APPENDIX A

BORING LOGS AND WELL CONSTRUCTION LOGS

BORING LOGS

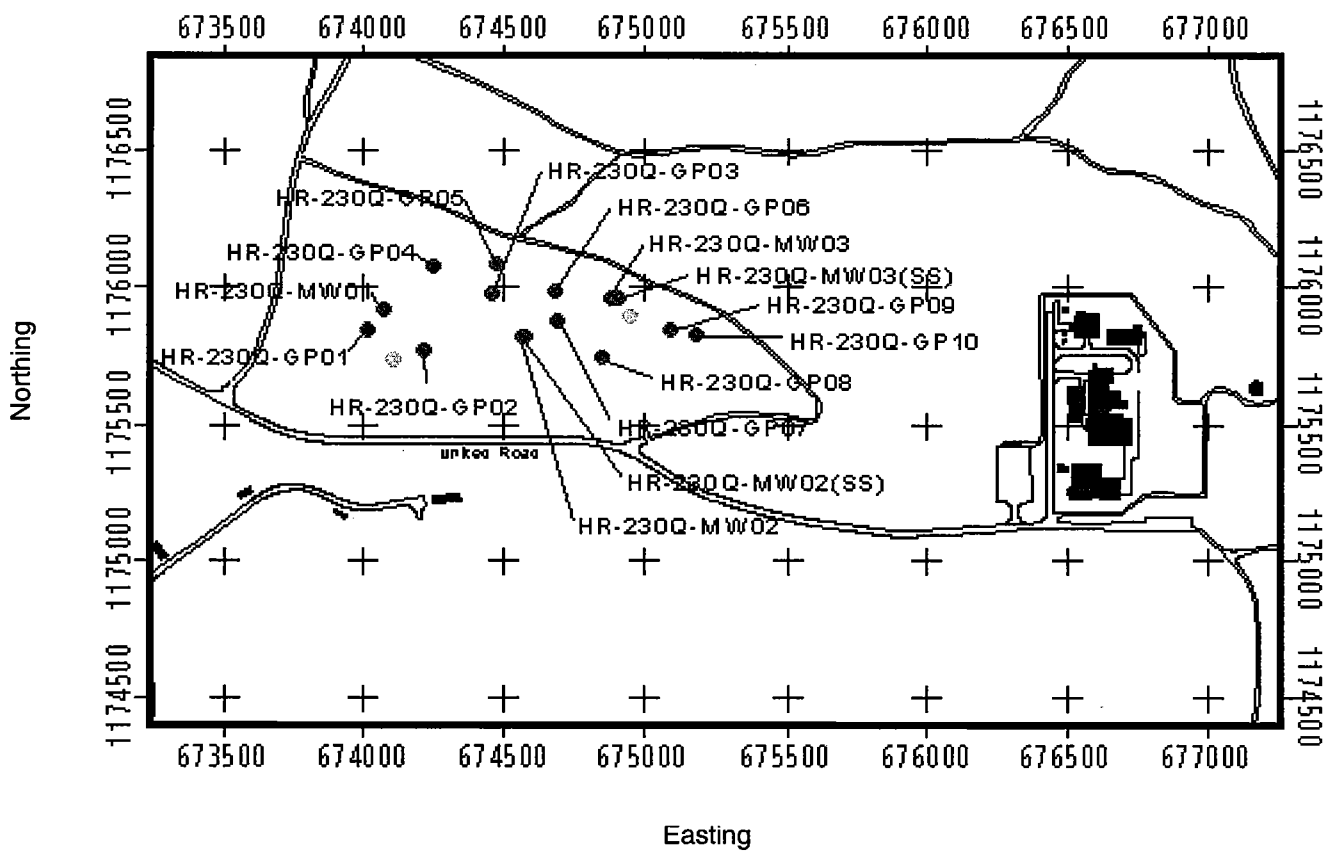
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-230Q-GP01
1. Company name: **IT Corporation**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Mark Shoemaker/Lee Flippen	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Former Antitank Range, Parcel 230Q
	9. Surface elevation (feet above mean sea level): 819.52
	10. Date started: 06/18/02 / 11. Date completed: 06/18/02
12. Overburden thickness (feet bgs): >2	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 2	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist: Cindy Levaas		
	Cuttings	N/A	N/A			

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: HR-230Q-GP01

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-GP01

Project: Fort McClellan | Geologist: Cindy Levaas | Sheet 2 of 2 sheets

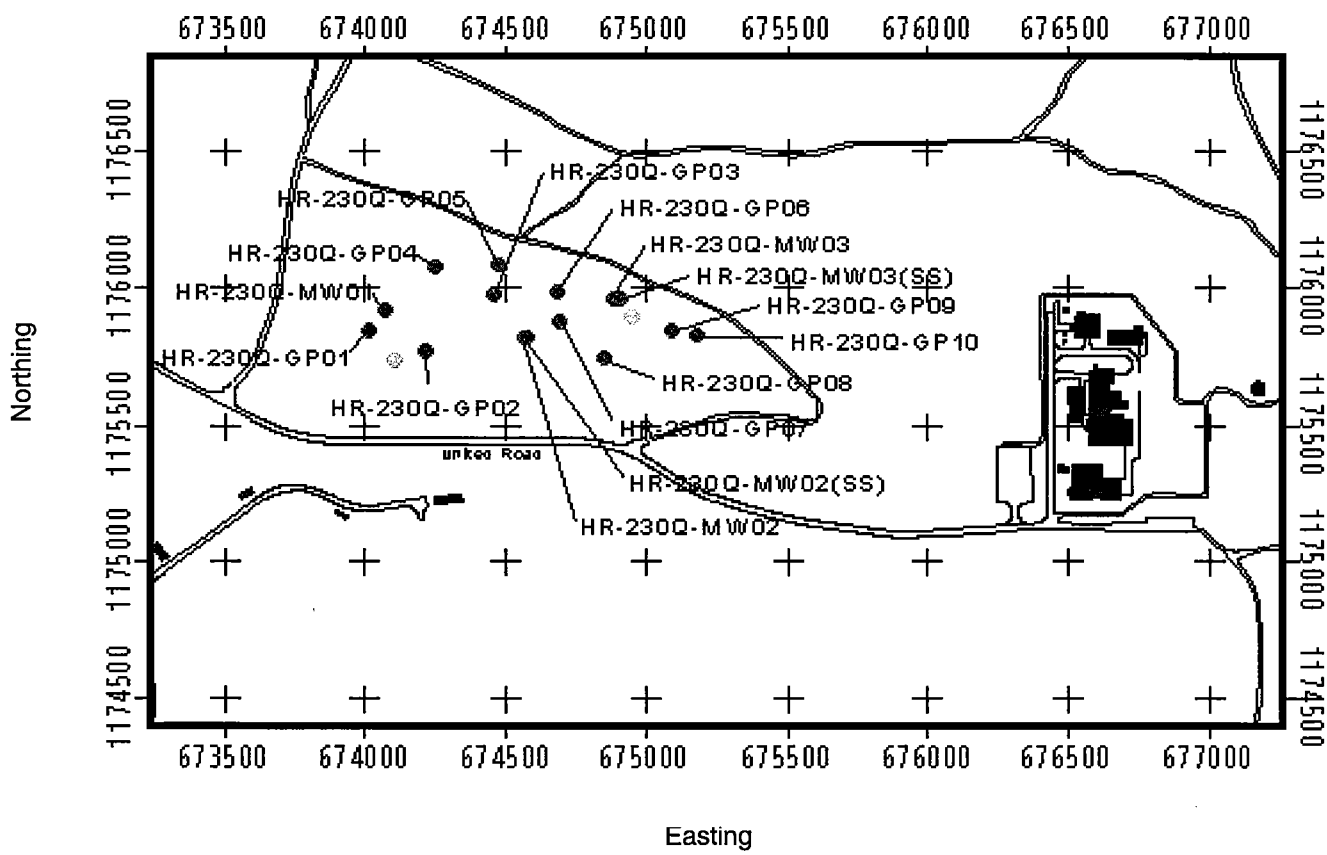
Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	sc: Medium to dark brown, moist, soft to medium stiff CLAY and SAND, little subrounded, sandstone Gravel.	sc		Organic Vapor = 2.7ppm		QT0001		
	1	sc: Light gray to yellowish orange, wet, medium stiff CLAY and SAND.	sc		Organic Vapor = 0ppm		QT0002		
	2								Bottom of borehole at 2' bgs

HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-230Q-GP02
1. Company name: **IT Corporation**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets
3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**	
5. Name of driller: Mark Shoemaker/Lee Flippen	6. Mfr. designation of drill: Hand Auger	
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Former Antitank Range, Parcel 230Q	
	9. Surface elevation (feet above mean sea level): 812.26	
	10. Date started: 06/21/01	11. Date completed: 06/21/02
12. Overburden thickness (feet bgs): >2	15. Depth groundwater encountered (feet bgs): 2	
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A	
14. Total depth of hole (feet bgs): 2	17. Other water level measurements (specify): N/A	

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist: Cindy Levaas		
	Cuttings	N/A	N/A			

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: HR-230Q-GP02

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-GP02

Project: Fort McClellan | Geologist: Cindy Levaas | 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)
	0	sc: Dark brown, moist, medium stiff CLAY and fine to medium SAND, little Silt, trace Roots.	sc		Organic Vapor = 0.1ppm		QT0003		
	1	sc: Light gray and yellowish orange, wet, soft to medium stiff CLAY and fine to medium SAND, little Silt, little subangular sandstone Gravel.	sc		Organic Vapor = 0ppm		QT0005		Groundwater encountered at 2' bgs Bottom of borehole at 2' bgs
	2								

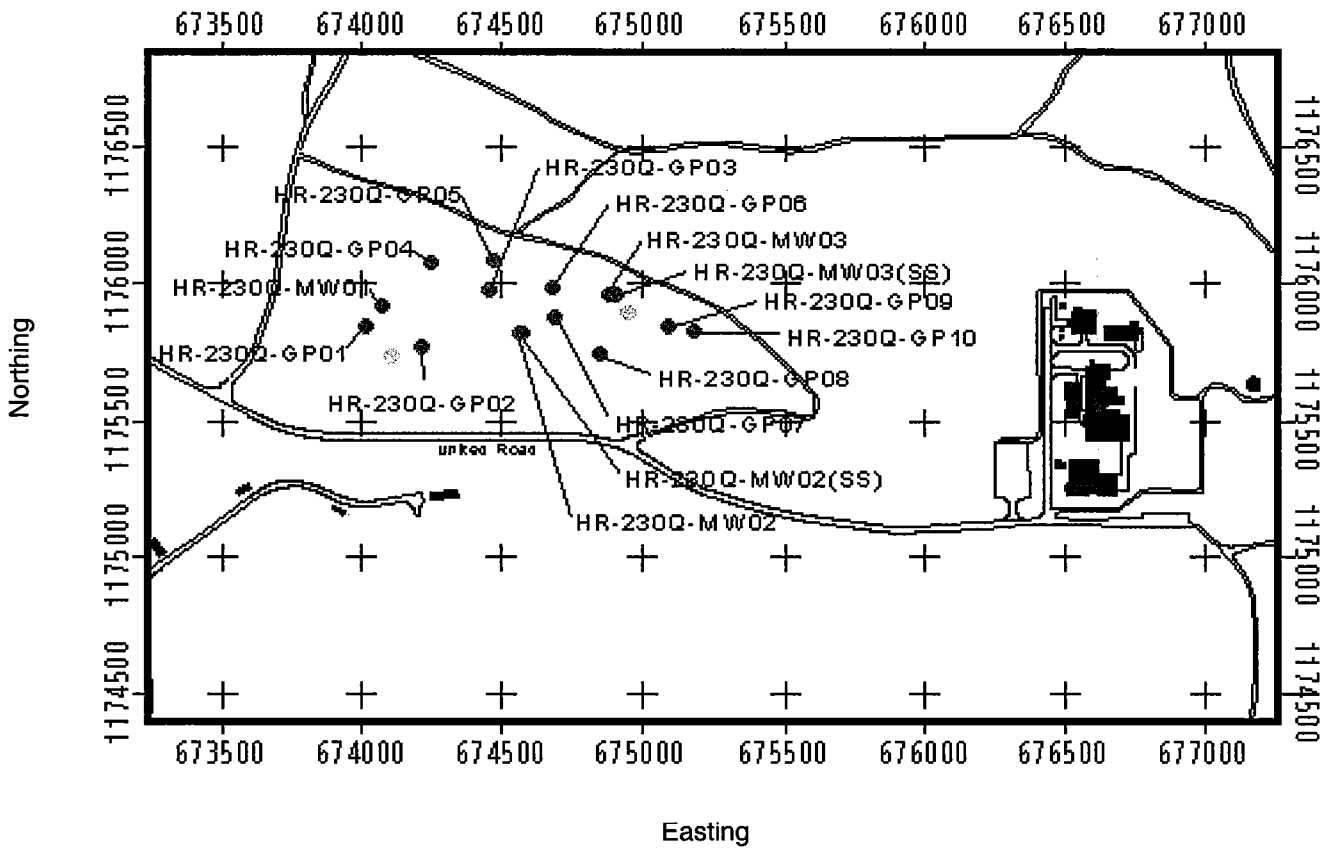
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER HR-230Q-GP03
1. Company name: **IT Corporation**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Mark Shoemaker/Lee Flippen	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Former Antitank Range, Parcel 230Q
	9. Surface elevation (feet above mean sea level): 829
	10. Date started: 06/18/02 / 11. Date completed: 06/18/02
12. Overburden thickness (feet bgs): >3	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 3	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist: Cindy Levaas		
	Cuttings	N/A	N/A			

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-GP03

Project: Fort McClellan | Geologist: Cindy Levaas | Sheet 2 of 2 sheets

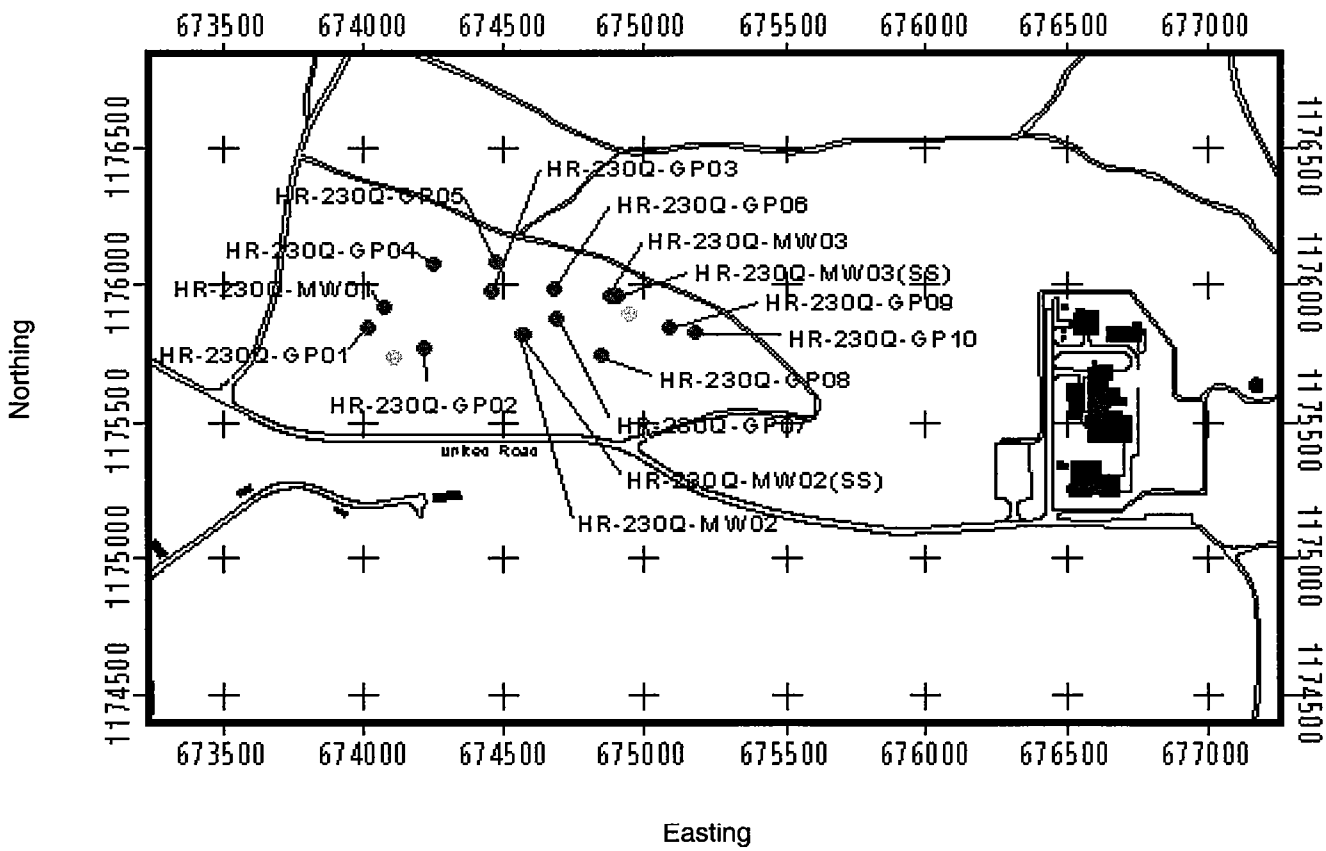
Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	ml: Tan to yellowish orange, slightly moist, loose SILT, some fine to medium Sand, little Clay, little subangular sandstone Gravel.	ml		Organic Vapor = 1.8ppm		QT0006		
	1	cl-ml: Yellowish orange to light brown, slightly moist, medium stiff CLAY and SILT, some fine to medium Sand.	cl-ml		Organic Vapor = 0ppm		QT0007		Refusal at 3' bgs Bottom of borehole at 3' bgs
	2								
	3								

HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER HR-230Q-GP04
1. Company name: **IT Corporation**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets
3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**	
5. Name of driller: Mark Shoemaker/Lee Flippen	6. Mfr. designation of drill: Hand Auger	
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Former Antitank Range, Parcel 230Q	
	9. Surface elevation (feet above mean sea level): 838.04	
	10. Date started: 06/21/02	11. Date completed: 06/21/02
12. Overburden thickness (feet bgs): >4	15. Depth groundwater encountered (feet bgs): N/A	
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A	
14. Total depth of hole (feet bgs): 4	17. Other water level measurements (specify): N/A	

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist: Cindy Levaas		
	Cuttings	N/A	N/A			

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-GP04

Project: Fort McClellan | Geologist: Cindy Levaas | 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)
	0	ml: Medium brown dry loose SILT, little Clay, little roots, some fine to medium Sand.	ml		Organic Vapor = 2.7ppm		QT0004 QT0008		
	1								
	2								
835	3	cl-ml: Light brown to yellowish orange, slightly moist, loose CLAY and SILT, little fine to medium Sand.	cl-ml		Organic Vapor = 1.1ppm		QT0009		Bottom of borehole at 4' bgs
	4								

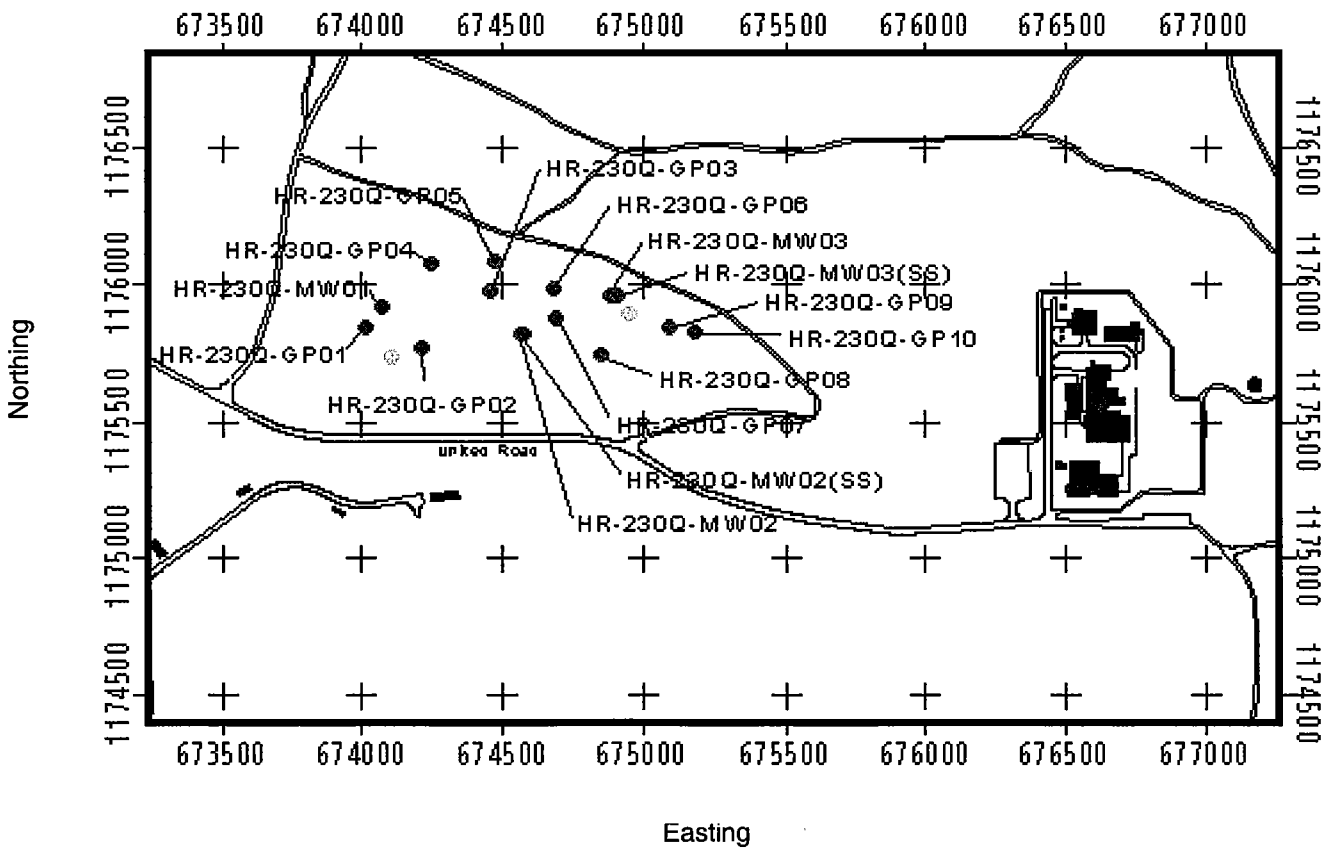
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-230Q-GP05
1. Company name: **IT Corporation**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Mark Shoemaker/Lee Flippen	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Former Antitank Range, Parcel 230Q
	9. Surface elevation (feet above mean sea level): 844.83
	10. Date started: 06/19/02 / 11. Date completed: 06/20/02
12. Overburden thickness (feet bgs): >4	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 4	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	Yes	Yes	SVOCs, Pesticides	Herbicides	Explosives	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Cindy Levaas		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-GP05

Project: Fort McClellan | Geologist: Cindy Levaas | 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)
	0	ml: Light brown to medium brown, slightly moist, loose SILT, some Clay, little roots, trace fine to medium Sand.	ml		Organic Vapor = 0.3ppm		QT0010 MS/MSD		
	1	ml: Light to medium brown, slightly moist, loose SILT, some Clay, some subrounded sandstone Gravel.							
	2		ml						
	3				Organic Vapor = 0ppm		QT0011		
	4								Bottom of borehole at 4' bgs

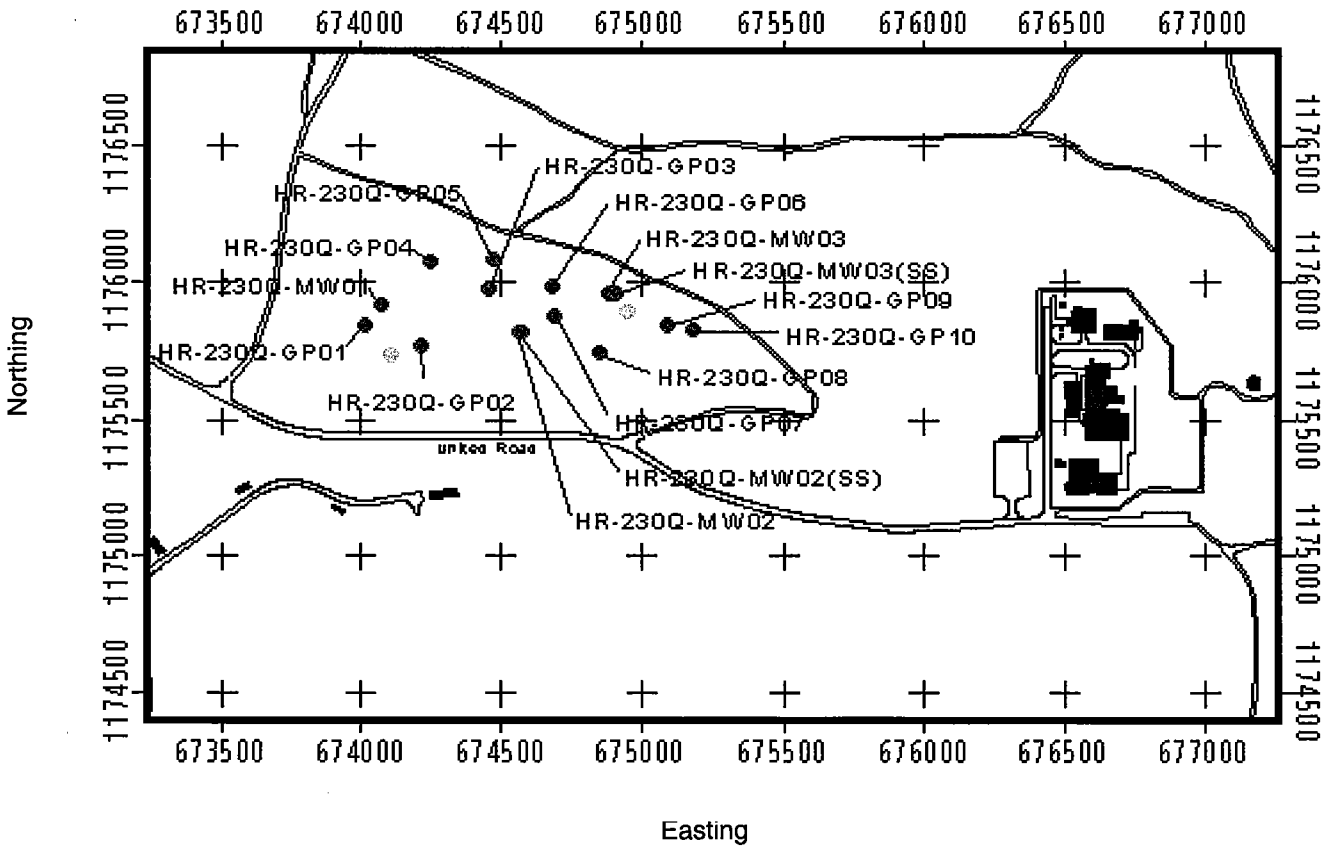
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-230Q-GP06
1. Company name: **IT Corporation**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Mark Shoemaker/Lee Flippen	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Former Antitank Range, Parcel 230Q
	9. Surface elevation (feet above mean sea level): 833.51
	10. Date started: 06/18/02 / 11. Date completed: 06/18/02
12. Overburden thickness (feet bgs): >4	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 4	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist: Cindy Levaas		
	Cuttings	N/A	N/A			

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: HR-230Q-GP06

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-GP06

Project: Fort McClellan | Geologist: Cindy Levaas | 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)
	0	ml: Light brown slightly moist loose SILT, some Clay, some subrounded sandstone Gravel.	ml		Organic Vapor = 0ppm		QT0012		
	1	ml: Light brown moist SILT, some Clay, some subrounded sandstone Gravel.	ml		Organic Vapor = 0ppm				
	2								
	3	ml: Light brown moist loose SILT, some fine Sand, some Clay, little subrounded sandstone Gravel.	ml		Organic Vapor = 0ppm		QT0013		
830									Bottom of borehole at 4' bgs
	4								

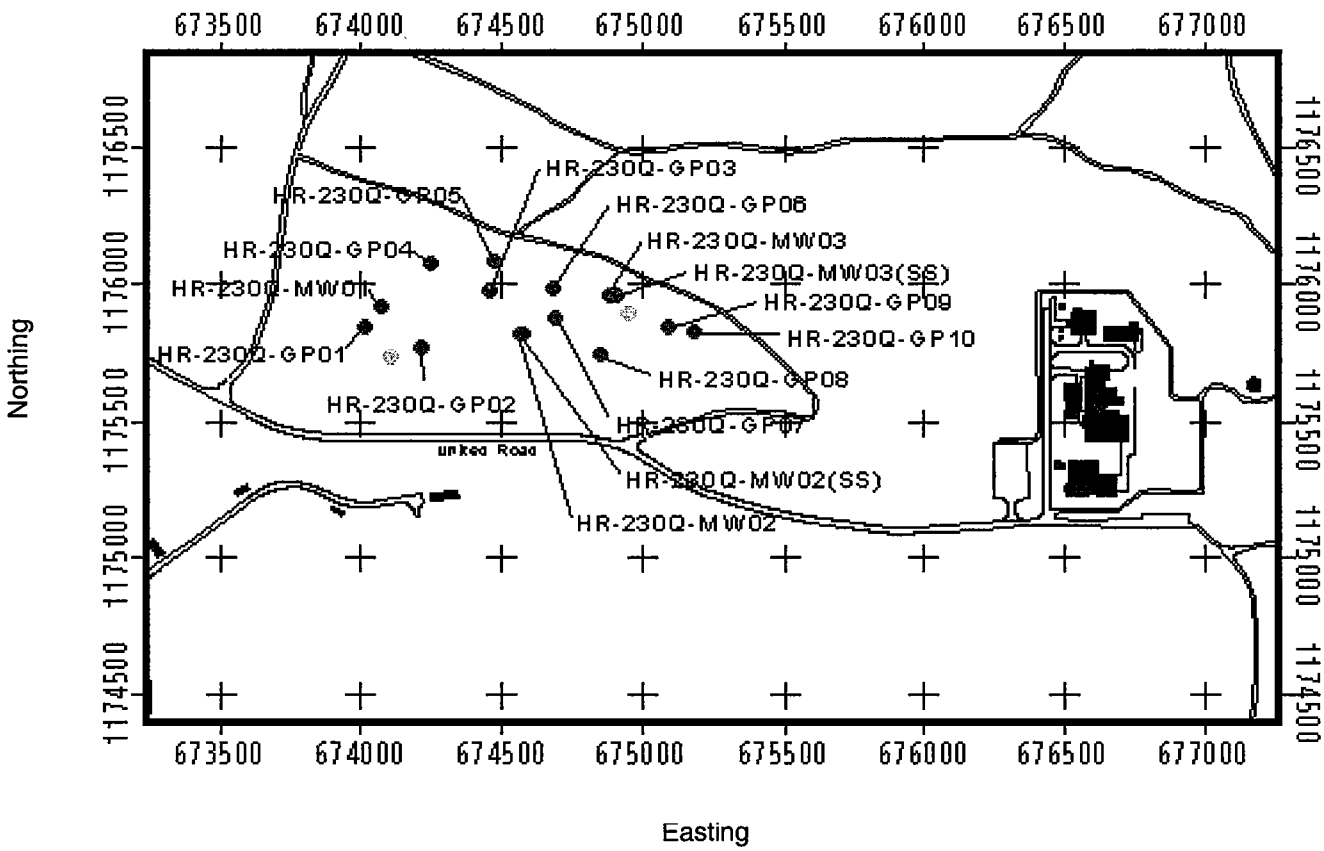
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER HR-230Q-GP07
1. Company name: **IT Corporation**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Mark Shoemaker/Lee Flippen	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Former Antitank Range, Parcel 230Q
	9. Surface elevation (feet above mean sea level): 848.84
	10. Date started: 06/18/02 / 11. Date completed: 06/18/02
12. Overburden thickness (feet bgs): >4	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 4	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist: Cindy Levaas		
	Cuttings	N/A	N/A			

