APPENDIX B

BORING LOGS AND WELL CONSTRUCTION LOGS

BORING LOGS

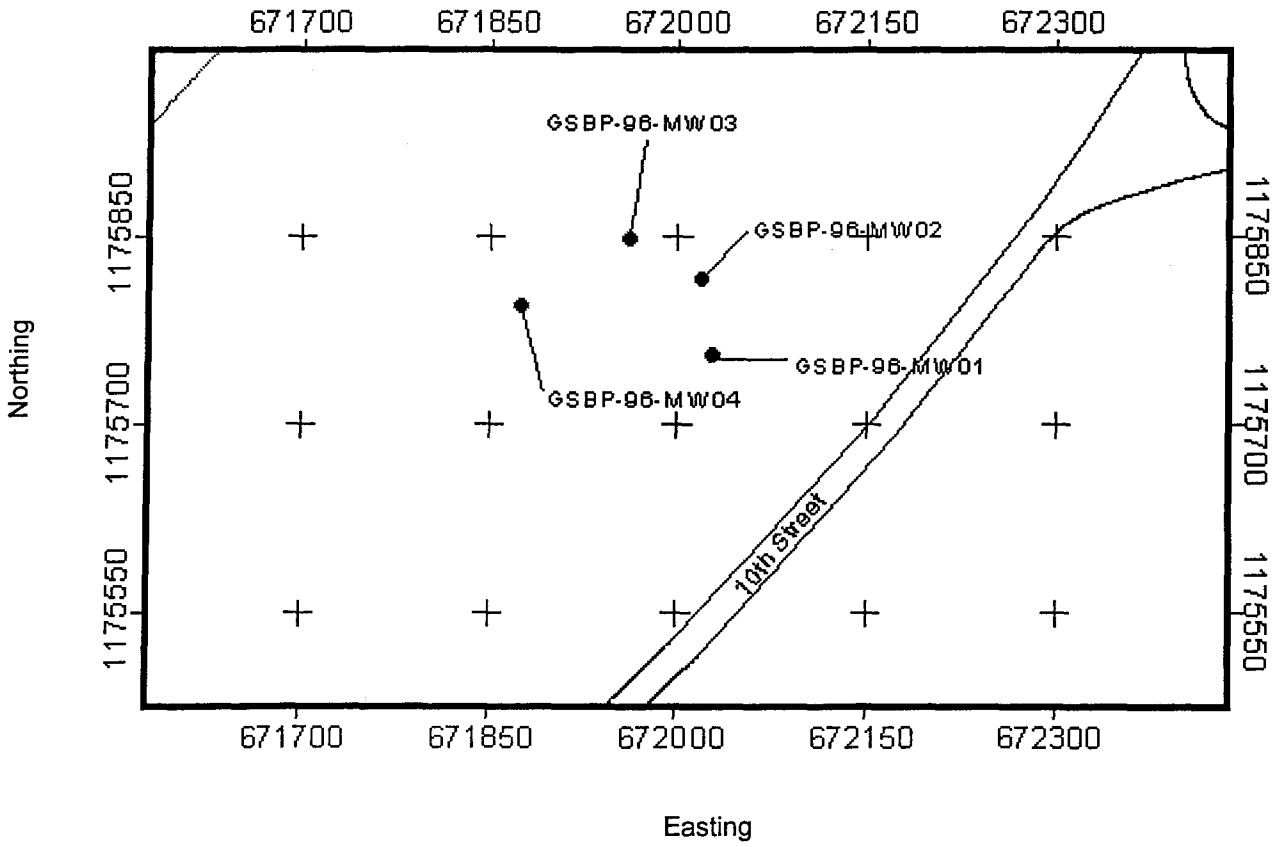
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER GSBP-96-MW01
1. Company name: **IT Corporation**	2. Drill Subcontractor: Miller Drilling	Sheet 1 of 5 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: Mobil B-57
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoons	8. Hole location: Former Incinerators, Bldg 4407/4428, Parcel 96 9. Surface elevation (feet above mean sea level): 801.07 10. Date started: 10/07/99 — 11. Date completed: 10/07/99
12. Overburden thickness (feet bgs): 23	15. Depth groundwater encountered (feet bgs): 32
13. Depth drilled into rock (feet bgs): 15	16. Depth to water and elapsed time after drilling completed (feet bgs): NA
14. Total depth of hole (feet bgs): 38	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA					
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
						NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
		X		John Hofer		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: GSBP-96-MW01

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW01

Project: Fort McClellan | Geologist: John Hofer | Sheet 2 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	sp-sw: Black TOPSOIL, SAND, silty.	sp-sw		Organic Vapor = 0ppm			6 7 7 18	Rec 12"/24" (0-2' bgs)
		cl: FILL, red to brown red CLAY, sandy, Quartzite and Brick fragments.							
800	1		cl						
	2	sm: FILL, light yellow very fine grained SAND, silty, brick fragments, dry.	sm		Organic Vapor = 0ppm			14 9 5 7	Rec 12"/24" (2-4' bgs)
	3								
	4	cl: Reddish yellow CLAY, some Sand, slightly moist, medium plasticity.	cl		Organic Vapor = 0ppm			4 3 4 5	Rec 12"/12" (4-5' bgs)
	5	cl: Yellowish red CLAY, trace-no Sand, gray-red mottling, very stiff, medium plasticity.			Organic Vapor = 0ppm			5 8 10 12	Rec 11"/24" (5-7' bgs)
795	6		cl						
	7	ch: Light gray CLAY, some Silt, medium stiff to stiff, high plasticity, slightly moist.			Organic Vapor = 0ppm			2 4 5 5	Rec 17"/24" (7-9' bgs)
	8		ch						
	9	cl: Brownish red CLAY, sandy, friable, dry.			Organic Vapor = 0ppm			14 19 27 29	Rec 24"/24" (9-11' bgs)
			cl						

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW01

Project: Fort McClellan | Geologist: John Hofer | Sheet 3 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10	ch: Light gray CLAY, some Silt, medium stiff to stiff, high plasticity, slightly moist.	ch						
		cl: Brownish red CLAY with fine to medium Sand and Silt, friable, dry, very stiff to hard, non-plastic, evidence of bedding starting at 10.7'.							
790	11								
			cl						
	12								
	13	ml: Reddish brown SILT with fine Sand, some weathered Shale fragments, dry, fissile.			Organic Vapor = 0ppm			4 11 19 23	Rec 20"/24" (13-15' bgs)
	14		ml						
	15	NA: No recovery.							
785	16								
			NA						
	17								
	18	ml: Reddish brown SILT with gray Clay mottles, some weathered Shale fragments, dry fissile.			Organic Vapor = 0ppm			7 12 14 21	(18-20' bgs)
	19		ml						
	20								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW01

Project: Fort McClellan | Geologist: John Hofer | Sheet 4 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
		NA: No recovery.							
780	21								Hard drilling.
			NA						
	22								
	23	sh: Weathered SHALE, yellowish reddish brown, thinly bedded at approximately 45 degrees, dry.			Organic Vapor = 0ppm			20 29 39 50	Rec 24"/24" (23-25' bgs)
	24		sh						
	25	NA: No recovery.							Very hard drilling Soft drill, moist.
775	26								
			NA						
	27								
	28	sh: At 28.8' dark gray black weathered SHALE, very thin Quartz laminae.			Organic Vapor = 0ppm			14 20 27 39	Rec 24"/24" (28-30' bgs)
	29		sh						
	30	NA: No recovery.							

