-4' BGS 1.3ppm			RUN #2 RUN: 2.0 REC. 2.Ø LOSS: Ø
	3					3
	4	CH - Fat clay <20% fine/med. sand Soft, moist 10YR 6/1 gray mottled w/ 10YR 5/6 yellowish brown				4
		SC - Clayey Sand cs. grained, angular to subangular moist fat clay, soft 5Y 6/1 grey Mottled w/ 5Y 3/1 v. dk. grey & 7.5YR 4/4 Brown	4-6' BGS 52.1ppm			RUN # 3 RUN: 2.Ø REC: 1.7 LOSS: Ø.3
	5					5
		Loss (unsure of contact)				Loss
	6	SM - Silty Sand. Wet - product in sand Sheen - strong odor - Soft, nonplastic, med gr. angular to subrounded. some clay <10% STRONG SMELL	6-8' BGS 173.6ppm			RUN#4 RUN: 2.Ø REC: 1.5 LOSS: Ø.5 6
	7					7
		Loss			8.Ø' BGS	Loss
	8	Same as above saturated w/ product on top of clay.	8-8½ 57.6ppm ~~8-10' BGS~~		Sample ID# 1145 7JJB72	RUN # 5 RUN: 2.Ø REC: 1.6 LOSS: .4 8
	9	CL - Lean Clay - w/ fine gr. Sand. ~35% firm → HARD high plasticity, 10YR 6/2 lt. brownish gray ~~dense~~ - oil/product sitting on top of clay	8½-9½' BGS 88.1ppm (2nd 8½-9½ H.S. reading 79.2ppm)			9
	10	Loss			10'	Loss 10

HTRW DRILLING LOG

PROJECT: Fort Stewart USTs	INSPECTOR	HOLE NUMBER: [illegible]-MW-11	SHEET 3 OF 5

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Lt. green-gray (10Y 8/1) silty clay: moist, plastic, mottled				Drill: 5.0 ft Recover: 3.7 ft.
	11	V. pale brown (10YR 8/2) clay sand: Moist, F-grnd, stratified, mod. packed, sl- to unplastic	61.2 ppm			
	12	Yellow (10YR 8/6) sand: wet, F- to m-grnd, generally massive, but mottled; uniform near bottom of interval.				
	13					
	14	No Recovery				Water at 14 ft BGS.
	15	Pale yellow (2.5Y 7/3) sand: wet, F to m-grnd.				
	16	↓				
	17					
	18					
	19					
	20					

HTRW DRILLING LOG | 27F-MW-11 | HOLE NUMBER 51

PROJECT: Fort Stewart USTs | INSPECTOR | SHEET 4 OF 5

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	21	Pale yellow sand (as above)				
	22					
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					

HTRW DRILLING LOG — 27F-MW-11 — HOLE NUMBER

PROJECT: Fort Stewart UST's — INSPECTOR — SHEET 5 OF 5

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSAPCE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	31	Pale Yellow sand (as above)				
	32					
	33					
	34					
	35					
	36					DK grey-green clay on augers at bottom. Bottom 7 Rt.
	37					
	38					
	39					
	40					TD = 40.0 Rt

63

HTRW DRILLING LOG

DISTRICT: USACE - Savannah

HOLE NUMBER: 27F-MW-12

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Miller Drilling Co

SHEET 1 OF 2

3. PROJECT: Fort Stewart

4. LOCATION: 3rd Engeneering

5. NAME OF DRILLER: Darren Penn

6. MANUFACTURERS DESIGNATION OF DRILL: MODEL B-59

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4¼" auger Wood Plug

8. HOLE LOCATION: See Map

9. SURFACE ELEVATION: TOC 68.74 ft N 681363.88 E 821543.07

10. DATE STARTED: 10/12/99

11. DATE COMPLETED: 10/12/99

12. OVERBURDEN THICKNESS: greater than T.D.

15. DEPTH GROUNDWATER ENCOUNTERED: NOT DRILLING FOR GW.

13. DEPTH DRILLED INTO ROCK: NA

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

14. TOTAL DEPTH OF HOLE: 10'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):

18. GEOTECHNICAL SAMPLES: DISTURBED NONE UNDISTURBED

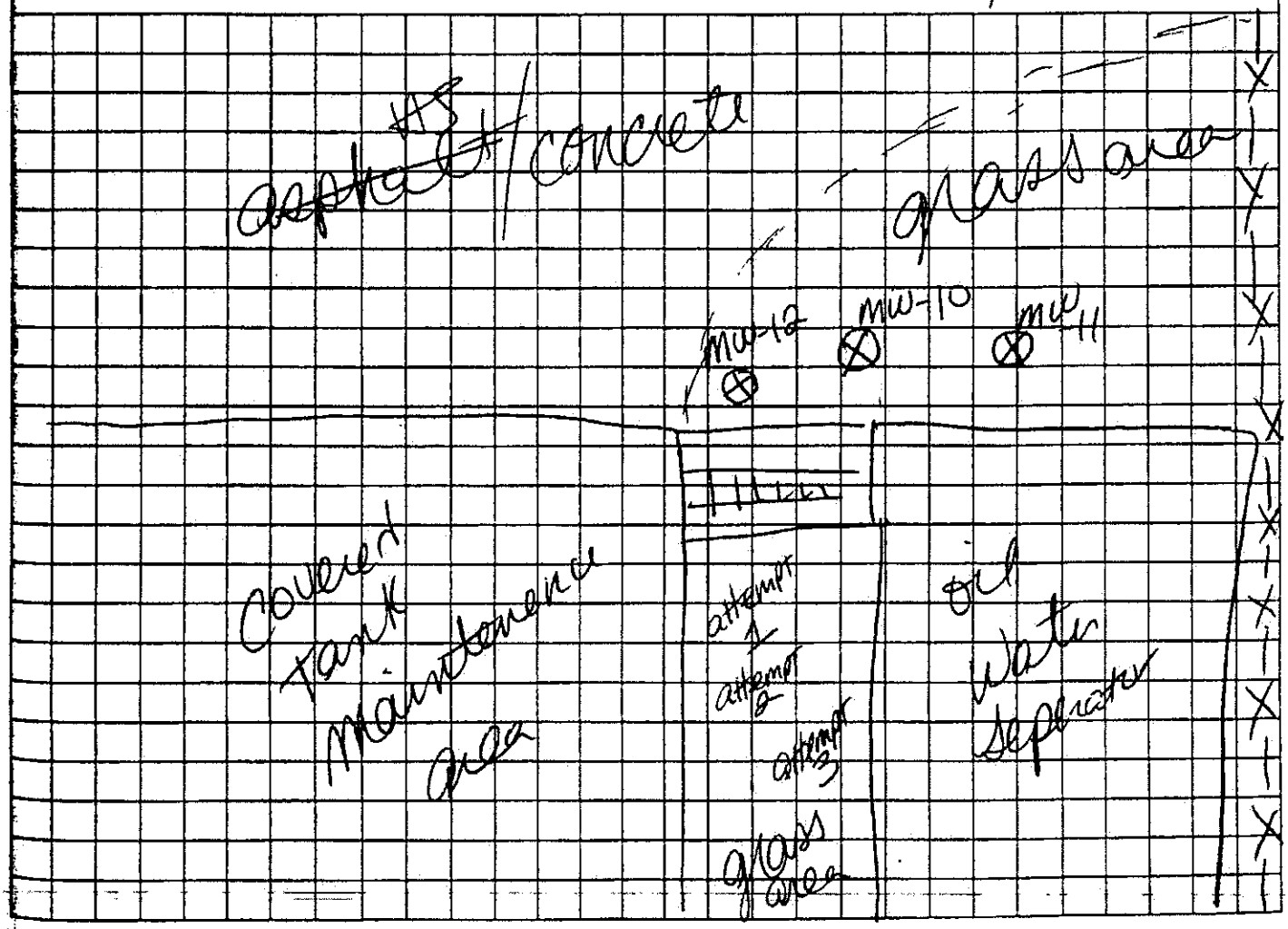
19. TOTAL NUMBER OF CORE BOXES: NA

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
	NONE					NA

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

LOCATION SKETCH/COMMENTS

SCALE: NONE



HTRW DRILLING LOG

HOLE NUMBER 27F-MW12 (6)

PROJECT: Fort Stewart USTs | INSPECTOR Heather Smith | SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		SM - Silty Sand top soil & organics in top .3' dry				Logged by cuttings only depths are estimates
	Ø1	nonplastic soft med gr. sands	89.9			
	Ø2	Subrounded → Subangular 10YR5/3 Brown				
	Ø3	Very odorous				
			22.2			
		SC - Clayey Sand w/ some silt				
	Ø4	med gr. Subangular to subrounded sand				
	Ø5	grains w/ moist fat clay, med. Plasticity				
		Soft. 10YR 3/2				
	Ø6	Y. dk. grayish brown	38.7			
		very odorous				
	Ø7	Clay content increases w/ depth still less than 30% of total material				
	Ø8		102			
		Saturated @ ~ 8.6' BGS				NOT water level.
	Ø9					We have not pierced clay into g. water zone yet this perch zone w/ product in soil
		SC Clayey Sand				
		Color Change				
	10	10YR 4/3 Brown				

Subang → ang. Sand grains

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BORING LOGS AND WELL DIAGRAMS – 2000

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HTRW DRILLING LOG

DISTRICT: USACE - Savannah | 27F-MW-13(TJ)

1. COMPANY NAME: SAIC | 2. DRILL SUBCONTRACTOR: Miller Drilling Company | SHEET 1 OF 3

PROJECT: 16 SWMU's | 4. LOCATION: 3rd Engineers Brigade MP

3. NAME OF DRILLER: Clete Sanders | 5. MANUFACTURER'S DESIGNATION OF DRILL: Mobile B-57

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Mobile B-57 auger rig; w/ 8½-in. OD, 4¼-in. ID Hollow-stem augers, 4-in. OD, 3⅜-in. ID, 5-Ft Split-spoons; 2-in. OD, 2-Ft split-spoons.

6. HOLE LOCATION: Small fenced compound near MW-6.

9. SURFACE ELEVATION:

10. DATE STARTED: 11/29/00 | 11. DATE COMPLETED: 11/29/00

12. OVERBURDEN THICKNESS: N/A

13. DEPTH DRILLED INTO ROCK: N/A

14. TOTAL DEPTH OF HOLE: 15.0 Ft

15. DEPTH GROUNDWATER ENCOUNTERED: 8.2 Ft BGS.

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 7.3 Ft BGS / ½ hour

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA

18. GEOTECHNICAL SAMPLES: (DISTURBED) | UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES: N/A

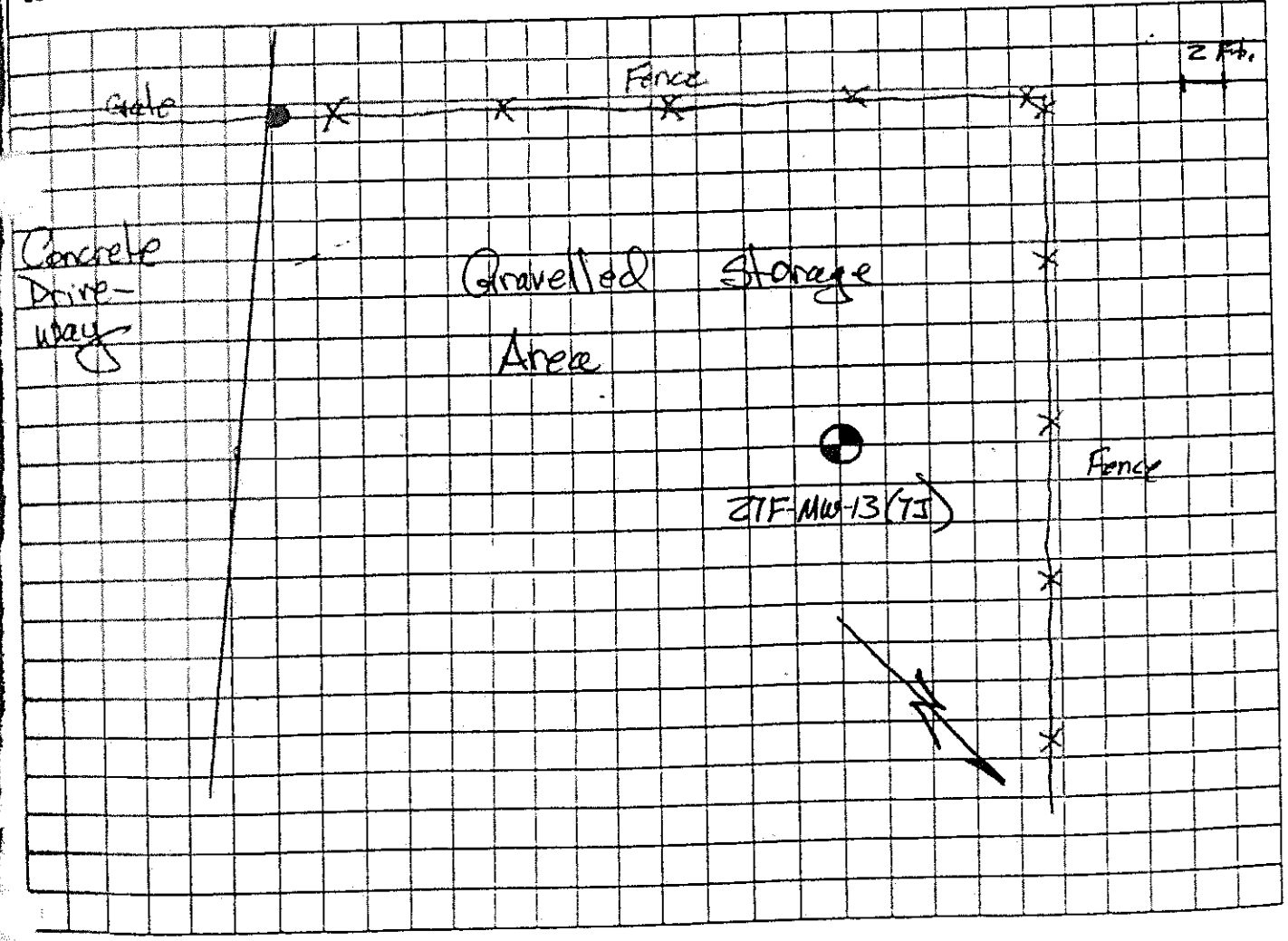
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	X	X	N/A			

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)
		X	

23. SIGNATURE OF INSPECTOR:

LOCATION SKETCH/COMMENTS

SCALE:



HTRW DRILLING LOG

PROJECT: 16 SWMU's | INSPECTOR Timothy Coffey | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Green-grey (10G 5/1) gravel fill				Run #1
		DK yellow-brn (10YR 4/4) sandy silt				Drill: 2 ft
		Black (10YR 2/1) sandy silt; moist/dry, v. F-grnd, mod. packed, but crumbles when handled, massive, becoming bedded at depth.	N/A	N/A	7J1D81	Recover: 1.4 ft
	1					
		No Recovery				
	2					Run #2
						Drill: 5.0 ft
	3					Recover: 0.0 ft
	4	No Recovery	N/A	N/A	7J1D81	
	5					
	6					
	7	v. dk. grey-black (10YR 3/2) silty sand.				Run #3
		v. Pale brown (10YR 8/2) clay sand; moist, bedded, alt. sand and clay, stiff, firm, mod. plastic.		N/A		Drill: 5.0 ft
	8					Recover: 2.5 ft
		v. Pale brown (10YR 8/2) sand wet, bedded, v. F-grained, mod. packed; rare clay.	N/A	7J1D82	7J1D81	Water @ 8.2 ft BGS.
	9					
		No Recovery				
	10					

PROJECT: 16 SWMU's | INSPECTOR Timothy Coffey | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	No Recovery	N/A	N/A	TSID81	
	12	Very pale brown sand (as above).				No coring, auger only.
	13		N/A	N/A	TSID81	
	14					
	15	TD = 15.0 ft.				
	16					
	17					
	18					
	19					

