APPENDIX B

BORING LOGS AND WELL CONSTRUCTION LOGS

BORING LOGS

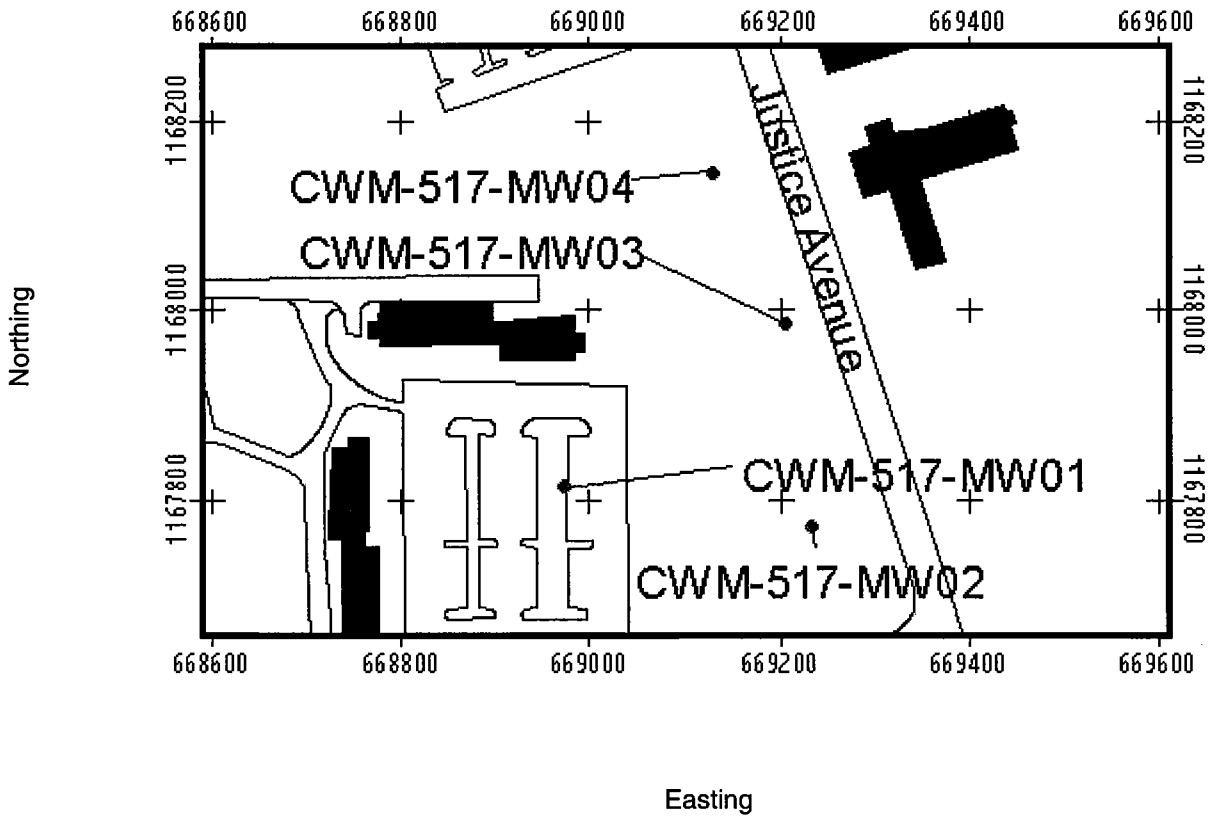
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** CWM-517-MW01
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: ESN/Miller Drilling Company	Sheet 1 of 5 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Sammy McDaniel/Darren Penn/Glen Bilbrey	6. Mfr. designation of drill: Geoprobe/CME-75/CME-550X
7. Sizes and types of drilling and sampling equipment: Direct Push, Hollow Stem Auger DP - 2'x2" Acetate-Lined Sampler HSA - 5'x4.25" ID Augers, 2'x2" Steel Split Spoons	8. Hole location: CBR Proficiency Area, Parcel 517 9. Surface elevation (feet above mean sea level): 812.06 10. Date started: 10/18/01 — 11. Date completed: 11/28/01
12. Overburden thickness (feet bgs): >35	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): 31 ~72 hours
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	NA	NA			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	Yes	Yes	CWM Breakdown Products	SVOCs	NA	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	NA	2" Permanent	NA	Cindy Levaas/Mark Shoemaker		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-517-MW01