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW01

Project: Fort McClellan | Geologist: John Hofer | Sheet 5 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
									Description from hollow stem auger cuttings.
770	31		NA						31
	32	NA: Dark brown cuttings, moist.							32
	33		NA						33
	34	NA: Gray, dry cuttings, scraping.							Very hard drilling. 34
	35		NA						35
765	36	NA: Grayish brown somewhat large cuttings.	NA						36
		NA: Dark gray- black cuttings, softer drilling.							Abundant steam off augers.
	37		NA						37
									Bottom of borehole at 38'.
	38								38

HTRW DRILLING LOG

District: Mobile USACE		HOLE NUMBER GSBP-96-MW02
1. Company name: IT Corporation	2. Drill Subcontractor: Miller Drilling	Sheet 1 of 5 sheets

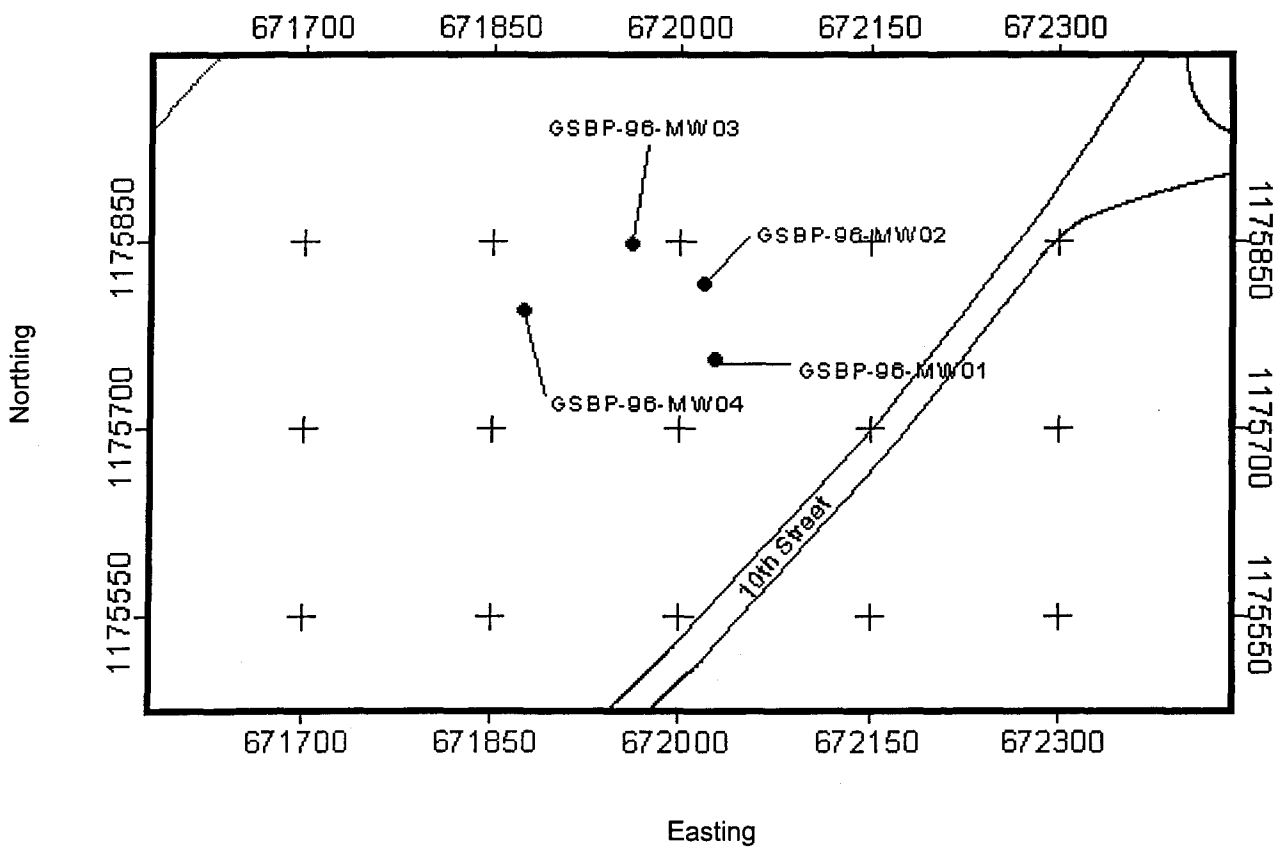
3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: Mobile B-57
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoons	8. Hole location: Former Incinerators, Bldgs 4407/4428, Parcel 96 9. Surface elevation (feet above mean sea level): 801.45 10. Date started: 10/06/99 — 11. Date completed: 10/06/99
12. Overburden thickness (feet bgs): 38	15. Depth groundwater encountered (feet bgs): 32
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): NA
14. Total depth of hole (feet bgs): 38	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA
	NA			

20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
						NA

22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:
		X		John Hofer

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: GSBP-96-MW02

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW02

Project: Fort McClellan | Geologist: John Hofer | Sheet 2 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	ml: Gray to brown SILT, Topsoil, dry.	ml		Organic Vapor = 0ppm			6 18 18 20	Rec 12"/24" (0-2' bgs)
		sm: Light yellow fine grained SAND, some Silt and Gravel.	sm						
		cl: Reddish yellow to yellowish red CLAY, silty, some fine to medium Sand, hard, dry.							
	1								
800									
	2		cl		Organic Vapor = 0ppm			12 16 18 18	Rec 17"/24" (2-4' bgs)
	3								
	4	NA: No recovery.	NA		Organic Vapor = 0ppm			5 10 10 12	Rec 0"/24" (4-6' bgs)
	5								
	6	cl: Yellowish to brownish red CLAY, very stiff, some evidence of relict bedding at 6.8'.	cl		Organic Vapor = 0ppm			12 12 14 18	Rec 12"/24" (6-8' bgs)
795									
	7								
	8	ml: Brown to red SILT, dry.	ml		Organic Vapor = 0ppm			5 9 14 18	Rec 21"/24" (8-10' bgs)
		cl: Weathered SHALE fragments.	cl						
	9	cl: Yellowish red CLAY with light gray mottling, thin bedding at approximately 45 degrees, medium plasticity, dry.							

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW02

Project: Fort McClellan | Geologist: John Hofer | Sheet 3 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10		cl		Organic Vapor = 0ppm			9 25 35 48	Rec 9"/24" (10-12' bgs)
	11								
790									
	12	NA: No recovery.	NA						
	13	ml: Red-yellowish red SILT with light gray Clay mottles, hard, slightly moist, low to medium plasticity, thin bedding	ml		Organic Vapor = 0ppm			20 35 45 50/0.4'	Rec 23"/23" (13-14.9' bgs)
	14								
	15	NA: No recovery.	NA						
	16								
785									
	17								
	18	ml: Red to yellowish red SILT, with light gray Clay mottled, hard, slightly moist, low to medium plasticity, thin bedding at 45 degrees.	ml		Organic Vapor = 0ppm			25 27 35 39	(18-20' bgs)
	19								
	20								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW02

Project: Fort McClellan | Geologist: John Hofer | Sheet 4 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
		NA: No recovery.							
	21								
780			NA						
	22								
	23	ml: Brown, red and gray mottled SILT with Clay mottles and weathered Shale fragments, slightly moist, thin bedding at 45 degrees.			Organic Vapor = 0ppm			25 50/0.5'	Rec 12"/12" (23-24' bgs)
	24	NA: No recovery.	ml						
	25								
	26								
775			NA						
	27								
	28	sh: Weathered SHALE brown, approximately 45 degrees bedding, slightly moist.			Organic Vapor = 0ppm			18 37 50/0.2'	Rec 14"/14" (28-29.2' bgs) Near vertical bedding top 4".
	29		sh						
		NA: No recovery.							Description from hollow stem auger cuttings.
	30								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW02

Project: Fort McClellan | Geologist: John Hofer | Sheet 5 of 5 sheets

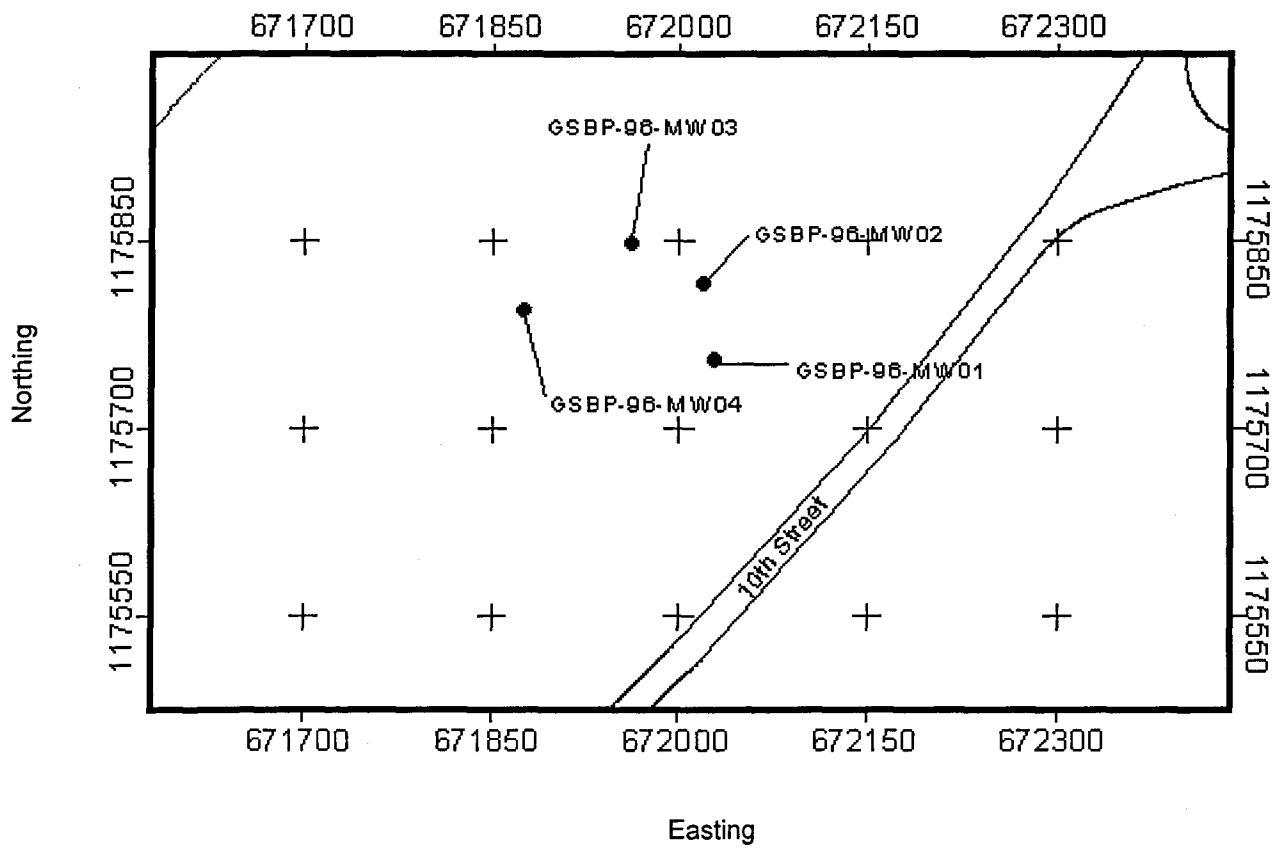
Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	31								31
770									
	32								Moist cuttings at 32'. 32
			NA						
	33								Wet cuttings at 33'. 33
	34								34
	35	NA: No recovery.							Scraping noise, hard rock. 35
			NA						
	36								36
765		NA: No recovery.							Very soft weathered zone.
	37								37
			NA						
									Auger refusal. Bottom of borehole at 38'.
	38								38