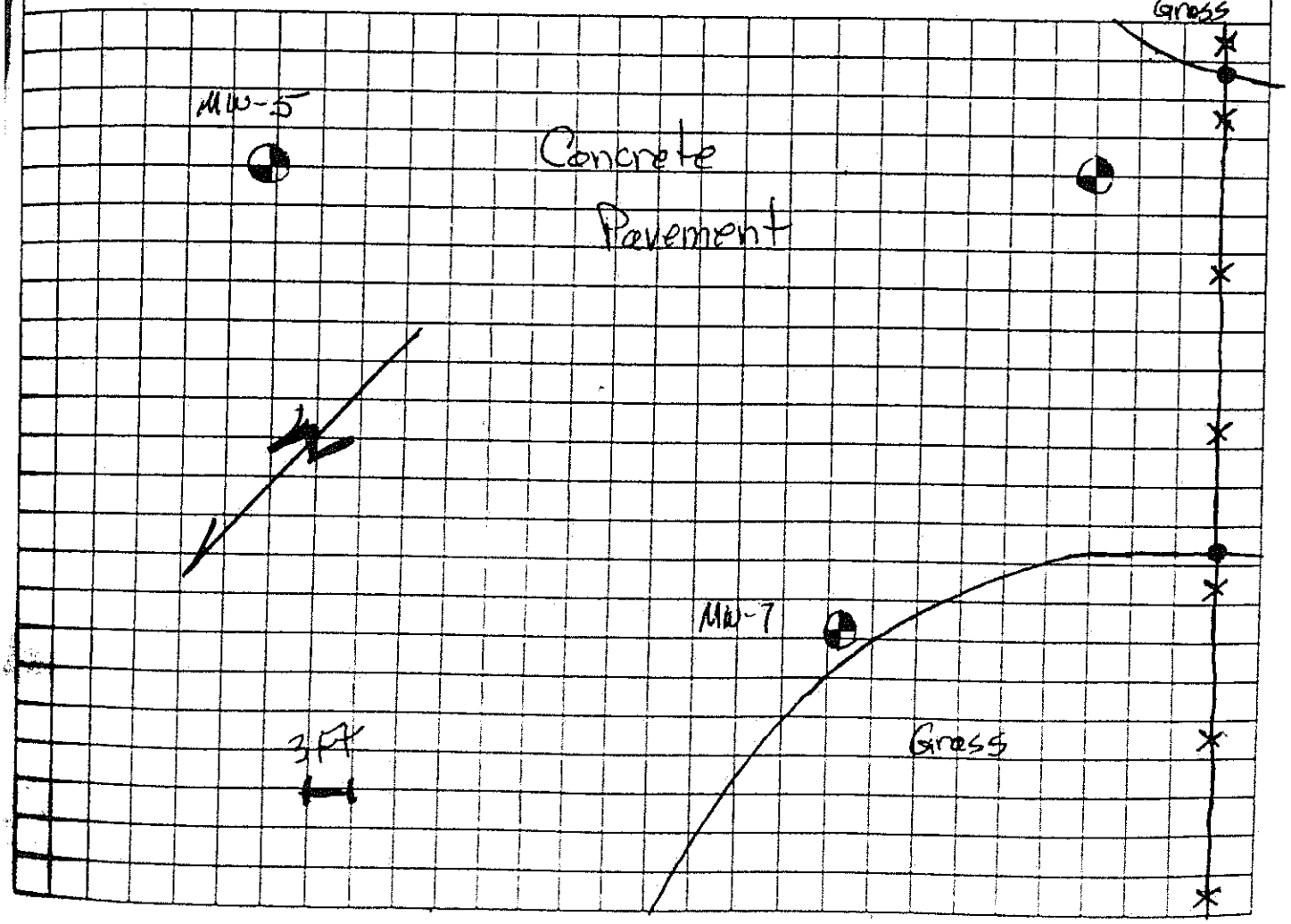
HTRW DRILLING LOG

1. COMPANY NAME: SAIC	DISTRICT: USACE-Savannah	HOLE NUMBER: 21F-MW-14(7) 29
2. DRILL SUBCONTRACTOR: Miller Drilling Company		SHEET 1 OF 3
3. PROJECT: 16 SWMU's	4. LOCATION: 3rd Engineers Brigade	
5. NAME OF DRILLER: Clete Sanders	6. MANUFACTURERS DESIGNATION OF DRILL: Mobile B-57	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Mobile B-57 auger rig; with 8½-in. OD, 4¼-in. ID hollow-stem augers; 4-in. OD, 3½-in. ID, 5-ft samplers; 2-in. OD, 2-ft split-spoons.	8. HOLE LOCATION: Near fenced storage compound.	
	9. SURFACE ELEVATION	
	10. DATE STARTED: 11/30/00	11. DATE COMPLETED: 11/30/00
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 7.7 Ft BGS	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 8.25 Ft BGS / ½ hour	
14. TOTAL DEPTH OF HOLE: 15.0 Ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY): N/A	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	X	X				
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: Timothy Jeffay		
		X				

LOCATION SKETCH/COMMENTS

SCALE:



17 58

PROJECT: 10 SWMU 5 | INSPECTOR: Timothy Coffey | SHEET 2 OF 3

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ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1	Concrete pavement	N/A	N/A	N/A	
	2	No Recovery	N/A	N/A	N/A	No Core, auger only.
	3	Reddish-yellow (5YR 5/6) silty clay; moist, mottled, soft, sl. to mod. plastic. Black (10YR 2/1) silty sand; dry to moist, massive, mod. packed, but crumbles when handled, v. F-grnd. see below	N/A	N/A	TJIE81	Run #1 Drill = 2.0 ft Recover: 2.0 ft
	4–5	Light gray (10YR 7/1) and yell-brn (10YR 5/6) sandy silty clay; mod. stiff, plastic, mottled. Lt. gray and yell-brn clay; moist, dense, very stiff, plastic, mottled. Lt. gray sandy clay; moist, sl. to mod. ~~packed~~ plastic. No Recovery	N/A	N/A	TJIE81	Run #2 Drill: 2.0 ft Recover: ~~2.0~~ 1.8 ft
	6–7	v. pale brown (10YR 8/2) sandy clay (as above): sand incr. w/ depth. No Recovery	N/A	N/A	TJIE81	Run #3 Drill: 2.0 ft Recover: 1.8 ft water at 7.7 ft stinky
	8–10	v. pale brown sand: wet, massive, but gradually changes color w/ depth, v. F-grnd, loose, weakly packed.	N/A	TJIE82	TJIE81	Run #4 Drill: 2.0 ft Recover: 2.0 ft

HTRW DRILLING LOG

PROJECT: 16 SWMU's	INSPECTOR Timothy Coffey	HOLE NUMBER ZTF-MW-14 (73) SHEET 3 OF 3

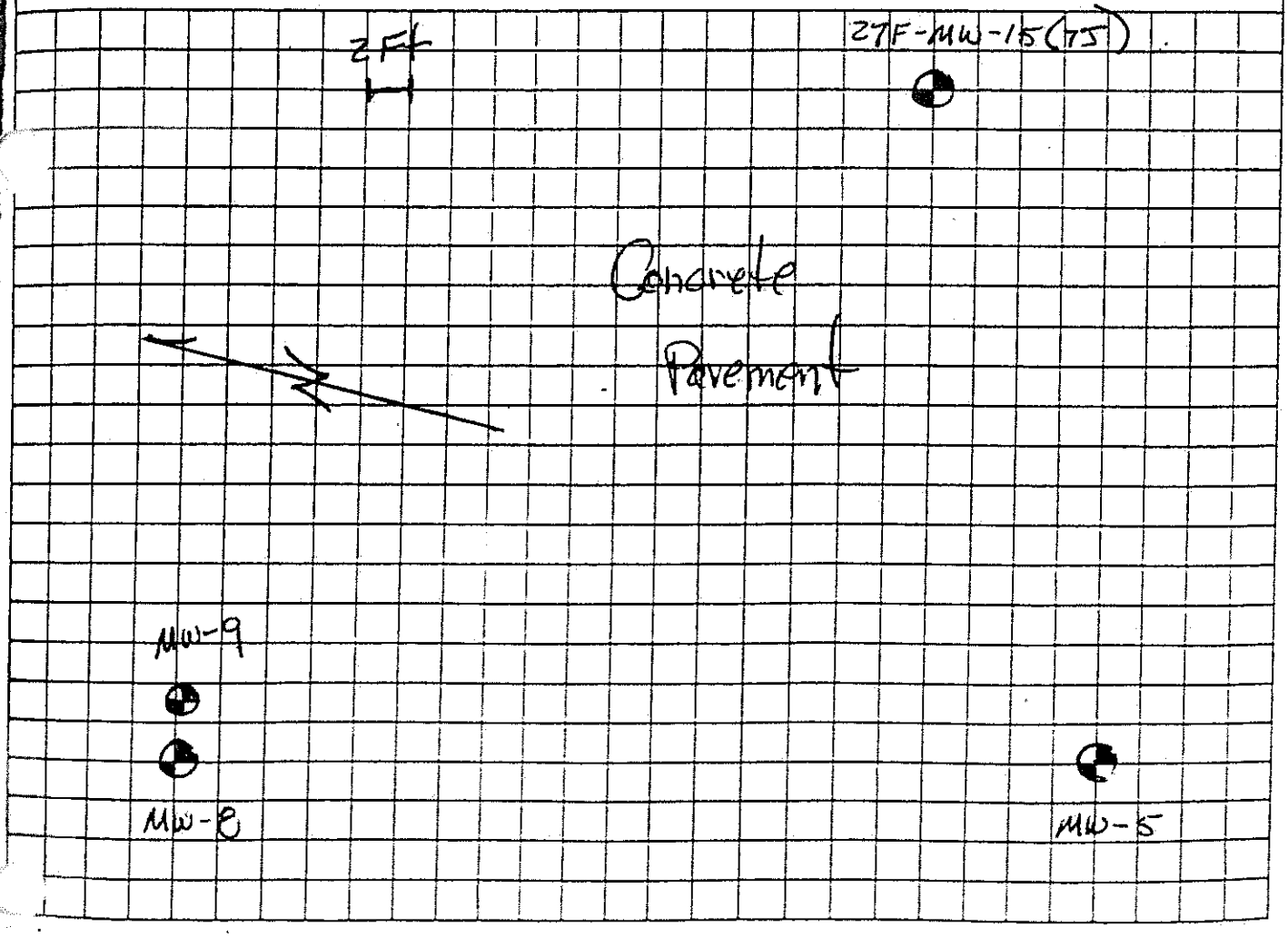
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		V. pale brown sand. (as above)				No core, augering only.
	11					
	12		N/A	N/A	75IE81	
	13					
	14					
	15	TD= 15.0 ft.				
	16					
	17					
	18					
	19					

HTRW DRILLING LOG

DISTRICT: USACE - Savannah	HOLE NUMBER: 27F-MW-15(75)	16
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: Miller Drilling Company	SHEET 1 OF 3
PROJECT: 16 SWMU's	4. LOCATION: 3rd Engineers Brigade MP	
5. NAME OF DRILLER:	6. MANUFACTURERS DESIGNATION OF DRILL: Mobile B-57	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Mobile B-57 auger rig; with 8 1/2-in. OD, 4 1/4-in. ID Hollow-stem auger; 4-in. OD, 3 5/8-in. ID samplers; 2-in. OD, 2-ft split-spoons.	8. HOLE LOCATION: Paved portion of motor pool	
	9. SURFACE ELEVATION:	
	10. DATE STARTED: 11/29/00	11. DATE COMPLETED: 11/29/00
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 8.7 Ft BGS	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 8.2 Ft BGS / 1/2 hour	
14. TOTAL DEPTH OF HOLE: 15.0 Ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA	

18. GEOTECHNICAL SAMPLES	(DISTURBED)	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	X	X	N/A			
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
		X				

LOCATION SKETCH/COMMENTS — SCALE:



HTRW DRILLING LOG

HOLE NUMBER [illegible]

PROJECT: 16 SWMU's | INSPECTOR: Timothy Coffey | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete pavement	N/A	N/A	N/A	
	1 ft	No Recovery	N/A	N/A	N/A	Run#1 Drill: 1.4 ft Recover: 0.0 ft
	2 ft	No Recovery	N/A	N/A	N/A	Run#2 Drill: 1.0 ft Recover: 0.0 ft
	3 ft	Black silty sand	clay			Run#3 ft Drill: 2.0 ft Recover: 1.4 ft
		Black silty sand: dry, loose, friable, v. f-grnd, massive				
	4 ft	Brownish-yellow (10YR 4/6) sand: massive, dry, loose, to weakly packed, v. f-grnd	N/A	N/A	TJIF81	
	5 ft	No Recovery				
		gray (10YR 6/1) and brn-yell (10YR 4/8) clay: moist, med hardness, plastic, mottled.	N/A	N/A	TJIF81	Run#4 Drill: 2.0 ft Recover: 1.6 ft
	6 ft	lt blue-gray (10B 7/1) clay sand: moist, bdd, alt snd/clay, sl. plast, stiff.				
	7 ft	No Recovery	N/A	N/A	N/A	
	8 ft	Dk yell-brn (10YR 4/4) gravelly silty sand: dry, massive, mod. packed, v. f-grnd	N/A	N/A	TJIF81	Run#5 Drill: 2.0 ft Recover: 2.0 ft
		white clay layer				water at 8.7 ft BGS
	9 ft	dk green-gray sandy clay: wet, plastic		TJIF82	~~TJIF82~~	
	10 ft	White (10YR 8/1) sandy clay: wet to moist, sl. to mod. plastic, weak (soft): sand incr. w/ depth.	N/A	TJIF82	~~TJIF8Z~~ TJIF81	Run#6 Drill: 2.0 ft Recover: 1.4 ft

H.T.R.W. DRILLING LOG

PROJECT: 16 SWMU's	INSPECTOR Timothy Coffey	HOLE NUMBER ZIF-MW45 19
		SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	As Above; more sand. No Recovery	N/A	TJIFBC	~~TJIFBZ~~ TJIF81	
	12	white sand.				No core; augering only.
	13		N/A	N/A	TJIF81	
	14					
	15					
		TD = 15.0 Ft.				
	16					
	17					
	18					
	19					
	20					

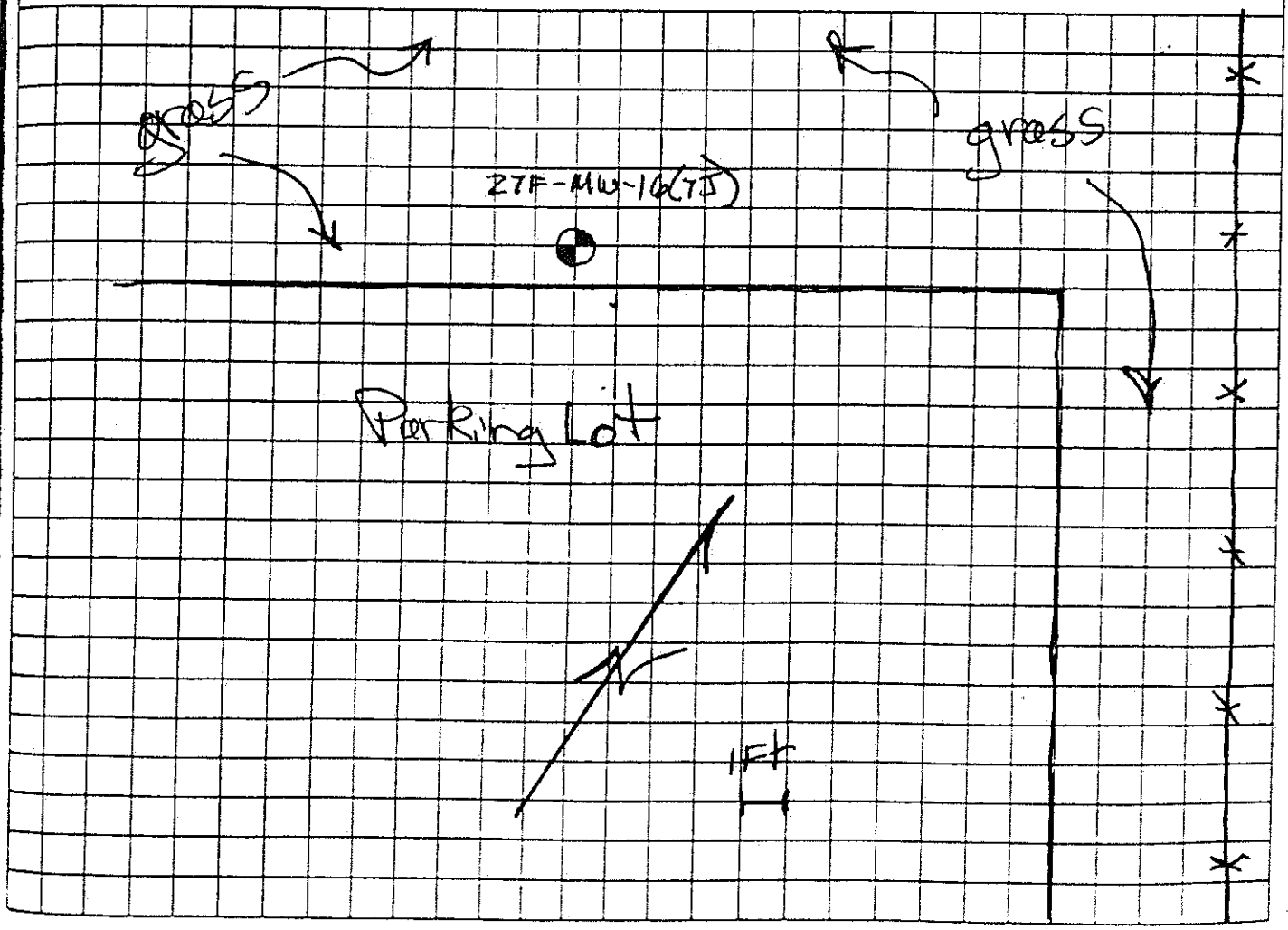
HTRW DRILLING LOG

DISTRICT: USACE - Savannah	HOLE NUMBER: 27F-MW-16(TJ)	42
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: Miller Drilling Company	SHEET 1 OF 3
3. PROJECT: 16 SWMU's	4. LOCATION: 3rd Engineers Batt. MP	
5. NAME OF DRILLER: Clete Sanders	6. MANUFACTURERS DESIGNATION OF DRILL: Mobile B-57	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Mobile B-57 auger rig with 8 1/2-in. OD, 4 1/4-in. ID hollow-stem augers; 2-in. OD, 2-ft split-spoons.	8. HOLE LOCATION: outside parking lot @ Motor Pool	
	9. SURFACE ELEVATION:	
	10. DATE STARTED: 12/5/00	11. DATE COMPLETED: 12/5/00
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 8 ft BGS.	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 7-9 ft BGS / 1/2 hr.	
14. TOTAL DEPTH OF HOLE: 15.0 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	(DISTURBED)	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC: X	METALS: X	OTHER (SPECIFY): N/A	OTHER (SPECIFY):	OTHER (SPECIFY):	21. TOTAL CORE RECOVERY: %
22. DISPOSITION OF HOLE	BACKFILLED:	MONITORING WELL: X	OTHER (SPECIFY):	23. SIGNATURE OF INSPECTOR: Timothy Joffey		

