APPENDICES

Appendix A

Monitoring Well Installation Documentation Forms for 2005 RFI Wells
Training Area T-38, Parcel 186(6)
McClellan, Anniston, Alabama

Appendix A1

Boring Logs for 2005 RFI Wells

HTW DRILLING LOG

HOLE NO. MW-56

1. COMPANY NAME: Bhate	2. DRILLING CONTRACTOR: Boart - Long Year
3. PROJECT: Ft. McClellan T-38	4. LOCATION
5. NAME OF DRILLER: Ken Gobell	6. MANUFACTURER'S DESIGNATION OF DRILL: Boart Long Year Rotosonic
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT: 8" barrel to 85'; 6" barrel to 200'	8. HOLE LOCATION: North N.1173947.96 NAD 83 (2) 05 East E.675164.54 NAD 83 (2) 05 TBD
	9. SURFACE ELEVATION (ft. NGVD): TBD 962.74 NAVD
	10. DATE STARTED: 5/6/05 — 11. DATE COMPLETED: 5/11/05
12. OVERBURDEN THICKNESS: 85'	15. DEPTH GROUNDWATER ENCOUNTERED: 45-50'
13. DEPTH DRILLED INTO ROCK: 115' from 85' - end of boring at 200'	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED
14. TOTAL DEPTH OF HOLE: 200'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

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

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

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Vert.	NA	yes	NA	

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
1	0	Red 2.5 YR 4/8 silty Clay (CL) w/ some reddish yellow 7.5 YR 6/8 mottles - clay is plastic	0 ppm				
2	5	Same w/ small cobbles mid-run (Limestone) more yellow Red mottles base of run	0 ppm				
3	10	Same w/ large Limestone cobble color change to 7.5 YR 5/6 (strong brown) w/ white, black yellow mottles	1 ppm				
4	15	Same	0 ppm				
5	20	10 YR 4/6 dark yellowish brown silty clay (CL) V. plastic and moist. mottled w/ 10 R 5/2 (weak Red) and 7.5 YR 6/8 (Reddish yellow) and Black, w/ small pebbles (Limestone) - 7.5 YR 5/8 (strong brown) at end of run	0 ppm				
6	25	Same Silty Clay (CL) trace of small pebbles	0 ppm				
7	30	10 YR 6/8 Brownish yellow w/ Brown, Reddish yellow mottled Sandy clayey Silt. (ML)	0 ppm				
	35						
	40						
	45						
	50						

PROJECT: Ft. McClellan — HOLE NO. MW56

HTW DRILLING LOG

HOLE NO. MW 56

PROJECT Ft. McClellan T-38

INSPECTOR Jeff Dickson

SHEET 2 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts Recovery g	REMARKS h
7	55	(ML)					
8	60	Same (ML)	0 ppm				
	65						
	70	Same Brownish yellow but more of a silty clay (CL)					
9	75		0 ppm				
	80						
	85	~~BEDROCK~~					
10	90	Shaly Limestone very wavy laminated w/ many calcite filled fractures - Limestone - blueish black, fracture fills - white	0 ppm			~ 8' Recovery Rock v. mechanically broken	8" casing, set at 88', 3' into bedrock continue w/ 6" barrel
	95						
11	100	Same	0 ppm			10' Recovery Rock mechanically broken no large pieces	
	105	Same more Shaly at end of run					
12	110					5' Recovery	Rock pieces becoming more broken less recovery
	115		0 ppm				
13	120	Same				3'	
	125		0 ppm				
14	130	Same Limestone + shaly Limestone pieces	0 ppm			2'	
	135						
15	140						

HTW DRILLING LOG

HOLE NO. MW56

PROJECT Ft McClellan T-38

INSPECTOR Jeff Dickson

SHEET 3 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	~~Blow Counts~~ Recovery g	REMARKS h
15	145						NO good core samples all broken by drilling can't distinguish fracture intervals or size
16	150	Broken Blueish gray Limestone and wavy shaly Limestone all mechanically picken can't get good core	0 ppm			6' pieces	
	155						
17	160	same	0 ppm			7' pieces	
	165						
18	170	same	0 ppm			7' pieces	
	175						
19	180	same	0 ppm			7' pieces	
	185						
20	190	same	0 ppm			5' small pieces	
	195						
21	200	same	0 ppm			8' small pieces	
		BOB					