Project: Fort McClellan | Geologist: Cindy Levaas/Mark Shoemaker | 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	cl: Brown to red-orange, slightly moist, soft CLAY, some coarse to fine Sand, little coarse quartz-rich subangular Gravel.			Organic Vapor = 0.0ppm		TV0001		Rec 2.8'/4.0' (0-4' bgs) Geoprobe - ESN - 10/18/01
	1								
810	2		cl						
	3								
	4	cl: Red-orange, slightly moist, medium stiff CLAY, trace coarse to fine Sand, trace coarse quartz-rich subangular Gravel.			Organic Vapor = 0.0ppm				Rec 3.3'/4.0' (4-8' bgs)
	5								
	6		cl						
805	7						TV0002		
	8	NA: No sample collected for lithologic description.							Direct push refusal at 8' bgs HSA- Miller Drilling Company - 10/25/01
	9		NA						
	10								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-517-MW01

Project: Fort McClellan | Geologist: Cindy Levaas/Mark Shoemaker | 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)
		cl: Yellowish orange, light brown and reddish brown, stiff, laminated CLAY, large piece of wood at 11' bgs.			Organic Vapor = 0.0ppm			6 12 17 24	Rec 2.0'/2.0' (10-12' bgs)
	11		cl						
800	12	NA: No sample collected for lithologic description.							
	13		NA						
	14								
	15	cl: Reddish brown, light brown, yellowish orange and light gray mottled, laminated CLAY, very stiff, brittle shaley texture.			Organic Vapor = 0.0ppm			6 16 20 22	Rec 2.0'/2.0' (15-17' bgs)
	16		cl						
795	17	NA: No sample collected for lithologic description.							
	18		NA						
	19								
	20	cl: Reddish brown, light brown, yellowish			Organic			9 25 32	Rec 2.0'/2.0' (20-22' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-517-MW01

Project: Fort McClellan | Geologist: Cindy Levaas/Mark Shoemaker | 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)
		orange and light gray mottled, laminated CLAY, very stiff, brittle shaley texture, more organic material.			Vapor = 0.0ppm			34	
	21		cl						21
790	22	NA: No sample collected for lithologic description.							22
	23		NA						23
	24								24
	25	sh-cl: Reddish brown, light brown, yellowish orange and light gray mottled, laminated CLAY, very stiff, brittle shaley texture, more organic material, grading to hard, medium brown to black, friable highly weathered SHALE.	sh-cl		Organic Vapor = 0.0ppm			14 34 50/0.3'	Rec 1.3'/1.3' (25-26.3' bgs) 25
	26								26
785	27	NA: No sample collected for lithologic description.							27
	28		NA						28
	29								29
	30	sh: Medium brown to black, friable, highly weathered SHALE.	sh		Organic Vapor			12 50/0.2'	Rec 0.5'/0.7' (30-30.7' bgs) 30

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-517-MW01

Project: Fort McClellan | Geologist: Cindy Levaas/Mark Shoemaker | 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)
		NA: No recovery.	NA		= 0.0ppm				
	31	NA: No sample collected for lithologic description.	NA						31
									Auger refusal at 32' bgs
780	32	sh: Black weathered SHALE.							32 Drilled with CME-550X (11/27/01) Description from HSA drill cuttings (32-35' bgs) Groundwater encountered at 32' bgs
	33		sh						33
	34								34
									Auger refusal at 35' bgs Bottom of borehole at 35' bgs
	35								35