LOCATION SKETCH/COMMENTS

SCALE:



Signature and Date

PROJECT: [illegible] | INSPECTOR: Timothy Coffey | SHEET 2 OF 3 | 43

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1	Black sandy topsoil; dry to wet; mottled/ massive (laminated in places), soft, weakly ~~phot~~ packed, V. F-grnd;	N/A	N/A	TSIGB1	Run #1 Drill: 2.0 Ft Recover: 2.0 Ft
	2	Reddish-yellow silty sand; hard				
		V. pale brown sand; dry to wet (perched water); massive, loose, F-grnd.				Run #2 Drill: 2.0 Ft Recover: 2.0 Ft
	3	Lt. gray sandy clay: moist, generally massive, soft, plastic, F-grnd, clay content incr. down.	N/A	N/A	TSIGB1	
	4	Brn yellow silty clay; firm, sl. plast				
		Brn yellow/ light gray clay; moist, mottled, firm				Run #3 Drill: 2.0 Ft Recover 0.7 Ft
		Lt gray sandy clay				
	5	No Recovery	N/A	N/A	TSIGB1	
	6					
		Lt. gray sandy clay (as above)				Run #4 Drill: 2.0 Ft Recover: 1.8 Ft
	7	Light brn-gray clay sand; moist, gen. massive (mnr mottling), rel. firm, sl. plastic.	N/A	N/A	TSIGB1	
		Lt. brn-gray sand; moist to wet, massive, <10% clay.				
	8	No Recovery				
	9	No Recovery	N/A	N/A	TSIGB1	Run #5 Drill: 2.0 Ft Recover: 0.0 Ft Entire spoon is wet; water at 8 Ft.
	10					

HTRW DRILLING LOG

PROJECT: 16-SWMU-3 | INSPECTOR: Timothy Coffey | HOLE NUMBER: 216-MW-16(7) 4 | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Lt. brown-grey sandy mass, lam w/ thin clay beds, weak to loose, F-grnd. saturated.	N/A	TS1GB2	TS1G01	Run #6 Drill: 2.0 ft Recover: 2.0 ft
	12					
	13	V. pale brown to yellow sand: wet, soft, loose/friable, F-grnd.	N/A	N/A	N/A	No cores; auger only.
	14					
	15					
		TD = 15.0 ft.				
	16					
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

1. COMPANY NAME: SAIC	DISTRICT: USACE-Savannah	HOLE NUMBER: ZTF-MW-17(T)
	2. DRILL SUBCONTRACTOR: Miller Drilling Company	SHEET 1 OF 3
3. PROJECT: 16 SWMU's	4. LOCATION: 3rd Eng. Brigade Motor Pool	
5. NAME OF DRILLER: Cletre Sanders	6. MANUFACTURER'S DESIGNATION OF DRILL: Mobile B-57	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Mobile B-57 auger rig with 8 1/2-in. OD, 4 1/4-in. ID hollow-stem augers; 4-in. OD, 3 7/8-in. ID 2-in. OD, 2-ft split-spoons.	8. HOLE LOCATION: Ingress along Motor Pool Fence.	
	9. SURFACE ELEVATION:	
	10. DATE STARTED: 12/5/00	11. DATE COMPLETED: 12/5/00
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 8 ft.	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 8.6 ft BGS/½ hr.	
14. TOTAL DEPTH OF HOLE: 15.0 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
	X	X	N/A			
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: Timothy Coffey		
		X				

LOCATION SKETCH/COMMENTS

SCALE:

See page 68, this logbook, for location sketch.

(Signature and Date)

PROJECT: 16 SWMU's | INSPECTOR Timothy Coffey | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1	Black to dk red-brown sandy silty topsoil - dry, massive, rare gravel; strongly packed, firm, grass, rootlets, etc.	N/A	N/A	TSIHB1	Run #1 Drill: 2.0 Ft Recover: 2.0 Ft
		V. pale brown sand: packed.				
		dk gray brown silty sand: dry, massive, hard chunks.				
	2	Black sand: dry, massive, uniform, loose.				
		Black sand (as above				Run # 2
		Dark brown ~~silty~~ sand: ~~dry, massive, hard~~ mod. firm, grades to below.				Drill: 2.0 Ft Recover: 2.0 Ft
	3	Yellow sand: moist to wet (perched water), loose, friable, F-grnd, massive.	N/A	N/A	TSIHB1	
		Brn-yellow/gray sandy clay: moist, mottled, mod firm, mod. plastic.				
	4					
		brn-yell/gray/dk red-brn sandy clay; moist, mottled, firm, plastic.				Run # 3 Drill: 2.0 Ft Recover: 1.2 Ft
	5		N/A	N/A	TSIHB1	
		No Recovery				
	6					
		Same As Above				Run # 4
		Yellow/gray: clay; moist mottled, very firm/stiff, plastic.				Drill: 2.0 Ft. Recover: 1.5 Ft
	7		N/A	N/A	TSIHB1	
		No Recovery				
	8					
		Lt. brown-gray clay sand; wet, gen. massive with thin clay layers, non-plastic, F-grnd.				Run # 5 Drill. 2.0 Ft Recover. 1.4 Ft water at 8 ft.
	9		N/A	TSIHB2	TSIHB1	
		No Recovery				
	10					

NFRW DRILLING LOG

PROJECT: 16 SWMU's | INSPECTOR Timothy Coffey | HOLE NUMBER 27F-MW-76(2) | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	white to very pale brown clay sand; wet, massive, v. F-grnd, loosely packed, clay disapears w/depth.	N/A	7J1HB2	7J1HB1	No core; auger only.
	12					
	13					
	14					
	15	TD = 15.0 Ft.				
	16					
	17					
	18					
	19					

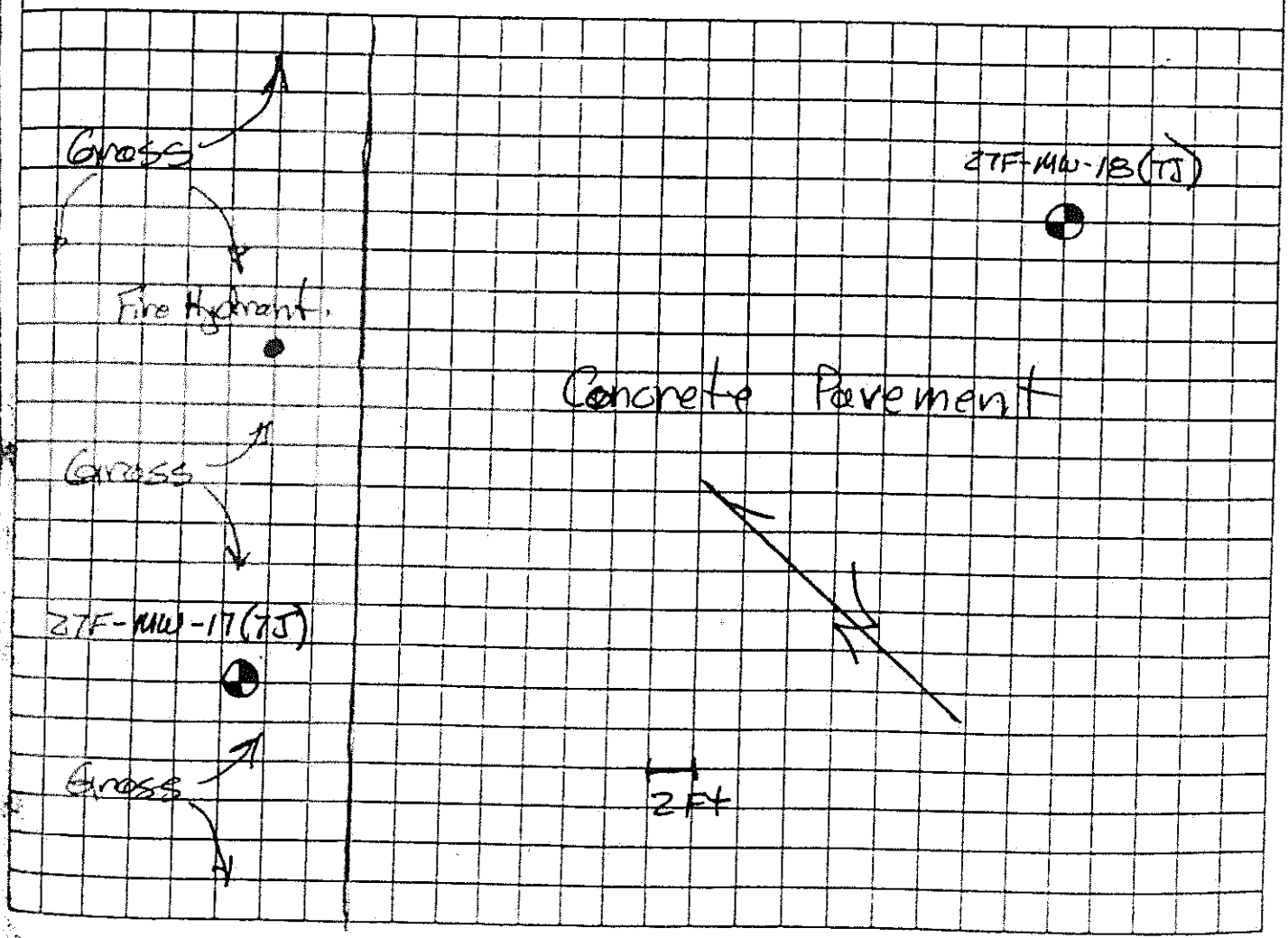
HTRW DRILLING LOG

1. COMPANY NAME: SAIC	DISTRICT: USACE-Savannah	HOLE NUMBER: 27F-MW-18(TJ) 68
	2. DRILL SUBCONTRACTOR: Miller Drilling Company	SHEET 1 OF 3
3. PROJECT: 16 SWMU's	4. LOCATION: 3rd Eng. Brigade Motor Pool	
5. NAME OF DRILLER: Cleve Sanders	6. MANUFACTURERS DESIGNATION OF DRILL: Mobile B-57	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Mobile B-57 auger rig with 8 1/2-in. OD, 4 1/2-in. ID hollow-stem augers; 2-in. OD, 2-ft split-spoons.	8. HOLE LOCATION: In motor pool pavement area.	
	9. SURFACE ELEVATION:	
	10. DATE STARTED: 12/5/00	11. DATE COMPLETED: 12/5/00
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 7.8 Ft.	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 8.0 Ft BGS / 1 hr.	
14. TOTAL DEPTH OF HOLE: 15.0 Ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	X	X	N/A			
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: Timothy Coffey		
		X				

LOCATION SKETCH/COMMENTS

SCALE:



PROJECT: 16 SWMU's | INSPECTOR Timothy Coffey | HOLE NUMBER SFF-MW-1B | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete Pavement	N/A	N/A	N/A	
	1	Dark gray silty sand: dry, massive, weakly packed, F-grnd.	N/A	N/A	TJIJ81	Run #1 Drill: 2.0 Ft Recover.
	2	Black silty sand: dry, massive, uniform, hard chunks, packed				
		Very pale brown sand: dry, massive but grades from above, v. F-grnd, loose.				
	3	Same As Above	N/A	N/A	TJIJ81	Run#2 Drill: 2.0 Ft Recover. 1.5 Ft
	4	brn-yellow/gray sandy clay: mottle, soft, mod. plastic, wet (perched?) grades to: silty clay: moist, rel. firm, sl. plastic				
		No Recovery				
	5	Brn-yell/gray/dk red sandy clay: moist, mottled, firm, dense, plastic.	N/A	N/A	TJIJ81	Run#3 Drill: 2.0 Ft Recover: 1.8 ft
		Lt. brn-gray sand: loose				
		Brn-yell/gray sandy clay: mottled, very stiff.				
	6	Lt. brn-gray sand: wet, soft, F-grnd, <10% clay.				
		Brn-yell/gray clay: mottled.				
		No Recovery				
	7	Same As Above Brn-yell/gray clay	N/A	TJIJ82	TJIJ81	Run#4 Drill: 2.0 Ft Recover. 1.8 Ft water @ 7.8 Ft
	8	Lt. brn-gray sand: moist to wet, massive, thin clay beds, soft, non-plastic, F-grnd.				
		No Recovery				
	9	Lt-brn-gray clay sand as above.	N/A	TJIJ82	TJIJ81	No core; auger only.
	10					

HTRW DRILLING LOG

PROJECT: 16 SWMU's | INSPECTOR Timothy Coffey | HOLE NUMBER 27F-MW-18 (TJ) | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Very pale brown sand; wet, massive, V. F-grnd, sugary, weakly packed.				No core, auger only.
	12		N/A	TJ1JB2	TJ1JB1	
	13					
	14					
	15	TD = 15.0 ft				
	16					
	17					
	18					
	19					
	20					

BORING LOGS AND WELL DIAGRAMS – 2005

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DP1 - SB01

3

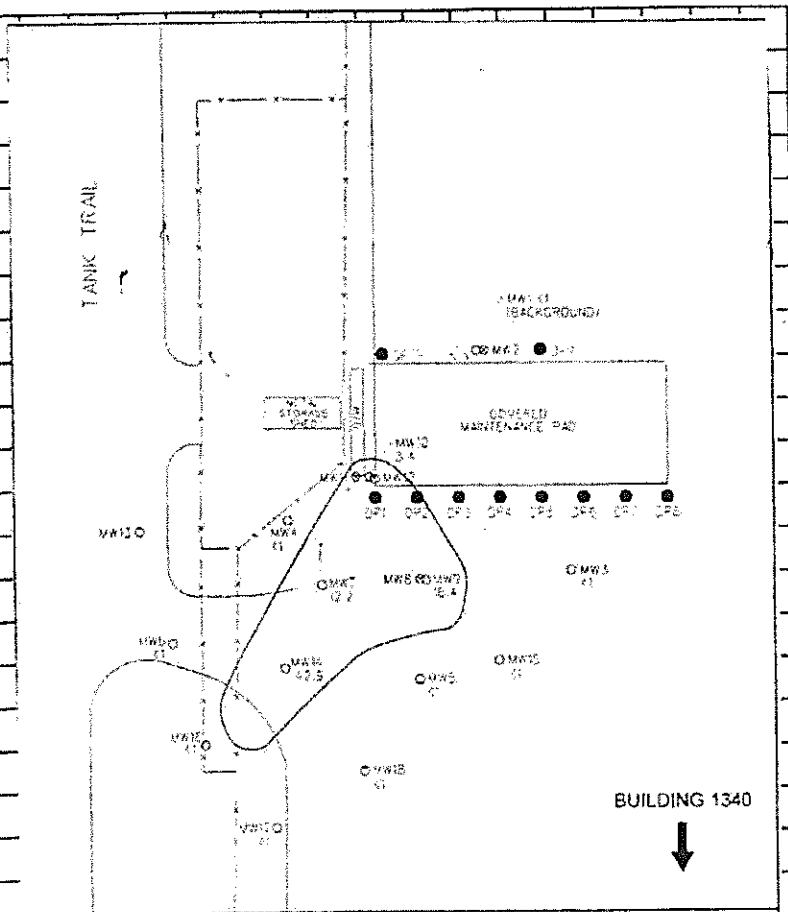
HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC ES	SHEET 1 OF 3
DISTRICT: USACE Savannah		HOLE NUMBER SB01

3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 2" x 4' steel rods acetate lined	8. HOLE LOCATION: SB01
	9. SURFACE ELEVATION: TBD
	10. DATE STARTED: 9/19/05 — 11. DATE COMPLETED: 9/19/05
12. OVERBURDEN THICKNESS: >12.0'	15. DEPTH GROUNDWATER ENCOUNTERED: NA
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA
14. TOTAL DEPTH OF HOLE: 12.0'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY): SVOCs	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE	BACKFILLED: X	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: [signature]		

LOCATION SKETCH/COMMENTS — SCALE: Not to Scale



HTRW DRILLING LOG

HOLE NUMBER 4

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Deady | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1	Hand Auger 0-4 ← Due to utilities.				
	2					
	3					
	4	(SP) Dk brown 2.5Y 3/1 well sorted, angular med SAND				
	5	(SC) Light grey 5Y 7/1 lt brown 2.5YR 6/6 Sandy Clay Sand = angular, med moist.	4-6 9.4			
	6					
	7		6-8 63.0			
	8		8-10 72.7			
	9					
	10					

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Dendy | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Same as above.	10-12		10-12'	
			222	1d ##	7J1181	
		SC				
		lt brown well sorted SAND (SP), moist, angular med				
	12	TD = 12.0				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

DP2 - SB02

HTRW DRILLING LOG

DISTRICT: USACE Savannah		HOLE NUMBER: DP2
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC E&S	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: Sumu 27, DP2/SB02	
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4.0x2.0" Steel rods, acetate liners	8. HOLE LOCATION: Sumu 27, SB02	
	9. SURFACE ELEVATION: TBD	
	10. DATE STARTED: 9/19/05	11. DATE COMPLETED: 9/19/05
12. OVERBURDEN THICKNESS: >12.0' bgs	15. DEPTH GROUNDWATER ENCOUNTERED: NA	
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA	
14. TOTAL DEPTH OF HOLE: 12.0' bgs	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
			SVOCs			
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
	X					

LOCATION SKETCH/COMMENTS: See page 3

SCALE:

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Dendy | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1		0.0			
	2	Hand Auger 0-4	NA			
	3		0-4			
	4					
	5	Dk-brown well sorted med, angular SAND (SP) 2.5Y 3/1	2-4 0.0			
	6	lt gray N 7/1 lt brown 2.5Y 6/4 Sandy CLAY, moist (SC)	4-6 0.0			
	7					
	8		6-8 0.0			
	9					
	10					