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: HR-230Q-GP07

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-GP07

Project: Fort McClellan | Geologist: Cindy Levaas | Sheet 2 of 2 sheets

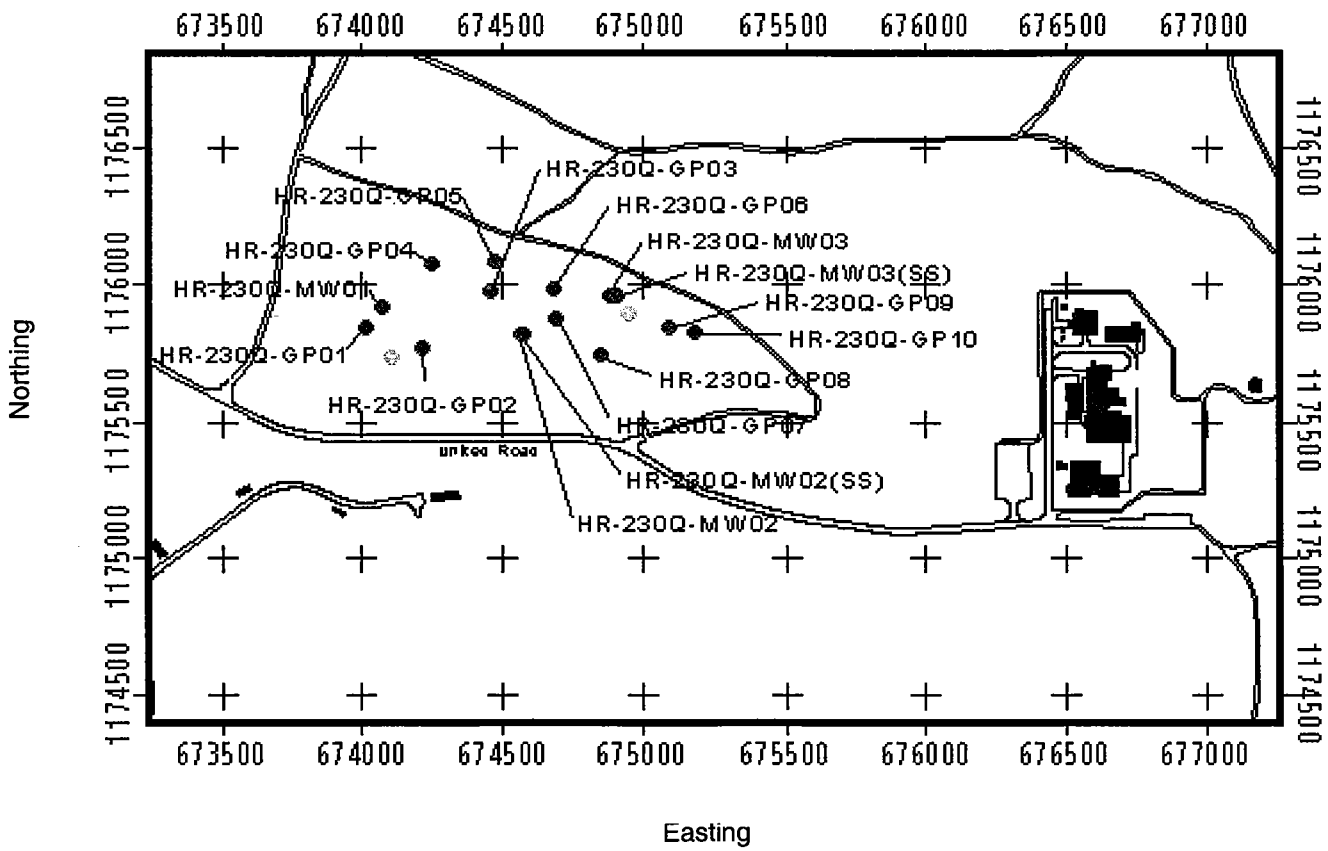
Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	ml: Light brown to tan, slightly moist loose SILT, little Clay, little subrounded sandstone Gravel.	ml		Organic Vapor = 6.7ppm		QT0014		
	1								
	2								
	3				Organic Vapor = 0ppm		QT0015		
845	4								Bottom of borehole at 4' bgs

HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-230Q-GP08
1. Company name: **IT Corporation**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets
3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**	
5. Name of driller: Adam Day	6. Mfr. designation of drill: Hand Auger	
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Former Antitank Range, Parcel 230Q	
	9. Surface elevation (feet above mean sea level): 842.91	
	10. Date started: 06/20/02	11. Date completed: 06/20/02
12. Overburden thickness (feet bgs): >3	15. Depth groundwater encountered (feet bgs): N/A	
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A	
14. Total depth of hole (feet bgs): 3	17. Other water level measurements (specify): N/A	

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Cindy Levaas		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-GP08

Project: Fort McClellan | Geologist: Cindy Levaas | Sheet 2 of 2 sheets

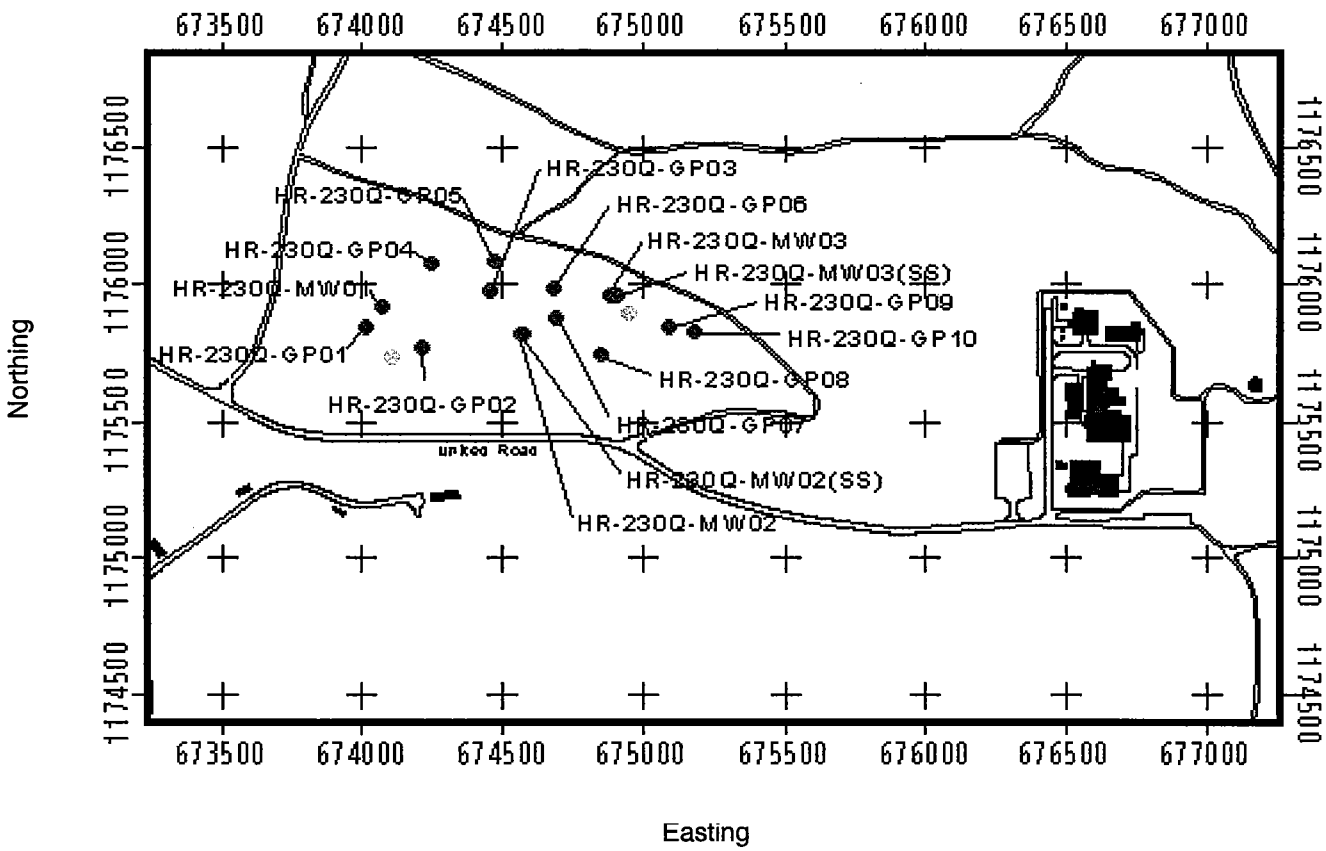
Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	ml: Reddish brown dry loose SILT, some Clay, little subrounded oxidized sandstone Gravel.	ml		Organic Vapor = 1.9ppm		QT0016		
	1								
	2	cl: Reddish brown moist stiff CLAY, some Silt, trace subrounded sandstone Gravel.	cl		Organic Vapor = 0ppm		QT0017		Auger refusal at 3' bgs Bottom of borehole at 3' bgs
840	3								

HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-230Q-GP09
1. Company name: **IT Corporation**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets
3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**	
5. Name of driller: Mark Shoemaker/Lee Flippen	6. Mfr. designation of drill: Hand Auger	
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Former Antitank Range, Parcel 230Q	
	9. Surface elevation (feet above mean sea level): 854.26	
	10. Date started: 06/19/02	11. Date completed: 06/19/02
12. Overburden thickness (feet bgs): >4	15. Depth groundwater encountered (feet bgs): N/A	
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A	
14. Total depth of hole (feet bgs): 4	17. Other water level measurements (specify): N/A	

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Cindy Levaas		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-GP09

Project: Fort McClellan | Geologist: Cindy Levaas | 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)
	0	ml: Medium brown slightly moist loose SILT, some Clay, trace roots.	ml		Organic Vapor = 0ppm		QT0018		
	1								
	2	sm: Medium brown slightly moist fine to medium SAND and SILT, little Clay.	sm		Organic Vapor = 0ppm				
	3						QT0019		
	4								Bottom of borehole at 4' bgs

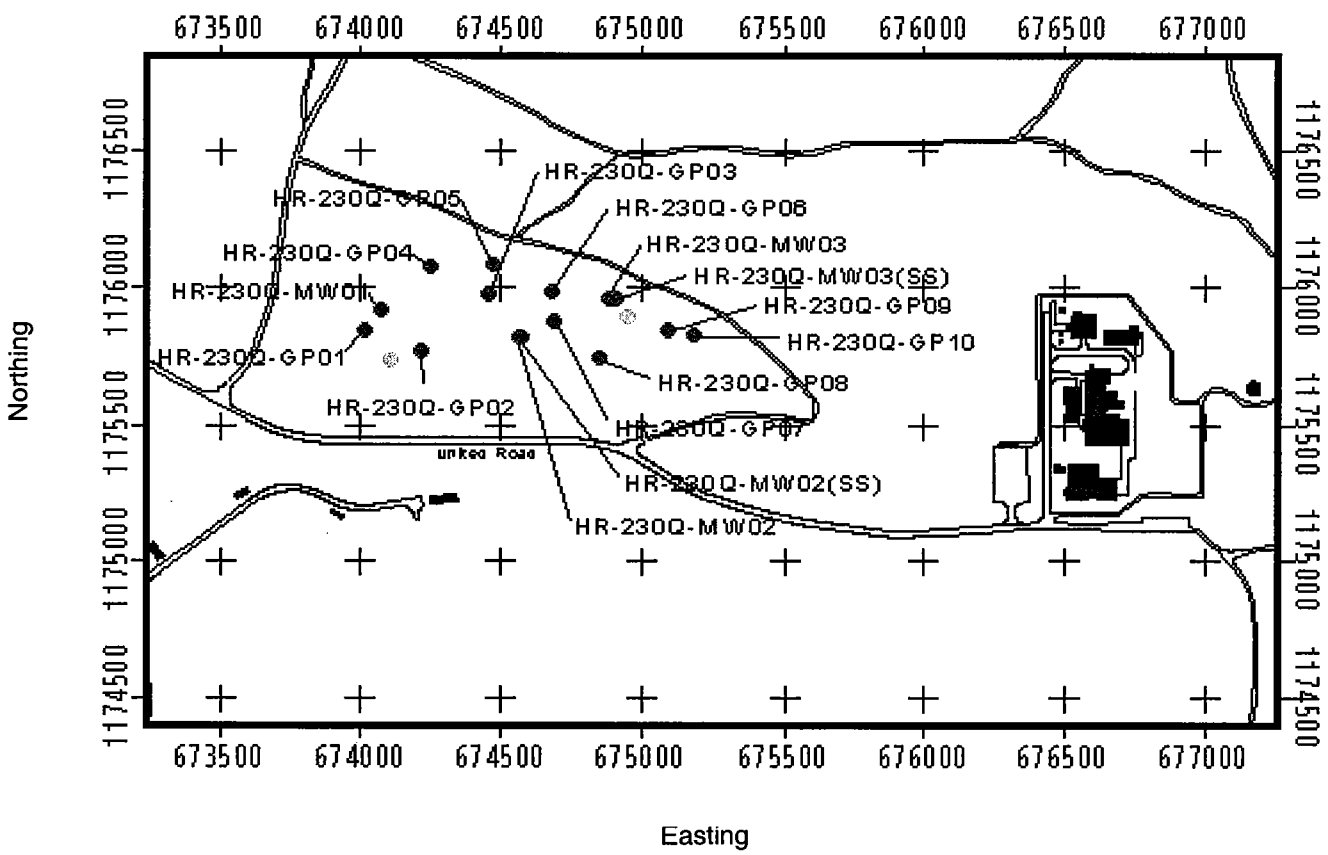
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER HR-230Q-GP10
1. Company name: **IT Corporation**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Adam Day	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Former Antitank Range, Parcel 230Q
	9. Surface elevation (feet above mean sea level): 844.46
	10. Date started: 06/20/02 / 11. Date completed: 06/20/02
12. Overburden thickness (feet bgs): >4	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 4	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	Yes	Yes	SVOCs, Pesticides	Herbicides	Explosives	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Cindy Levaas		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-GP10

Project: Fort McClellan | Geologist: Cindy Levaas | Sheet 2 of 2 sheets

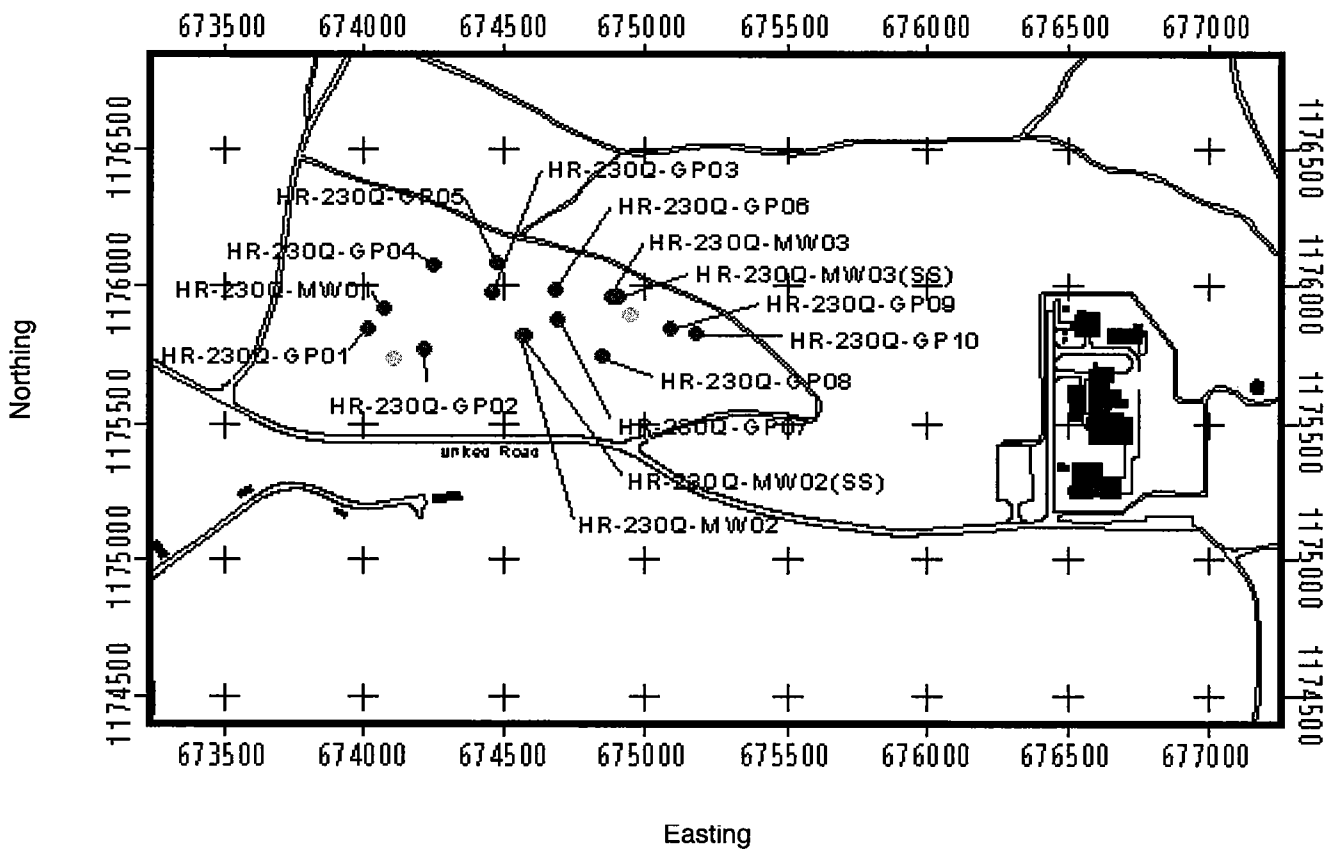
Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	ml: Light brown dry to slightly moist loose SILT, some fine to medium Sand, little Clay, trace roots.	ml		Organic Vapor = 0.9ppm		QT0020		
	1								
	2								
	3	cl: Light brown slightly moist medium stiff CLAY, some Silt, some subrounded sandstone Gravel, noted manganese nodules.	cl		Organic Vapor = 0.3ppm		QT0021		
	4								Bottom of borehole at 4' bgs

HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER HR-230Q-MW03
1. Company name: **IT Corporation**	2. Drill Subcontractor: ESN/Miller Drilling Company	Sheet 1 of 6 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-750 Hollow Stem Auger Rig	
7. Sizes and types of drilling and sampling equipment: Direct Push, Hollow Stem Auger DP - 4' x 2" Acetate-Lined Sampler HSA - 5' x 4.25" ID Augers, 2' x 2" Steel Split Spoons	8. Hole location: Former Antitank Range, Parcel 230Q 9. Surface elevation (feet above mean sea level): 837.26 10. Date started: 06/17/02	11. Date completed: 06/19/02
12. Overburden thickness (feet bgs): 42.6	15. Depth groundwater encountered (feet bgs): 35	
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 16.52 ~48 hours	
14. Total depth of hole (feet bgs): 42.6	17. Other water level measurements (specify): N/A	