HTRW DRILLING LOG

District: Mobile USACE		HOLE NUMBER GSBP-96-MW03
1. Company name: IT Corporation	2. Drill Subcontractor: Miller Drilling	Sheet 1 of 5 sheets
3. Project: Fort McClellan	4. Location: Calhoun County, Alabama	
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: Mobile B-57	
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoons	8. Hole location: Former Incinerators, Bldgs 4407/4428, Parcel 96	
	9. Surface elevation (feet above mean sea level): 792.87	
	10. Date started: 10/06/99	11. Date completed: 10/06/99
12. Overburden thickness (feet bgs): 35	15. Depth groundwater encountered (feet bgs): 33	
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): NA	
14. Total depth of hole (feet bgs): 35	17. Other water level measurements (specify): NA	

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA					
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
						NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
		X		John Hofer		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: GSBP-96-MW03

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW03

Project: Fort McClellan | Geologist: John Hofer | Sheet 2 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	ml: Dark brown SILT (Topsoil), very fine grained Sand, Roots, dry.	ml		Organic Vapor = 0ppm			5 10 16 22	Rec 24"/24" (0-2' bgs)
		cl-ml: Yellowish red CLAYand SILT, dry friable, hard (FILL).							
	1								
	2				Organic Vapor = 0ppm			20 22 25 27	Rec 18"/24" (2-4' bgs)
790	3		cl-ml						
	4				Organic Vapor = 0ppm			5 10 14 20	Rec 12"/24" (4-6' bgs)
	5	ml: Grayish brown sandy SILT (former soil horizon).	ml						
		cl-ml: Yellow-red, dry, SILT and CLAY, low angle bedding, crumbly, hard.							
	6				Organic Vapor = 0ppm			14 24 36 37	Rec 22"/24" (6-8' bgs)
	7		cl-ml						
785	8	cl: Yellow-red, slightly moist CLAY, some Silt, weathered Shale at 9' to 9.6', hard.			Organic Vapor = 0ppm			10 12 18 20	Rec 17"/24" (8-10' bgs)
	9		cl						

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW03

Project: Fort McClellan | Geologist: John Hofer | Sheet 3 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10	cl: Yellowish red, slightly moist CLAY, some Silt, some weathered Shale fragments. At 14' color change to brownish red.			Organic Vapor = 0ppm			15 25 35 50	Rec 24"/24" (10-12' bgs)
	11								
	12								
780	13								
	14		cl						Missed spoon.
	15								
	16								
	17								
775	18	cl: Brownish red to brownish gray CLAY, some Silt weathered Shale 19.1'-19.5', dary, hard high angle thin bedding.			Organic Vapor = 0ppm			15 25 42 50/0.3'	Rec 22"/22" (18-19.8' bgs)
	19		cl						
	20	NA: No recovery.							

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW03

Project: Fort McClellan | Geologist: John Hofer | Sheet 4 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	21		NA						
	22								
770	23	sh: Grayish brown weathered SHALE, dry, fissile, hard, Clayey, bedding approximately 45 degrees from horizontal.	sh		Organic Vapor = 0ppm			30 50/0.5'	Rec 12"/12" (23-24' bgs)
	24	sh: SHALE, brown weathered.	sh						Spoon refusal at 24'. Hard drilling. Description from hollow stem auger cuttings.
	25								
	26	sh: Weathered zone.	sh						
	27	sh: SHALE, brown, weathered.	sh						
765	28								
	29	sh: Brownish gray cuttings, SHALE, lightly weathered. Wet cuttings at 33'.							Very hard drilling.
	30								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW03

Project: Fort McClellan | Geologist: John Hofer | Sheet 5 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	31								31
	32		sh						32
760	33								33
	34								34
	35								Auger refusal at 35'. Bottom of borehole at 35'. 35

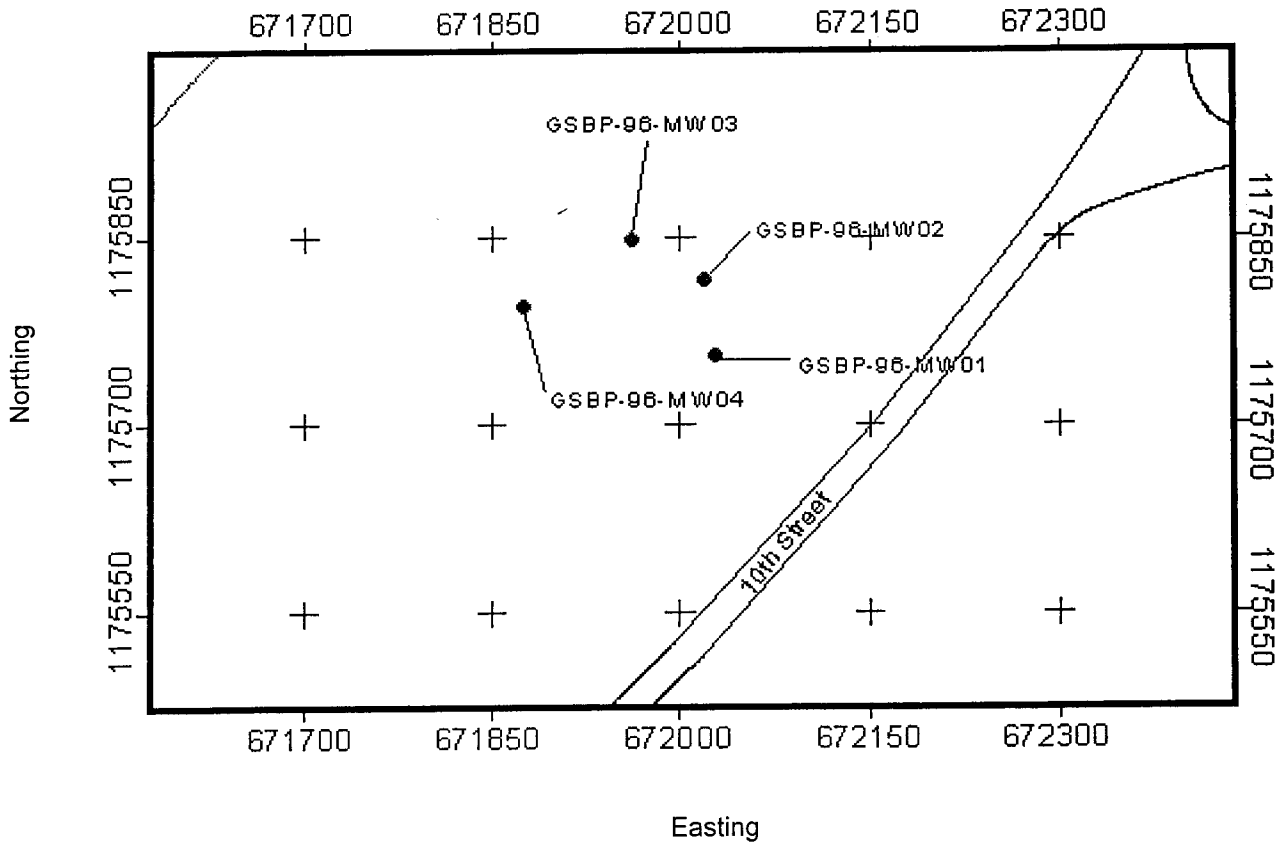
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER GSBP-96-MW04
1. Company name: **IT Corporation**	2. Drill Subcontractor: Miller Drilling	Sheet 1 of 6 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: Mobile B-57
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoons	8. Hole location: Former Incinerators, Bldgs 4407/4428, Parcel 96 9. Surface elevation (feet above mean sea level): 783.29 10. Date started: 10/05/99 — 11. Date completed: 10/05/99
12. Overburden thickness (feet bgs): 46.7	15. Depth groundwater encountered (feet bgs): 44
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): NA
14. Total depth of hole (feet bgs): 46.7	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA					
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	X	X	X			NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
		X		John Hofer		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: GSBP-96-MW04