VI C-2502

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Dooley | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	SC	Same as above.				
	CL	lt Gray N 7/1 Hard CLAY, no Sand	8-10 0.0			
	11	CL				
	12	TD = 12.0				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

DP3/SB3

HTRW DRILLING LOG

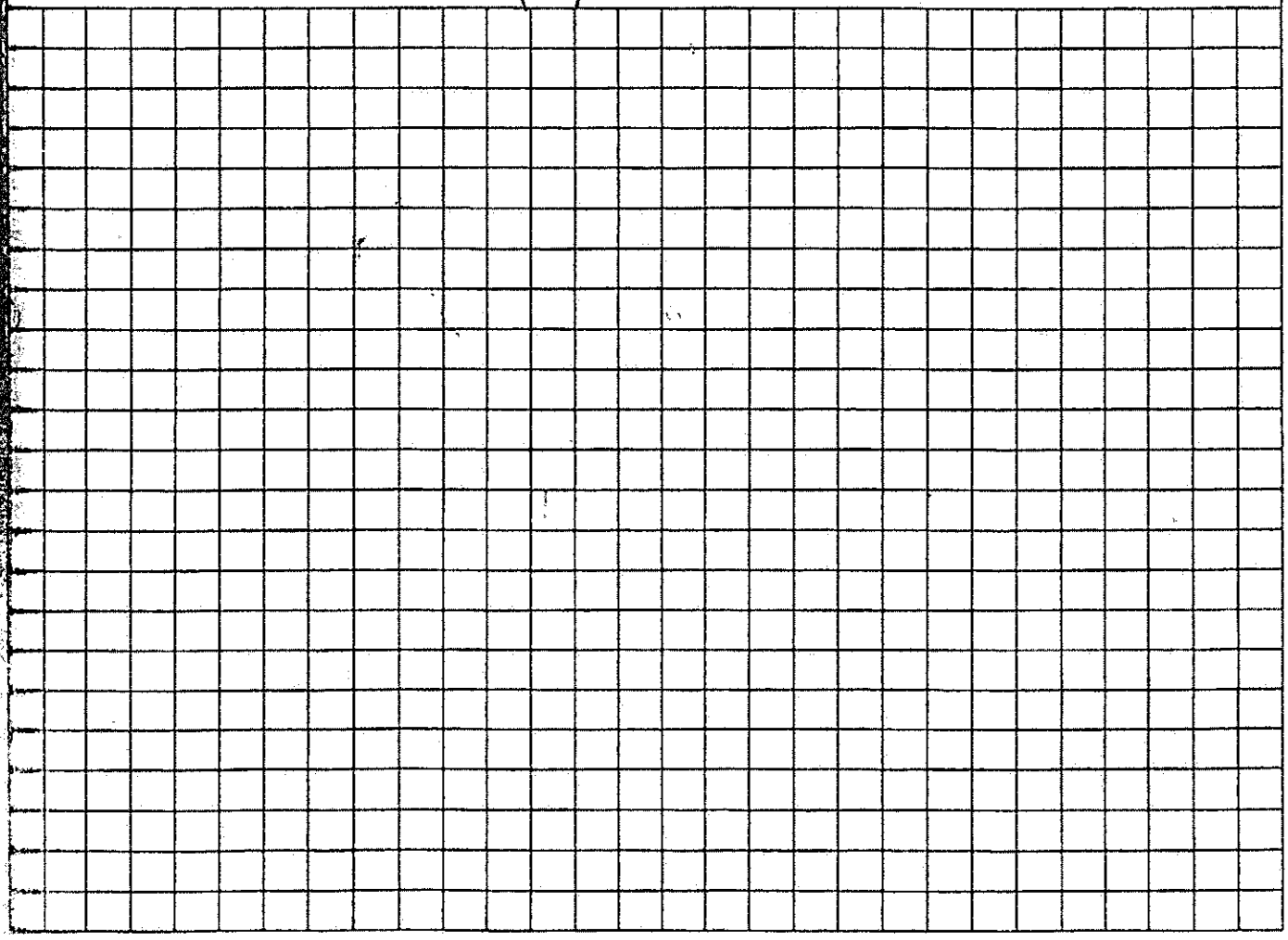
DISTRICT: USACE Savannah		HOLE NUMBER
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC E&S	SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27 SB03
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4.0" x 2.0" Steel Rods; Acetate lined	8. HOLE LOCATION: SWMU 27, SB03
	9. SURFACE ELEVATION: TBD
	10. DATE STARTED: 9/16/05 / 11. DATE COMPLETED: 9/16/05
12. OVERBURDEN THICKNESS: > 12.0' bgs	15. DEPTH GROUNDWATER ENCOUNTERED: NA
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA
14. TOTAL DEPTH OF HOLE: 12.0' bgs	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY): SVOCs	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE	BACKFILLED: X	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: [signature]		

LOCATION SKETCH/COMMENTS: See page 3

SCALE:



HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Dendy | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1	Hand Auger assume Same litho as Surrounding borings	hand auger			
	2					
	3					
	4	lt brown and dark brown well sorted Sand (SP) 10YR 4/3 7.5YR 2.5/1	4-6 375			
	5					
	6					
SP	SP					
SC		lt grey Sandy clay 7.5YR 9/8 ~30% Sand, angular med sized mast	6-8 579			
	7					
	8		8-10 203			
	9					
	10					

VIII-92

DP3/SB83 6'

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Dendy | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	same as above.	10-12 18.9			
	SC	SC				
	CL	CL lt grey med stiff @LAY, no sand				TD = 12.0
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

DP4/SB4 43

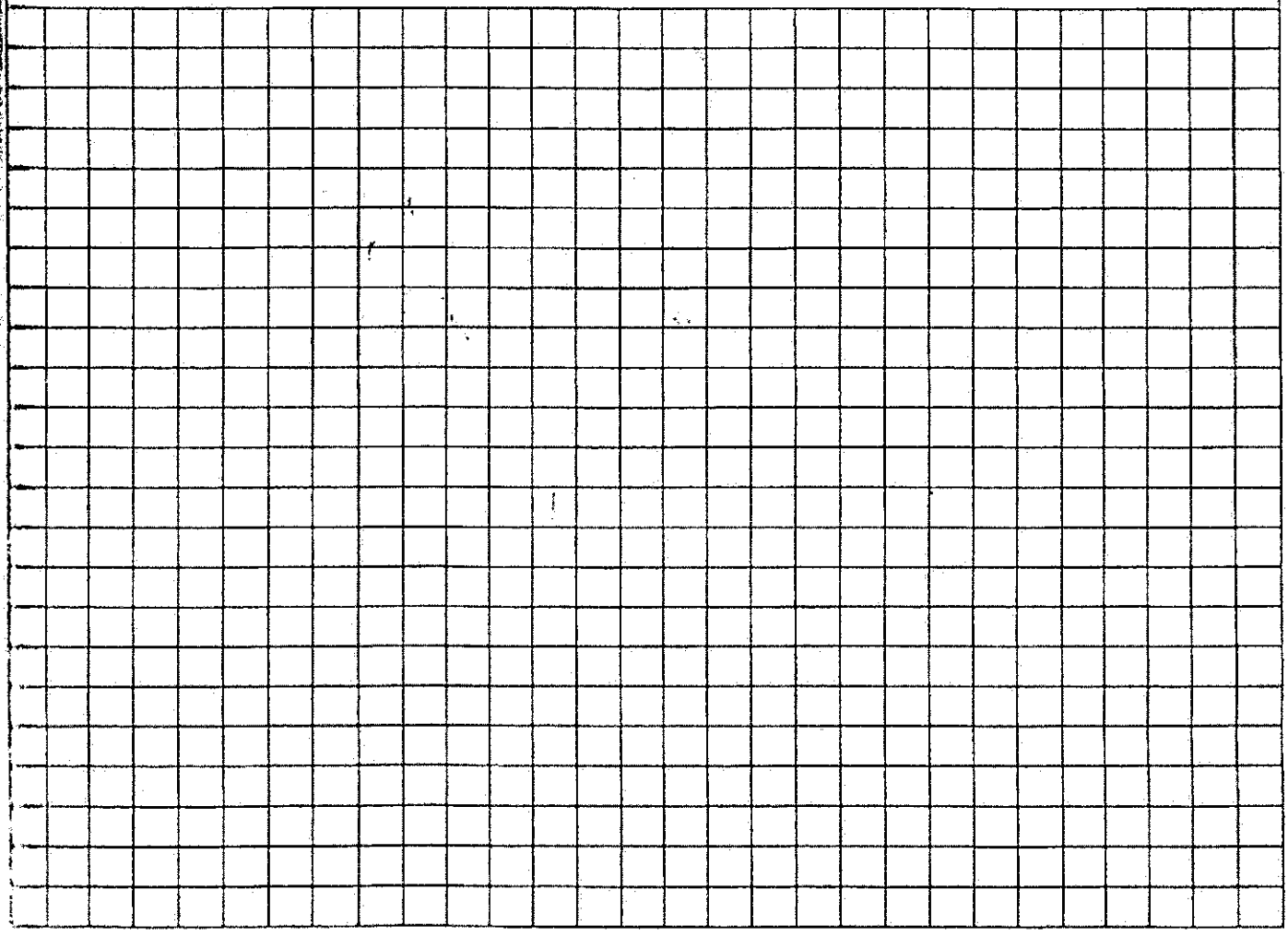
HTRW DRILLING LOG

DISTRICT: USACE Savannah		HOLE NUMBER
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC E & S	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27, SB04	
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4.0" X 2.0" steel rods; Acetate liners	8. HOLE LOCATION: SWMU 27, SB04	
	9. SURFACE ELEVATION: TBD	
	10. DATE STARTED: 9/16/05	11. DATE COMPLETED: 9/16/05
12. OVERBURDEN THICKNESS: > 12.0' bgs	15. DEPTH GROUNDWATER ENCOUNTERED: NA	
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA	
14. TOTAL DEPTH OF HOLE: 12.0' bgs	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY): SVOCs	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY: %
22. DISPOSITION OF HOLE	BACKFILLED: X	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		

LOCATION SKETCH/COMMENTS: See page 3

SCALE:



HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Deasley | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete				
	1	lt grey Sandy CLAY (SC) 7.5YR 5/8 little Sand	1-2 0.0			
	2					
	SC		2.4			
	SP	lt brown, well Sorted Sand (SP), angular / med sized moist 10 YR 4/3	12.2			
	3					
	4		4.6			
			12.3			
	5					
	SC	lt grey 7.5 YR 5/8 Sandy CLAY ≈30% sand moist to wet - Sand, med sized angular	6.8 63			petro odor
	7					
	8		8.10 190			
	9					
	SP	lt grey well Sorted Sand (SP) moist to wet 7.5 YR 5/8 ≈ 20% CLAY				
	10					

DP4 13804

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Deady | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (E)	REMARKS (G)
	11	Same as above	10-12			petro odor
	12	TD=12.0	224		Sample	
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

DP5/SB5 33

HTRW DRILLING LOG

DISTRICT: USACE Savannah		HOLE NUMBER SB05
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC 2 of 5	SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4.0" X 2.5" Steel rods, acetate liner	8. HOLE LOCATION: SWMU 27, SB05
	9. SURFACE ELEVATION: TBD
	10. DATE STARTED: 9/16/05 / 11. DATE COMPLETED: 9/16/05
12. OVERBURDEN THICKNESS: 12'	15. DEPTH GROUNDWATER ENCOUNTERED: NA
13. DEPTH DRILLED INTO ROCK: na	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA
14. TOTAL DEPTH OF HOLE: 12'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: na			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
			SVOCs			
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
	X					

LOCATION SKETCH/COMMENTS: See page 3

SCALE:

HTRW DRILLING LOG

34

PROJECT: Fort Stewart/Hunter	INSPECTOR J. Dendy	HOLE NUMBER	SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		concrete				
	1	lt grey SAND CLAY (SC) 7.5 YR 5/8 little sand	1-2 0.0			
	2		2-4 7.2			
	SC 3					
	4	lt brown well sorted SAND (SP), angular, med sized moist - orange oxidations 10 YR 4/3	4-6 11.4			
	5					
	SP 6					
	7	lt grey 7.5 YR 5/8 lt brown 10YR 4/3 Sandy Clay (SC) ≈ 50% Sand - angular - med sized	6-8 1.0 10.0			
	8		8-10 33.5		9.5 to 10.5	
	SC 9					
	SP 10	lt grey well sorted SAND SP, < 30% fines moist to wet 7.5 YR 5/8				petro odor 8-12

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Dendy | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Same as above				
	12	TD=12.0				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

WW101 1SB06 13

HTRW DRILLING LOG

HTRW DRILLING LOG	DISTRICT: USACE Savannah	HOLE NUMBER SB06
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC E&S	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27	
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 2" x 4' steel rods acetate lined	8. HOLE LOCATION: SWMU 27 SB06	
	9. SURFACE ELEVATION: TBD	
	10. DATE STARTED: 9/19/05	11. DATE COMPLETED: 9/19/05
12. OVERBURDEN THICKNESS: > 12.0'	15. DEPTH GROUNDWATER ENCOUNTERED: NA	
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA	
14. TOTAL DEPTH OF HOLE: 12.0' bgs	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES		
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)
			SVOCs		
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR	
	X			James [signature]	

LOCATION SKETCH/COMMENTS: See page 3 of this book. SCALE:

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Dendy | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1	Hand auger 0-4	0-4 hand auger			
	2					
	3					
	4					
	5	It brown well sorted Sand, med, angular, moist 2.5YR 6/6	4-6 22.0			PID readings could be due to moisture
	6	SC It brown 2.5YR 6/6 It gray N 7/1 Sandy Clay med stiff moist Sand= angular, med	6-8 4.9			
	7					
	8		8-10 5.8			
	9					
	10					

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Dendy | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Same as above	10-12 21.4		10-12' Id # 731681	
	12	TD=12.0				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

DP 7-SB0 (?)

HTRW DRILLING LOG	DISTRICT: USACE Savannah	HOLE NUMBER
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC, E+S	SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter	4. LOCATION: TJ-SB-7 or DP7
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4.0' x 2.0" SHI tools, acetate liners	8. HOLE LOCATION: SWMU 27, DP7
	9. SURFACE ELEVATION: TBD
	10. DATE STARTED: 9/16/05 — 11. DATE COMPLETED: 9/16/05
12. OVERBURDEN THICKNESS: > 16.0' bgs	15. DEPTH GROUNDWATER ENCOUNTERED: NA
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA
14. TOTAL DEPTH OF HOLE: 16.0' bgs	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES		
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
			SVOCs			
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
	X			[signature]		

LOCATION SKETCH/COMMENTS See page 3 SCALE:

HTRW DRILLING LOG

HOLE NUMBER 14

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Deady | SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1	Concrete				
		lt grey Sandy CLAY (SC) ~~10YR 6/2~~ 7.5 YR 5/8 little sand	1-2 ~~1.3~~ 0.7			
	SC 2					
	SP	lt brown 10 YR 4/3 - well sorted SAND (SP) - angular - med sized - moist - orange oxidations throughout	2-4 0.0			
	3					
	4		4-6 0.4			
	5					
	6 SP					
	SC	lt grey 7.5 YR 5/8 lt brown 10YR 4/3 Sandy CLAY (SC) ± 30% sand, angular med sized	6-8 2.5			Sandy CLAY is not a continuing layer
	7					
	8 SP					
	SP	lt brown 10 YR 4/3 - well sorted, angular, med sized SAND - (SP) - moist to wet with lt grey 7.5YR 5/8 (<10% fines)	8-10 1.4			
	9					
	10					

HTRW DRILLING LOG

HOLE NUMBER DP77-15

PROJECT: Fort Stewart/Hunter | INSPECTOR | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Same as above wet to very wet	10-12 0.0			
	11					
	12		12-14 0.4			
	13					
	14		14-16 1.0			
	15					
	16					TD= 16.0'
	17					
	18					
	19					
	20					