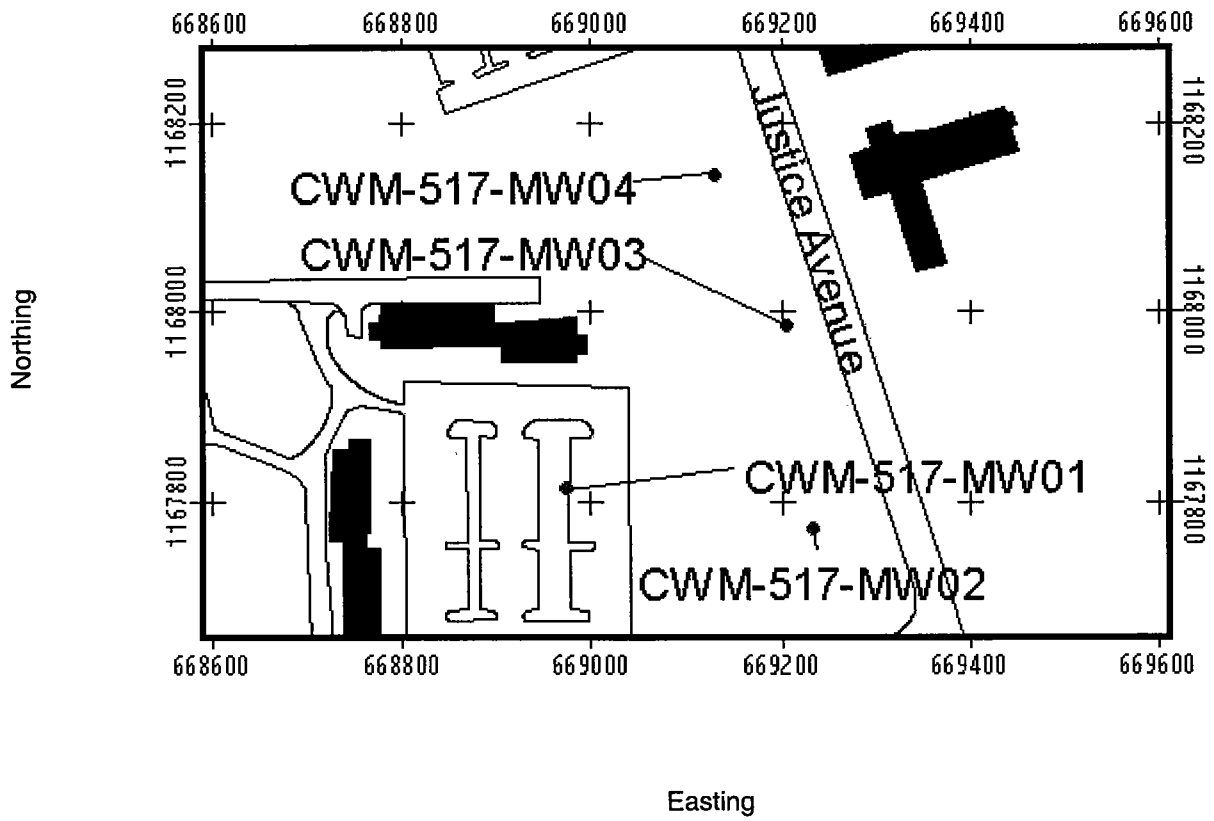
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** CWM-517-MW02
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: ESN/Miller Drilling Company	Sheet 1 of 3 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Sammy McDaniel/Glen Bilbrey	6. Mfr. designation of drill: Geoprobe/CME-550X
7. Sizes and types of drilling and sampling equipment: Direct Push, Hollow Stem Auger DP - 2'x2" Acetate-Lined Sampler HSA - 5'x4.25" ID Augers, 2'x2" Steel Split Spoons	8. Hole location: CBR Proficiency Area, Parcel 517 9. Surface elevation (feet above mean sea level): 786.19 10. Date started: 10/18/01 — 11. Date completed: 11/28/01
12. Overburden thickness (feet bgs): 18	15. Depth groundwater encountered (feet bgs): Not encountered
13. Depth drilled into rock (feet bgs): 0.4	16. Depth to water and elapsed time after drilling completed (feet bgs): 15.48 ~16.5 hours
14. Total depth of hole (feet bgs): 18.4	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA	NA	NA			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	Yes	Yes	CWM Breakdown Products	SVOCs	NA	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	NA	2" Permanent	NA	Cindy Levaas/Kyle Wilson		

LOCATION SKETCH/COMMENTS:



bgs= below ground surface
NA = Not applicable

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-517-MW02

Project: Fort McClellan | Geologist: Cindy Levaas/Kyle Wilson | Sheet 2 of 3 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	cl: Brown to yellow-orange, slightly moist, medium stiff to stiff CLAY, little coarse to fine Sand, little coarse quartz-rich subangular Gravel.	cl		Organic Vapor = 0.1ppm		TV0003		Rec 3.0'/.3.0' (0-3' bgs) Geoprobe - ESN - 10/18/01
785	1								
	2				Organic Vapor = 0.0ppm		TV0004		
	3	NA: No sample collected for lithologic description.	NA						Direct push refusal at 3' bgs HSA - Miller Drilling Company - 11/27/01
	4								
	5	cl: Yellowish orange to greenish gray, medium stiff, dry, laminated CLAY.	cl		Organic Vapor = 1.4ppm			4 17 11 12	Rec 1.7'/2.0' (5-7' bgs)
780	6								
		NA: No recovery	NA						
	7	cl: Yellowish orange to greenish gray, medium stiff, dry, laminated CLAY, some highly weathered Shale.	cl		Organic Vapor = 1.6ppm			14 20 30 32	Rec 2.0'/2.0' (7-9' bgs)
	8								
	9	sh: Yellowish orange, medium stiff to stiff, dry, highly weathered SHALE, some laminated Clay.			Organic Vapor = 0.0ppm			36 44 52 61	Rec 2.0'/2.0' (9-11' bgs)
	10								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-517-MW02