HTW DRILLING LOG

HOLE NO. MW-57

1. COMPANY NAME: Brate	2. DRILLING CONTRACTOR: Boart - Long Year
SHEET 1 OF 1 SHEETS	
3. PROJECT: Ft. McClellan T-38	4. LOCATION: Anniston, Alabama
5. NAME OF DRILLER: Ken Gobell	6. MANUFACTURER'S DESIGNATION OF DRILL: Boart Long Year Rotosonic
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT: 6" bit - in Rock; 8" set 2' into Rock at 82'	8. HOLE LOCATION: North N. 1178998.40 DMP 8/23/05; East TBD E. 675150.99 DMP 8/23/05
	9. SURFACE ELEVATION (ft. NGVD): TBD 962.60 DMP 8/23/05
	10. DATE STARTED: 5/12/05; 11. DATE COMPLETED: 5/13/05
12. OVERBURDEN THICKNESS: 80'	15. DEPTH GROUNDWATER ENCOUNTERED: ?
13. DEPTH DRILLED INTO ROCK: 80-114' (34')	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED
14. TOTAL DEPTH OF HOLE: 114'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

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

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

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Vert.	NA	Yes	NA	

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
	0	Blind Drill to 100'					
		80' Bedrock					
	100	Shaley Limestone bluish gray w/ white calcite filled fractures. heavily broken by drilling					set well at 110'
1	105		0 ppm				lots of fines in hole - added mud to circulation water to lift out - clear to 112'
	110	Ream to 114'					
	115	114' - BOB					
	3						
	4						
	5						

PROJECT: Ft McClellan T-38 HOLE NO. MW-57

HTW DRILLING LOG

HOLE NO. MW-58

1. COMPANY NAME: B-Trate	2. DRILLING CONTRACTOR: Boart - Long Year	SHEET 1 OF 2 SHEETS
3. PROJECT: Ft. McClellan T-38	4. LOCATION: anniston, al.	
5. NAME OF DRILLER: Ken Gobell	6. MANUFACTURER'S DESIGNATION OF DRILL: Boart Long Year Rotosonic	
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT: start w/ 6" bit; Ream w/ 8" bit to 126'	8. HOLE LOCATION: North TBD East E. 1173455.09 N. 675642.42 DUP 8/23/05	
	9. SURFACE ELEVATION (ft. NGVD): TBD 945.58 DUP 8/23/05	
	10. DATE STARTED: 0900 5/17/05	11. DATE COMPLETED: 5/18/05
12. OVERBURDEN THICKNESS: 124'	15. DEPTH GROUNDWATER ENCOUNTERED: ≈55'	
13. DEPTH DRILLED INTO ROCK: 2'	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE: 126'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	

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

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

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Vert.	NA	yes	NA	

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results OVM d	Geotech Sample or Core Box No. e	Analytical Sample No. f	~~Blow Counts~~ Recovery g	REMARKS h
1	0	Brown 7.5 YR 5/3 organic silty clay (OL) Roots, other organic matter, moist sewer smell	85 ppm	1		5'	sewer smell
2	10	Reddish yellow 7.5 YR 7/6 Silty Clay (CL) w/ small pebbles mottled w/ yellow	90 ppm	2		10'	smelly
3	20	Same color more silty clayey Silt (ML) less moist	Top 24 ppm Bottom 5 ppm	3		10'	less smelly
4	30	silty clay (CL) same colour contains small white pebbles crush easily when pressed together	15 ppm	4		10'	slightly more smelly
5	40	Color change Light grey 10 YR 7/1 and Black 10 YR 2/1 speckled and yellowish brown 10 YR 4/6 mottled silty CLAY (CL)	1 ppm	5		14'	No odor
	50	weak Red 10 YR 4/3 and yellow brown 10 YR 6/6 mottled clayey Silt (ML)	0 ppm				