DPS / SB-08 S

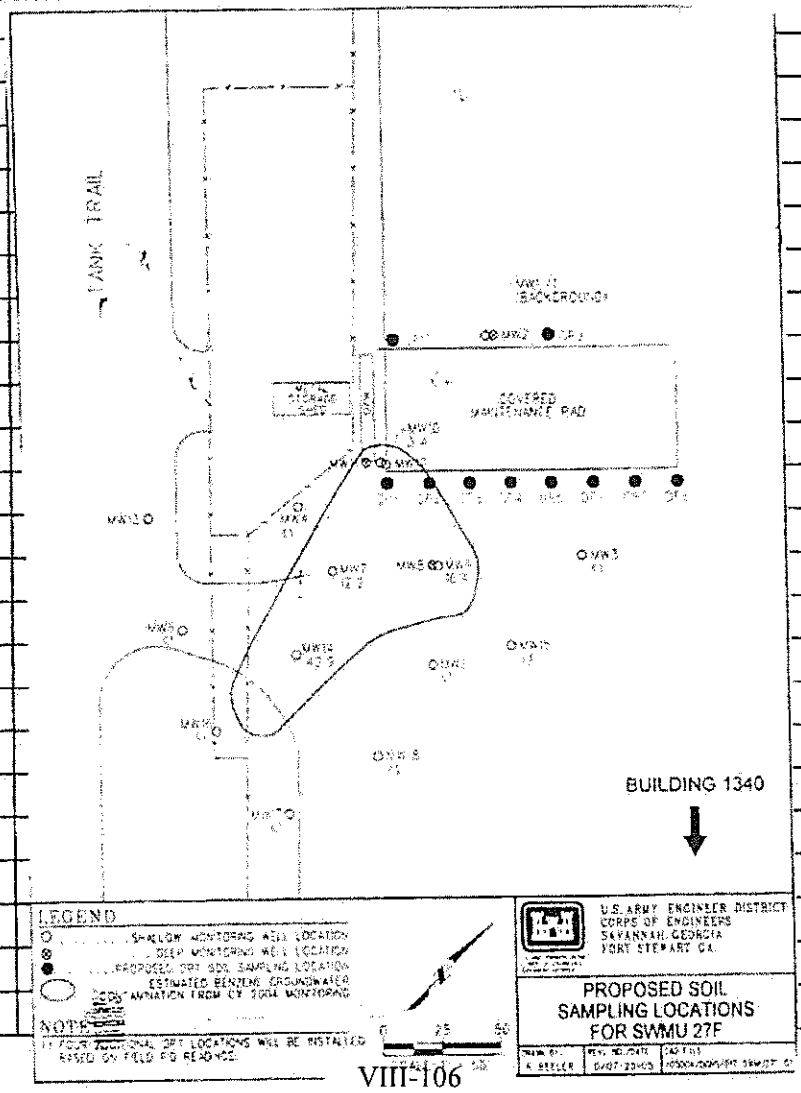
HTRW DRILLING LOG

DISTRICT: USACE Savannah		HOLE NUMBER
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC E. 3. S	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SP 7J - SB - 08	
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL:	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4.0" X 2.0" Steel Rods acetate lined	8. HOLE LOCATION: SWMU 27, SB08	
	9. SURFACE ELEVATION: TBD	
	10. DATE STARTED: 9/15/05	11. DATE COMPLETED: 9/15/05
12. OVERBURDEN THICKNESS: > 18.0'	15. DEPTH GROUNDWATER ENCOUNTERED: NA	
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA	
14. TOTAL DEPTH OF HOLE: 18.0' bgs	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
			SVOCs			
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
	X					

LOCATION SKETCH/COMMENTS

SCALE:



HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Dendy | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete				
	1	well sorted lt brown Sand, <10% fines (SP) 10YR 4/3	0-2 0.0			
	2		2-4 0.0			
	3					
	4		4-6 0.0			
		SP				
	5	Sandy CLAY (SC) lt grey 10Y 6/2 lt brown 10YR 4/3 ~30% Sand				Not a confining layer clay layer
	6	SC	6-8 0.0			
		lt grey 10Y 6/2 greenish brown well Sorted Sand, <10% fines angular med sized Sand moist 7.5YR 5/8				
	8		8-10 0.0			
		SP				
	9	Greenish brown well sorted SAND, angular, med grained 7.5YR 5/8, moist				
		SP				
	10					

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Reedy | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Same as above. Pr expressively getting wetter	10-12 0.0		10-12' id # IJ1881	
	12		12-14 0.0			NO clay layers
	13					
	14		14-16 0.0			
	15					
	16		16-18 0.0			
	17					OPT refusal 18.5' bgs
	18					
	19					
	20					

DR4 / SB09 23

HTRW DRILLING LOG

DISTRICT: USACE Savannah		HOLE NUMBER
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC E&S	SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 2" x 4' steel rods, acetate lined	8. HOLE LOCATION: SWMU 27 SB09
	9. SURFACE ELEVATION: TBD
	10. DATE STARTED: 9/19/05 / 11. DATE COMPLETED: 9/19/05
12. OVERBURDEN THICKNESS: 12.0'	15. DEPTH GROUNDWATER ENCOUNTERED: NA
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA
14. TOTAL DEPTH OF HOLE: 12.0' bgs	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY): SVOCs	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: James Pengelly		

LOCATION SKETCH/COMMENTS: see page 3

SCALE: 1

HTRW DRILLING LOG

HOLE NUMBER 27

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Dendy | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0		0-2			
	1		0-4 Hand Auger			
	2	Hand Auger 0-4' utilities				
	3					
	4	lt brown, well sorted, med, angular, SAND (SP), moist 2.5 YR 6/6	4-6 3.7			
	5	SP				
	6	lt grey N 7/1 lt brown 2.5YR 6/6 Sandy Clay, moist Sand = angular, med SC ≈ 40% Sand	6-8 2.8			
	7					
	8		8-10 2.6			
	9	lt grey SANDY CLAY ≈ 20% Sand, moist to wet SC N 7/1				
	10					

DP9 / >B09

25

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter

INSPECTOR

SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Same as above	10-12			
			0.2		10-12'	
					id # FS1981	
	12	SC				
		TD=12				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

DP 10 (SB107)

HTRW DRILLING LOG

DISTRICT: USACE Savannah		HOLE NUMBER
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC E & S	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27, DP10	
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4.0" x 2.0" steel rods acetate lined	8. HOLE LOCATION: SWMU 27, DP 10	
	9. SURFACE ELEVATION: TBD	
	10. DATE STARTED: 9/19/05	11. DATE COMPLETED: 9/19/05
12. OVERBURDEN THICKNESS: 12.0' bgs	15. DEPTH GROUNDWATER ENCOUNTERED: NA	
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA	
14. TOTAL DEPTH OF HOLE: 12.0' bgs	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY): SVOCs	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE:	BACKFILLED: X	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		

LOCATION SKETCH/COMMENTS: See page 3

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 7

PROJECT: Fort Stewart/Hunter | INSPECTOR: J. Dendy | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0		0-2 0.0			
	1					
	2	Hand Auger to the utilities	2-4 0.0			
	3					
	4	lt brown 2.5YR 6/6 wet Soiled med moist Sand (SP)	4-6 0.0			
	5					
	6		6-8. 0.0			
	7					
	8		8-10 0.0			
	9	lt brown, med stiff moist CLAY, some Sand (CL/SC) 2.5YR 6/6				
	10		VIII-113			

Continued

DP1D / SB1D -75

HTRW DRILLING LOG

HOLE NUMBER DP1D

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Dendy | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Same as above Sandy Clay. 2.40% Sand	18-12 8.1			
	12	Lt grey to Tan well sorted angular med sand (SP)				
		TD = 12.0				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

	DISTRICT: USACE Savannah	HOLE NUMBER DP11/SB11
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC. E&S	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: Swmu 27, DP11/SB11	
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4.0" X 2.0" Steel rods; acetate liners	8. HOLE LOCATION: Swmu 27 DP11/SB11	
	9. SURFACE ELEVATION: TBD	
	10. DATE STARTED: 9/19/05	11. DATE COMPLETED: 9/19/05
12. OVERBURDEN THICKNESS: 12.0' bgs	15. DEPTH GROUNDWATER ENCOUNTERED: NA	
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA	
14. TOTAL DEPTH OF HOLE: 12.0' bgs	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
			SVOCs			
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: James Dunn		
	X					

LOCATION SKETCH/COMMENTS: See page 3

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 91

PROJECT: Fort Stewart/Hunter | INSPECTOR: J. Deming | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Hand Auger 0-4	N/A Hand Auger			
	4	SP lt brown well sorted Sand, med, angular moist	4-6 49.0 0.4			
	6	SC lt brown 2.5YR 6/6 lt grey N 7/1 Sandy Clay moist Sand = ± 40%, angular med	6-8 49.0			
	8		8-10 78.0			
	10					

DP11SB11

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter

INSPECTOR J. Dendy

SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Same as above.	10-12 0.0			
	12	SC				
		TD=1210				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

DP12 / SB12

HTRW DRILLING LOG

DISTRICT: USACE Savannah		HOLE NUMBER
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC E & S	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27 SB12	
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 2.0" x 4.0' Stnl rods, acetate liners	8. HOLE LOCATION: SWMU 27 SB12	
	9. SURFACE ELEVATION: TBD	
	10. DATE STARTED: 9/19/05	11. DATE COMPLETED: 9/19/05
12. OVERBURDEN THICKNESS: 12.0'	15. DEPTH GROUNDWATER ENCOUNTERED: NA	
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA	
14. TOTAL DEPTH OF HOLE: 12.0' bgs	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA	

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

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
			SVOCs			

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	X			James Lowry

LOCATION SKETCH/COMMENTS: See page 3

SCALE:

HTRW DRILLING LOG

HOLE NUMBER 3

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Deady | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0-4 Hand Auger		0-4 Hand Auger			
	4	lt grey N 7/1 well Sorted, med, angular Sand (SP)	4-6 0.8			
	5	lt brown Sandy Clay 2.5YR 6/6 med stiff SC				
	6		6-8 61.0			
	7				8-10' id# 7J1881	
	8		~~to 12~~ 8-10 71.0			
	9					
SC	SC					
CL	10	lt grey N 7/1, hard CLAY, No Sand (CL)				

VIII-119

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter

INSPECTOR

SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Same as above	10-12 1,3			
	12	CL				
		TD=12.0				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

DP13 / SB13 43

HTRW DRILLING LOG

DISTRICT: USACE Savannah		HOLE NUMBER
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC &? S	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27	
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 2.0" x 4.0" acetate lined	8. HOLE LOCATION: SWMU27 SB13	
	9. SURFACE ELEVATION: TBD	
	10. DATE STARTED: 9/20/05	11. DATE COMPLETED: 9/20/05
12. OVERBURDEN THICKNESS: 12.0'	15. DEPTH GROUNDWATER ENCOUNTERED: NA	
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA	
14. TOTAL DEPTH OF HOLE: 12.0'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY): SVOCs	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE	BACKFILLED: x	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: James Purdy		

LOCATION SKETCH/COMMENTS: See page 3

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 44

PROJECT: Fort Stewart/Hunter | INSPECTOR: J Dendy | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Concrete				
	1					
	2	Hand auger 0-4 utilities				
	3					
	4					
		lt brown 2.5Y 6/6 well sorted sorted, angular, moist	4-6 15.7			
	5	SP				
		SC lt grey N 7/1 yellowish brown 10YR 4/6 most, sandy clay, sand = med, angular,	6-8 35.0			
	7					
	8		8-10 54.0			
	9					
	10					

HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Deely | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		SC	10-12 245.0		10-12A	
	11	lt grey well sorted, med moist to wet, angular, Sand. N 7/1			Id # 71081	
	12	SP				
		TD=12.0				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

DP14 / SB14 5 5

HTRW DRILLING LOG

DISTRICT: USACE Savannah		HOLE NUMBER SB14
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC E & S	SHEET 1 of 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27	
5. NAME OF DRILLER: Bobby Lewis	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 4.0" x 2.0" Steel Rods, acetate liners	8. HOLE LOCATION: SWMU 27, SB14	
	9. SURFACE ELEVATION: TBD	
	10. DATE STARTED: 9/20/05	11. DATE COMPLETED: 9/20/05
12. OVERBURDEN THICKNESS: > 12.0' bgs	15. DEPTH GROUNDWATER ENCOUNTERED: NA	
13. DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: NA	
14. TOTAL DEPTH OF HOLE: 12.0' bgs	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NA	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
			SVOCs			
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
	X					

LOCATION SKETCH/COMMENTS: See page 3

SCALE:

HTRW DRILLING LOG

HOLE NUMBER 7

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Dendy | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete				
	1					
	2	0-4 Hand Auger				
	3					
	4	Dk brown 2.5Y 2.5/1 well sorted, angular, moist Sand, moist.	4-6 2.7			
	5	SP / SC				
	6	lt. grey, N 7/1 lt brown 2.5Y 6/6 Sandy Clay, moist med stiff. Sand= angular, med	6-8 31.4		6-8' id# 7J1K81 + 7J1K21	
	7					
	8					
SC	9	SC	8-10 8.3			
CL		lt grey hard Clay N 7/1 No sand				
	10	CL				

DP14 / SB14

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HTRW DRILLING LOG

HOLE NUMBER

PROJECT: Fort Stewart/Hunter | INSPECTOR J. Deady | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Same as ~~above~~ S.0 description	10-12 151.0			
		SC				
	12	SP lt grey with sorted med-vf angular SAND				
		TD= 12.0				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

BORING LOGS AND WELL DIAGRAMS – 2007 AND 2008

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HTRW DRILLING LOG

DISTRICT: USACE Savannah

HOLE NUMBER: TJ-SB75

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Boart-Longyear

SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter

4. LOCATION: SWMU 27F

5. NAME OF DRILLER: Shane Brown

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6600

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 6600, truck-mounted - probing; 2-in x macro-core with Acetate liners.

8. HOLE LOCATION: See location sketch

9. SURFACE ELEVATION:

10. DATE STARTED: 7/11/07

11. DATE COMPLETED: 7/11/07

12. OVERBURDEN THICKNESS: N/A

15. DEPTH GROUNDWATER ENCOUNTERED: 12.3 ft BGS

13. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A

14. TOTAL DEPTH OF HOLE: 16.0 ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES: ~~DISTURBED~~ N/A ~~UNDISTURBED~~ N/A

19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	N/A	SVOC	—	—	

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	X	—	—	Timothy Coffey

LOCATION SKETCH/COMMENTS

SCALE:

See page 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-15

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete	N/A		N/A	
	1	Predom red sandy clay mottled lt. gray and yell-brn; dry, rel. stiff, crumbly, sl. plastic; sand ≤ 40 %.	#31			Run #1 0.8-4 ft D: 3.2 ft R: 2.5 ft
	2		0.0 ppm		N/A	
	3					
	4	No Recovery	N/A		N/A	
		Red sandy clay-	1439			Run #2 4-8 ft D: 4.0 ft R: 3.4 ft
	5	Black silty sand; dry, "dirty" rel. packed. grades to: Brown to light gray sand: dry, rel. loose, F- to M-grnd.	0.0 ppm	N/A	N/A	
	6		1443			
	7	Gray clay / sandy clay; moist, mottled (yell-brn), rel. stiff, plastic.	12.4 ppm		N/A	
	8	No Recovery	N/A		N/A	
		Red, gray, and yell-brn mottled sandy clay: moist; rel. stiff, plastic.	1448			Run # 3 8-12 ft D: 4.0 ft R: 4.0 ft
	9		25 ppm		N/A	
	10	See Below				

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HTRW DRILLING LOG

PROJECT: Fort Stewart/Hunter	INSPECTOR: Timothy Coffey	HOLE NUMBER: SB-15	SHEET 3 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	10–12	Predom gray clay and sandy clay: moist, rel. massive, alt. beds of pure clay and sandy clay, plastic.	1451 3ø2 ppm		751M28Z 751MZ1 (Dup)	Water at 12.3 ft BGS
	12–13	Brown clay/silt sand: wet, loose/runny, F- to M-grnd.	N/A	N/A	754M11 (Groundwater)	Run #4 12-16 ft D: 4.ø ft R: 4.ø ft
	13–13.7	Lt. gray to white clay sand: wet, rel. stiff, med plast.				
	13.7–16	Lt. grey to yellow sand: wet, massive to bedded, F- to C-grnd, sl. packed.				
	16	End of Boring.				TD=16.ø ft
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

DISTRICT: USACE Savannah

HOLE NUMBER: SB-16

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Boart-Longyear

SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter

4. LOCATION: SWMU 27F

5. NAME OF DRILLER: Shane Brown

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6600

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 6600 truck-mounted probe; 2-in. macro-core with Acetate liners.