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW04

Project: Fort McClellan | Geologist: John Hofer | Sheet 2 of 6 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	ml: Black fine SILT, organic, some Sand.	ml					5 7 7 8	Rec 20"/24" (0-2' bgs)
		ml: Yellow SILT, dry, minor iron concentration.	ml						
	1	cl: Reddish yellow, dry, CLAY, crumbly, trace Silt, bedding becoming evident, becoming fissile.							
	2						BY0001	8 12 12 12	Rec 24"/24" (2-4' bgs)
			cl						
	3								
780									
	4	cl-ml: Mottled, reddish yellow and gray, dry, stiff to very stiff, CLAY and SILT, bedding less evident than above.						4 6 8 8	Rec 20"/24" (4-6' bgs)
	5		cl-ml						
	6	NA: No description provided.						6 8 12 20	Rec 22"/24" (6-8' bgs)
	7		NA						
	8	sh: Weathered SHALE, dry thin low bedding.						14 10 35 50/0.3	Rec 19"/21" (8-9.8' bgs)
775			sh						
		ml: Yellow brown SILT, some Clay, hard.							
	9		ml						
		sh: Weathered SHALE, Silt.							

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW04

Project: Fort McClellan | Geologist: John Hofer | Sheet 3 of 6 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10								10
	11		sh						11
	12								12
	13	ml: SILT with Clay (weathered SHALE), brownish yellow, dry.						10 20 30 50/0.4	Rec 13"/23" (13-14.9' bgs) 13
770									
	14		ml						14
	15								Description from hollow stem auger drill cuttings. 15
	16	sh: SHALE/weathered Shale.							Hard drilling. 16
	17								17
	18		sh						18
765									
	19								19
	20								20

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW04

Project: Fort McClellan | Geologist: John Hofer | Sheet 4 of 6 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
		sh: SHALE, dark gray Rock chips.							Easier drilling 20'-22'.
	21		sh						21
	22	sh: Fine cuttings.							Hard drilling 22'-23'. 22
			sh						
	23	sh: Large chips, dry weathered SHALE.							23
760									
	24								Easier drilling 23'-27'. 24
	25		sh						25
	26								26
	27	sh: Fine cuttings, gray, dry, very few chips.							Hard drilling 27'-32'. 27
	28								28
755									
	29								29
			sh						
	30								30

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW04

Project: Fort McClellan | Geologist: John Hofer | Sheet 5 of 6 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	31								31
	32	sh: Softer, Rock chips in returns, brownish gray weathered zone.							Easier drilling 32'-36' 32
	33								33
750									
	34		sh						34
	35								35
	36	sh: Harder.							Harder drilling 36'-37'. 36
			sh						
	37	sh: Soft, weathered SHALE, small chips.							Soft 37'-44'. 37
	38								38
745									
	39								39
	40								40

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-96-MW04

Project: Fort McClellan | Geologist: John Hofer | Sheet 6 of 6 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
			sh						Description from hollow stem auger cuttings.
	41								41
	42								42
	43								43
740									
	44	sh: Very hard, slightly moist fine cuttings, dark gray.							Hard drilling 44'-46.7'. 44
	45		sh						45
	46								Auger refusal at 46.7'. Bottom of borehole at 46.7'. 46

Boring Log Report Form

Boring No. SI08-GW5 Page 1 of 2

Client USACE
Site Location SI08-GW501
ESE Field Crew Leader: Rich Hill
Date Start 5-14-98 Finish 5-14-98
Contractor: Graves Services
Boring Depth 12' Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Josh Toney
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
2'							0-11' - Sandy Silt, 30% Silt) Reddish Yellow (7.5YR-6/8) to 7.5YR-6/6, Non Plastic, Firm, Moist	SM	Collected Sample SS07 (EFM28 #10) from 0-1'
4'							11-12' - Shale, Light Brownish Grey (2.5Y-6/2), Non-Plastic, Medium Dense.		
6'									
8'									
10'									
12'									- Bott = 12'

Boring Log Report Form

Boring No. SI08-GW SC2 Page 1 of 2

Client USACE
Site Location SI08
ESE Field Crew Leader: Rich Hill
Date Start 5-15-98 Finish 5-15-98
Contractor: Graves Services
Boring Depth 21' Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Josh Toney
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
2'							0'-1' - Silty Sand, 25% Silt, Very Dark Brown (7.5YR-2.5/2), Firm, Non-Plastic, Subangular, Poorly Graded, Moist	SM	
4'							1'-8 Sandy Clay, 35% Sand, Firm to Stiff, Slightly Plastic, Reddish Yellow (7.5YR-6/8), Moist.	CL	
6'									
8'							8'-11' - Silt, Light Gray (Gley 7/N7/), Stiff, Non Plastic, Moist	SM	
10									
12'							11'-21' - Shale, Non plastic, Stiff, Light Brown (7.5YR-6/3).	Rx	
14'									
16'									
18'									
20'									BOH = 21'
22'									

Boring Log Report Form

Boring No. SI08-GW503 Page 1 of 2

Client USACE
Site Location SI08
ESE Field Crew Leader: Rich Hill
Date Start 5-15-98 Finish 5-15-98
Contractor: Graves Services
Boring Depth 15'6" Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Josh Toney
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
2'							0'-12' - SILTY SAND, 35% SILT, REDDISH BROWN (5YR-5/8), NON-PLASTIC, medium dense, subangular, POORLY GRADED, MOIST.	SM	COLLECTED SAMPLE SS01A (EFM 23 #1) FROM 0-1'
4'									
6'							12'-15'6" - Shale, 20% clay, LIGHT YELLOWISH BROWN (10YR-6/4), NON PLASTIC, STIFF, MOIST.	Rx	
8'									COLLECTED SAMPLE SS01J (EFM 23 #2) FROM 3-4'
10'									
12'									
14'									-15'6" = REF
16'									

Boring Log Report Form

Boring No. SI08-GW304 Page 1 of 2

Client USACE
Site Location SI08
ESE Field Crew Leader: Rich Hill
Date Start 5-15-98 Finish 5-15-98
Contractor: Graves Services
Boring Depth 16' Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Josh Carey
Geologist: Rich Hill