Project: Fort McClellan | Geologist: Cindy Levaas/Kyle Wilson | Sheet 3 of 3 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						
	11	NA: No sample collected for lithologic description.							
775									
	12								
			NA						
	13								
	14	sh: Light gray, stiff, dry, highly weathered SHALE.			Organic Vapor = 0.0ppm			6 12 35 50/0.2'	Rec 1.7'/1.7' (14-15.7' bgs)
			sh						
	15								
	16	NA: No sample collected for lithologic description.							
770									
			NA						
	17								
	18	sh: Black to dark gray, weathered SHALE.	sh		Organic Vapor = 0.0ppm			50/0.4'	Auger refusal at 18' bgs Rec 0.2'/0.4' (18-18.4' bgs) Bottom of borehole at 18.4' bgs
		NA: No recovery.	NA						

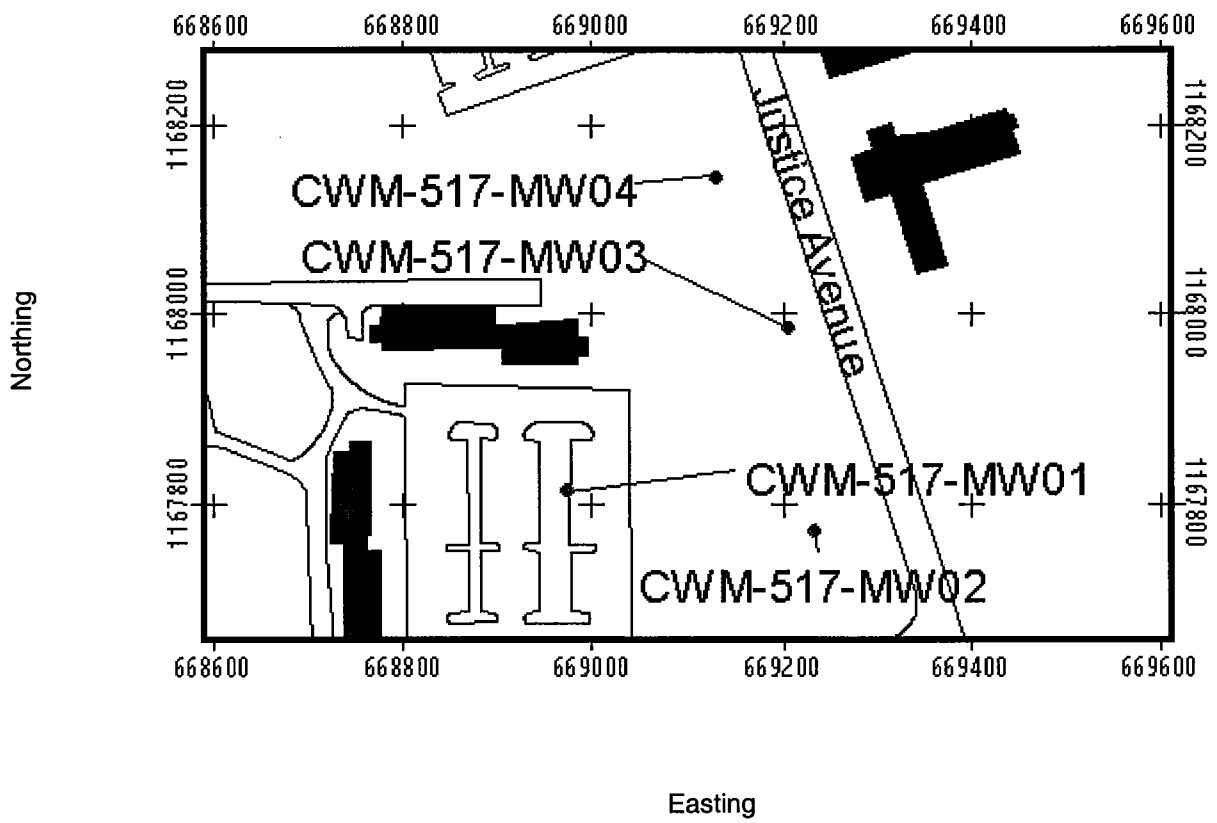
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** CWM-517-MW03
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: ESN/Miller Drilling Company	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Sammy McDaniel/Darren Penn	6. Mfr. designation of drill: Geoprobe/CME-75
7. Sizes and types of drilling and sampling equipment: Direct Push, Hollow Stem Auger DP - 2'x2" Acetate-Lined Sampler HSA - 5'x4.25" ID Augers, 2'x2" Steel Split Spoons	8. Hole location: CBR Proficiency Area, Parcel 517 9. Surface elevation (feet above mean sea level): 775.08 10. Date started: 10/18/01 — 11. Date completed: 11/28/01
12. Overburden thickness (feet bgs): >10	15. Depth groundwater encountered (feet bgs): Not encountered
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 4 ~24 hours
14. Total depth of hole (feet bgs): 10	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA	NA	NA			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	Yes	Yes	CWM Breakdown Products	SVOCs	NA	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	NA	2" Permanent	NA	Zach Parham/Mark Shoemaker		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-517-MW03