8. HOLE LOCATION: See location sketch.

9. SURFACE ELEVATION:

10. DATE STARTED: 7/11/07

11. DATE COMPLETED: 7/11/07

12. OVERBURDEN THICKNESS: N/A

15. DEPTH GROUNDWATER ENCOUNTERED: 13.0 ft BGS

13. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A

14. TOTAL DEPTH OF HOLE: 16.0 ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED: N/A	UNDISTURBED: N/A	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC: BTEX	METALS: N/A	OTHER (SPECIFY): SVOC	OTHER (SPECIFY): —	OTHER (SPECIFY): —	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE	BACKFILLED: X	MONITORING WELL: —	OTHER (SPECIFY): —	23. SIGNATURE OF INSPECTOR: [signature]		

LOCATION SKETCH/COMMENTS

SCALE:

See page 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-14

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete	N/A		N/A	
	1	Lt. gray, red, brn-yellow (mottled) sandy clay: dry stiff, non- to sl. plastic; sand ≤ 30%.	1649			Run #1 0.8-4 ft D: 3.2 ft R: 2.9 ft
	2		0.0 ppm		N/A	
	3	Predom red + yellow mottled clay and sandy clay: moist.				
	4	No Recovery	N/A		N/A	
		Red and yellow mottled clay (As Above)	1654			Run # 2 4-8 ft D: 4.0 ft R: 3.8 ft
	5		6.0 ppm	N/A	N/A	
		Black silty sand: dry; rel. packed, F-grnd, "dirty".				
	6	Brown to Lt gray sand: dry to moist, rel. packed, F. to m-grnd, gen. massive.	1700			
	7		6.8 ppm		TSW81	
		Gray sandy clay: moist, mottled yellow.				
	8	No Recovery	N/A		N/A	
		Gray sandy clay (As Above)	1705			Run # 3 8-12 ft D: 4.0 ft R: 2.9 ft
	9	Red, gray, and brn-yellow sandy clay: moist, stiff, mottled, sl. plastic, sand ≤ 40%; m-grnd.	18.9 ppm		TSW81 TSW82	
	10					

HTRW DRILLING LOG

HOLE NUMBER SB-16

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 3 OF 3

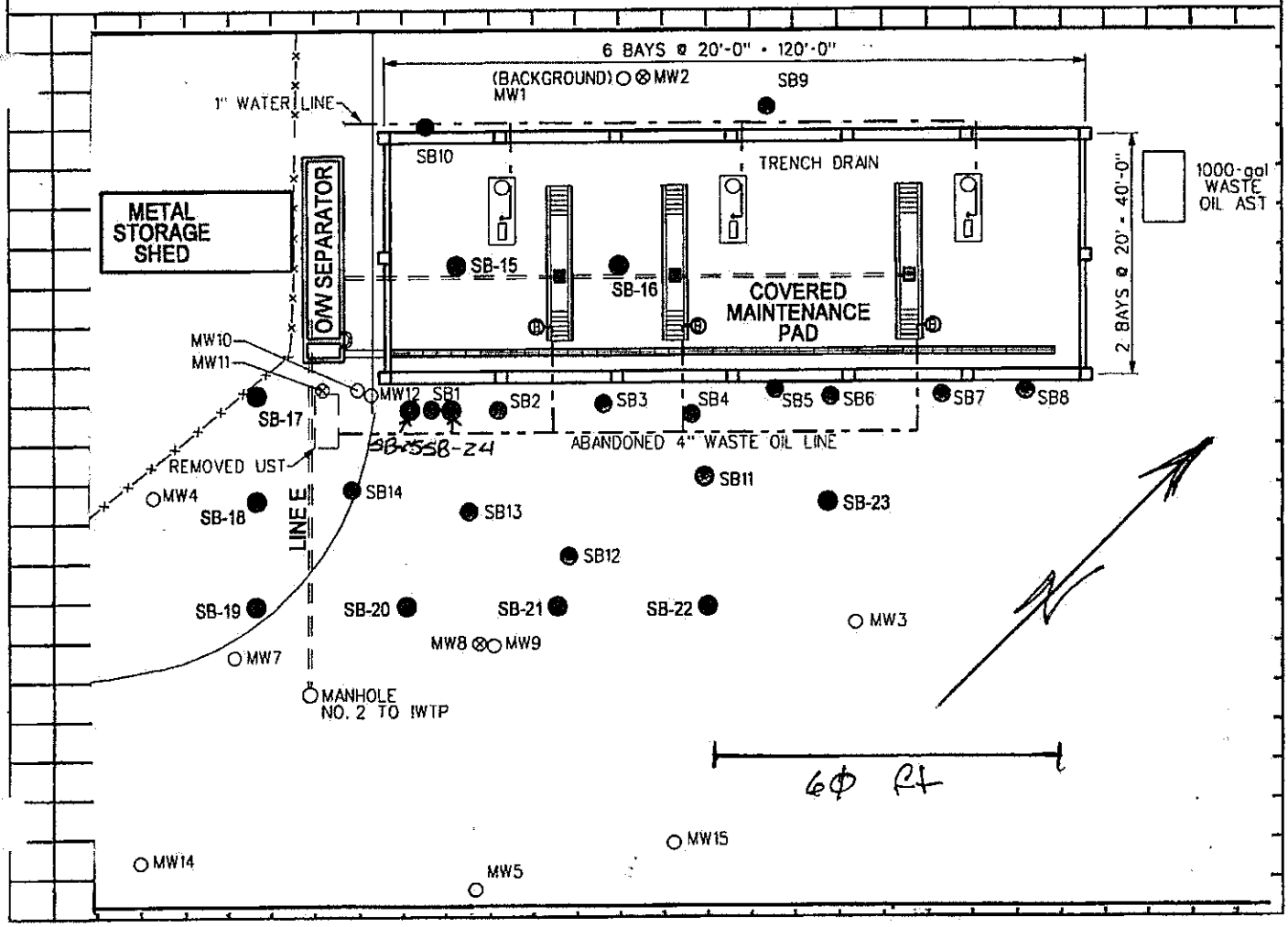
ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	10	Red, gray, and brn-yellow sandy clay (As Above).	17Φ5		75NB2	
	11	No Recovery	N/A		N/A	
	12	Red, gray, and brn-yellow Sandy clay (As Above).			75NH1 (Rins)	Run #4 12-16 Ft D: 4.Φ Ft R: 3.3 Ft Water at 13.Φ Ft BGS
	13	Gray and yellow clay sand: moist to wet, M-grnd, well packed, alt intervals of clay and sand.	N/A	N/A		
	14		N/A		75NH1 (Groundwater)	
	15	Not entirely saturated.				
	16	End of Boring.				TD = 16.Φ Ft
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

	DISTRICT: USACE Savannah	HOLE NUMBER: TJ-SB-17
COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: Boart-Longyear	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27 F.	
5. NAME OF DRILLER: Shane Brown	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6600	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 6600 truck-mounted probe with 2-in. macro-core with Acetate liner.	8. HOLE LOCATION: See Below	
	9. SURFACE ELEVATION:	
	10. DATE STARTED: 7/11/07	11. DATE COMPLETED: 7/11/07
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 12 Ft BGS	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 16.0 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED: N/A	UNDISTURBED: N/A	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC: BTEX	METALS: N/A	OTHER (SPECIFY): SVOC	OTHER (SPECIFY): —	OTHER (SPECIFY): —	21. TOTAL CORE RECOVERY: %
22. DISPOSITION OF HOLE	BACKFILLED: X	MONITORING WELL: —	OTHER (SPECIFY): —	23. SIGNATURE OF INSPECTOR: Timothy Coffey		

LOCATION SKETCH/COMMENTS — SCALE:



HTRW DRILLING LOG

HOLE NUMBER SB-17

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 2 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	V. dk gray brn sandy topsoil; dry, organics.	ϕϕϕ7			Run #1
		Lt. gray, red, brn-yellow clay and sandy clay; dry to moist, stiff, variegated, non-plast to sl. plast., sand ≤ 40%.	ϕ.ϕppm		N/A	ϕ-4 Ft D: 4.ϕ Ft R: 3.5 Ft
	2		ϕϕϕ9			
		Black to v. dk gray	51.1 ppm		N/A	
	4	No Recovery	N/A		N/A	
		As Above Lt. yellow-brown sand; dry, loose, friable, m-grnd.	ϕ912			Run #2
	6	Lt. gray, red, and brn-yellow clay and sandy clay; dry to moist, stiff, variegated, non- to sl. plastic; sand ≤ 40%.	8.4 ppm	N/A	N/A	4-8 Ft D: 4.ϕ Ft R: 4.ϕ Ft
			ϕ914			
	8		89.5 ppm		PBC 7-7	
			ϕ917			Run # 3
	10	Lt. gray sandy clay; moist, rel. soft, plastic, massive	22.4 ppm		75 PBC	8-12 Ft D: 4 Ft R: 3.3 Ft Perched water at 9.5 Ft BGS.

5

HTRW DRILLING LOG

HOLE NUMBER	SB-17
PROJECT: Fort Stewart/Hunter	INSPECTOR: Timothy Coffey
SHEET 3 OF 3	

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	10	Lt. gray sandy clay (As Above).	0920 198ppm	↕ (10–16 ft)	75IP0Z	
	11	Reddish-yellow sand; dry to moist				
		No Recovery	N/A		N/A	water at 12 ft BGS.
	12	As Above Rel. massive.		N/A	75I4P11 (Groundwater)	Run # 4 12-16 ft D: 4.0 ft R: 4.0 ft
	13					
	14	V. pale brown to Lt. gray sand; wet, massive to bdd, F- to m-grnd.	N/A			
	15					
	16	End of Boring.				TD = 16 ft.
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

DISTRICT: USACE Savannah		HOLE NUMBER: TJ-SB-18
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: Boart-Longyear	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27F	
5. NAME OF DRILLER: Shane Brown	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6600	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 6600 truck-mounted probe; 2-in. macro-core with acetate liner.	8. HOLE LOCATION: See location sketch	
	9. SURFACE ELEVATION:	
	10. DATE STARTED: 7/11/07	11. DATE COMPLETED: 7/11/07
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 12 Ft BGS	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 16 Ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	N/A	SVOC	—	—	
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: Samantha Coffey		
	X	—	—			

LOCATION SKETCH/COMMENTS — SCALE:

See pg. 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER 75-SB-48 M

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Brown sandy topsoil	10.5			Run #1
	1	Predom Lt red, clay mottled Lt. gray; dry, stiff, non- to sl. plast. ≤30% sand.	0.0 ppm		N/A	0-4 ft D: 4.0 ft R: 3.5 ft
	2		10.7			
	3	Black silty sand: dry, gen. loose, "dirty", F- to m grnd.	0.0 ppm		N/A	
	4	No Recovery	N/A		N/A	
	5	As Above grades to Lt. yellow-brn sand; F- to m-grnd, loose.	10.1		N/A	Run #2 4-8 ft D: 4 ft R: 3.4 ft
		Gray to strong brown sandy clay; dry to moist, rel. stiff (becomes soft w/ depth), mottled, plastic; sand ≤30%	3.7 ppm	N/A		
	6		10.2		TS1R81	
	7		29.7 ppm			
	8	No Recovery	N/A		N/A	
	9	Gray to strong brown mottled sandy clay (As Above).	10.3		N/A	Run #3 8-12 ft D: 4.0 ft R: 3.8 ft
	10		20.5 ppm			

HTRW DRILLING LOG

HOLE NUMBER SB-18

PROJECT: Fort Stewart/Hunter | INSPECTOR Timothy Coffey | SHEET 3 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Gray to strong brown sandy clay (As Above).	1033 164 ppm		TJ1R82	
		Lt. gray and brn-yellow sand; moist to wet, F- to M-grnd.				water @ 12 Ft
	12	No Recovery	N/A		N/A	Run #4 12 / 16 Ft D: 4.0 Ft R:
	13	No cores or cuttings	N/A	N/A	TJ4R11 (Groundwater)	Probe to 16 Ft BGS using screen sampler.
	16	End of Boring				TD = 16 Ft.

HTRW DRILLING LOG

DISTRICT: USACE Savannah		HOLE NUMBER: 78-SB-19
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: Boart-Longyear	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWMU 27F	
5. NAME OF DRILLER: Shane Brown	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6600	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 6600 truck mounted probe; 2¼in. macro-core with acetate liners.	8. HOLE LOCATION: See location sketch	
	9. SURFACE ELEVATION:	
	10. DATE STARTED: 7/11/07	11. DATE COMPLETED: 7/11/07
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 12 ft BGS	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 16.0 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED: N/A	UNDISTURBED: N/A	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC: BTEX	METALS: N/A	OTHER (SPECIFY): SVOC	OTHER (SPECIFY): —	OTHER (SPECIFY): —	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE	BACKFILLED: X	MONITORING WELL: —	OTHER (SPECIFY): —	23. SIGNATURE OF INSPECTOR: [signature]		

LOCATION SKETCH/COMMENTS

SCALE:

See page 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-19 24

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 2 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Brown sandy topsoil	1112			Run #1
	1	Red clay and sandy clay; dry, stiff, non- to sl. plastic, mottled lt. gray and brn-yellow.	0.0 ppm		N/A	0-4 Ft D: 4.0 Ft R: 3.6 Ft
	2		1114			
	3	Black to v. dk gray silty sand; dry, rel. loose, F- to m-grnd. Lightening w/ depth.	7.7 ppm		N/A	
	4	No Recovery	N/A		N/A	
		white sand; dry, loose, M-grnd;	1119			Run #2
	5	Predom. gray sandy clay w/ yell-brn mottling; moist, rel. soft, plastic; sand ≤ 20%	0.9 ppm	N/A	N/A	4-8 Ft D: 4.0 Ft R: 3.4 Ft
	6		1122			
	7		409 ppm		7J1581	
	8	No Recovery	N/A		N/A	
		Gray mottled clay sandy clay (As Above)	1127			Run #3
	9	Lt. gray clay sand; moist, massive to laminated, F-grnd; sand 75%	277 ppm		N/A	8-12 Ft D: 4.0 Ft R: 3.8 Ft
	10					

HTRW DRILLING LOG

HOLE NUMBER SB-19

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Colley

SHEET 3 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Lt. gray to white sand; moist to wet, loose to packed (some clay), V. F. to F. grnd; sugary.	1128 202 ppm		7J1582	Perched water at approx. 11 ft BGS.
	12	No Recovery	N/A		N/A	
		No cores or cuttings	N/A	N/A	7J1583 (Groundwater)	Water at 12 ft BGS. Probe to 16 ft using screen sampler.
	16	End of Boring				TD = 16.0 ft

HTRW DRILLING LOG

DISTRICT: USACE Savannah

HOLE NUMBER: FS-SB-20

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Boart-Longyear

SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter

4. LOCATION: SCUMU 27F

5. NAME OF DRILLER: Shane Brown

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6620

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 6620 truck-mounted probe; 2-in. macro-core with Acetate liners.

8. HOLE LOCATION: See location sketch

9. SURFACE ELEVATION:

10. DATE STARTED: 7/11/04

11. DATE COMPLETED: 7/11/04

12. OVERBURDEN THICKNESS: N/A

15. DEPTH GROUNDWATER ENCOUNTERED: 12 ft BGS

13. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A

14. TOTAL DEPTH OF HOLE: 16.0 ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

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

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	N/A	SVOC	—		

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	X	—	—	Timothy Colley

LOCATION SKETCH/COMMENTS

SCALE:

See page 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-20
SHEET 2 OF 3

PROJECT: Fort Stewart/Hunter
INSPECTOR Timothy Coffey

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete	N/A	↕	N/A	Run #1 0.6-4.0 ft D: 3.4 ft R: 1.8 ft
	1	Brown silty sand: dry, sl. packed.	1333			
		Black silty sand: dry, F grnd, loose, "dirty"	15.8 ppm		N/A	
	2	Red, yellow, red mottled sandy clay: moist, rel. stiff, sl. plast.				A little perched water: 2.4 ft
	3	No Recovery	N/A		N/A	
	4–5	Gray and brn-yell mottled sandy clay: moist, plastic; sand ≤ 40%.	1337 2.4 ppm	N/A	N/A	Run #2 4-8 ft D: 4.0 ft R: 3.0 ft
	6		1339 BC 234 ppm 235	↕	TSIT081	
	7	No Recovery	N/A		N/A	
	8–9	Lt. gray clay and sandy clay: moist, massive to mottled, stiff, sl. plastic, sand ≤ 25% (v.F-grnd).	1344 234 ppm		TSIT082	Run #3 8-12 ft D: 4.0 ft R: 3.4 ft
	10					

HTRW DRILLING LOG

HOLE NUMBER SB-24

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	11	As Above Lt. gray to white sand, wet, massive to bdd, F- to C- gnd, rel. loose.	N/A		N/A	Actually have water at 10.5 Ft BGS.
	12	No Recovery.				water at 12 Ft BGS.
	13	No cores or cuttings		N/A		Probe to 16 Ft BGS using screen sampler.
	14		N/A			
	15					
	16	End of Boring				TD = 16.0 Ft
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

COMPANY NAME: SAIC	DISTRICT: USACE Savannah	HOLE NUMBER: TS-SB-21
	2. DRILL SUBCONTRACTOR: Boart-Longyear	SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter	4. LOCATION: SWNW 27F
5. NAME OF DRILLER: Shane Brown	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6600
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 6600 truck-mounted probe, 2-in. macro-core with acetate liners.	8. HOLE LOCATION: See location sketch
	9. SURFACE ELEVATION:
	10. DATE STARTED: 7/12/07 — 11. DATE COMPLETED: 7/12/07
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 10.5 Ft BGS
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 16.0 Ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED: N/A	UNDISTURBED: N/A	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC: BTEX	METALS: N/A	OTHER (SPECIFY): SVOC	OTHER (SPECIFY): —	OTHER (SPECIFY): —	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE	BACKFILLED: X	MONITORING WELL: —	OTHER (SPECIFY): —	23. SIGNATURE OF INSPECTOR: [signature]		

LOCATION SKETCH/COMMENTS — SCALE:

See page 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-21 | 64

PROJECT: Fort Stewart/Hunter | INSPECTOR Timothy Coffey | SHEET 2 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete	N/A		N/A	Run #1 0.6-4 ft
	1	Predom red sandy clay mottled lt. gray and yell-brn; dry, stiff, sl. plast.	0815 1.0 ppm		N/A	D: 3.4 ft R: 3.2 ft
	2	sand ≤ 40%.				
			0817			
	3	Black to olive brn silty sand: dry, rel. packed (looser w/ depth), mass to mottled, "dirty".	17.6 ppm		N/A	
	4	No Recovery	N/A		N/A	
		olive brn sand (As Above)	0819			Run # 2 4-8 ft
	5	Gray and yell-brn sandy clay; moist, mottled, rel. soft, plastic,	14.1 ppm	N/A	N/A	D: 4.0 ft R: 3.6 ft
	6	sand ≤ 25%	0822			
	7	As Above, with dark red mottling	173 ppm		TSI0881	
	8	No Recovery	N/A		N/A	
		Gray sandy clay w/ red mottling	0824			Run #3 8-12 ft
	9	Gray clay: moist, massive/ uniform, rel. stiff, plastic,	127 ppm		TSI0882	D: 4.0 ft R: 3.8 ft
	10	sand ≤ 10%.				

HTRW DRILLING LOG

HOLE NUMBER SB-21

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Lt. gray clay (As Above)	ΦBZ4		TSIVB2	
	11	Lt. gray clay sand: wet, massive/unif, stiff/well packed, F-grnd, non-plast. All sand.				Water at 10.5 ft BGS.
	12	No Recovery				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

DISTRICT: USACE Savannah

HOLE NUMBER: 73-SB-22

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Boart - Longyear

SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter

4. LOCATION: SWMU 27F

5. NAME OF DRILLER: Shane Brown

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6600

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 6600 truck mounted probe; 2-in. macro-core with Acetate liners.