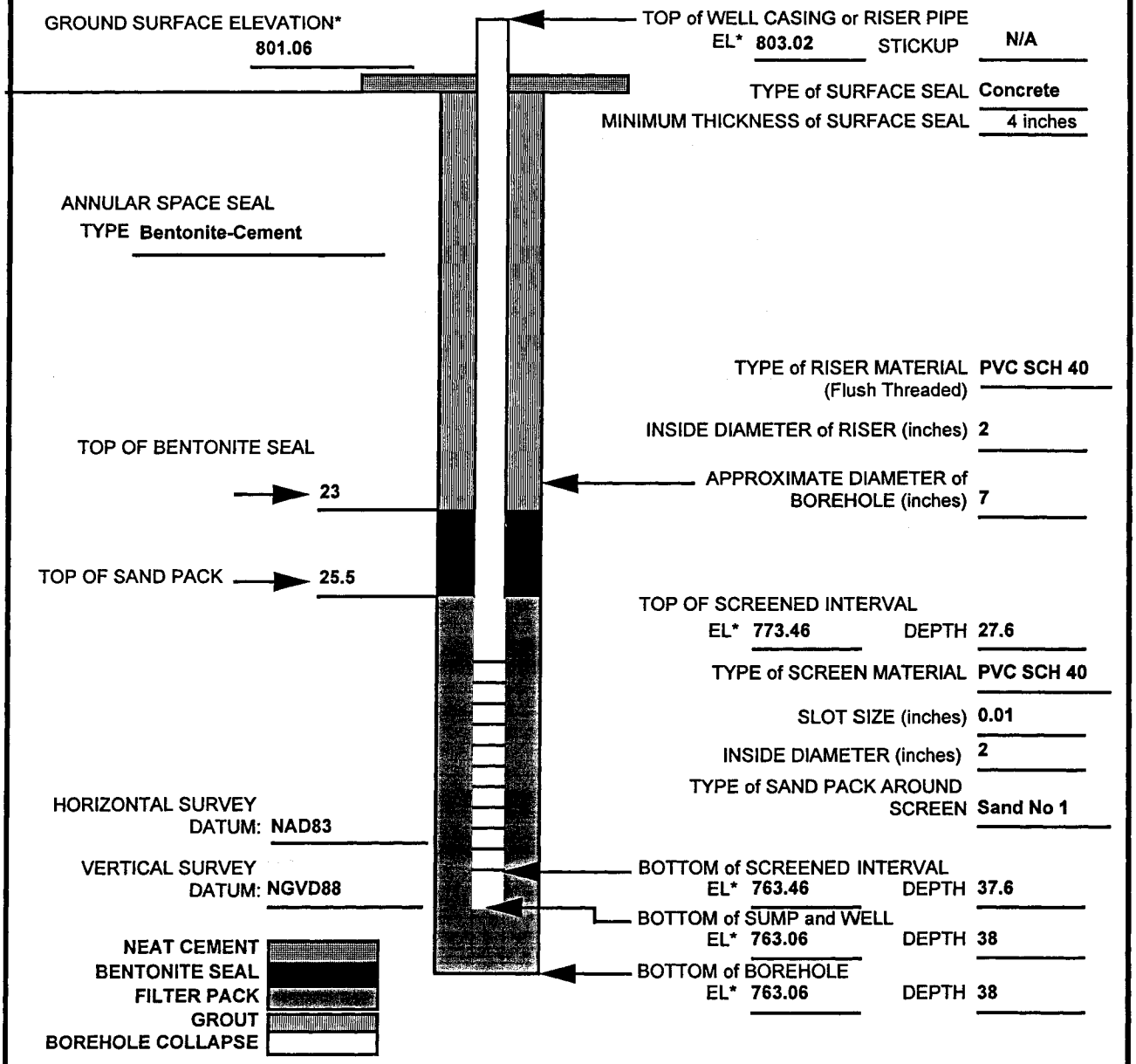
Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
							0'-1' - SANDY SILT, 20% SAND, DARK REDDISH GREY (5YR-4/2), NON-PLASTIC, LOOSE, MOIST	SM	
2'							1'-5' SANDY SILT, 20% SAND, STRONG BROWN (7.5YR-5/6), FIRM, MOIST	SM	
4'							5'-8' - SANDY CLAY, 20% SAND MOD. PLASTIC, FIRM, MOIST, LIGHT BROWN 7.5YR-6/3	CL	
6'							8'-16' - Shale, YELLOWISH BROWN, HIGHLY WEATHERED & FRIABLE, LOOSE, NON PLASTIC, MOIST.	RX	
8'									
10'									-BOH = 16'
12'									
14'									
16'									

RX = ROCK

WELL CONSTRUCTION LOGS

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan, SAD TERC	WELL NO: GSBP-96-MW01
LOCATION Anniston, AL	DRILLING METHOD: Hollow Stem Auger
CLIENT: USACE Mobile District	INSTALLATION DATE 10/07/99
CONTRACTOR Miller Drilling	NORTHING: 1175752.09
DRILLER: Ron Gerrish	EASTING: 672027.08
IT FIELD REPRESENTATIVE: John Hofer	JOB NO: 774645A

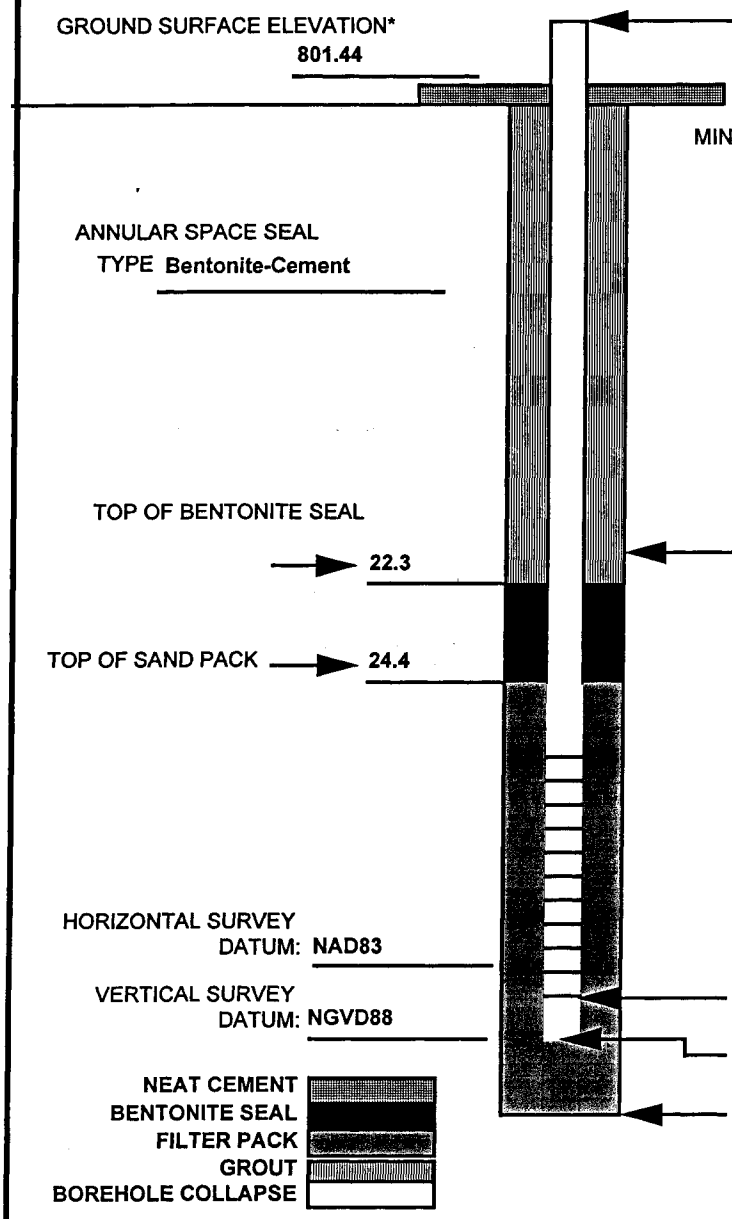


*All elevations (EL) are referenced to MSL.

All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan, SAD TERC	WELL NO: GSBP-96-MW02
LOCATION Anniston, AL	DRILLING METHOD: Hollow Stem Auger
CLIENT: USACE Mobile District	INSTALLATION DATE 10/06/99
CONTRACTOR Miller Drilling	NORTHING: 1175812.3
DRILLER: Ron Gerrish	EASTING: 672017.04
IT FIELD REPRESENTATIVE: John Hofer	JOB NO: 774645A