Project: Fort McClellan | Geologist: Zach Parham/Mark Shoemaker | Sheet 2 of 2 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)
775	0	cl: Red-orange to light brown, moist, soft CLAY, little coarse to fine Sand, trace coarse quartz-rich, subangular Gravel.	cl		Organic Vapor = 0.0ppm		TV0005		Rec 2.2'/3.0' (0-3' bgs) Geoprobe - ESN - 10/18/01
	1								
	2						TV0006		
	3	NA: No sample collected for lithologic description.	NA						Direct push refusal at 3' bgs HSA - Miller Drilling Company - 11/15/01
	4	sh: Dark gray, highly weathered SHALE.	sh		Organic Vapor = 0.0ppm			2 25 42 50	Rec 1.6'/2.0' (4-6' bgs)
770	5								
		NA: No recovery	NA						
	6	sh: Dark gray, highly weathered SHALE.	sh		Organic Vapor = 0.0ppm			50/0.2'	Rec 0.05'/0.2' (6-6.2' bgs)
		NA: No recovery.	NA						
		NA: No sample collected for lithologic description.							
	7								
	8		NA						
	9								
	10								Auger refusal at 10' bgs on black Shale Bottom of borehole at 10' bgs

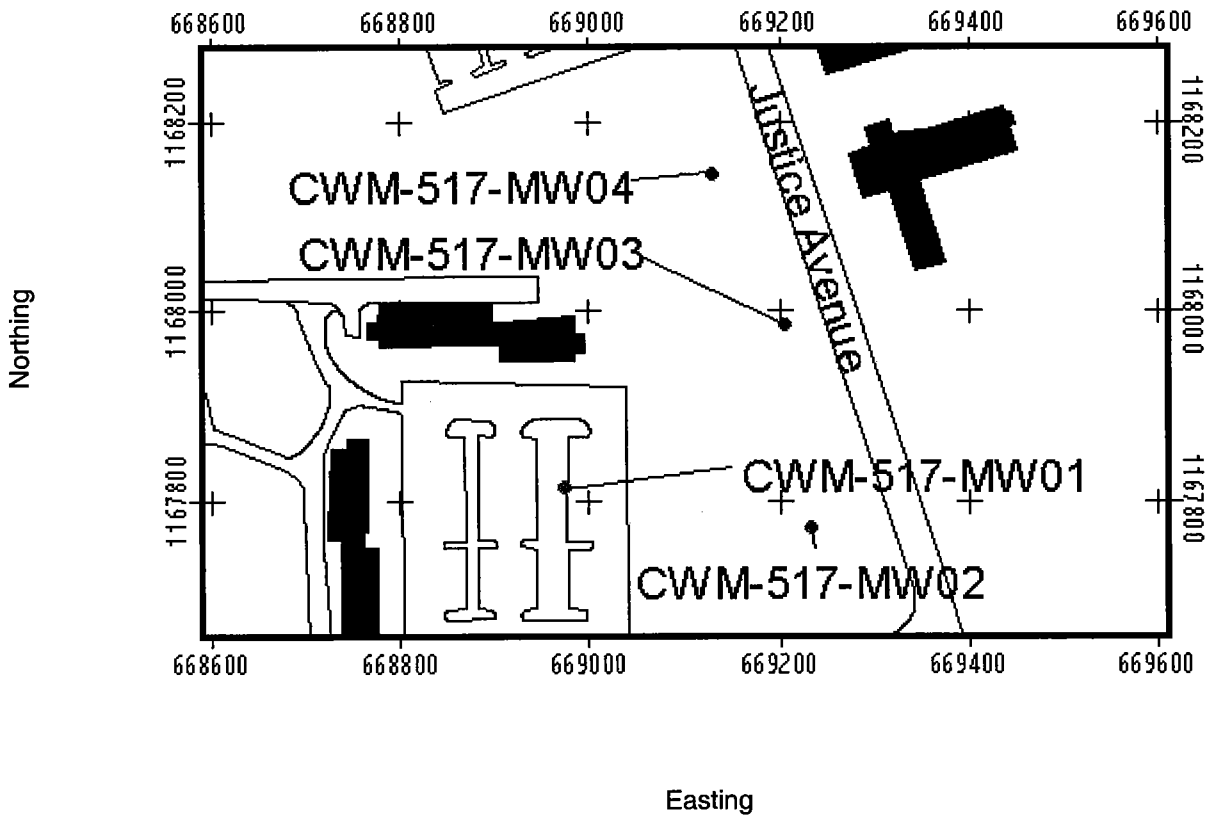
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** CWM-517-MW04
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: ESN/Miller Drilling Company	Sheet 1 of 3 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Sammy McDaniel/Darren Penn	6. Mfr. designation of drill: Geoprobe/CME-550X
7. Sizes and types of drilling and sampling equipment: Direct Push, Hollow Stem Auger DP - 2'x2" Acetate-Lined Sampler HSA - 5'x4.25" ID Augers, 2'x2" Steel Split Spoons	8. Hole location: CBR Proficiency Area, Parcel 517 9. Surface elevation (feet above mean sea level): 772.5 10. Date started: 10/18/01 — 11. Date completed: 11/28/01
12. Overburden thickness (feet bgs): >14	15. Depth groundwater encountered (feet bgs): 13.5
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 11 on 10/29/01