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

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-MW03

Project: Fort McClellan | Geologist: Cindy Levaas/Kyle Wilson | 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	cl-ml: Light brown to yellowish orange, slightly moist, medium stiff CLAY and SILY, some Sand, trace roots, trace subangular sandstone Gravel.	cl-ml		Organic Vapor = 0ppm		QT0026 QT0027		Rec 3.5'/4.0' (0-4'bgs)
	1								
835	2								
	3						QT0028		
	4	sc: Light brown to yellowish orange, moist, medium stiff CLAY and fine to medium SAND, some Silt, little subangular, sandstone Gravel.			Organic Vapor = 0ppm				Rec 4.0'/4.0' (4-8'bgs)
	5								
	6								
830	7								
	8		sc		Organic Vapor = 0ppm				Rec 1.4'/4.0' (8-12'bgs)
	9								
	10								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-MW03

Project: Fort McClellan | Geologist: Cindy Levaas/Kyle Wilson | 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)
	11								
825	12	NA: No sample collected for lithologic description.							
	13		NA						
	14								
	15	cl: Reddish brown, medium stiff, slightly moist CLAY, some coarse to fine Sand.			Organic Vapor = 0ppm			3 9 9 9	Rec 2.0'/2.0' (15-17' bgs)
	16		cl						
820	17	NA: No sample collected for lithologic description.							
	18		NA						
	19								
	20	cl: Reddish brown, medium stiff, slightly moist			Organic			4 6 8	Rec 2.0'/2.0' (20-22' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-MW03

Project: Fort McClellan | Geologist: Cindy Levaas/Kyle Wilson | 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)
		CLAY, some coarse to fine Sand.			Vapor = 0ppm			10	
	21		cl						
	22	NA: No sample collected for lithologic description.							
815									
	23		NA						
	24								
	25	cl: Reddish brown, medium stiff, medium plasticity, moist CLAY, some coarse to fine Sand.			Organic Vapor = 0ppm			3 5 6 7	Rec 2.0'/2.0' (25-27' bgs)
	26		cl						
	27	NA: No sample collected for lithologic description.							
810									
	28		NA						
	29								
	30	cl: Brown, medium stiff to soft, moist, medium plasticity CLAY, some fine to coarse Sand.			Organic Vapor			3 3 4 4	Rec 2.0'/2.0' (30-32' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-MW03

Project: Fort McClellan | Geologist: Cindy Levaas/Kyle Wilson | 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		cl		= 0ppm				
805	32	NA: No sample collected for lithologic description.							
	33		NA						
	34								
	35	cl: Brown, medium stiff, moist to wet, medium to high plasticity CLAY, some fine to coarse Sand, trace sandstone Gravel.			Organic Vapor = 0ppm			1 3 4 7	Groundwater encountered at 35' bgs Rec 2.0'/2.0' (35-37' bgs)
	36		cl						
800	37	NA: No sample collected for lithologic description.							
	38		NA						
	39								
	40	cl: Brown, medium stiff, moist to wet, medium to high plasticity CLAY, some fine to coarse Sand, trace sandstone Gravel.			Organic Vapor = 0ppm			0 4 4 5	Rec 1.0'/2.0' (40-41' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-MW03

Project: Fort McClellan

Geologist: Cindy Levaas/Kyle Wilson

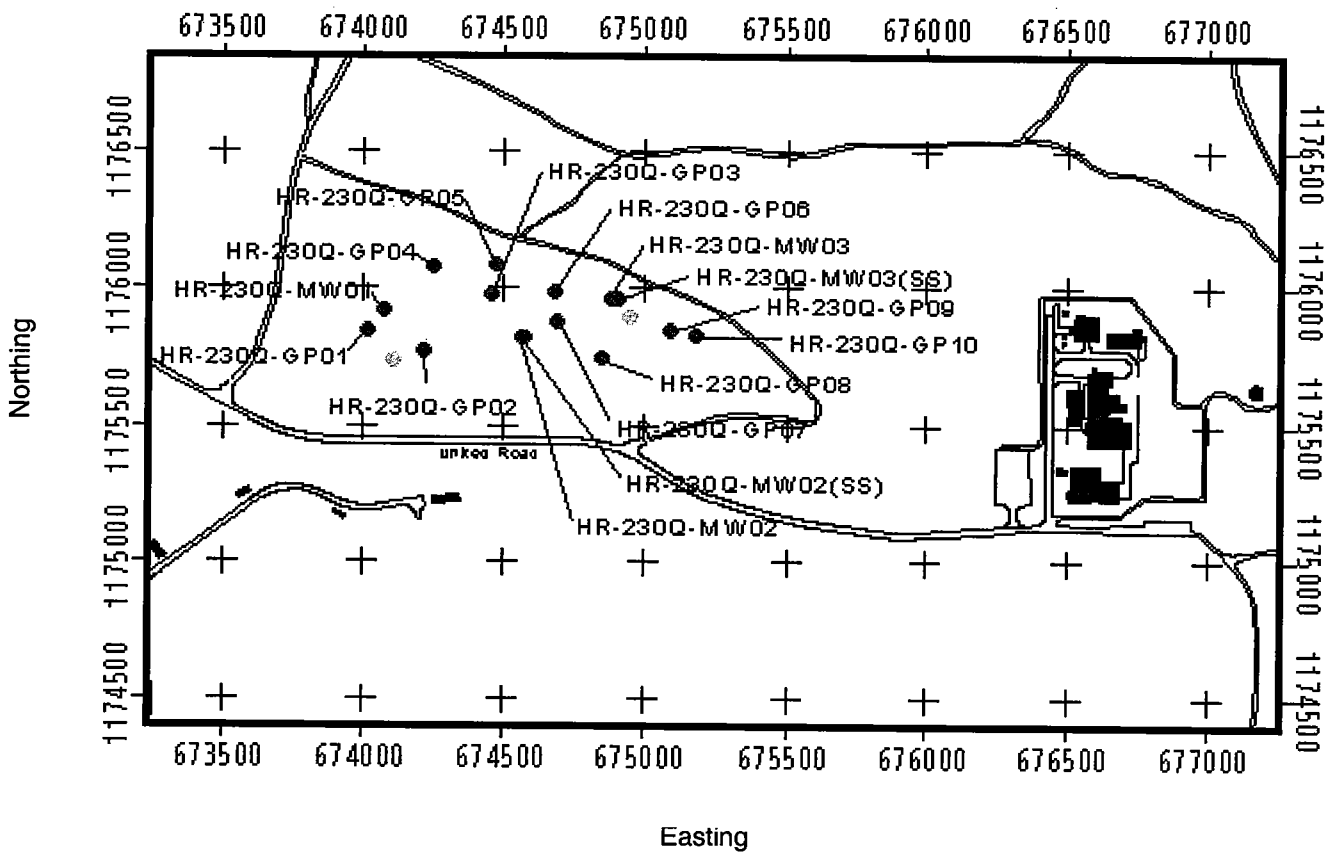
Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	41	NA: No recovery.	NA						41
795	42	NA: No sample collected for lithologic description.	NA						42 Auger refusal at 42.6' bgs Bottom of borehole at 42.6'

HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER HR-230Q-MW01
1. Company name: **IT Corporation**	2. Drill Subcontractor: ESN/Miller Drilling Company	Sheet 1 of 4 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-750 Hollow Stem Auger Rig	
7. Sizes and types of drilling and sampling equipment: Direct Push, Hollow Stem Auger DP - 4' x 2" Acetate-Lined Sampler HSA - 5' x 4.25" ID Augers, 2' x 2" Steel Split Spoons	8. Hole location: Former Antitank Range, Parcel 230Q 9. Surface elevation (feet above mean sea level): 818.56 10. Date started: 06/14/02	11. Date completed: 06/19/02
12. Overburden thickness (feet bgs): >27	15. Depth groundwater encountered (feet bgs): 8	
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A	
14. Total depth of hole (feet bgs): 27	17. Other water level measurements (specify): N/A	

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	N/A	2" Permanent	N/A	Cindy Levaas/Nicole Badon		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-MW01

Project: Fort McClellan | Geologist: Cindy Levaas/Nicole Badon | Sheet 2 of 4 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-ml: Light tan to reddish orange, dry to slightly moist CLAY and SILT.	cl-ml				QT0022		Rec 2.1'/4.0' (0-4' bgs)
	1								
	2								
	3								
815							QT0023		
	4	cl: Tan to light gray, very stiff, moist CLAY, some Silt, little subangular, fine grained, sandstone Gravel, little Sand.	cl						Rec 4.0'/4.0' (4-8' bgs)
	5								
	6								
	7								
	8	cl: Light brown to light gray, wet, medium stiff CLAY, some Silt, some fine to medium Sand.							Rec 2.3'/4.0' (8-12' bgs) Groundwater encountered at 8' bgs
810									
	9								
	10								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-MW01

Project: Fort McClellan | Geologist: Cindy Levaas/Nicole Badon | Sheet 3 of 4 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)
	11		cl						
	12	NA: No sample collected for lithologic description.			Organic Vapor = 0ppm				
	13								
805			NA						
	14								
	15	sm: Light brown, dense, wet SAND, medium to coarse, trace medium Gravel, some Silt.	sm		Organic Vapor = 0ppm			1 1 1 1	Rec 2.0'/2.0' (15-17' bgs)
		ml: Light brown, loose, wet SILT, some fine to coarse Sand, little fine, angular Gravel.							
	16		ml						
	17	NA: No sample collected for lithologic description.							
	18								
800			NA						
	19								
	20	sm: Light brown, loose, wet medium to coarse			Organic			1 1 1 1	Rec 0.8'/2.0' (20-22' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-MW01

Project: Fort McClellan | Geologist: Cindy Levaas/Nicole Badon | Sheet 4 of 4 sheets

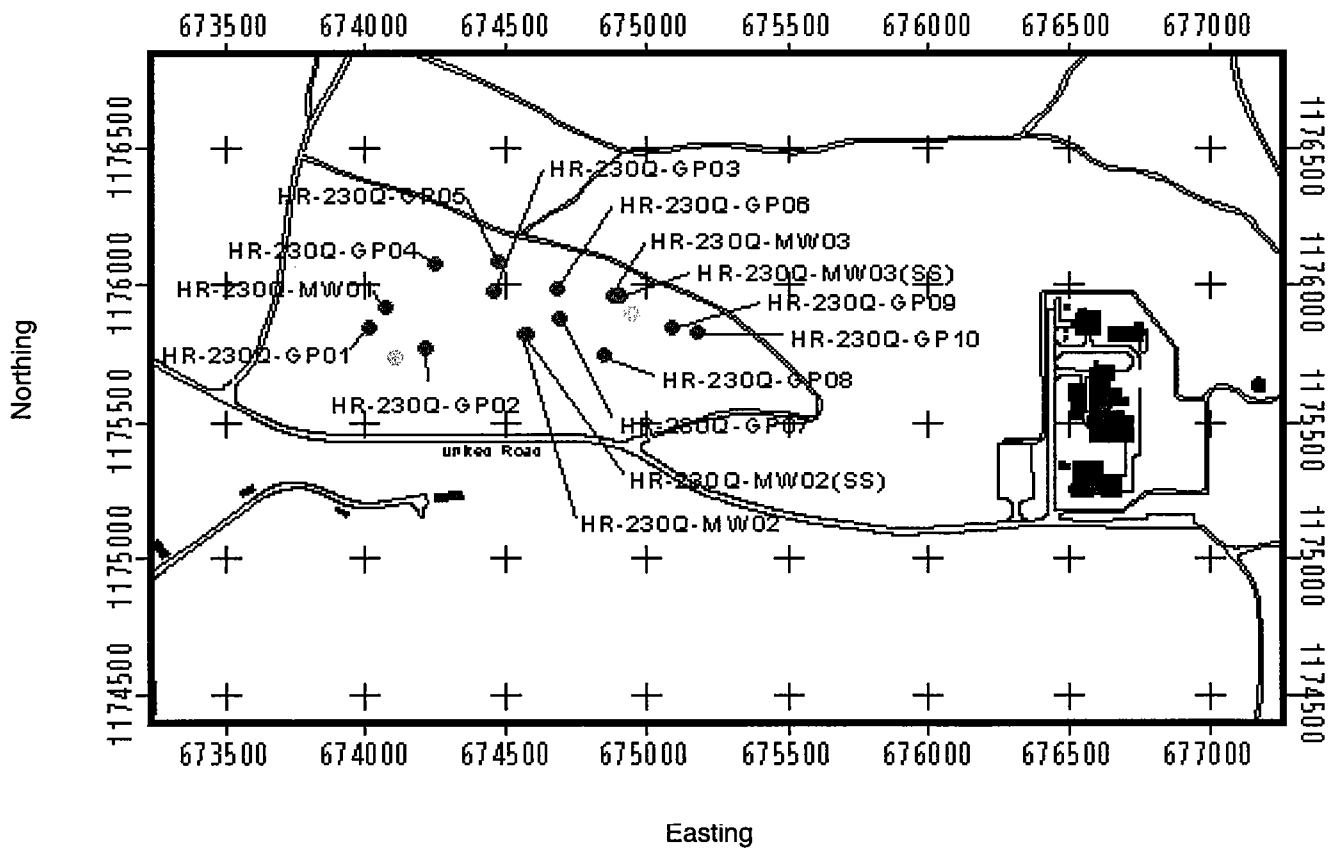
Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
		SAND and SILT, trace coarse angular Gravel.	sm		Vapor = 0ppm				
	21	NA: No recovery.	NA						
	22	NA: No sample collected for lithologic description.							
	23								
795			NA						
	24								
	25	ml: Light brown, very loose, wet SILT, some Clay, some medium to coarse Sand, little coarse, angular Gravel.			Organic Vapor = 0ppm			1 1 1 1	Rec 2.0'/2.0' (25-27' bgs)
	26		ml						
	27								Bottom of borehole at 27' bgs

HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-230Q-MW02
1. Company name: **IT Corporation**	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/Glen Bilbrey	6. Mfr. designation of drill: Geoprobe/CME-750 Hollow Stem Auger Rig	
7. Sizes and types of drilling and sampling equipment: Direct Push, Hollow Stem Auger DP - 4' x 2" Acetate-Lined Sampler HSA - 5' x 4.25" ID Augers, 2' x 2" Steel Split Spoons	8. Hole location: Former Antitank Range, Parcel 230Q 9. Surface elevation (feet above mean sea level): 829.71 10. Date started: 06/17/02	11. Date completed: 06/19/02
12. Overburden thickness (feet bgs): >32	15. Depth groundwater encountered (feet bgs): 30	
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 7.65 ~48 hours	
14. Total depth of hole (feet bgs): 32	17. Other water level measurements (specify): N/A	

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

LOCATION SKETCH/COMMENTS:



bgs= below ground surface
NA = Not applicable

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-MW02

Project: Fort McClellan | Geologist: Cindy Levaas/Kyle Wilson | 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	sc: Light brown moist medium stiff CLAY and SAND, some Silt, little subangular sandstone Gravel.			Organic Vapor = 0ppm		QT0024		Rec 2.6'/4.0' (0-4' bgs)
	1								
	2								
	3						QT0025		
	4		sc		Organic Vapor = 0ppm				Rec 4.0'/4.0' (4-8' bgs)
825									
	5								
	6								
	7								
	8	sc: Light brown to yellowish orange, moist, medium stiff to stiff SAND and CLAY, little Silt, little subangular sandstone Gravel.			Organic Vapor = 0ppm				Rec 4.0'/4.0' (8-12' bgs)
	9								
820									
	10								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-MW02

Project: Fort McClellan | Geologist: Cindy Levaas/Kyle Wilson | 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)
			sc						
	11								
	12	NA: No sample collected for lithologic description.							
	13		NA						
	14								
815									
	15	cl: Brown to yellowish orange, medium stiff, medium plasticity, moist CLAY, some fine to medium Sand.			Organic Vapor = 0ppm			5 7 7 10	Rec 2.0'/2.0' (15-17' bgs)
	16		cl						
	17	NA: No sample collected for lithologic description.							
	18		NA						
	19								
810									
	20	cl: Brown to yellowish orange, medium stiff,			Organic			2 2 3 3	Rec 2.0'/2.0' (20-22' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-MW02

Project: Fort McClellan | Geologist: Cindy Levaas/Kyle Wilson | 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)
		medium plasticity, moist CLAY, some fine to medium Sand.			Vapor = 0ppm				
	21		cl						
	22	NA: No sample collected for lithologic description.							
	23		NA						
	24								
805									
	25	NA: No recovery.			Organic Vapor = 0ppm			1 1 1 2	Rec 0'/2.0' (25-27' bgs)
	26		NA						
	27	NA: No sample collected for lithologic description.							
	28		NA						
	29								
800									Groundwater encountered at 30' bgs
	30	cl: Brown, wet, soft CLAY, some fine to medium Sand.			Organic Vapor			0 2 6 50/0.5'	Rec 2.0'/2.0' (30-32' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-230Q-MW02

Project: Fort McClellan | Geologist: Cindy Levaas/Kyle Wilson | 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		cl		= 0ppm				31
	32	gm: Brown, wet, loose, fine SAND and white to gray, fine grained sandstone GRAVEL with calcite cement, reacts slightly with HCl.	gm						Auger refusal at 32' bgs Bottom of borehole at 32' bgs 32