GROUND SURFACE ELEVATION* 801.44

TOP of WELL CASING or RISER PIPE EL* 803.46 STICKUP N/A

TYPE of SURFACE SEAL Concrete

MINIMUM THICKNESS of SURFACE SEAL 4 inches

ANNULAR SPACE SEAL TYPE Bentonite-Cement

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 40

INSIDE DIAMETER of RISER (inches) 2

TOP OF BENTONITE SEAL 22.3

APPROXIMATE DIAMETER of BOREHOLE (inches) 7

TOP OF SAND PACK 24.4

TOP OF SCREENED INTERVAL EL* 774.74 DEPTH 26.7

TYPE of SCREEN MATERIAL PVC SCH 40

SLOT SIZE (inches) 0.01

INSIDE DIAMETER (inches) 2

TYPE of SAND PACK AROUND SCREEN Sand No 1

HORIZONTAL SURVEY DATUM: NAD83

VERTICAL SURVEY DATUM: NGVD88

BOTTOM of SCREENED INTERVAL EL* 764.74 DEPTH 36.7

BOTTOM of SUMP and WELL EL* 764.34 DEPTH 37.1

BOTTOM of BOREHOLE EL* 763.44 DEPTH 38

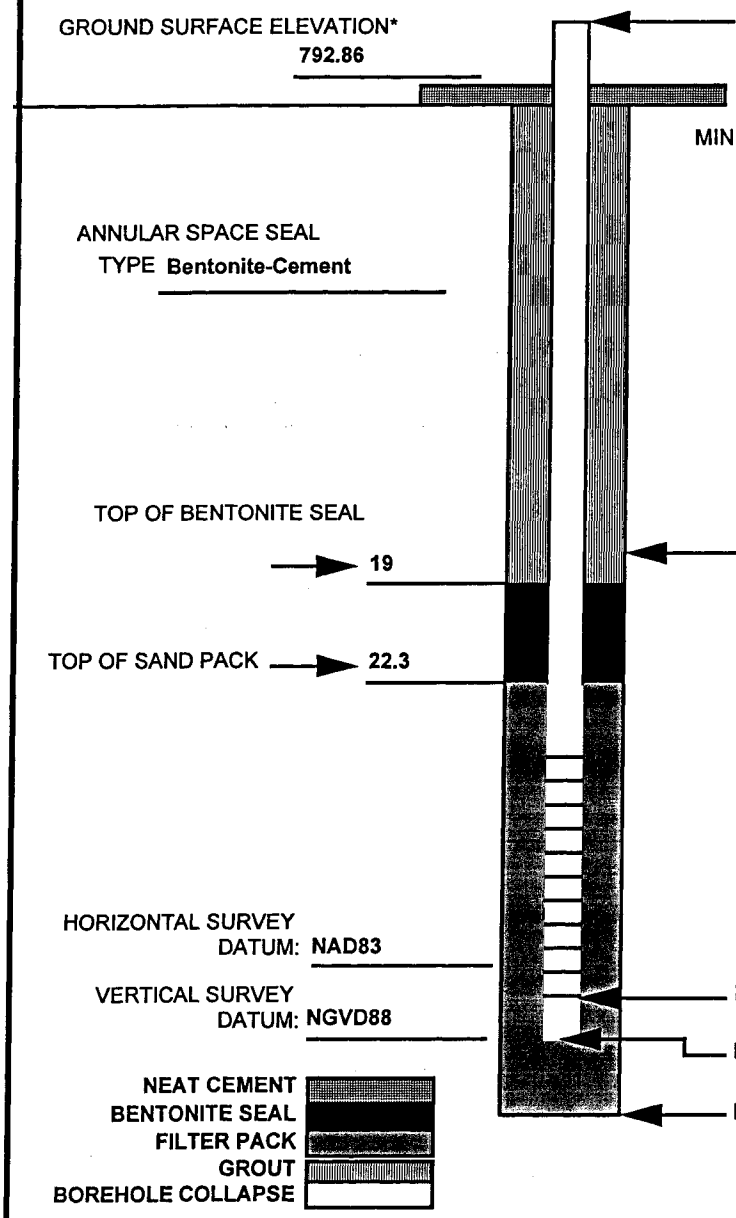
NEAT CEMENT
BENTONITE SEAL
FILTER PACK
GROUT
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.

All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan, SAD TERC	WELL NO: GSBP-96-MW03
LOCATION Anniston, AL	DRILLING METHOD: Hollow Stem Auger
CLIENT: USACE Mobile District	INSTALLATION DATE 10/06/99
CONTRACTOR Miller Drilling	NORTHING: 1175845.79
DRILLER: Ron Gerrish	EASTING: 671961
IT FIELD REPRESENTATIVE: John Hofer	JOB NO: 774645A



GROUND SURFACE ELEVATION* 792.86

TOP of WELL CASING or RISER PIPE EL* 794.95 STICKUP N/A

TYPE of SURFACE SEAL Concrete

MINIMUM THICKNESS of SURFACE SEAL 4 inches

ANNULAR SPACE SEAL TYPE Bentonite-Cement

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 40

INSIDE DIAMETER of RISER (inches) 2

TOP OF BENTONITE SEAL 19

APPROXIMATE DIAMETER of BOREHOLE (inches) 7

TOP OF SAND PACK 22.3

TOP OF SCREENED INTERVAL EL* 768.26 DEPTH 24.6

TYPE of SCREEN MATERIAL PVC SCH 40

SLOT SIZE (inches) 0.01

INSIDE DIAMETER (inches) 2

TYPE of SAND PACK AROUND SCREEN Sand No 1

HORIZONTAL SURVEY DATUM: NAD83

VERTICAL SURVEY DATUM: NGVD88

BOTTOM of SCREENED INTERVAL EL* 758.26 DEPTH 34.6

BOTTOM of SUMP and WELL EL* 757.86 DEPTH 35

BOTTOM of BOREHOLE EL* 757.86 DEPTH 35

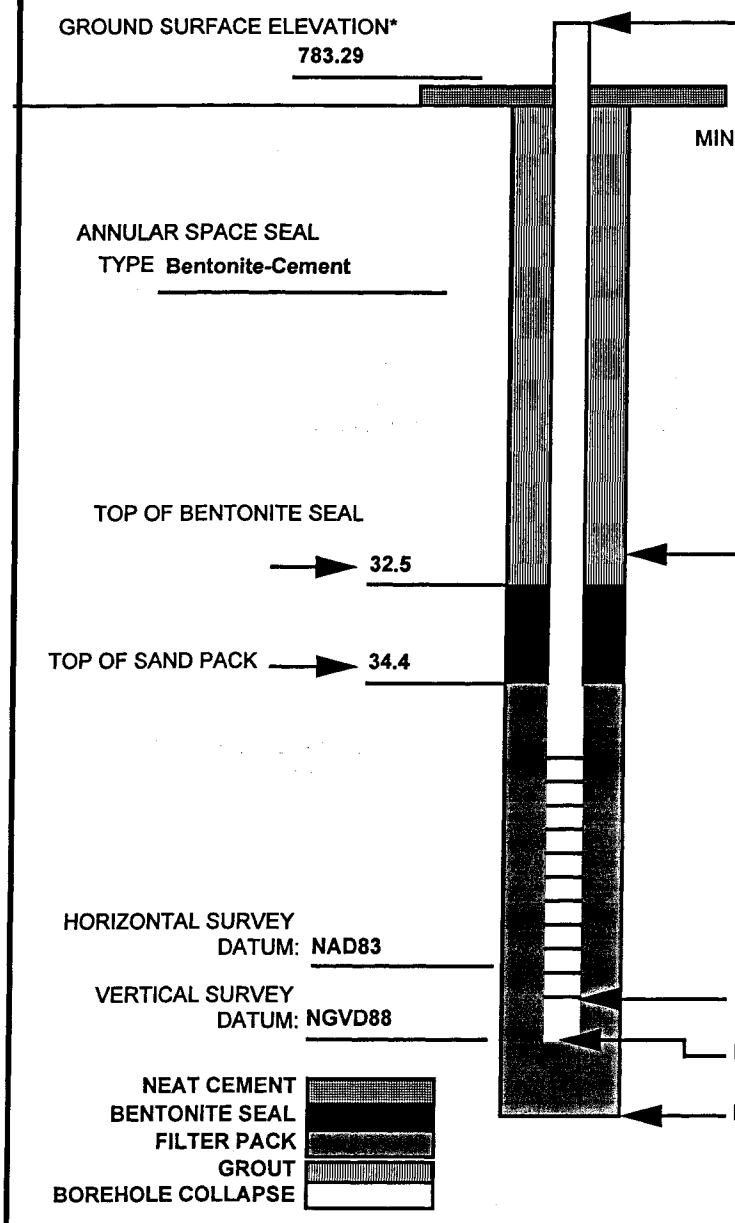
NEAT CEMENT
BENTONITE SEAL
FILTER PACK
GROUT
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.

All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan, SAD TERC	WELL NO: GSBP-96-MW04
LOCATION Anniston, AL	DRILLING METHOD: Hollow Stem Auger
CLIENT: USACE Mobile District	INSTALLATION DATE 10/05/99
CONTRACTOR Miller Drilling	NORTHING: 1175792.19
DRILLER: Ron Gerrish	EASTING: 671876.31
IT FIELD REPRESENTATIVE: John Hofer	JOB NO: 774645A



GROUND SURFACE ELEVATION* 783.29

TOP of WELL CASING or RISER PIPE EL* 785.1 STICKUP N/A

TYPE of SURFACE SEAL Concrete

MINIMUM THICKNESS of SURFACE SEAL 4 inches

ANNULAR SPACE SEAL TYPE Bentonite-Cement

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 40

INSIDE DIAMETER of RISER (inches) 2

TOP OF BENTONITE SEAL 32.5

APPROXIMATE DIAMETER of BOREHOLE (inches) 7

TOP OF SAND PACK 34.4

TOP OF SCREENED INTERVAL EL* 746.89 DEPTH 36.4

TYPE of SCREEN MATERIAL PVC SCH 40

SLOT SIZE (inches) 0.010

INSIDE DIAMETER (inches) 2

TYPE of SAND PACK AROUND SCREEN Sand No 1

HORIZONTAL SURVEY DATUM: NAD83

VERTICAL SURVEY DATUM: NGVD88

BOTTOM of SCREENED INTERVAL EL* 736.89 DEPTH 46.4

BOTTOM of SUMP and WELL EL* 736.59 DEPTH 46.7

BOTTOM of BOREHOLE EL* 736.59 DEPTH 46.7

NEAT CEMENT
BENTONITE SEAL
FILTER PACK
GROUT
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.