14. Total depth of hole (feet bgs): 14	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA	NA	NA			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	Yes	Yes	CWM Breakdown Products	SVOCs	NA	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	NA	2" Permanent	NA	Zach Parham/Mark Shoemaker		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: CWM-517-MW04

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-517-MW04

Project: Fort McClellan | Geologist: Zach Parham/Mark Shoemaker | Sheet 2 of 3 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	cl: Yellow-orange to light gray to light brown, slightly moist, stiff CLAY, some coarse quartz-rich subangular Gravel, little highly weathered Shale.	cl		Organic Vapor = 0.0ppm		TV0007		Rec 2.8'/3.0' (0-3' bgs) Geoprobe - ESN - 10/18/01
	1								
	2								
770							TV0009		
	3	NA: No sample collected for lithologic description.	NA						Direct push refusal at 3' bgs HSA - Miller Drilling Company - 10/25/01
	4								
	5	sh-cl: Medium brown to dark gray laminated CLAY to highly weathered SHALE.	sh-cl		Organic Vapor = 0.0ppm			5 20 22 23	Rec 1.5'/2.0' (5-7' bgs)
	6								
		NA: No recovery.	NA						
	7	cl: Light brown to yellowish orange mottled, stiff laminated CLAY, trace fine Sand, trace organics.	cl		Organic Vapor = 0.0ppm			0 0 0 0	Rec 2.0'/2.0' (7-9' bgs)
765									
	8								
	9	cl: Light brown to yellowish orange, stiff CLAY, some Silt, trace organics.	cl		Organic Vapor = 0.0ppm			6 8 10 11	Rec 1.5'/2.0' (9-11' bgs)
	10								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-517-MW04

Project: Fort McClellan | Geologist: Zach Parham/Mark Shoemaker | Sheet 3 of 3 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.	NA						
	11	NA: No sample collected for lithologic description.							11
	12								12
760			NA						
	13								13
									Auger refusal at 14' bgs on black Shale Bottom of borehole at 14' bgs
	14								14

WELL CONSTRUCTION LOGS

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Miller Drilling Company
DRILLER: Glen Bilbrey
SHAW FIELD REPRESENTATIVE: K.Wilson/ M.Shoemaker