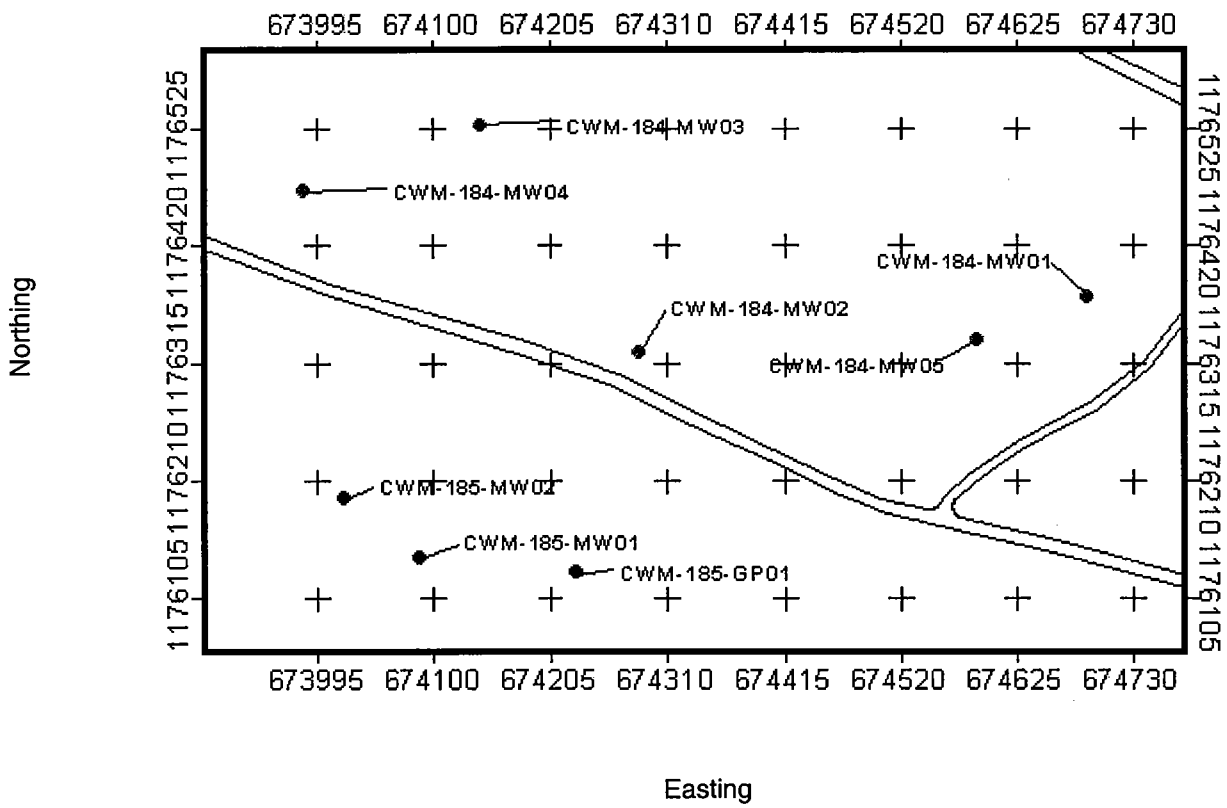
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** CWM-184-MW01
1. Company name: **IT Corporation**	2. Drill Subcontractor: ESN/Miller Drilling Company	Sheet 1 of 6 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 - 4'x2" Acetate-Lined Sampler HSA - 5'x4.25" ID Augers, 2'x2" Steel Split Spoons	8. Hole location: Training Area T-31, Parcel 184 9. Surface elevation (feet above mean sea level): 840.59 10. Date started: 10/16/01 — 11. Date completed: 10/25/01
12. Overburden thickness (feet bgs): >47	15. Depth groundwater encountered (feet bgs): 35
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 32.1 on 10/23/01
14. Total depth of hole (feet bgs): 47	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	SVOCs	NA	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	NA	2" Permanent	NA	C. Levaas/A. Day		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: CWM-184-MW01

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW01

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
840	0–4	sw: Brown to yellowish orange, slightly moist, unconsolidated SAND, little coarse quartz-rich subangular Gravel.	sw		Organic Vapor = 0.0ppm		TL0001		Rec 3.0'/4.0' (0-4' bgs)
	4–5	cl: Brown to yellowish orange, slightly moist, stiff CLAY, trace fine to coarse Sand, little coarse quartz-rich subangular Gravel.	cl		Organic Vapor = 0.0ppm		TL0002		Rec 1.0'/1.0' (4-5' bgs)
835	5–7	cl: Light brown to yellowish orange, hard, dry CLAY, some medium grained Sand, little sandstone, white to yellowish brown Gravel, little Silt.	cl		Organic Vapor = 5.1ppm			25 28 28 22	Direct push refusal at 5' bgs. Rec 2.0'/2.0'1 (5-7' bgs)
	7–9	gc: White to yellowish brown, fine to medium grained, dry sandstone angular GRAVEL, some fine to medium, white to yellowish brown to reddish brown, dry, subangular Sand, little Silt, trace Clay.	gc		Organic Vapor = 5.2ppm			5 54 78 53	Rec 1.9'/2.0' (7-8.9' bgs)
	9–10	NA: No recovery.	NA						
		sc: Yellowish orange to red to light brown to white, dry, dense SAND, some dry, stiff CLAY, little sandstone, white, angular Gravel.			Organic Vapor = 4.5ppm			25 20 22 21	Rec 2.0'/2.0' (9-11' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW01

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
830			sc						
	11	cl: Yellowish orange to red to brown, very stiff, moist CLAY, some Sand, little Silt.			Organic Vapor = 0.0ppm			3 7 10 11	Rec 2.0'/2.0' (11-13' bgs)
	12		cl						
	13	NA: No sample collected for lithologic description.							
	14		NA						
	15	sc: Reddish brown to white to light brown, moist, dense SAND, some yellowish white, angular, sandstone Gravel, some reddish brown, stiff CLAY, little Silt.	sc		Organic Vapor = 0.0ppm			15 12 25 29	Rec 0.6'/2.0' (15-17' bgs)
825		NA: No recovery.							
	16		NA						
	17	NA: No sample collected for lithologic description.							
	18		NA						
	19								
	20	sc: Reddish brown to white to light brown,			Organic			14 13	Rec 2.0'/2.0' (20-22' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW01

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
820		moist, dense SAND, some yellowish white, angular, sandstone Gravel, some reddish brown, stiff CLAY, little Silt.			Vapor = 0.0ppm			12 13	
	21		sc						21
	22	NA: No sample collected for lithologic description.							22
	23		NA						23
	24								24
	25	cl: Light brown to yellowish orange, stiff, moist CLAY, some Sand, trace Silt.			Organic Vapor = 0.0ppm			4 7 5 6	Rec 2.0'/2.0' (25-27' bgs) 25
815									
	26		cl						26
	27	NA: No sample collected for lithologic description.							27
	28		NA						28
	29								29
	30	cl: Yellowish orange to light brown, moist, very stiff CLAY, little coarse grained, white,			Organic Vapor			4 7 8 9	Rec 2.0'/2.0' (30-32' bgs) 30

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW01

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
810		subrounded Sand, trace Silt.			= 0.0ppm				
	31		cl						31
	32	NA: No sample collected for lithologic description.							32
	33		NA						33
	34								34
	35	cl: Very soft, light brown, wet CLAY, trace Sand, trace Silt.	cl		Organic Vapor = 0.0ppm			0 0 0 2	Groundwater encountered at 35' bgs Rec 0.7'/2.0' (35-37' bgs) 35
805		NA: No recovery.							
	36		NA						36
	37	NA: No sample collected for lithologic description.							Spoon drove 1.5' by gravity 37
	38		NA						38
	39								39
	40	cl: Very soft, light brown, wet CLAY, trace Sand, trace Silt.			Organic Vapor =			0 0 4 4	Rec 1.2'/2.0' (40-42' bgs) 40

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW01

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
800			cl		0.0ppm				
	41								41
		NA: No recovery.	NA						
	42	NA: No sample collected for lithologic description.							42
	43		NA						43
	44								44
	45	cl: Very soft, light brown, wet CLAY, trace Sand, trace Silt.	cl		Organic Vapor = 0.0ppm			0 0 2 2	Rec 0.6'/2.0' (45-47' bgs) 45
795		NA: No recovery.							
	46		NA						46
									Bottom of borehole at 47' bgs
	47								47

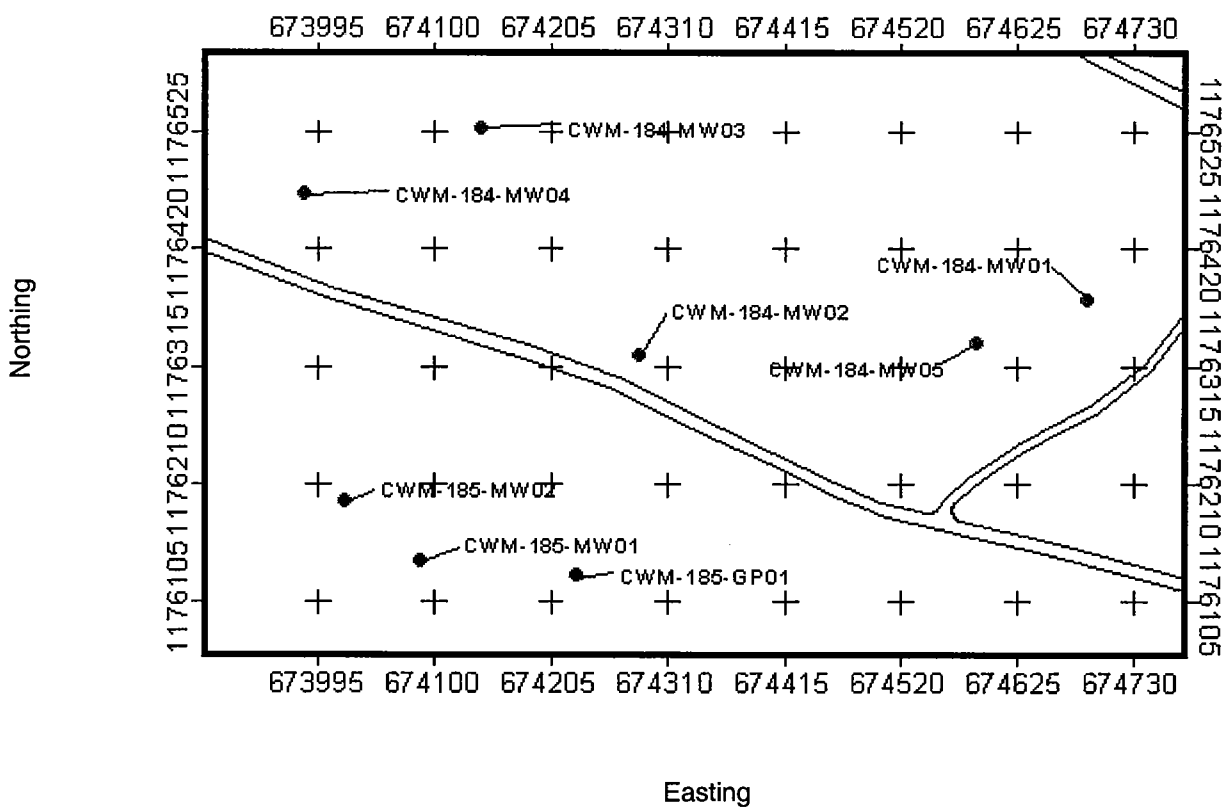
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER CWM-184-MW02
1. Company name: **IT Corporation**	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/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 - 4'x2" Acetate-Lined Sampler HSA - 5'x4.25" ID Augers, 2'x2" Steel Split Spoons	8. Hole location: Training Area T-31, Parcel 184 9. Surface elevation (feet above mean sea level): 827.08 10. Date started: 10/16/01 — 11. Date completed: 10/25/01
12. Overburden thickness (feet bgs): >32	15. Depth groundwater encountered (feet bgs): 25
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 6.7 after 21 hours
14. Total depth of hole (feet bgs): 32	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	SVOCs	NA	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist: C. Levaas/A. Day		
	NA	2" Permanent	NA			

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW02

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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: Yellowish orange, slightly moist, soft to medium stiff CLAY, little fine to coarse Sand.			Organic Vapor = 0.0ppm		TL0003		Rec 4.0'/4.0' (0-4' bgs)
	1								
825	2		cl						
	3								
	4	cl: Yellowish orange, slightly moist, medium stiff CLAY, some fine to coarse Sand.			Organic Vapor = 0.0ppm				Rec 2.0'/2.0' (4-6' bgs)
	5		cl				TL0004		Direct push refusal at 6' bgs
	6	NA: No sample collected for lithologic descriptions.							
820	7		NA						
	8	sc: Yellowish orange to light brown to red to black, fine to medium grained, poorly sorted, moist SAND, some fine to medium grained, subangular sandstone Gravel, little Clay, little Silt.			Organic Vapor = 0.0ppm			3 4 4 12	Rec 2.0'/2.0' (8-10' bgs)
	9		sc						
	10								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW02

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
	11	cl: Yellowish orange to light brown to reddish brown to black to white mottled, very stiff, moist CLAY, some poorly sorted, fine to medium grained, light brown Sand, little Silt, trace light brown, subangular, fine to medium grained sandstone Gravel.	cl		Organic Vapor = 0.0ppm			10 10 14 14	Rec 2.0'/2.0' (10-12' bgs)
815	12	NA: No sample collected for lithologic descriptions.	NA						
	13								
	14								
	15	cl: Light brown to black to reddish brown mottled, stiff, moist CLAY, little poorly sorted, coarse, light brown Sand.	cl		Organic Vapor = 0.0ppm			2 3 8 5	Rec 2.0'/2.0' (15-17' bgs)
	16								
810	17	NA: No sample collected for lithologic descriptions.	NA						
	18								
	19								
	20	cl: Light brown to black to reddish brown			Organic			1 2 3 4	Rec 2.0'/2.0' (20-22' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW02

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
		mottled, stiff, moist CLAY, little poorly sorted, coarse, light brown Sand.			Vapor = 0.0ppm				
	21		cl						
805	22	NA: No sample collected for lithologic descriptions.							
	23		NA						
	24								Groundwater encountered at 25' bgs
	25	ch: Light brown to black, soft, wet CLAY, little poorly sorted, coarse, light brown Sand.			Organic Vapor = 0.0ppm			1 2 2 3	Rec 2.0'/2.0' (25-27' bgs)
	26		ch						
800	27	NA: No sample collected for lithologic descriptions.							
	28		NA						
	29								
	30	ch: Light brown to black, soft, wet CLAY, little poorly sorted, coarse, light brown Sand.			Organic Vapor			0 0 0 1	Rec 2.0'/2.0' (30-32' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW02

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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		ch		= 0.0ppm				31
	32								Bottom of borehole at 32' bgs 32

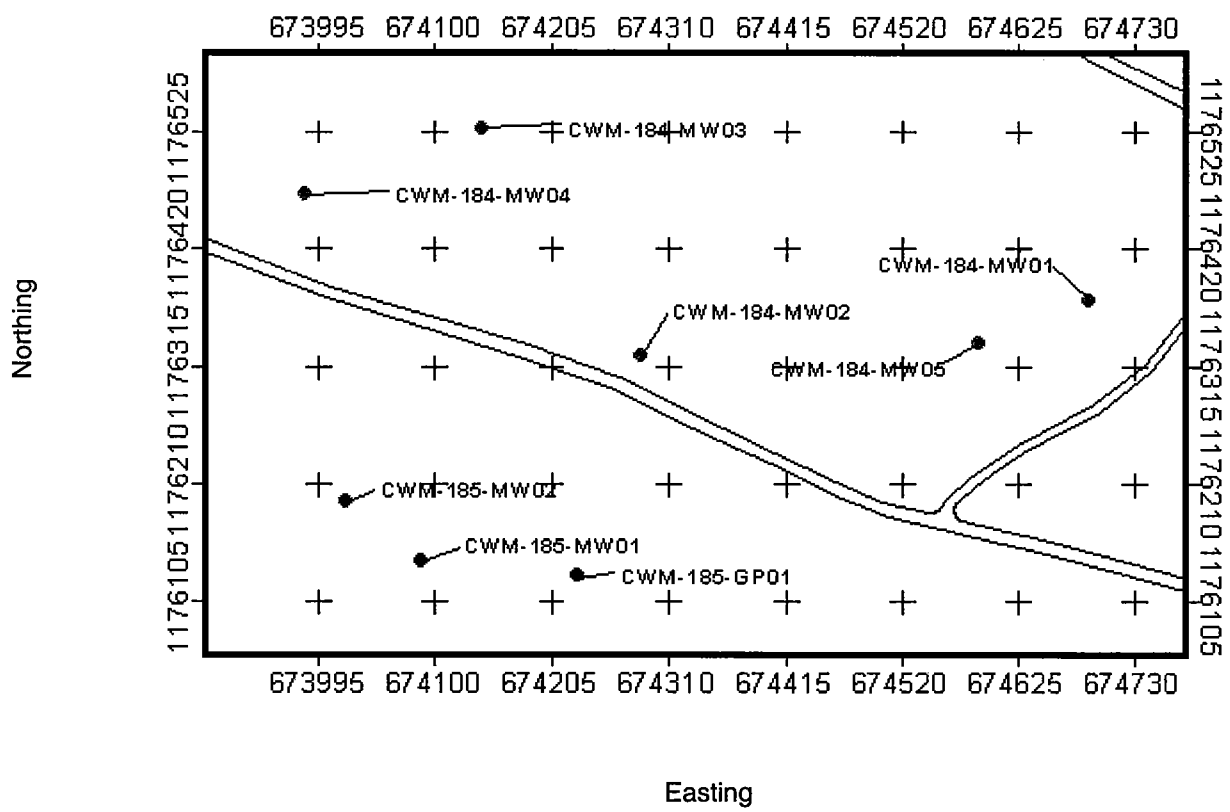
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** CWM-184-MW03
1. Company name: **IT Corporation**	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/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 - 4'x2" Acetate-Lined Sampler HSA - 5'x4.25" ID Augers, 2'x2" Steel Split Spoons	8. Hole location: Training Area T-31, Parcel 184 9. Surface elevation (feet above mean sea level): 828.35 10. Date started: 10/16/01 — 11. Date completed: 10/25/01
12. Overburden thickness (feet bgs): >37	15. Depth groundwater encountered (feet bgs): 25
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 12.8 after 21 hours
14. Total depth of hole (feet bgs): 37	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	SVOCs	NA	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	NA	2" Permanent	NA	C. Levaas/A. Day		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: CWM-184-MW03