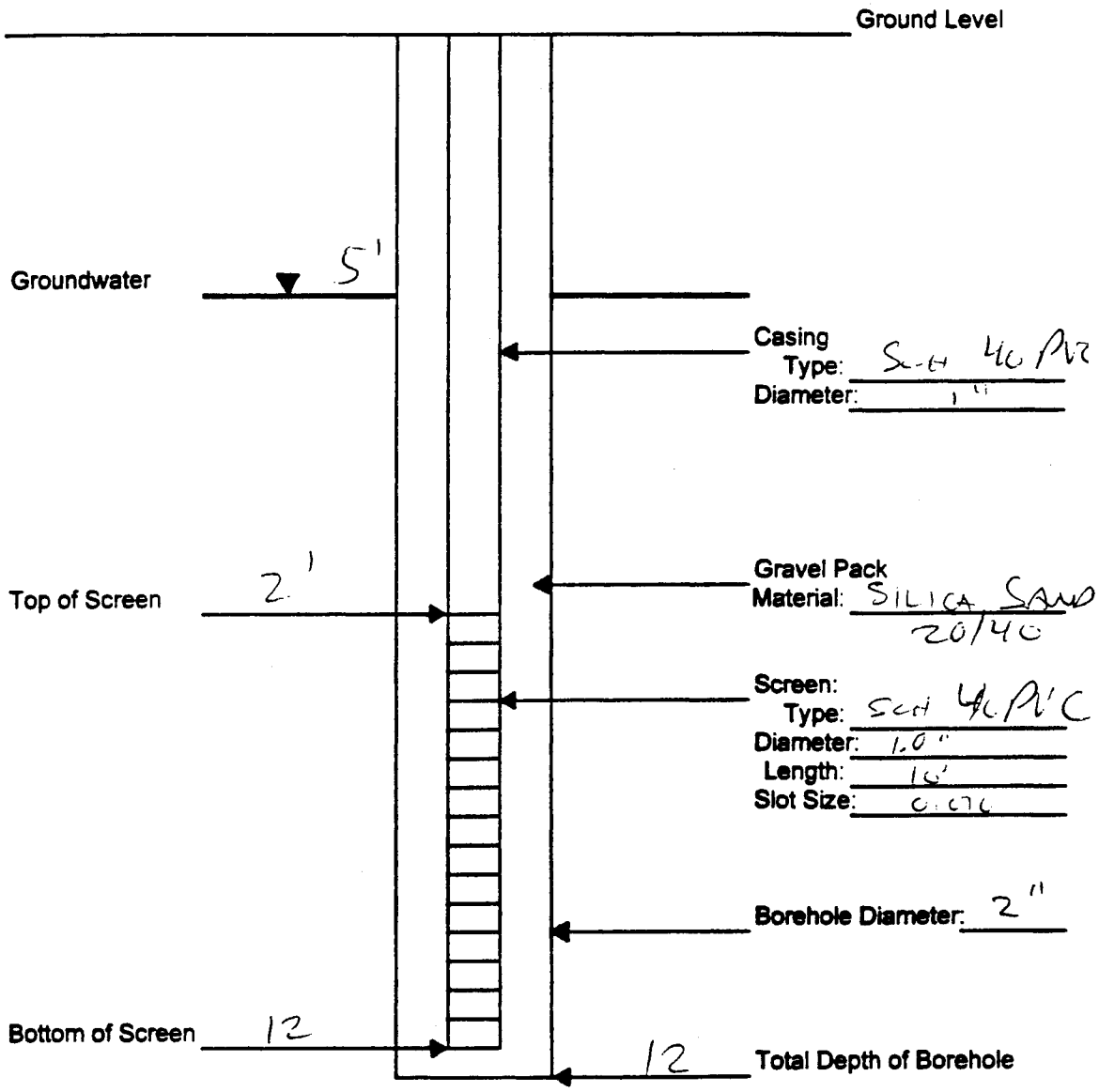
All depths and heights are given in feet and are referenced to the ground surface.

Temporary Monitor Well Construction Log

Well ID:	SIGE - GW 501	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-14-98
Driller's Name:	JOSH TONEY	Finish Date/Time:	5-14-98

Comments: SET GW 501 TO 12'. GOT REFUSAL AT 12' IN SHALE. WATER IS AT ≈ 5'

Depths are in Reference to Ground Level

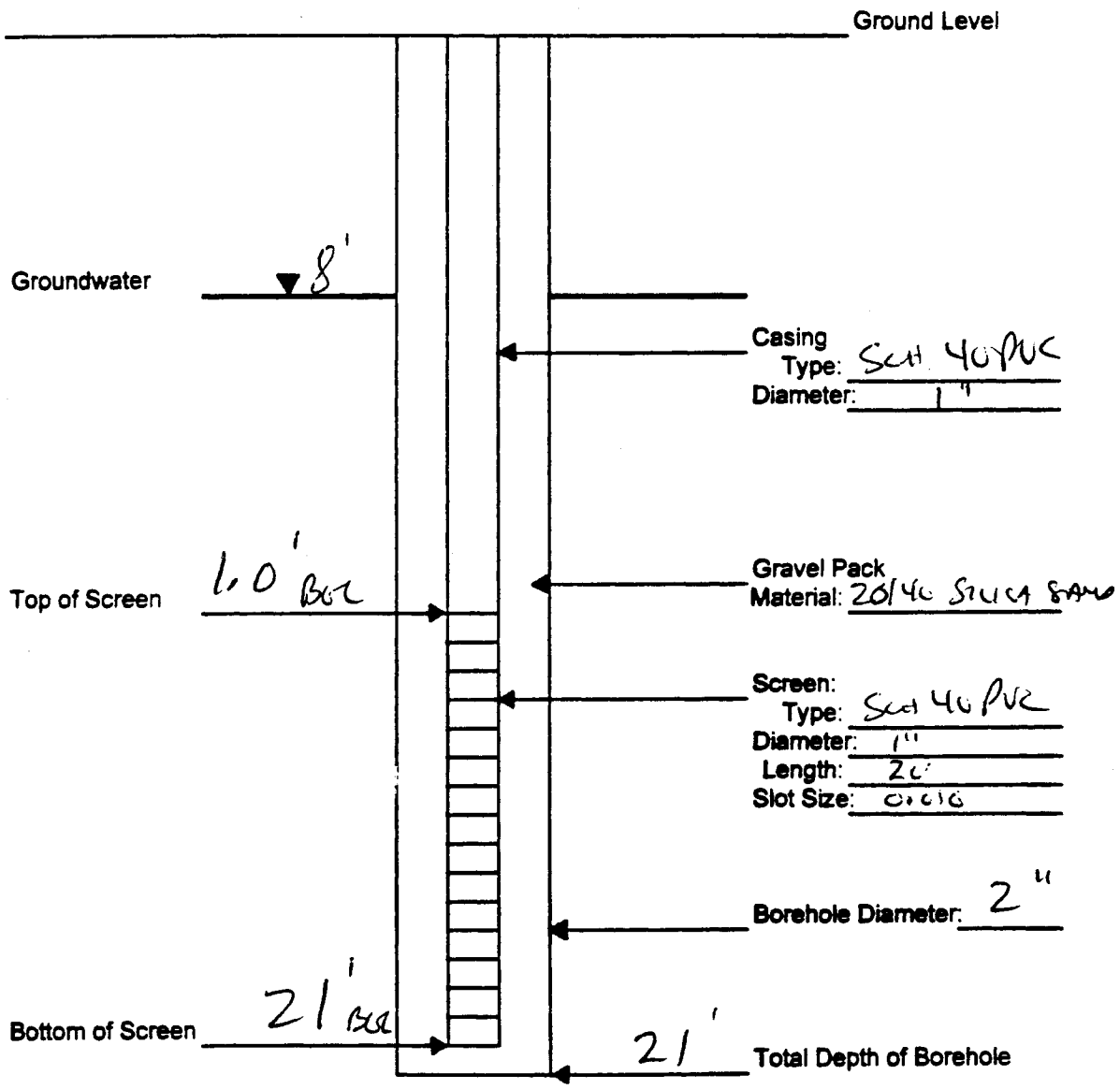


Temporary Monitor Well Construction Log

Well ID:	SI08-GW502	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-15-98
Driller's Name:	JOSH TONEY	Finish Date/Time:	5-15-98

Comments: SET GW502 TO 21' BGL, WATER AT 8'. Refusal AT 21' IN Shale.