8. HOLE LOCATION: See location sketch

9. SURFACE ELEVATION:

10. DATE STARTED: 7/12/07

11. DATE COMPLETED: 7/12/07

12. OVERBURDEN THICKNESS: N/A

15. DEPTH GROUNDWATER ENCOUNTERED: 11.0 ft BGS

13. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A

14. TOTAL DEPTH OF HOLE: 16.0 ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

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

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	N/A	SVOC	—	—	

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

LOCATION SKETCH/COMMENTS

SCALE:

See page 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-22 | 74

PROJECT: Fort Stewart/Hunter | INSPECTOR Timothy Coffey | SHEET 2 OF

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete	N/A		N/A	Run # 1 0.6 - 4.0 Ft D: 3.4 Ft R: 2.7 Ft
	1	Red clay sand; sl. packed, sl. plastic, mottled Lt. gray; sand ≥ 40%.	0906			
	2	Black silty sand; dry, packed "dirty" yellow-brn clay	21.5 ppm		N/A	
	3	Black to dark gray brn silty sand; dry, packed (loose at bottom), "dirty"				
	4	No Recovery	N/A		N/A	
		Lt. gray to white sand; dry, loose	0909			Run # 2 4 - 8 Ft D: 4.0 Ft R: 3.6 Ft
	5	Predom gray and yell-brn (mottled) sandy clay; moist, rel. soft, plastic, sand ≤ 30%.	757 ppm	N/A	N/A	
	6		0911			
	7	Gray to Lt. gray sandy clay; moist, uniform, rel. stiff, sl. plastic.	289 ppm		751V81	
	8	No Recovery	N/A		N/A	
		Gray sandy clay w/ red mottling (As Above)	0914			Run # 3 8 - 12 Ft D: 4.0 Ft R: 3.4 Ft
	9	Lt. gray clay; moist, massive, uniform, stiff, plastic, sand ≤ 5%.	107 ppm		751V82	
	10					

HTRW DRILLING LOG

HOLE NUMBER SB-22

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 3 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	10	Lt. gray clay (As Above)	⌀914		75VB2	
	11	Lt. gray to Lt. brn-gray sandy clay: moist to wet, bdd, sl. plastic.	N/A		N/A	water at approx. 11.0 ft BGS
	12	No Recovery				
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

DISTRICT: USACE Savannah

HOLE NUMBER: TS-SB-23

COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Boart-Longyear

SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter

4. LOCATION: SWMU 27F

5. NAME OF DRILLER: Shane Brown

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6620

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 6620 truck-mounted probe; 2-in. macro-core with Acetate liners.

8. HOLE LOCATION: See location sketch

9. SURFACE ELEVATION:

10. DATE STARTED: 7/12/07

11. DATE COMPLETED: 7/12/07

12. OVERBURDEN THICKNESS: N/A

15. DEPTH GROUNDWATER ENCOUNTERED: 12.5 ft BGS

13. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A

14. TOTAL DEPTH OF HOLE: 16.0 ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES: DISTURBED: N/A; UNDISTURBED: N/A

19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	N/A	SVOC	—	—	
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
	X	—	—			

LOCATION SKETCH/COMMENTS

SCALE:

See page 3, this log book, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-23

PROJECT: Fort Stewart/Hunter | INSPECTOR Timothy Coffey | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete	N/A	↑	N/A	Run #1 ϕ.8–4.ϕ ft D: 3.2 ft R: 2.4 ft
	1	Red clay sand: dry, massive, sl. packed.	ϕ957		751X81	
	2	Brown-grey clay/silt sand: dry, mottled yell-brn and red, packed, sl. plast to non-pl.	153 ppm			
	3	Black silty sand: dry, packed, "dirty"				
		No Recovery	N/A		N/A	
	4	Brown sand: dry, loose, M-grnd.	1ϕϕ1			Run #2 4–8 ft D: 4.ϕ ft R: 3.ϕ ft
	5	Gray and yell-brn (mottled) sandy clay: moist, rel. soft, plastic; sand ≤ 3ϕ%.	145 ppm	N/A	N/A	
	6		.1ϕϕ3			
			8ϕ.3 ppm		N/A	
	7	No Recovery	N/A		N/A	
	8	Gray, red, and yell-brn sandy clay (As Above)	1ϕϕ6			Run #3 8–12 ft D: 4.ϕ ft R: 3.6 ft
	9	Predom gray sandy clay: moist, plastic, rel. stiff, M- to C-grnd.	37.7 ppm	↓	N/A	
	10		Below		Below	

Right margin depths: 1, 2, 3, 4, 5, 6, 7, 8, 1ϕ

HTRW DRILLING LOG

PROJECT: Fort Stewart/Hunter	INSPECTOR Timothy Coffey
HOLE NUMBER SB-23	SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	10	Gray sandy clay (As Above) sand decr ↓	1Ø1Ø 70.6 ppm.	↑	TJ1X08	
	11	Lt. gray clay: moist, stiff, plastic, pure, massive/uniform				
		No Recovery	N/A		N/A	
	12	Lt. gray clay (As Above)				Run #4 12-16 ft D: 4.Ø ft R: 2.4 ft
	13	Lt gray to gray sand and clay sand: wet, mass, f- to m-grnd, sl. packed.		N/A		water at 12.5 ft BGS.
	14	strong brown sand, wet, massive, m-grnd.	N/A		TJ4X11 (Groundwater)	
	15	No Recovery		↓		
	16	End of Boring.				TD = 16.Ø ft
	17					
	18					
	19					
	20					

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HTRW DRILLING LOG

DISTRICT: USACE Savannah

HOLE NUMBER: TS-SB-24 / TS-SB-25

SHEET 1 OF 3

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: Boart – Longyear

3. PROJECT: Fort Stewart/Hunter

4. LOCATION: SWMU 27F

5. NAME OF DRILLER: Shane Brown

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe truck-mounted probe; 2-in. discrete-interval macro-core sampler with Acetate liners.

8. HOLE LOCATION: See location sketch.

9. SURFACE ELEVATION:

10. DATE STARTED: 7/12/07

11. DATE COMPLETED: 7/12/07

12. OVERBURDEN THICKNESS: N/A

15. DEPTH GROUNDWATER ENCOUNTERED: NM

13. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A

14. TOTAL DEPTH OF HOLE: 16.0 ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED N/A	UNDISTURBED N/A	19. TOTAL NUMBER OF CORE BOXES N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	—	—	NOD/SOD	—	—	
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
	X	—	—			

LOCATION SKETCH/COMMENTS

SCALE:

See page 3, this logbook; Raw location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-24

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0–10	See lithology log for SB-24 for representative lithology log.	N/A	N/A	N/A	Probe to 10 ft using discrete-interval macro-core sampler.

SB-25

HTRW DRILLING LOG

HOLE NUMBER SB-24

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 3 OF 3

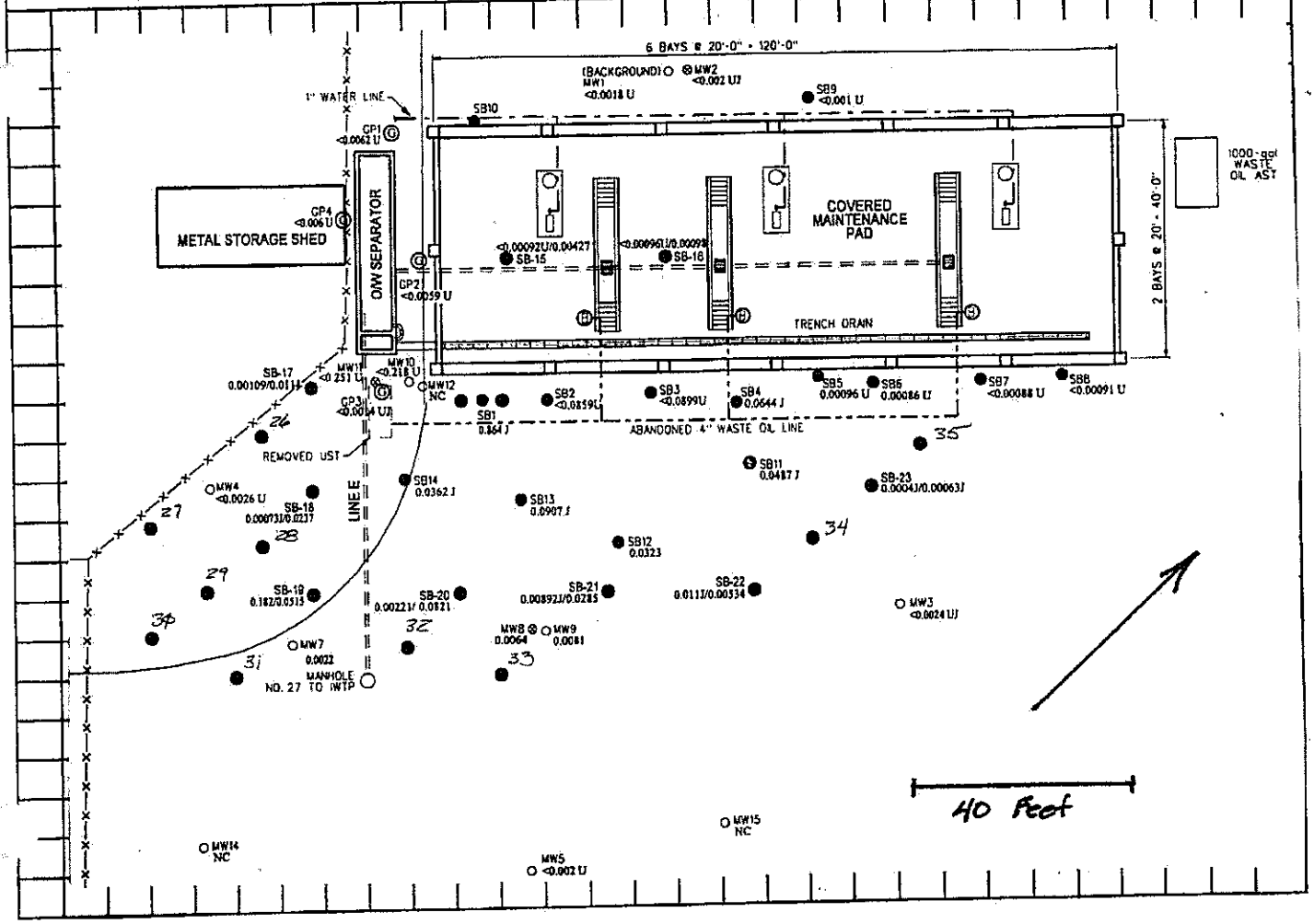
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	See SB-24 for representative lithologic log.	N/A		TJ4Y81 (Soil)	6 soil cores total wt = 24 lbs
	12					Probe to 16 ft using macro-core sampler. Install temp. piez. from 10-15 ft BGS. 2 ea, 1-Liter Amber glass bottles.
	13			N/A		
	14		N/A		TJ4Y11 (Groundwater)	
	15					
	16	End of Boring.				TD = 16.0 ft
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

1. COMPANY NAME: SAIC	DISTRICT: USACE Savannah 2. DRILL SUBCONTRACTOR: SAIC	HOLE NUMBER TJ-SB-26 SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: Ft. Stewart/SWMU 27F	
5. NAME OF DRILLER: Chris Hemer	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 5400 truck-mounted DPT rig; 2-in. Macro-core barrell with Acetate liners; 1-in. diam. Screen water sampler	8. HOLE LOCATION: See location sketch.	
	9. SURFACE ELEVATION:	
	10. DATE STARTED: 1/28/98	11. DATE COMPLETED: 1/28/98
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 9.0 Ft BGS.	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 13.0 Ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED: N/A	UNDISTURBED: N/A	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC: BTEX	METALS: —	OTHER (SPECIFY): SVOC	OTHER (SPECIFY): —	OTHER (SPECIFY): —	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE	BACKFILLED: X	MONITORING WELL: —	OTHER (SPECIFY): —	23. SIGNATURE OF INSPECTOR: Timothy Coffey		

LOCATION SKETCH/COMMENTS — SCALE:



HTRW DRILLING LOG

HOLE NUMBER SB-26

PROJECT: Fort Stewart/Hunter | INSPECTOR Timothy Caffrey | SHEET 2 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0–0.6	Dk gray-brn, silty sand: moist, F-grnd, rel. packed, organics.	0.0 ppm	N/A (0–9)	N/A	Run #1 0-4 ft D: 4 ft R: 3.3 ft
	0.6–1.6	Lt. gray sandy clay w/ yellow specks: moist, rel. stiff, sl. to non-plast.				
	1.6–2.6	Lt. red + med gray sandy clay: moist, rel. stiff, sl. plast.	14.9 ppm		1418 — 7512668	
	2.6–3.3	Black to med. brown silty sand: dry, F-grnd, variegated.				
	3.3–4	No Recovery	N/A		N/A	
	4–6	Med. gray to yell-brown sandy clay: moist, med. plastic, mottled (rare red-brn); sand: ≤30%.	46.2 ppm		1426 N/A	Run #2 4-8 ft D: 4 ft R: 3.8 ft
	6–7.8		96.2 ppm		1428 N/A	
	7.8–8	No Recovery	N/A		N/A	
	8–9	Med. gray to yell-brn sandy clay (As Above)	14.5 ppm		1434 7512682 (Reg) 7512631 (Dup)	Run #3 8-12 ft D: 4 ft R: 3.3 ft
	9–10	Med. gray clay sand: wet, F-grnd, rel. stiff, sl. plast.	N/A	7514266"	N/A	water at 9.0 ft BGS.

HTRW DRILLING LOG

HOLE NUMBER SB-26

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 3 OF 3

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Med. gray clay, Sand (As Above)				
		Red-yellow sand: wet, F-grnd, massive.	N/A	11 92H TL	N/A	
	12	No Recovery				
		No soil ~~Drilling~~ for Sampling	N/A		N/A	
	13	End of Boring				TD = 13 Ft.
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21					

HTRW DRILLING LOG

DISTRICT: USACE Savannah		HOLE NUMBER: TJ-513-27
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: Ft. Stewart / Skill 27F	
5. NAME OF DRILLER: Chris Homer	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 5400 truck-mounted DPT rig; 2-in. Macro-core barrel with Acetate liners; 1-in. diam. screen water sampler.	8. HOLE LOCATION: See Below	
	9. SURFACE ELEVATION:	
	10. DATE STARTED: 1/28/08	11. DATE COMPLETED: 1/28/08
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 9.8 Ft BGS	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 14.0 Ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED: N/A	UNDISTURBED: N/A	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC: BTEX	METALS: —	OTHER (SPECIFY): SVOC	OTHER (SPECIFY): —	OTHER (SPECIFY): —	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE	BACKFILLED: X	MONITORING WELL: —	OTHER (SPECIFY): —	23. SIGNATURE OF INSPECTOR: [signature]		

LOCATION SKETCH/COMMENTS

SCALE:

See Page 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-27

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Dk gray-brn sandy topsoil; moist, F-grnd, organics.	0.0 ppm		N/A	Run #1 0-4 ft D: 4 ft R: 3.0 ft
	1	Lt. red and mod gray clay sand; moist, m-plastic, mottled.				
	2	Black sandy silt; dry, v F-grnd.	0.0 ppm		1525 N/A	
	3	Dk yellow-brn silty sand; dry to moist, F-grnd, mottled.				
	4	No Recovery	N/A		N/A	Run #2 4-8 ft D: 4 ft R: 3.6 ft
	5	Med gray and yell-brn sandy clay; moist, med. plast, rel. stiff; sand ≤ 40%	0.0 ppm	N/A	1531 N/A	
	6				1533	
	7	Predom. med. gray sandy clay; moist, plastic, rel. stiff; sand ≤ 25%.	0.0 ppm			
	8	No Recovery	N/A		N/A	Run #3 8-12 ft D: 4 ft R: 3.3 ft water at 9.8 ft BGS.
	9	Med. gray sandy clay (As Above).	0.0 ppm		1538	
	10		N/A		N/A	

HTRW DRILLING LOG

HOLE NUMBER	SB-37
SHEET	3 OF 3

PROJECT: Fort Stewart/Hunter | INSPECTOR: Timothy Coffey

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	10–11	Pale yellow-brown clay sand, wet, F- to m-grand, massive.	N/A	7542711	N/A	
	11	Yellow-brn sand, wet.				
	11–12	No Recovery				
	12–14	No soil ~~drilling~~ sampling (TJC) ↓	N/A		N/A	
	14	End of Boring				TD = 14 ft
	15					
	16					
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

DISTRICT: USACE Savannah

HOLE NUMBER: TS-SB-28

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: SAIC

SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter

4. LOCATION: Ft. Stewart/SWMU 27F

5. NAME OF DRILLER: Chris Hamer

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 5400 Truck-mounted DPT rig, 2-in. Macro-core barrel with Acetate liner, 1-in. diam. screen water sampler.