WELL NO: CWM-517-MW01
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 28-NOV-01
NORTHING: 1167812.95
EASTING: 668973.19
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 812.06

TOP of WELL CASING or RISER PIPE
EL* 811.6 STICKUP N/A

SURFACE SEAL
TYPE of SURFACE SEAL: Concrete
MINIMUM THICKNESS: 4 inches

ANNULAR SPACE SEAL TYPE
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

TOP OF SEAL
SEAL MATERIAL: Bentonite
SEAL START DEPTH: 18

FILTER PACK
TYPE of SAND PACK AROUND SCREEN: Sand No 1
TOP OF SAND PACK: 20

CASING
TYPE of RISER MATERIAL (Flush Threaded): PVC SCH 40
INSIDE DIAMETER of RISER (inches): 2

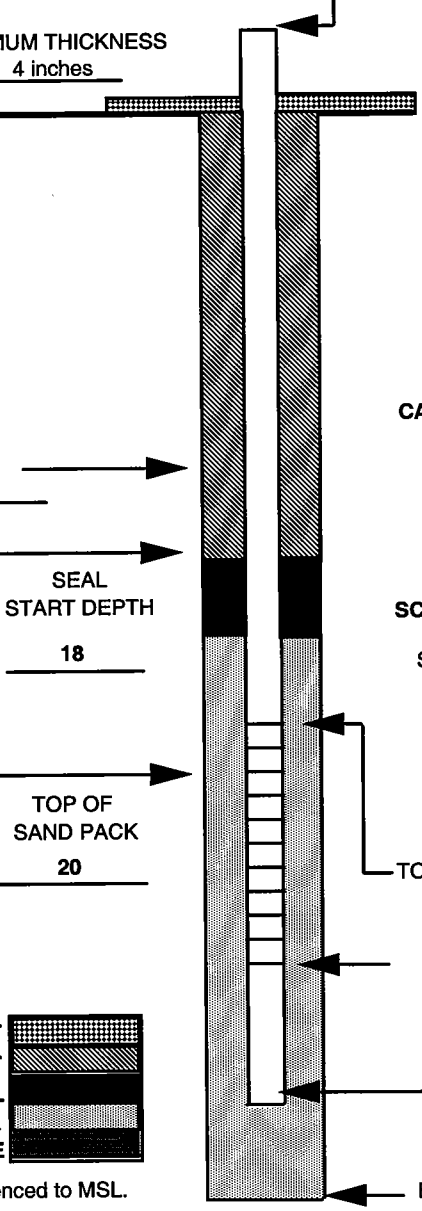
SCREEN
TYPE of SCREEN MATERIAL: PVC SCH 40
SLOT SIZE (inches): 0.010
INSIDE DIAMETER (inches): 2

TOP OF SCREENED INTERVAL
EL* 787.06 DEPTH 25

BOTTOM of SCREENED INTERVAL
EL* 777.06 DEPTH 35

BOTTOM of SUMP and WELL
EL* 777.06 DEPTH 35

BOTTOM of BOREHOLE
EL* 777.06 DEPTH 35



NEAT CEMENT
GROUT
BENTONITE SEAL
FILTER PACK
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
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Miller Drilling Company
DRILLER: Glen Bilbrey
SHAW FIELD REPRESENTATIVE: Kyle Wilson

WELL NO: CWM-517-MW02
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 28-NOV-01
NORTHING: 1167768.84
EASTING: 669232.74
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 786.19

TOP of WELL CASING or RISER PIPE
EL* 788.31 STICKUP 2.12

SURFACE SEAL
TYPE of SURFACE SEAL: Concrete
MINIMUM THICKNESS: 4 inches

ANNULAR SPACE SEAL TYPE
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

TOP OF SEAL
SEAL MATERIAL: Bentonite
SEAL START DEPTH: 3

FILTER PACK
TYPE of SAND PACK AROUND SCREEN: Sand No 1
TOP OF SAND PACK: 5

CASING
TYPE of RISER MATERIAL (Flush Threaded): PVC SCH 40
INSIDE DIAMETER of RISER (inches): 2

SCREEN
TYPE of SCREEN MATERIAL: PVC SCH 40
SLOT SIZE (inches): 0.010
INSIDE DIAMETER (inches): 2