Depths are in Reference to Ground Level

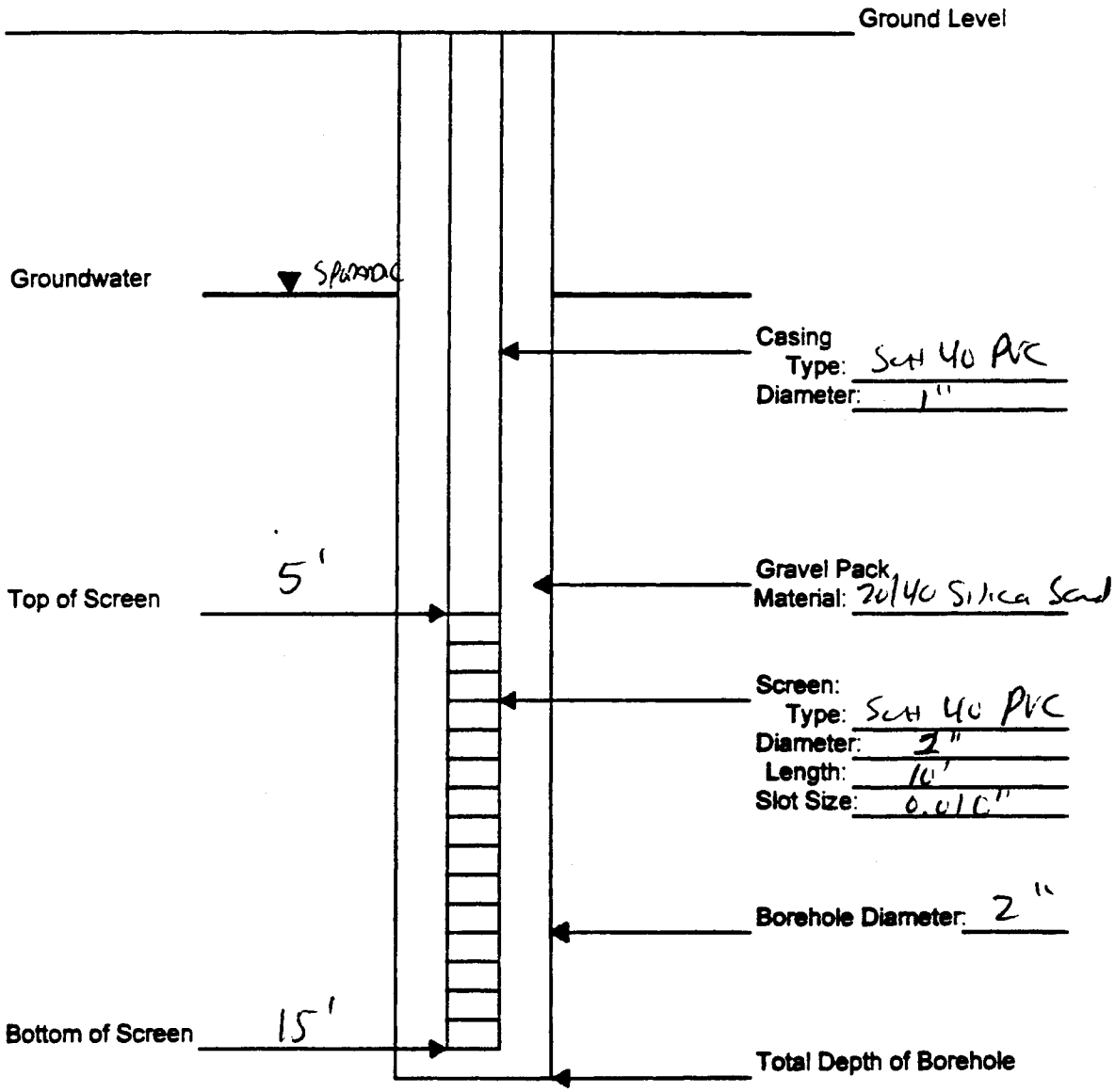


Temporary Monitor Well Construction Log

Well ID:	SI08- GW S03	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-15-98
Driller's Name:	Josh Toney	Finish Date/Time:	5-15-98

Comments: Set GWS03 to 15' BGL. Refusal @ 15'6" in. Periodic wet zones from 6'-11'.

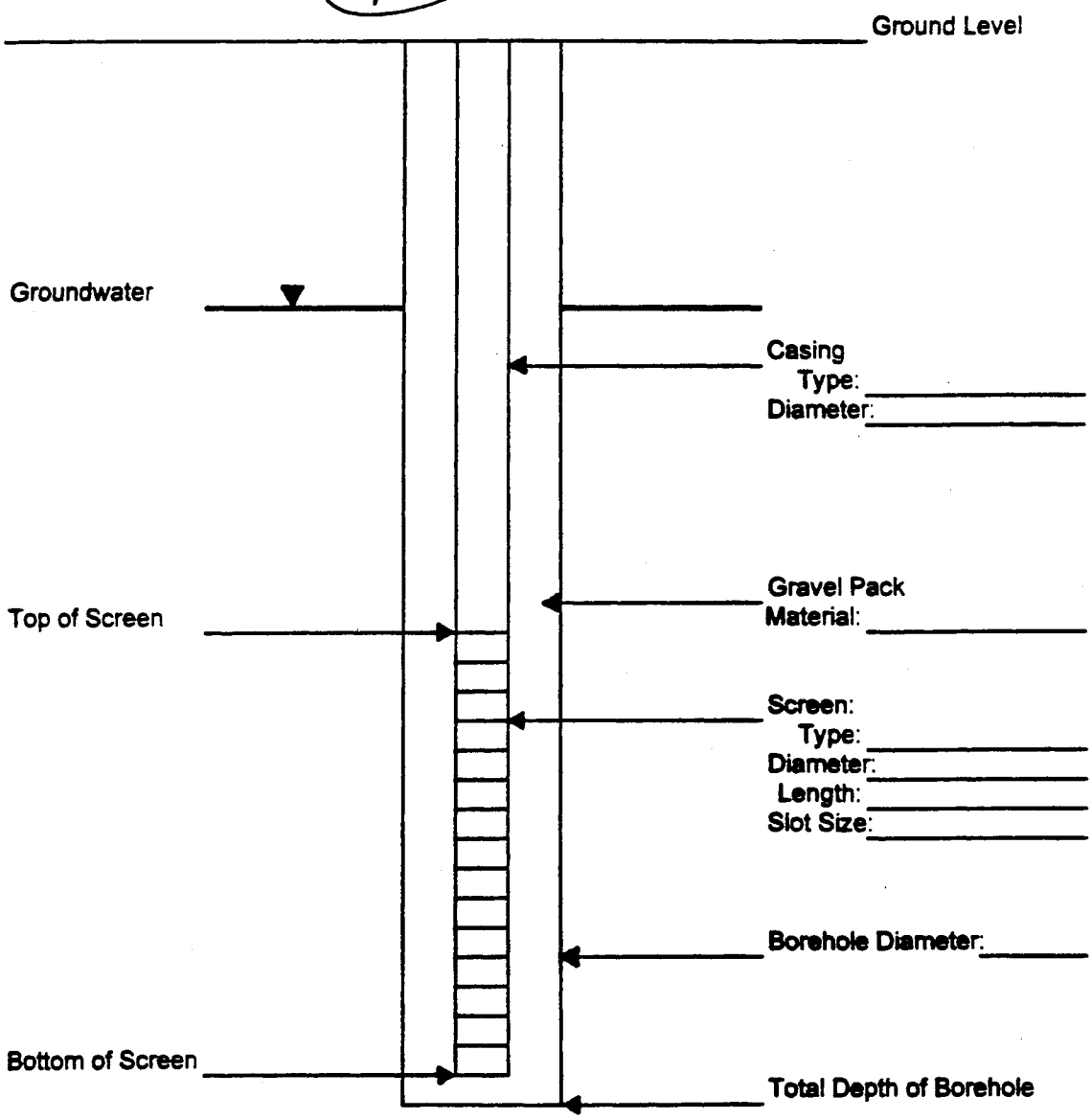
Depths are in Reference to Ground Level



Temporary Monitor Well Construction Log

Well ID:	SJ08-GW504	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-15-98
Driller's Name:	JOSH ENEY	Finish Date/Time:	5-15-98

Comments: DID NOT SET GW504, DRY HOLE. REFUSAL AT 16' IN SHALE

Depths are in Reference to Ground Level

NA