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW03

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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 orange, slightly moist, stiff CLAY, little coarse to fine Sand.	cl		Organic Vapor = 0.0ppm		TL0005		Rec 3.0'/4.0' (0-4' bgs)
	1								
	2								
	3								
825									
	4	cl: Brown to orange, slightly moist, stiff CLAY, little fine to coarse Sand.	cl		Organic Vapor = 0.0ppm		TL0006		Rec 1.0'/1.0' (4-5' bgs) Direct push refusal at 5' bgs
	5	cl: Yellowish orange to light brown to light gray, very stiff, dry CLAY, some coarse quartz Sand, little Silt. (White to light brown hard, subangular, medium grained quartzite Gravel in shoe.)	cl		Organic Vapor = 0.0ppm			6 13 10 32	Rec 1.7'/2.0' (5-7' bgs)
	6								
		NA: No recovery.	NA						
	7	cl: Light brown to yellowish orange, very stiff, dry CLAY, some coarse quartz Sand, little Silt.	cl		Organic Vapor = 0.0ppm			56 40 50 68	Rec 1.9'/2.0' (7-9' bgs)
	8	gm: Pink to white to red to yellowish orange, dry, coarse grained, angular GRAVEL, some pink to white to red to yellowish orange, dry, medium grained, poorly sorted Sand, little Silt.	gm						
820									
	9	NA: No recovery.	NA		Organic Vapor = 0.0ppm			105/0.4'	Rec 0.4'/0.4' (9-9.4' bgs)
		gm: Pink to white to red to yellowish orange, dry, coarse grained, angular GRAVEL, some pink to white to red to yellowish orange, dry, medium grained, poorly sorted Sand, little Silt.	gm						
	10	NA: No sample collected for lithologic							

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW03

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
		description.	NA						
	11	sc: Light brown to yellowish orange to reddish brown to black to orange, medium dense, moist, medium grained SAND, some Clay, little Silt, little pink to light brown, medium to fine grained, subangular, quartzite Gravel.	sc		Organic Vapor = 0.0ppm			2 13 15 14	Rec 2.0'/2.0' (11-13' bgs)
	12								
	13	NA: No sample collected for lithologic description.	NA						
815									
	14								
	15	cl: Light brown to yellowish orange to yellowish white to black mottled, moist, stiff CLAY, little medium grained, subrounded, white to gray, poorly sorted Sand, trace Silt.	cl		Organic Vapor = 0.0ppm			3 4 4 5	Rec 2.0'/2.0' (15-17' bgs)
	16								
	17	NA: No sample collected for lithologic description.	NA						
	18								
810									
	19								
	20	cl: Light brown to yellowish orange to yellowish			Organic			2 3 4 4	Rec 2.0'/2.0' (20-22' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW03

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
		white to black mottled, moist, stiff CLAY, little medium grained, subrounded, white to gray, poorly sorted Sand, trace Silt.			Vapor = 0.0ppm				
	21		cl						21
	22	NA: No sample collected for lithologic description.							22
	23								23
805			NA						
	24								24
									Groundwater encountered at 25' bgs
	25	ch: Light brown to yellowish orange to yellowish white to black to reddish brown mottled, wet, medium stiff CLAY, little subrounded, white to gray, medium grained, poorly sorted Sand, little Silt, trace medium grained, yelllowish brown, subrounded, sandstone Gravel. (One piece of Gravel had a black ring and yellowish white core.)			Organic Vapor = 0.0ppm			2 2 2 3	Rec 2.0'/2.0' (25-27' bgs) 25
	26		ch						26
	27	NA: No sample collected for lithologic description.							27
	28								28
800			NA						
	29								29
	30	ch: Light brown to yellowish orange to yellowish white to black to reddish brown			Organic Vapor			0 0 0 2	Rec 0.9'/2.0' (30-32' bgs) 30

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW03

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
		mottled, wet, medium stiff CLAY, little subrounded, white to gray, medium grained, poorly sorted Sand, little Silt, trace medium grained, yelllowish brown, subrounded, sandstone Gravel.	ch		= 0.0ppm				
	31	NA: No recovery.	NA						
	32	NA: No sample collected for lithologic description.							
795	33		NA						
	34								
	35	ch: Light brown to yellowish orange to yellowish white to black to reddish brown mottled, wet, medium stiff CLAY, little subrounded, white to gray, medium grained, poorly sorted Sand, little Silt, trace medium grained, yelllowish brown, subrounded, sandstone Gravel.			Organic Vapor = 0.0ppm			0 0 0 1	Rec 2.0'/2.0' (35-37' bgs)
	36		ch						Spoonhole caved to 37' bgs
	37								Bottom of borehole at 37' bgs

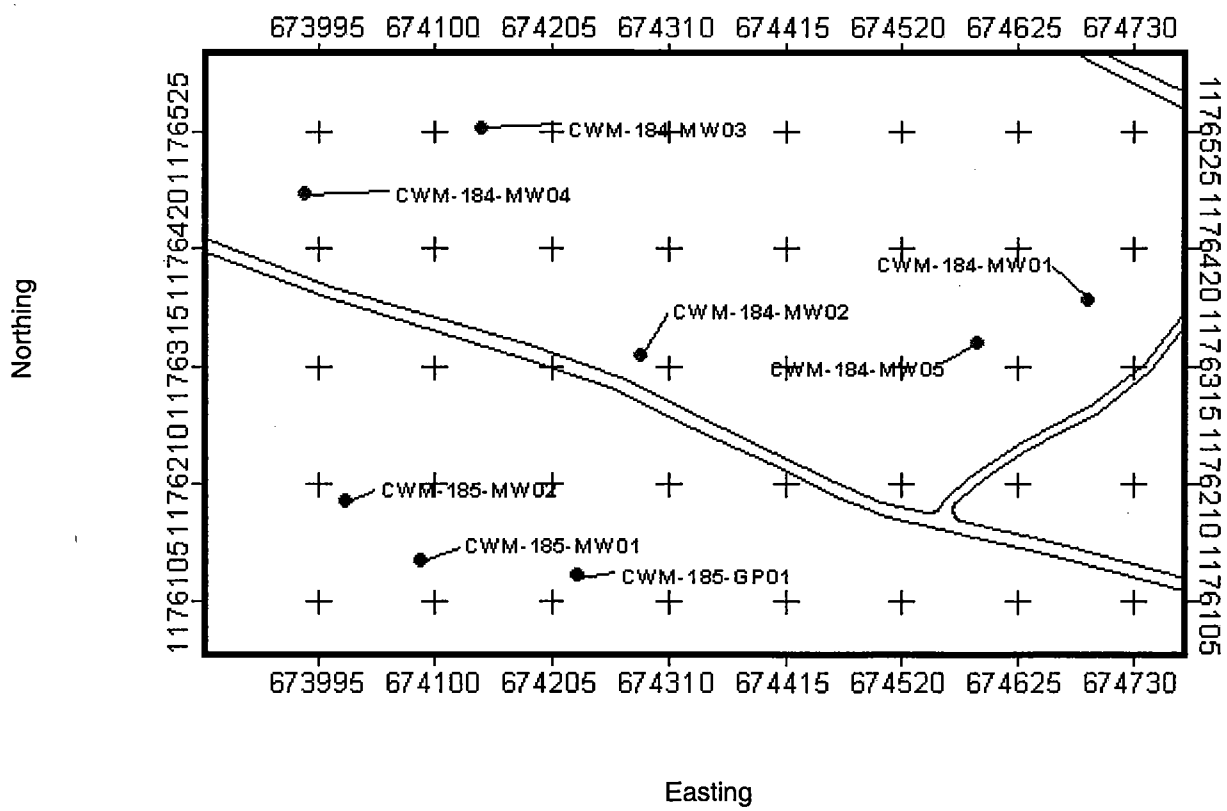
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER CWM-184-MW04
1. Company name: **IT Corporation**	2. Drill Subcontractor: ESN/Miller Drilling Co.	Sheet 1 of 4 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 - 4'x2" Acetate-Lined Sampler HSA - 5'x4.25" ID Augers, 2'x2" Steel Split Spoons	8. Hole location: Training Area T-31, Parcel 184 9. Surface elevation (feet above mean sea level): 821.95 10. Date started: 10/16/01 — 11. Date completed: 10/29/01
12. Overburden thickness (feet bgs): >22	15. Depth groundwater encountered (feet bgs): 13
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 5.9 after 21 hours
14. Total depth of hole (feet bgs): 22	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	SVOCs	NA	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	NA	2" Permanent	NA	C. Levaas/A. Day		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: CWM-184-MW04

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW04

Project: Fort McClellan | Geologist: C. Levaas/A. Day | Sheet 2 of 4 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	NA: Light brown to yellowish orange, slightly moist, medium stiff to stiff SAND, some Clay.			Organic Vapor = 0.0ppm		TL0007		Rec 3.25'/3.25' (0-3.25' bgs)
	1		NA						
820	2						TL0008		
	3								Direct push refusal at 3.25' bgs
		cl: Brown to light brown to yellowish orange to reddish brown, moist, very stiff CLAY, some medium grained, subrounded, dense Sand, little Silt.	cl		Organic Vapor = 0.0ppm			16 27 30 34	Rec 0.8'/2.0' (3-5' bgs)
	4	gm: Pink to yellowish orange to light brown, fine grained, quartzite GRAVEL, angular, some medium to fine grained, pink to orange coarse Sand.	gm						
		NA: No recovery.	NA						
	5	cl: Light brown to yellowish orange to red, very stiff, moist CLAY, some fine grained Sand, little Silt, little yellow to red, highly weathered, stained, subangular, quartzite, fine grained Gravel.	cl		Organic Vapor = 0.0ppm			50 24 26 28	Rec 1.4'/2.0' (5-7' bgs)
	6	NA: No recovery.	NA						
815	7	cl: Light brown to yellowish orange to reddish brown to black mottled, very stiff, moist CLAY, some yellowish orange, fine to medium grained, poorly sorted Sand, little light brown, fine grained, subangular, quartzite Gravel.			Organic Vapor = 0.0ppm			40 33 52 50	Rec 2.0'/2.0' (7-9' bgs)
	8		cl						
	9	cl: Light brown to yellowish orange to black to reddish brown, moist, medium stiff CLAY, little white to black, medium grained Sand, little Silt.			Organic Vapor = 0.0ppm			1 2 2 4	Rec 2.0'/2.0' (9-11' bgs)
	10								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW04

Project: Fort McClellan | Geologist: C. Levaas/A. Day | Sheet 3 of 4 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						
	11	ch: Light brown to yellowish white to black moist to wet, medium stiff CLAY, little white to black to gray, medium grained Sand, little Silt.			Organic Vapor = 0.0ppm			2 2 3 4	Rec 2.0'/2.0' (11-13' bgs)
810	12		ch						
	13	NA: No sample collected for lithologic description.							Groundwater encountered at 13' bgs
	14		NA						
	15	ch: Yellowish orange to light brown, wet, soft CLAY, some medium grained Sand.	ch		Organic Vapor = 0.0ppm			0 0 2 2	Rec 0.1'/2.0' (15-17' bgs)
		NA: No recovery.							
	16		NA						
805	17	NA: No sample collected for lithologic description.							
	18		NA						
	19								
	20	ch: Yellowish orange to light brown, wet, soft			Organic			0 0 1 1	Rec 2.0'/2.0' (20-22' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW04

Project: Fort McClellan | Geologist: C. Levaas/A. Day | Sheet 4 of 4 sheets

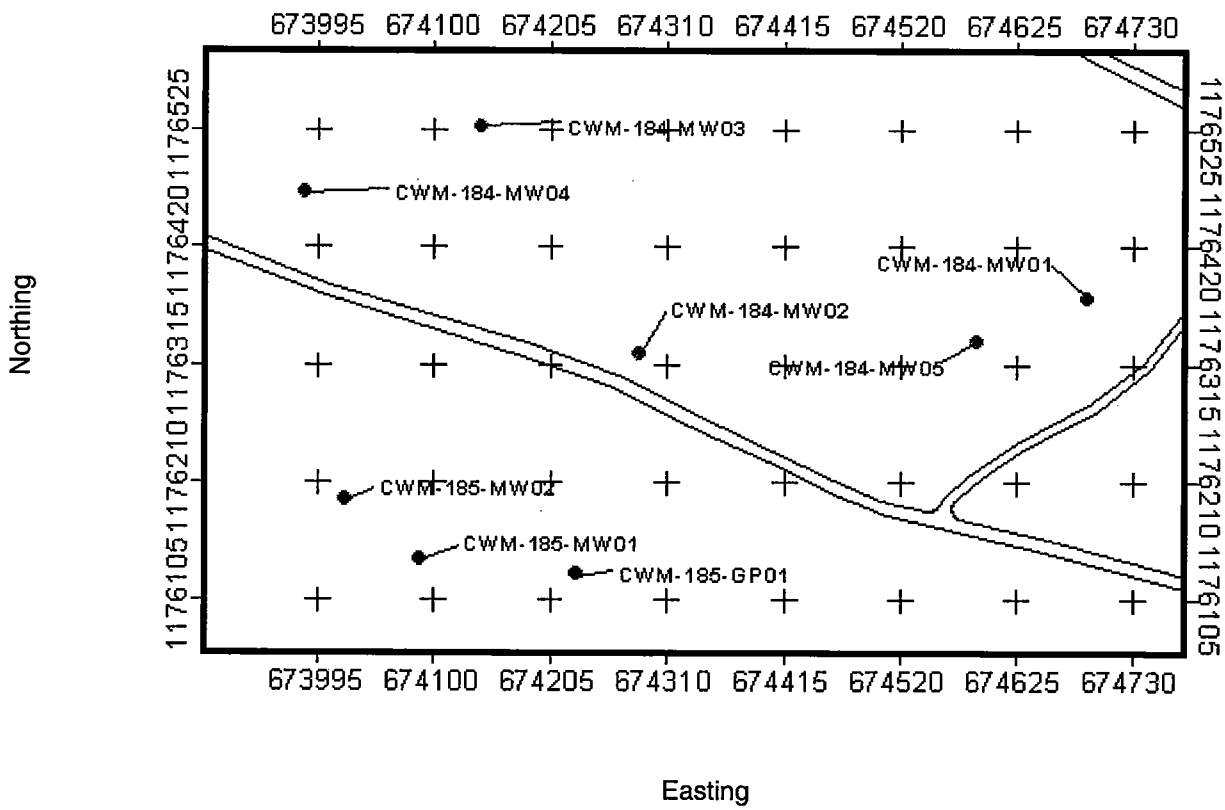
Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
		CLAY, some medium grained Sand. (Small piece of metal (iron) at ~20' bgs, caused high hits on PID, the rest of sample read ~4.0 ppm).			Vapor = 13.2ppm				
	21		ch						21
									Bottom of borehole at 22' bgs
800	22								22

HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER CWM-184-MW05
1. Company name: **IT Corporation**	2. Drill Subcontractor: ESN/Miller Drilling Company	Sheet 1 of 6 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 - 4'x2" Acetate-Lined Sampler HSA - 5'x4.25" ID Augers, 2'x2" Steel Split Spoons	8. Hole location: Training Area T-31, Parcel 184 9. Surface elevation (feet above mean sea level): 837.39 10. Date started: 10/16/01	11. Date completed: 10/25/01
12. Overburden thickness (feet bgs): >50	15. Depth groundwater encountered (feet bgs): 45	
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 20.3 after 20 hours	
14. Total depth of hole (feet bgs): 50	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	SVOCs	NA	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	NA	2" Permanent	NA	C. Levaas/A. Day		