8. HOLE LOCATION: See Below

9. SURFACE ELEVATION:

10. DATE STARTED: 1/29/08

11. DATE COMPLETED: 1/29/08

12. OVERBURDEN THICKNESS: N/A

15. DEPTH GROUNDWATER ENCOUNTERED: 99 ft BGS.

13. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A

14. TOTAL DEPTH OF HOLE: 14.0 ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED: N/A	UNDISTURBED: N/A	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC: BTEX	METALS: —	OTHER (SPECIFY): SVOC	OTHER (SPECIFY):	OTHER (SPECIFY): —	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE	BACKFILLED: X	MONITORING WELL: —	OTHER (SPECIFY): —	23. SIGNATURE OF INSPECTOR:		

LOCATION SKETCH/COMMENTS

SCALE:

See Page 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-26

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1	Refer to boring TJ-SB-26 for Lithologic log.	0.0 ppm		N/A	Run #1 0-4 Ft D: 4 Ft R: 3.6 Ft
	2		1.1 ppm		0928 — 0932 — TL	
	3					
	4	No Recovery	N/A		N/A	Run #2 4-8 Ft D: 4 Ft R: 3.6 Ft
	5		0.0 ppm	N/A	0934 N/A	
	6				0936	
	7		1.4 ppm		N/A	
	8	No Recovery	N/A		N/A	Run #3 8-12 Ft D: 4 Ft R: 3.2 Ft
	9		15.2 ppm		0941 — 0945 — TL	Water at 9.9 Ft BGS.
	10		N/A		N/A	

HTRW DRILLING LOG

HOLE NUMBER SB-26

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	See Above	N/A	11 TO 14 FT	N/A	
	12					
	13	No soil drilling TR sampling	N/A		N/A	
	14	End of Boring				TD = 14 ft
	15					
	16					
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

DISTRICT: USACE Savannah

HOLE NUMBER: FS-513-29

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: SAIC

SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter

4. LOCATION: Ft. Stewart/SWMU 27F

5. NAME OF DRILLER: Chris Hamer

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 5400 Truck-mounted DPT rig; 2-in. Macro-core barrell with Acetate liners; 1-in. diam. screen water sampler.

8. HOLE LOCATION: See Below

9. SURFACE ELEVATION:

10. DATE STARTED: 1/29/08

11. DATE COMPLETED: 1/29/08

12. OVERBURDEN THICKNESS: N/A

15. DEPTH GROUNDWATER ENCOUNTERED: 9.2 Ft BGS

13. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A

14. TOTAL DEPTH OF HOLE: 13.0 Ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES: ~~DISTURBED~~ N/A ~~UNDISTURBED~~ N/A

19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	—	SVOC		—	

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	X	—	—	Vincent Caffey

LOCATION SKETCH/COMMENTS

SCALE:

See Page 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-29

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Caffrey

SHEET 2 OF 3

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ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0–4	Refer to boring TJ-SB-27 for representative lithologic log.	0.0 ppm	N/A	N/A	Run #1 0-4 ft D: 4 ft R: 3.1 ft
	2		0.0 ppm		1043 N/A	Perched water: 2.7-3.2 ft.
	4	No Recovery	N/A		N/A	
	4–8		0.0 ppm	N/A	1054 N/A	Run #2 4-8 ft D: 4 ft R: 3.5 ft
	6		0.0 ppm		1053 TJ 12931 (Dup) TJ 12931 (Reg)	
	8	No Recovery	N/A		N/A	
	8–12		0.0 ppm		1101 TJ 12932 N/A	Run #3 8-12 ft D: 4 ft R: 3.0 ft Water at 9.2 ft BGS.
	10		N/A			

HTRW DRILLING LOG

HOLE NUMBER SB-29

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Caffrey

SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	See Above	N/A	TJ42911	N/A	
	12	No Recovery				
	13	No soil Drilling ~~Sampling~~ BC	N/A		N/A	
		End of Boring				TD = 13 ft

HTRW DRILLING LOG

DISTRICT: USACE Savannah

HOLE NUMBER: TS-SB-34

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: SAIC

SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter

4. LOCATION: Ft. Stewart / SWMU 27F

5. NAME OF DRILLER: Chris Hemer

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 5400 truck-mounted DPT rig; 2-in. Diam. Macro-core barrell with Acetate liners; 1-in. diam. screen water sampler.

8. HOLE LOCATION: See Below

9. SURFACE ELEVATION:

10. DATE STARTED: 1/29/08

11. DATE COMPLETED: 1/29/08

12. OVERBURDEN THICKNESS: N/A

15. DEPTH GROUNDWATER ENCOUNTERED: 9.4 Ft BGS.

13. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A

14. TOTAL DEPTH OF HOLE: 13.0 Ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES: ~~DISTURBED~~ N/A ~~UNDISTURBED~~ N/A

19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	—	SVOC	—	—	

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	X	—	—	Timothy Coffey

LOCATION SKETCH/COMMENTS

SCALE:

See Page 3 of this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-39

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Dk gray-brn silty sand topsoil: moist, F-grnd, organics	0.0 ppm		N/A	Run #1 0-4 ft D: 4 ft R: 3.5 ft
	1	Black sandy silt; dry, v. F-grnd, salt + pepper, gen. massive.				
	2		63 ppm		1232 TJ 13081	
	3	Dk grn to yell-brn to pale yell-brn sand; dry, F-grnd, rel. packed - top / loose - bottom.				
	4	No Recovery	N/A		N/A	
		As Above		N/A	1234	Run #2 4-8 ft D: 4 ft R: 3.7 ft
	5	Med-gray and Yell-brown sandy clay; moist, ret. stiff, mod. plast.	0.0 ppm		N/A	
	6				1235	
	7	Predom yell-brn and red sandy clay; moist, rel. soft, sl. plastic (with mnr med gray coloring) more sand.	0.0 ppm		N/A	
	8	No Recovery	N/A		N/A	
		As Above	0.0 ppm		1238 TJ 13082	Run #3 8-12 ft D: 4 ft R: 3.1 ft water at 9.4 ft BGS.
	9	Lt brn gray clay sand to sand; wet, mottled, F-grnd, non-plast.	N/A	TJ 13011	N/A	
	10					

HTRW DRILLING LOG

HOLE NUMBER SB-36

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	As Above Red-yellow sand; wet, F-grnd, gen massive.	N/A	TS430011	N/A	
	12	No Recovery				
	13	No Soil ~~Drilling~~ Sampling TSC	N/A		N/A	
		End of Boring				TD = 13 ft.

HTRW DRILLING LOG

DISTRICT: USACE Savannah

HOLE NUMBER: 73-513-31

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: SAIC

SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter

4. LOCATION: Ft. Stewart/SWMU 27.5

5. NAME OF DRILLER: Chris Hamer

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 5400 Truck-mounted DPT rig; 2-in. diam. Macro-Core barrel with Acetate liners. 1-in. diam. screen water sampler

8. HOLE LOCATION: See Below

9. SURFACE ELEVATION:

10. DATE STARTED: 1/29/98

11. DATE COMPLETED: 1/29/98

12. OVERBURDEN THICKNESS: N/A

15. DEPTH GROUNDWATER ENCOUNTERED: ~3 Ft BGS

13. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A

14. TOTAL DEPTH OF HOLE: 13.0 Ft BGS

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

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

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	—	SVOC-	—	—	
22. DISPOSITION OF HOLE	**BACKFILLED**	**MONITORING WELL**	**OTHER (SPECIFY)**	**23. SIGNATURE OF INSPECTOR**		
	X	—	—			

LOCATION SKETCH/COMMENTS

SCALE:

See Page 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-31

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Pettrey

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete	N/A	N/A	N/A	Run #1 Ø.64 Ft D: 3.4 Ft R: 3.0 Ft
	1	Med gray, yell-brn, and red silty clay: moist, rel. stiff, mod. plastic, mottled.	1.9 ppm		N/A	
	2	Black sandy silt: dry, v. F-grnd, mass/unit, loose.			1329	
	3	DK yell-brn to p. yell-brown silty sand: dry, F-grnd, rel. loose, lighter w/depth.	3.Ø ppm		TJ13181	
	4	No Recovery	N/A	N/A	N/A	Run #2 4-8 Ft D: 4 Ft R: 3.2 Ft
	5	Med gray and DK yell-brn sandy clay: moist, rel. stiff, mottled, mod. plast.	Ø.Ø ppm		1332 N/A	
	6	Predom. med gray clay: moist, stiff, sl. plastic, rare red mottling.	Ø.3 ppm		1333 TJ13182	
	7					Water at 8.3 Ft BGS.
	8	No Recovery	N/A		N/A	Run #3 8-12 Ft D: 4 Ft R: 3.5
	9	Med. gray clay (As Above)				
	10	Med-gray silty sand: wet, F-grnd, massive.	N/A	TJ43111	N/A	
		See below				

HTRW DRILLING LOG

HOLE NUMBER SB-31

PROJECT: Fort Stewart/Hunter | INSPECTOR Timothy Coffey | SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Red-yellow sand; wet, F- to m-grnd, mottled.				
		Med. gray silty sand; wet, F-grnd, massive/unif., sugary.	N/A	TT43111	N/A	
	12	No Recovery				
		No soil ~~Drilling~~ Sampling TIC	N/A		N/A	
	13	End of Boring				TD = 13 ft
	14					
	15					
	16					
	17					
	18					
	19					
	20					

HTRW DRILLING LOG	DISTRICT: USACE Savannah	HOLE NUMBER FT-SB-32
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter	4. LOCATION: Ft. Stewart/SWMU 27 F
5. NAME OF DRILLER: Chris Homer	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 5400 Truck-mounted DPT rig; 2-in. diam. Macro-core barrel with Acetate liners; 1-in. diam. screened water sampler.	8. HOLE LOCATION: See Below
	9. SURFACE ELEVATION:
	10. DATE STARTED: 1/29/08 11. DATE COMPLETED: 1/29/08
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 9.80 Ft BGS
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 14.0 Ft BGS	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED: N/A	UNDISTURBED: N/A	19. TOTAL NUMBER OF CORE BOXES: N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	—	SVOC	—	—	
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
	X	—	—			

LOCATION SKETCH/COMMENTS SCALE:

See Page 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SI3-3E

PROJECT: Fort Stewart/Hunter | INSPECTOR Timothy Coffey | SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0–0.6	Concrete	N/A	N/A	N/A	Run #1 ⌀.6-4 ft D: 3.4 ft R: 3.⌀ ft
	1	Red and med gray sandy clay: moist, mod. plastic, rel. stiff, mottled	⌀.⌀ ppm	↑	N/A	
	2	Black sandy silt: dry, v. F-grnd, loose, mass/uniform.	1.8 ppm		1438 751328I	
	3	Gray sand.				
		Brown silty sand: dry, F-grnd, massive.				
		No Recovery	N/A		N/A	
	4	Predom med gray and yellow-brn sandy clay: moist, mod. plastic, rel. stiff, mottled (rare red color).	⌀.⌀ ppm	N/A	1445 N/A	Run #2 4-8 ft D: 4 ft R: 3.7 ft
	5					
	6		59.4 ppm		1447 751328N	
	7	Gray sandy clay: moist, med plast, rel. stiff				
		No Recovery	N/A		N/A	
	8	Brown-gray sandy clay/clay sand.	42.⌀ ppm		1454 N/A	Run #3 8-12 ft D: 4 ft R: 3.2 ft
	9	Med gray clay (to sandy clay: moist, stiff, sl- to mod. plastic; sand ≤1⌀%		↓		Water at 9.8 ft BGS.
	10	See Below	N/A		N/A	

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HTRW DRILLING LOG

HOLE NUMBER SB-32

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Lt. Red-yellow silty sand, wet, F-grnd, massive.				
		Lt gray sand, wet, F-to m-grnd, sugary.	N/A		N/A	
	12	No Recovery		TJ43211 (Reg) TJ43221 (Dup)		
		No Soil Drilling TJC Sampling	N/A		N/A	
	13					
	14	End of Boring				TD = 14 ft
	15					
	16					
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	HOLE NUMBER: TS-SB-33
		SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter	4. LOCATION: Ft. Stewart/SWMU 27F
5. NAME OF DRILLER: Chris Homer	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 5400 Truck-mounted DPT rig; 2-in. diam. Macro-core barrell with Acetate liners; 1-in. diam. screened water sampler.	8. HOLE LOCATION: See Below
	9. SURFACE ELEVATION:
	10. DATE STARTED: 1/29/08 11. DATE COMPLETED: 1/29/08
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 9.8 Ft BGS
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 14.0 Ft BGS	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

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

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	—	SVOC	—	—	

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

LOCATION SKETCH/COMMENTS

SCALE:

See Page 3, this logbook, for location sketch.

HTRW DRILLING LOG

HOLE NUMBER SB-33

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete	N/A	N/A	N/A	
	1	Red and med. gray sandy clay; moist to dry, st. to mod. plastic, very stiff. (more yell-brn mottling)	0.0 ppm	N/A	N/A	Run #1 0.6-4.0 Ft D: 3.4 ft R: 3.2 ft
	2					
		Black sandy silt; dry; v. F-grnd, moss/uniform	2.9 ppm		1551 TT13381	
	3	DK yellow-brn silty sand; dry, F-grnd, rel. loose,				
	4	No Recovery	N/A		N/A	
		Predom med gray and yellow-brn sandy clay; moist, rel. stiff,	29.8 ppm	N/A	1554 N/A	Run #2 4-8 Ft D: 4 ft R: 3.7 Ft
	5					
	6				1557	
		Gray clay; moist, stiff, plastic; mnr red mottling.	75.4 ppm		N/A	
	7					
	8	No Recovery	N/A		N/A	Run #3 8-12 Ft D: 4 ft R: 3.2
		Gray clay (As Above) rare to mnr sand. some mottling.	101 ppm		1601 TT13382	
	9					Water at 9.8 ft BGS
	10		N/A		N/A	

HTRW DRILLING LOG

HOLE NUMBER SB-33

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 3 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	10	Gray clay / sandy clay (As Above)				
	11	Lt. yellow-gray to white sand: wet, F-grnd, moss., sugary.	N/A	TT43311	N/A	
	12	No Recovery				
	13	No Soil Sampling ↓	N/A		N/A	
	14	End of Boring				TD = 14 ft
	15					
	16					
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

	DISTRICT: USACE Savannah	HOLE NUMBER: TJ-SB-34
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR: SAIC	SHEET 1 OF 3
3. PROJECT: Fort Stewart/Hunter	4. LOCATION: Ft Stewart / SWMU 27F	
5. NAME OF DRILLER: Chris Horner	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 5400 Truck-mounted DPT rig; 2-in. diam. Macro-core barrel w/ Acetate liners; 1-in. diam. Screened water Sampler.	8. HOLE LOCATION: See Below	
	9. SURFACE ELEVATION:	
	10. DATE STARTED: 1/30/08	11. DATE COMPLETED: 1/30/08
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 11.2 ft BGS	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 15.0 ft BGS	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED: N/A	UNDISTURBED: N/A	19. TOTAL NUMBER OF CORE BOXES: N/A				
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC: BTEX	METALS: —	OTHER (SPECIFY): SVOC	OTHER (SPECIFY): —	OTHER (SPECIFY): —	21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE	BACKFILLED: X	MONITORING WELL: —	OTHER (SPECIFY): —	23. SIGNATURE OF INSPECTOR: [signature]			

LOCATION SKETCH/COMMENTS

SCALE:

See Page 3, this logbook, for location sketch.

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HTRW DRILLING LOG

HOLE NUMBER SB-34

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 2 OF 3

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Concrete	N/A	N/A	N/A	
	1	mod-gray and red mottled sandy clay.		↑	Ø912	Run #1 Ø.6 - 4 ft D: 3.4 ft R: 2.7 ft
	2	Brn-yellow clay sand.	12.3 ppm		N/A	
		Black-gray silty sand: salt & pepper				
	3	Brown silty sand.				
		No Recovery	N/A		N/A	
	4	As Above.			Ø918	Run #2 4-8 ft D: 4 ft R: 3.2 ft
	5	Predom gray sandy clay: moist, mod. plastic, rare Dk yell-brn mottling.	2.3 ppm	N/A	N/A	
	6		102 ppm		Ø924 TJ13481	
	7					Product odor
		No Recovery	N/A		N/A	
	8	gray and Dk yell-brn mottled sandy clay (As Above)	340 ppm		Ø928 TJ1348N	Run #3 8-12 ft D: 4 ft R: 3.2
	9	Gray clay: moist, v. stiff, sl. plast.		↓		
	10	See Below	10.6 ppm		Ø931	

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HTRW DRILLING LOG

HOLE NUMBER SB-37

PROJECT: Fort Stewart/Hunter

INSPECTOR Timothy Coffey

SHEET 3 OF 3

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ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	Gray sandy clay; moist, stiff, rainy yell-brn mottling. →	14.5 ppm	N/A	N/A	Water at 11.2 Ft BGS
		Yell-brn silty sand.				
	12	No Recovery	N/A		N/A	
	13	No Soil Sampling ↓	N/A	TT43411	N/A	
	14					
	15	End of Boring				TD = 15 ft
	16					
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

DISTRICT: USACE Savannah

HOLE NUMBER: FS-SB-35

1. COMPANY NAME: SAIC

2. DRILL SUBCONTRACTOR: SAIC

SHEET 1 OF 3

3. PROJECT: Fort Stewart/Hunter

4. LOCATION: Ft. Stewart/SWMU 27F

5. NAME OF DRILLER: Chris Homer

6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 5400

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe 5400 truck-mounted DPT rig; 2-in. discrete interval soil sampler w/ Acetate liners; 1-in. diam. screen water-sampler.

8. HOLE LOCATION: See Below

9. SURFACE ELEVATION:

10. DATE STARTED: 1/30/06

11. DATE COMPLETED: 1/30/06

12. OVERBURDEN THICKNESS: N/A

15. DEPTH GROUNDWATER ENCOUNTERED: 11-12 Ft BGS

13. DEPTH DRILLED INTO ROCK: N/A

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A

14. TOTAL DEPTH OF HOLE: 15.0 Ft

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

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

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	BTEX	—	SVOC	—	—	

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

LOCATION SKETCH/COMMENTS

SCALE:

See Page 3, this logbook, for location sketch.