TOP OF SCREENED INTERVAL
EL* 778.19 DEPTH 8

BOTTOM of SCREENED INTERVAL
EL* 768.19 DEPTH 18

BOTTOM of SUMP and WELL
EL* 768.19 DEPTH 18

BOTTOM of BOREHOLE
EL* 767.79 DEPTH 18.4

NEAT CEMENT
GROUT
BENTONITE SEAL
FILTER PACK
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
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Miller Drilling Company
DRILLER: Darren Penn
SHAW FIELD REPRESENTATIVE: Mark Shoemaker

WELL NO: CWM-517-MW03
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 28-NOV-01
NORTHING: 1167981.67
EASTING: 669204.63
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 775.08

TOP of WELL CASING or RISER PIPE
EL* 777.07 STICKUP 1.99

SURFACE SEAL
TYPE of SURFACE SEAL: Concrete
MINIMUM THICKNESS: 4 inches

ANNULAR SPACE SEAL TYPE
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

TOP OF SEAL
SEAL MATERIAL: Bentonite
SEAL START DEPTH: 1

FILTER PACK
TYPE of SAND PACK AROUND SCREEN: Sand No 1
TOP OF SAND PACK: 2

CASING
TYPE of RISER MATERIAL (Flush Threaded): PVC SCH 40
INSIDE DIAMETER of RISER (inches): 2

SCREEN
TYPE of SCREEN MATERIAL: PVC SCH 40
SLOT SIZE (inches): 0.010
INSIDE DIAMETER (inches): 2

TOP OF SCREENED INTERVAL
EL* 770.08 DEPTH 5

BOTTOM of SCREENED INTERVAL
EL* 765.08 DEPTH 10

BOTTOM of SUMP and WELL
EL* 765.08 DEPTH 10

BOTTOM of BOREHOLE
EL* 765.08 DEPTH 10

NEAT CEMENT
GROUT
BENTONITE SEAL
FILTER PACK
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
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Miller Drilling Company
DRILLER: Darren Penn
SHAW FIELD REPRESENTATIVE: Mark Shoemaker

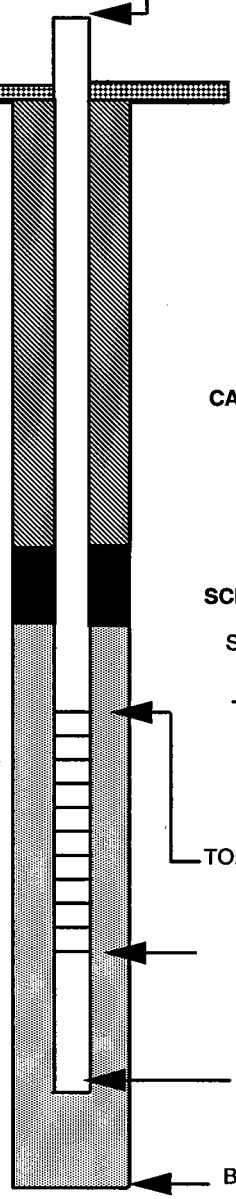
WELL NO: CWM-517-MW04
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 28-NOV-01
NORTHING: 1168141.85
EASTING: 669129.43
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 772.5

TOP of WELL CASING or RISER PIPE
EL* 774.65 STICKUP 2.15

SURFACE SEAL
TYPE of SURFACE SEAL: Concrete
MINIMUM THICKNESS: 4 inches

ANNULAR SPACE SEAL TYPE
Grout



CASING
TYPE of RISER MATERIAL (Flush Threaded): PVC SCH 40
INSIDE DIAMETER of RISER (inches): 2

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

TOP OF SEAL
SEAL MATERIAL: Bentonite
SEAL START DEPTH: 1

SCREEN
TYPE of SCREEN MATERIAL: PVC SCH 40
SLOT SIZE (inches): 0.010
INSIDE DIAMETER (inches): 2

FILTER PACK
TYPE of SAND PACK AROUND SCREEN: Sand No 1
TOP OF SAND PACK: 2

TOP OF SCREENED INTERVAL
EL* 768.5 DEPTH 4

BOTTOM of SCREENED INTERVAL
EL* 758.5 DEPTH 14

BOTTOM of SUMP and WELL
EL* 758.5 DEPTH 14

BOTTOM of BOREHOLE
EL* 758.5 DEPTH 14

NEAT CEMENT
GROUT
BENTONITE SEAL
FILTER PACK
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.
All depths and heights are given in feet and are referenced to the ground surface.