LOCATION SKETCH/COMMENTS:



bgs= below ground surface
NA = Not applicable

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW05

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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	sc: Light brown to yellowish orange, moist, fine to coarse SAND, some Clay, little subangular, coarse, quartz-rich Gravel.					TL0009		Rec 3.75'/4.0' (0-4' bgs)
	1								
	2		sc						
835									
	3								
	4	sc: Yellowish orange, moist, fine to coarse SAND, some Clay, little subangular, coarse, quartz-rich Gravel.							Rec 4.0'/4.0' (4-8' bgs)
	5								
	6		sc						
	7								
830							TL0010		Direct push refusal at 8' bgs
	8	sc: Yellowish orange to light brown to pink to white to reddish brown, dense, fine to medium, poorly sorted, moist SAND, some white to yellowish brown, fine to medium grained sandstone Gravel, little Silt, little Clay.			Organic Vapor = 1.8ppm			13 20 18 26	Rec 2.0'/2.0' (8-10' bgs)
	9		sc						
	10								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW05

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
		sc: Yellowish orange to light brown to pink to white to reddish brown, dense, fine to medium, poorly sorted, moist SAND, some white to yellowish brown, fine to medium grained sandstone Gravel, little Silt, little Clay.	sc		Organic Vapor = 1.6ppm			0 8 19 17	Rec 1.6'/2.0' (10-12' bgs)
	11								
		NA: No recovery.	NA						
	12	NA: No sample collected for lithologic description.	NA						
825									
	13	sc: Yellowish orange to light brown to pink to white to reddish brown, dense, fine to medium, poorly sorted, moist SAND, some white to yellowish brown, fine to medium grained sandstone Gravel, little Silt, little Clay.	sc		Organic Vapor = 2.4ppm			18 19 17 11	Rec 2.0'/2.0' (13-15' bgs)
	14								
	15	NA: No sample collected for lithologic description.	NA						
	16								
	17								
820									
	18	cl: Light brown to yellowish orange, moist, very stiff CLAY, some fine to medium, poorly sorted Sand, little Silt, little yellowish brown, sandstone Gravel.	cl		Organic Vapor = 0.5ppm			6 10 7 10	Rec 1.2'/2.0' (18-20' bgs)
	19								
		NA: No recovery.	NA						
	20	NA: No sample collected for lithologic							

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW05

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
		description.							
	21								21
			NA						
	22								22
815									
	23	cl: Light brown to yellowish orange, moist, very stiff CLAY, some fine to medium, poorly sorted Sand, little Silt, little yellowish brown, sandstone Gravel.			Organic Vapor = 0.0ppm			4 7 8 11	Rec 2.0'/2.0' (23-25' bgs) 23
	24		cl						24
	25	NA: No sample collected for lithologic description.							25
	26								26
			NA						
	27								27
810									
	28	cl: Light brown to yellowish orange, moist, very stiff CLAY, some fine to medium, poorly sorted Sand, little Silt, little yellowish brown, sandstone Gravel.			Organic Vapor = 1.3ppm			4 6 7 9	Rec 2.0'/2.0' (28-30' bgs) 28
	29		cl						29
	30	NA: No sample collected for lithologic description.							30

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW05

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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		NA						
	32								
805									
	33	cl: Light brown to yellowish orange, moist, very stiff CLAY, some fine to medium, poorly sorted Sand, little Silt, little yellowish brown, sandstone Gravel.	cl		Organic Vapor = 0.0ppm			2 3 4 6	Rec 2.0'/2.0' (33-35' bgs)
	34								
	35	NA: No sample collected for lithologic description.	NA						
	36								
	37								
800									
	38	cl: Light brown, moist, stiff CLAY, little Sand.	cl		Organic Vapor = 0.0ppm			3 3 6 8	Rec 2.0'/2.0' (38-40' bgs)
	39								
	40	NA: No sample collected for lithologic description.							

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-184-MW05

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
	41		NA						
795	42								
	43	cl: Light brown, moist, medium stiff CLAY, little Sand. (Bottom of spoon is wet.)	cl		Organic Vapor = 0.0ppm			2 3 4 5	Rec 2.0'/2.0' (43-45' bgs)
	44								
	45	NA: No sample collected for lithologic description.	NA						Groundwater encountered at 45' bgs
	46								
790	47								
	48	sc: Light brown, wet, loose SAND, some sandstone Gravel, some Clay.	sc		Organic Vapor = 0.0ppm			6 18 3 0	Rec 1.6'/2.0' (48-50' bgs)
	49								
	50	NA: No recovery.	NA						Bottom of borehole at 50' bgs

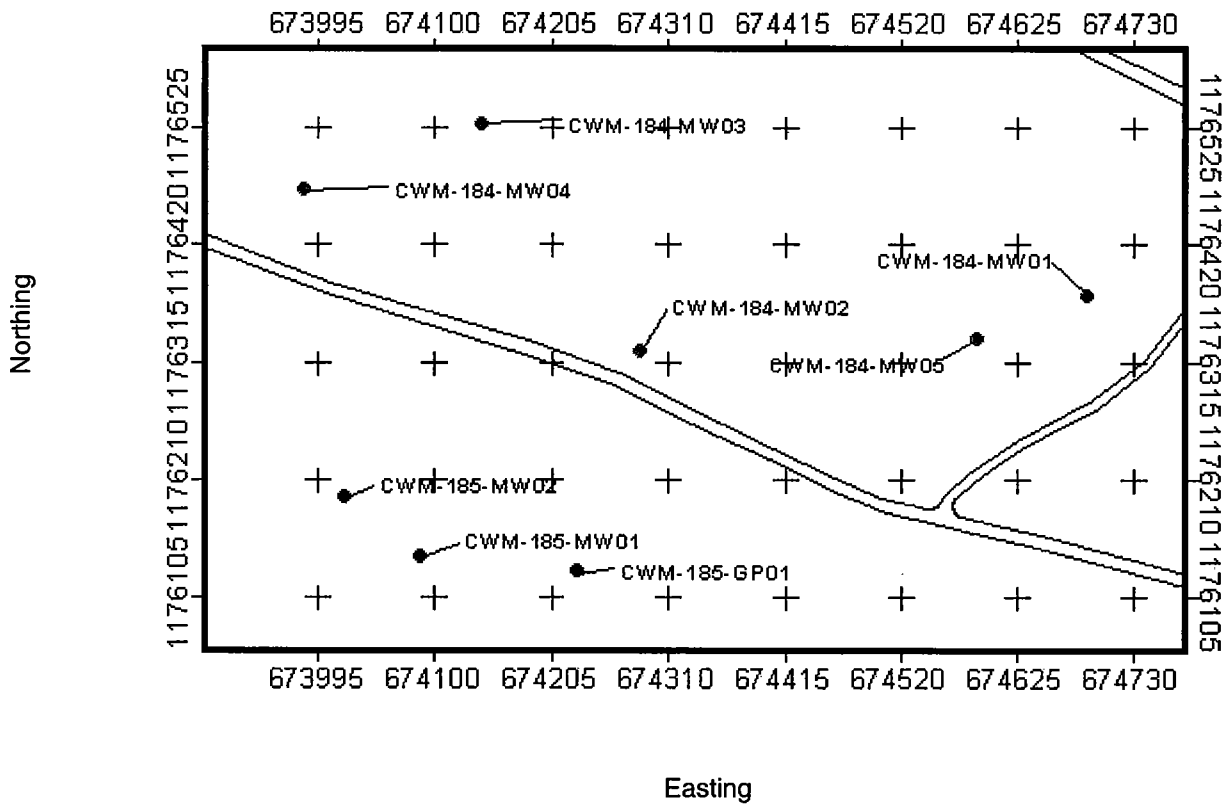
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** CWM-185-MW01
1. Company name: **IT Corporation**	2. Drill Subcontractor: ESN/Miller Drilling	Sheet 1 of 4 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 - 4'x2" Acetate-Lined Sampler HSA - 5'x4.25" ID Augers, 2'x2" Steel Split Spoons	8. Hole location: Training Area T-31, Parcel 185 9. Surface elevation (feet above mean sea level): 820.26 10. Date started: 10/16/01 — 11. Date completed: 10/29/01
12. Overburden thickness (feet bgs): >27	15. Depth groundwater encountered (feet bgs): 15
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 5.3 after 20 hours
14. Total depth of hole (feet bgs): 27	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	SVOCs	NA	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	NA	2" Permanent	NA	C. Levaas/A. Day		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: CWM-185-MW01

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-185-MW01

Project: Fort McClellan | Geologist: C. Levaas/A. Day | Sheet 2 of 4 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)
820	0	sc: Olive-gray to light gray, slightly moist, fine to coarse SAND, some Clay.	sc		Organic Vapor = 0.0ppm		TF0001		Rec 4.0'/4.0' (0-4' bgs)
	1								
	2								
	3								
	4	cl-sc: Light gray to yellowish orange, moist, fine to coarse SAND and CLAY, little coarse, quartz-rich, subangular Gravel.	cl-sc		Organic Vapor = 0.0ppm		TF0002		Rec 1.0'/1.0' (4-5' bgs)
815	5	sc: Light brown to yellowish orange to reddish brown to gray to yellowish white, fine to medium grained SAND, some yellowish orange to gray to brown, stiff, moist Clay, little light brown to yellowish orange, fine grained, angular, quartzite Gravel, little Silt.	sc		Organic Vapor > 2000 ppm			13 30 35 13	Direct push refusal at 5' bgs. Rec 1.7'/2.0' (5-7' bgs)
	6								
		NA: No recovery.	NA						
	7	cl: Light brown to yellowish orange, stiff, moist CLAY, some medium grained, yellowish orange Sand, little yellowish orange to white, subangular, quartzite Gravel.	cl		Organic Vapor > 100ppm			7 8 10 22	Rec 1.0'/2.0' (7-9' bgs)
	8	NA: No recovery.	NA						
	9	ch: Light brown to yellowish orange, stiff, moist CLAY, some medium grained, yellowish orange Sand, little yellowish orange to white, subangular, quartzite Gravel.			Organic Vapor > 1000 ppm			20 25 13 10	Rec 2.0'/2.0' (9-11' bgs)
	10								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-185-MW01

Project: Fort McClellan | Geologist: C. Levaas/A. Day | Sheet 3 of 4 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)
810			ch						
	11	ch: Light brown to yellowish orange to black mottled, moist, stiff CLAY, little yellowish orange to light brown to white, medium grained Sand, trace Silt, trace white, coarse grained, subangular, sandstone Gravel.			Organic Vapor < 100ppm			6 10 9 10	Rec 2.0'/2.0' (11-13' bgs)
	12		ch						
	13	NA: No sample collected for lithologic description.							
	14		NA						
									Groundwater encountered at ~15' bgs
	15	ch: Light brown to black mottled, soft, very wet CLAY, some yellowish white, medium grained Sand, little Silt.			Organic Vapor < 100ppm			1 1 2 2	Rec 0.5'/2.0' (15-17' bgs)
805									
	16		ch						
	17	NA: No sample collected for lithologic description.							
	18								
			NA						
	19								
	20	ch: Light brown to black mottled, soft, very wet			Organic			0 1 8 7	Rec 1.7'/2.0' (20-21.7' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-185-MW01

Project: Fort McClellan | Geologist: C. Levaas/A. Day | Sheet 4 of 4 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)
800		CLAY, some yellowish white, medium grained Sand, little Silt.	ch		Vapor < 10.0ppm				
	21								21
		dol: White to gray, fine grained, wet, highly weathered, severely fractured DOLOMITE, bedded at ~45 degrees.	dol						
	22	NA: No recovery.	NA						22
		NA: No sample collected for lithologic description.							
	23								23
			NA						
	24								24
	25								25
795		dol: White to gray, fine grained, wet, highly weathered, severely fractured DOLOMITE, bedded at ~45 degrees.	dol		Organic Vapor < 10.0ppm			0 1 1 3	Rec 0.1'/2.0' (25-27' bgs)
		NA: No recovery.							
	26		NA						26
									Bottom of borehole at 27' bgs
	27								27

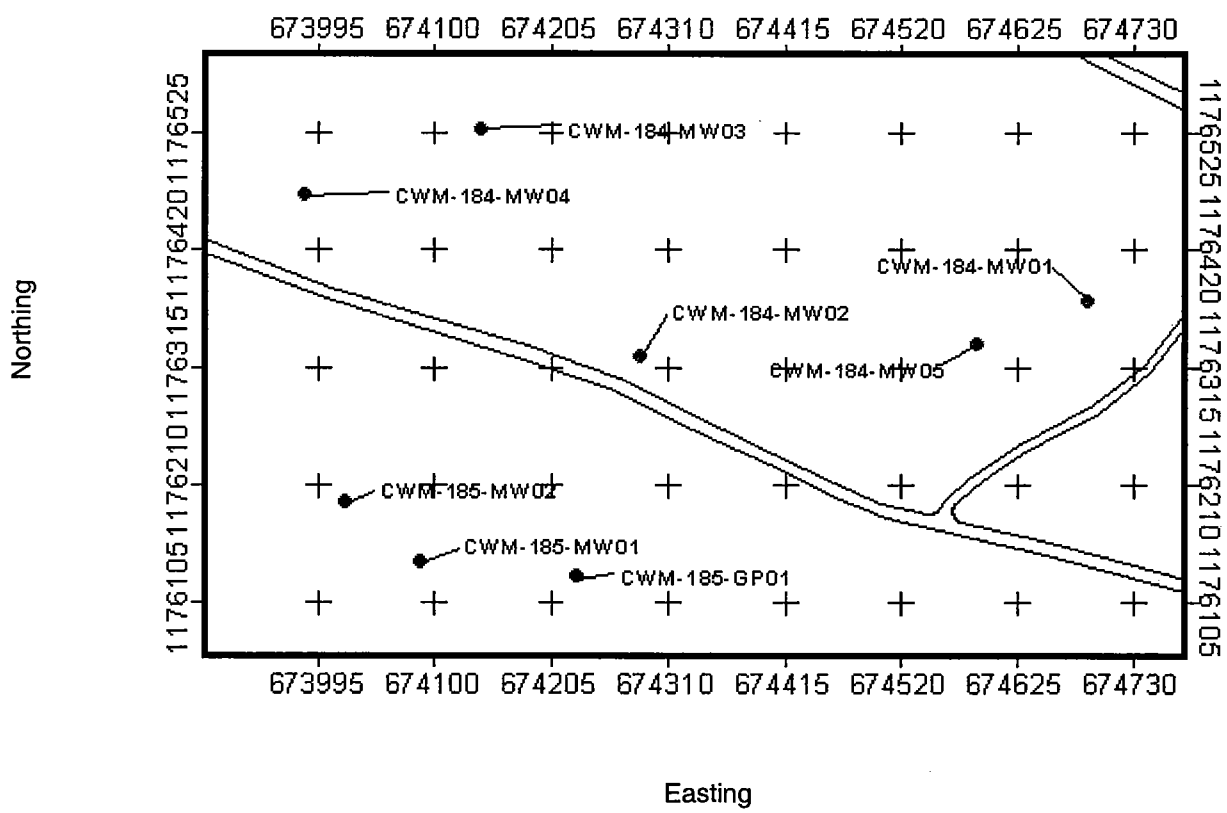
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER CWM-185-MW02
1. Company name: **IT Corporation**	2. Drill Subcontractor: ESN/Miller Drilling	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 - 4'x2" Acetate-Lined Sampler HSA - 5'x4.25" ID Augers, 2'x2" Steel Split Spoons	8. Hole location: Training Area T-31, Parcel 185 9. Surface elevation (feet above mean sea level): 821.95 10. Date started: 10/16/01 — 11. Date completed: 10/29/01
12. Overburden thickness (feet bgs): >20	15. Depth groundwater encountered (feet bgs): 4
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 4.6 after 20 hours
14. Total depth of hole (feet bgs): 20	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	SVOCs	NA	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	NA	2" Permanent	NA	C. Levaas/A. Day		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: CWM-185-MW02

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-185-MW02

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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	sc: Brown to light gray, wet, fine to coarse SAND, little subangular, coarse, quartz-rich Gravel.	sc		Organic Vapor = 0.3ppm		TF0003		Rec 1.0'/1.0' (0-1' bgs)
	1	sc: Olive-gray to light gray to yellowish orange, moist to wet, fine to coarse SAND, little Clay.	sc		Organic Vapor = 0.0ppm		TF0004 TF0005		Rec 2.2'/2.2' (1-3.2' bgs)
820	2								
	3	sc: Yellowish orange to white to olive-gray to orange to light brown, wet, medium dense, fine to medium grained SAND, some wet, yellowish orange to light brown Clay, little Silt, little white, medium grained, subangular, sandstone Gravel.	sc		Organic Vapor < 20ppm			12 10 25 30	Direct push refusal at 3.2' bgs Rec 1.5'/2.0' (2-4' bgs)
		NA: No recovery.	NA						
	4	sc: Yellowish orange to white to olive-gray to orange to light brown, wet, medium dense, fine to medium grained SAND, some wet, yellowish orange to light brown Clay, little Silt, little white, medium grained, subangular, sandstone Gravel.	sc		Organic Vapor = 20ppm			47 26 30 33	Groundwater encountered at 4' bgs Rec 1.7'/2.0' (4-6' bgs)
	5								
		NA: No recovery.	NA						
	6	sc: Yellowish orange to white to olive-gray to orange to light brown, wet, medium dense, fine to medium grained SAND, some wet, yellowish orange to light brown Clay, little Silt, little white, medium grained, subangular, sandstone Gravel.	sc					32 38 54 45	Rec 1.7'/2.0' (6-8' bgs)
815	7								
		NA: No recovery.	NA						
	8	sc: Yellowish orange to white to olive-gray to orange to light brown, wet, medium dense, fine to medium grained SAND, some wet, yellowish orange to light brown Clay, little Silt, little white, medium grained, subangular, sandstone Gravel.	sc		Organic Vapor > 20ppm			25 35 51 38	Rec 1.5'/2.0' (8-10' bgs)
	9								
		NA: No recovery.	NA						
	10								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: CWM-185-MW02

Project: Fort McClellan | Geologist: C. Levaas/A. Day | 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)
	11	sc: Yellowish orange to white to olive-gray to orange to light brown, wet, medium dense, fine to medium grained SAND, some wet, yellowish orange to light brown Clay, little Silt, little white, medium grained, subangular, sandstone Gravel.	sc		Organic Vapor = 0.3ppm			27 26 30 33	Rec 2.0'/2.0' (10-12' bgs)
810	12	NA: No sample collected for lithologic description.	NA						
	13	ch: Light brown, wet, soft CLAY, some white to yellowish orange, medium grained Sand.	ch		Organic Vapor = 0.0ppm			0 1 2 1	Rec 0.5'/2.0' (13-15' bgs)
	14	NA: No recovery.	NA						
	15	NA: No sample collected for lithologic description.	NA						
805	17								
	18	ch: Light brown, wet, soft CLAY, some white to yellowish orange, medium grained Sand, some subangular, fine grained, light brown to pink, quartzite Gravel.	ch		Organic Vapor = 2.0ppm			4 8 2 1	Rec 2.0'/2.0' (18-20' bgs)
	19								
	20								Bottom of borehole at 20' bgs

WELL CONSTRUCTION LOGS

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Miller Drilling Company
DRILLER: Glen Bilbrey
IT FIELD REPRESENTATIVE: Nicole Badon

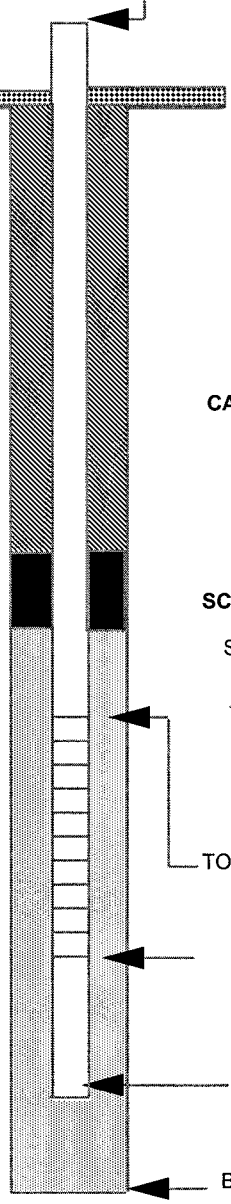
WELL NO: HR-230Q-MW01
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 17-JUN-02
NORTHING: 1175910.61
EASTING: 674069.29
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 818.56

TOP of WELL CASING or RISER PIPE
EL* 820.64 STICKUP 2.08

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: 2

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: 5

TOP OF SCREENED INTERVAL
EL* 806.56 DEPTH 12

BOTTOM of SCREENED INTERVAL
EL* 791.56 DEPTH 27

BOTTOM of SUMP and WELL
EL* 791.56 DEPTH 27

BOTTOM of BOREHOLE
EL* 791.56 DEPTH 27

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
IT FIELD REPRESENTATIVE: Kyle Wilson

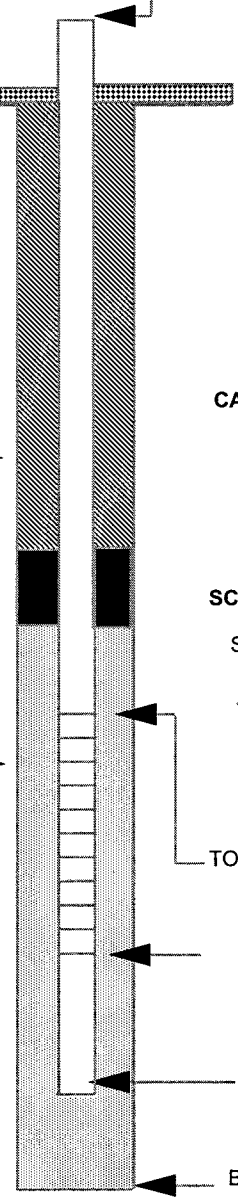
WELL NO: HR-230Q-MW02
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 19-JUN-02
NORTHING: 1175805.09
EASTING: 674560.39
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 829.71

TOP of WELL CASING or RISER PIPE
EL* 831.85 STICKUP 2.14

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: 9

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: 11.6

TOP OF SCREENED INTERVAL
EL* 812.71 DEPTH 17

BOTTOM of SCREENED INTERVAL
EL* 797.71 DEPTH 32

BOTTOM of SUMP and WELL
EL* 797.71 DEPTH 32

BOTTOM of BOREHOLE
EL* 797.71 DEPTH 32

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
IT FIELD REPRESENTATIVE: Kyle Wilson

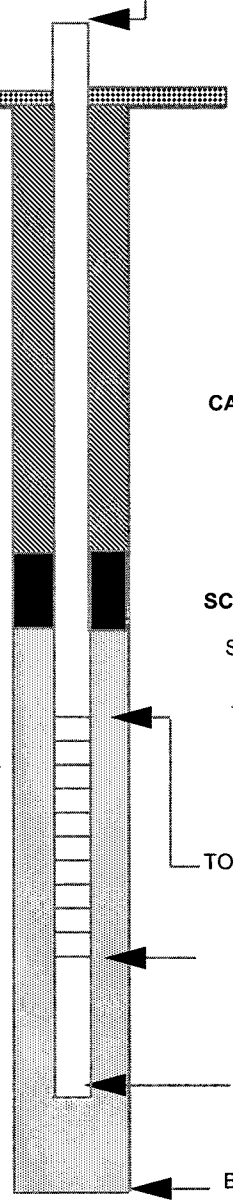
WELL NO: HR-230Q-MW03
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 19-JUN-02
NORTHING: 1175950.61
EASTING: 674880.74
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 837.26

TOP of WELL CASING or RISER PIPE
EL* 839.37 STICKUP 2.11

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: 12.8

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: 17

TOP OF SCREENED INTERVAL
EL* 814.66 DEPTH 22.6

BOTTOM of SCREENED INTERVAL
EL* 794.66 DEPTH 42.6

BOTTOM of SUMP and WELL
EL* 794.66 DEPTH 42.6

BOTTOM of BOREHOLE
EL* 794.66 DEPTH 42.6

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 Co.
DRILLER: Glen Bilbrey
IT FIELD REPRESENTATIVE: Adam Day

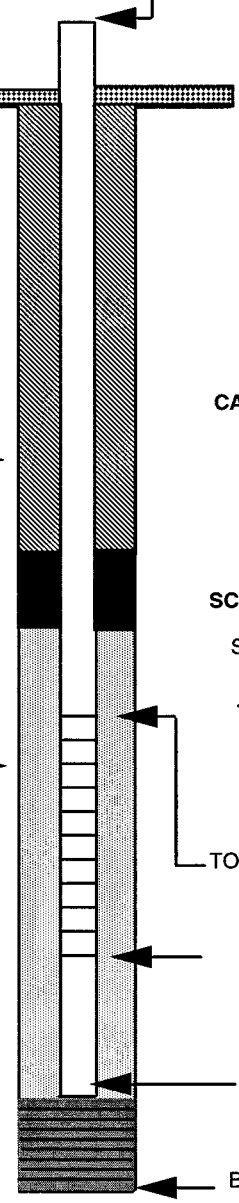
WELL NO: CWM-184-MW01
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 22-OCT-01
NORTHING: 1176371.46
EASTING: 674687.71
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 840.59

TOP of WELL CASING or RISER PIPE
EL* 842.8 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: 23

FILTER PACK
TYPE of SAND PACK AROUND SCREEN: Sand No 1
TOP OF SAND PACK: 25

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* 810.59 DEPTH 30

BOTTOM of SCREENED INTERVAL
EL* 795.59 DEPTH 45

BOTTOM of SUMP and WELL
EL* 795.59 DEPTH 45

BOTTOM of BOREHOLE
EL* 793.59 DEPTH 47

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 Co.
DRILLER: Glen Bilbrey
IT FIELD REPRESENTATIVE: Adam Day

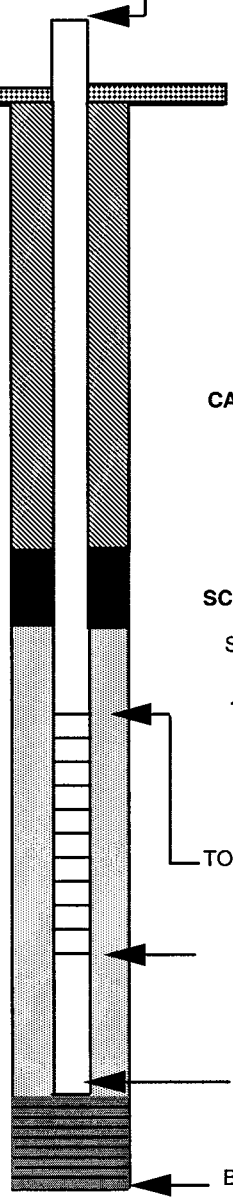
WELL NO: CWM-184-MW02
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 25-OCT-01
NORTHING: 1176321.26
EASTING: 674285.24
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 827.08

TOP of WELL CASING or RISER PIPE
EL* 829.17 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: 7

FILTER PACK
TYPE of SAND PACK AROUND SCREEN: Sand No 1
TOP OF SAND PACK: 10

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* 812.08 DEPTH 15

BOTTOM of SCREENED INTERVAL
EL* 797.08 DEPTH 30

BOTTOM of SUMP and WELL
EL* 797.08 DEPTH 30

BOTTOM of BOREHOLE
EL* 795.08 DEPTH 32

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 Co.
DRILLER: Glen Bilbrey
IT FIELD REPRESENTATIVE: Adam Day

WELL NO: CWM-184-MW03
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 25-OCT-01
NORTHING: 1176526.15
EASTING: 674141.84
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 828.35

TOP of WELL CASING or RISER PIPE
EL* 830.4 STICKUP N/A

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: 12

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: 15

TOP OF SCREENED INTERVAL
EL* 808.35 DEPTH 20

BOTTOM of SCREENED INTERVAL
EL* 793.35 DEPTH 35

BOTTOM of SUMP and WELL
EL* 793.35 DEPTH 35

BOTTOM of BOREHOLE
EL* 791.35 DEPTH 37

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 Co.
DRILLER: Glen Bilbrey
IT FIELD REPRESENTATIVE: Adam Day

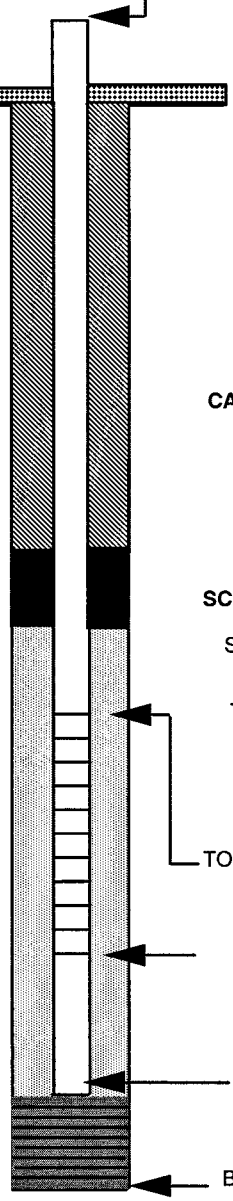
WELL NO: CWM-184-MW04
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 29-OCT-01
NORTHING: 1176466.11
EASTING: 673981.59
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 821.95

TOP of WELL CASING or RISER PIPE
EL* 824.2 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: 2

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* 811.95 DEPTH 10

BOTTOM of SCREENED INTERVAL
EL* 801.95 DEPTH 20

BOTTOM of SUMP and WELL
EL* 801.95 DEPTH 20

BOTTOM of BOREHOLE
EL* 799.95 DEPTH 22

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 Co.
DRILLER: Glen Bilbrey
IT FIELD REPRESENTATIVE: Adam Day

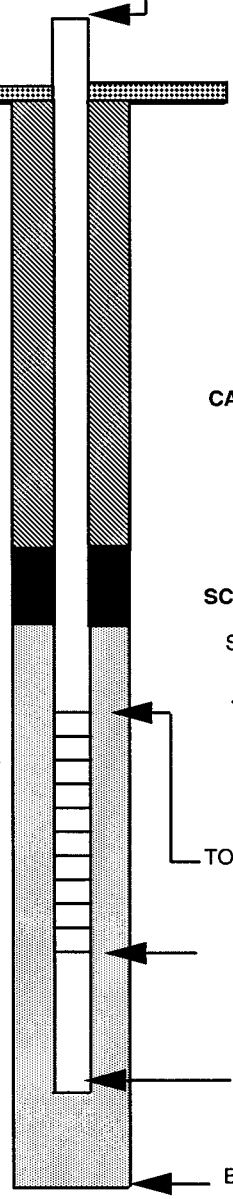
WELL NO: CWM-184-MW05
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 25-OCT-01
NORTHING: 1176332.99
EASTING: 674588.45
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 837.39

TOP of WELL CASING or RISER PIPE
EL* 839.29 STICKUP N/A

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: 12

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: 14

TOP OF SCREENED INTERVAL
EL* 812.39 DEPTH 25

BOTTOM of SCREENED INTERVAL
EL* 787.39 DEPTH 50

BOTTOM of SUMP and WELL
EL* 787.39 DEPTH 50

BOTTOM of BOREHOLE
EL* 787.39 DEPTH 50

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 Co.
DRILLER: Glen Bilbrey
IT FIELD REPRESENTATIVE: Adam Day

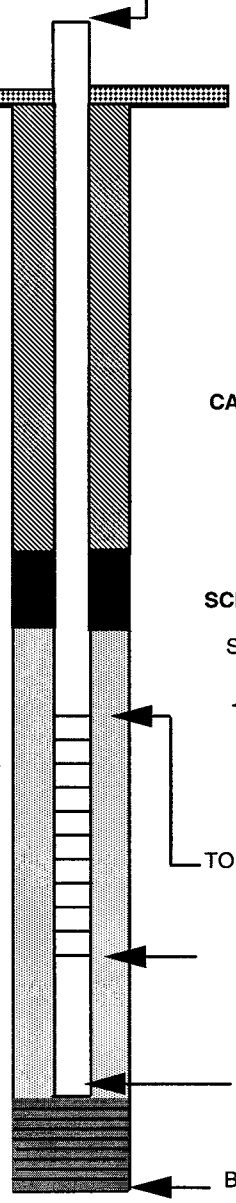
WELL NO: CWM-185-MW01
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 29-OCT-01
NORTHING: 1176139.01
EASTING: 674086.35
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 820.26

TOP of WELL CASING or RISER PIPE
EL* 822.19 STICKUP N/A

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: 2

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: 5

TOP OF SCREENED INTERVAL
EL* 810.26 DEPTH 10

BOTTOM of SCREENED INTERVAL
EL* 795.26 DEPTH 25

BOTTOM of SUMP and WELL
EL* 795.26 DEPTH 25

BOTTOM of BOREHOLE
EL* 793.26 DEPTH 27

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 Co.
DRILLER: Glen Bilbrey
IT FIELD REPRESENTATIVE: Adam Day

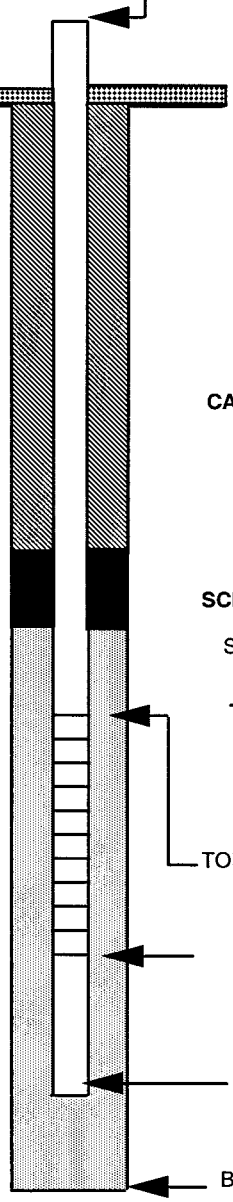
WELL NO: CWM-185-MW02
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 29-OCT-01
NORTHING: 1176193.2
EASTING: 674018.53
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 821.95

TOP of WELL CASING or RISER PIPE
EL* 821.24 STICKUP N/A

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: 2

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: 5

TOP OF SCREENED INTERVAL
EL* 811.95 DEPTH 10

BOTTOM of SCREENED INTERVAL
EL* 801.95 DEPTH 20

BOTTOM of SUMP and WELL
EL* 801.95 DEPTH 20

BOTTOM of BOREHOLE
EL* 801.95 DEPTH 20

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.