PROJECT Ft. McClellan HOLE NO. MW58

HTW DRILLING LOG

HOLE NO. MW-58

PROJECT Ft. McClellan

INSPECTOR J. Dickson

SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	~~Blow Counts~~ Recovery g	REMARKS h
5	55	Same, less Red, more yellow brown and gray mottles cool to the touch	0 ppm				wet
	60	Dark brown 10YR 3/3 + brownish yellow 10YR 6/6 sandy clay (CL) wet					
	63	Back to Red, yellow brown, gray mottled clayey sandy silt (ML)				20'	
6	65	Fine-medium grained wet clayey Sand dark Brown (SC) 68' 10YR 3/3	0 ppm				
	68						
	70	Brown + brownish yellow silty sandy clay (CL)					
	75						
7	80	NO Recovery wet soupy sand ? (SC)?	NO Reading			0' Recovery	
	85						
	90	Dark yellowish brown 10YR 4/6 and Red mottled sandy silty clay (CL)					
8	95		3 ppm				
	100	Dark yellowish brown and brownish yellow 10YR 6/8 mottled v. moist, plastic sandy clay (CL)					
	105						
9	110	Brown, sticky fat clay some small pebbles in thin lenses, wet there Rest of unit is v. tight + plastic yellow brown mottles	0 ppm				
	115						
10	120	Yellow brown, saturated, fat, plastic clay (CH)					
		122'					
	125	Highly weathered clayey shale dark gray shale 124' - dry !	0 ppm				Bed Rock 122-124' dry
		BOB 126'					Set well at 125'
	130						

HTW DRILLING LOG

HOLE NO. MW-59

1. COMPANY NAME: B-Trate	2. DRILLING CONTRACTOR: Boart - Long Year	SHEET 1 OF 3 SHEETS
3. PROJECT: Ft. McClellan T-38	4. LOCATION: Anniston, Alabama	
5. NAME OF DRILLER: Ken Gobell	6. MANUFACTURER'S DESIGNATION OF DRILL: Boart Long Year Rotosonic	
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT: 6" to 118'; 8" Reamed to 137'; back to 6" bit to BOB	8. HOLE LOCATION: North N. 1172262.98 East E. 675394.61 TBD Sup 8/23/05	
	9. SURFACE ELEVATION (ft. NGVD): TBD 1004.13 Sup 8/23/05	
	10. DATE STARTED: 5/3/05	11. DATE COMPLETED: 5/6/05
12. OVERBURDEN THICKNESS: 118'	15. DEPTH GROUNDWATER ENCOUNTERED: ≈ 55'	
13. DEPTH DRILLED INTO ROCK: 118-165' 47'	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE: 165'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	

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

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

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Vert.	NA	yes	NA	

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	~~Blow Counts~~ Recovery g	REMARKS h
1	0	10 R 4/6 Red, dry Silty Clay (CL) occasional Limestone pebble grad mottled limonitic Stained inclusions	0 ppm			4'	
	5	Limestone Boulder					
2		Same Red clay (CL) as above w/ yellow mottling on dark Red streaks dry	0 ppm			4.2'	
3	10		0 ppm			3.8'	
	15	Dark yellow brown 10yR4/6 dry fractured clayey Silt (ML) fractures filled w/ ~~sand~~ red clay occasional small white pebbles					
4	20	same more Red than yellow brown small Limestone pebbles mottled w/ black and purple traces of fine sand	0 ppm			8.2	
	25						
5	30	dark Red, Brown, tan + white mottled Silty clay (CL)	0 ppm			7.5	
	35	v. dark Red, Brown hard Silty clay with limonitic fractures ~~from~~ then back to yellowish brown clayey silt (ML)					
6	40	Yellowish brown mottled Silty clay (CL)	0 ppm			6.7	
	45						
7	50	yellow brown sandy/clayey Silt w/white fracture fills (ML)	0 ppm			9.5	

HTW DRILLING LOG

HOLE NO. MW-59

PROJECT Ft McClellan T-38

INSPECTOR J. Dickson

SHEET 2 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	~~Blow Counts~~ Recovery g	REMARKS h
7		sample cold to touch possibly water table					
	55	10 YR 5/4 Brown Sandy Silt (ML) w/ trace of yellow brown clay					
		yellow brown + light brown mottles	0 ppm			10'	
	60						
8		Yellow brown + light brown sticky silty clay (CL)					
	65	7.5 YR 6/8 reddish yellow clayey Silt (ML) trace fine Sand wet					
		5 YR 3/3 dark Reddish brown clayey sandy Silt (ML)	0 ppm			8.0'	
9	70	sand v. fine grain + crumbly					
	75	Same, but w/ yellow brown mottles					
		5 YR 5/8 yellowish red sandy Silt (ML)					
	80	7.5 YR reddish yellow w/ black	0 ppm			6.5'	
10		fined fracture fills and 10 YR 7/3 v. pale brown mottled sandy Silt					
	85						
	90	?				0	Rods dropped void
11						Recovery	
	95	no recovery				4.5' slop	
	100						
	105	Hard brown to dark brown mottled sandy Silt (ML) in tip of bit					
		no Recovery				0	
12	110	Just slop	0 ppm			No Recovery	Rods dropped again
		thin, runny Reddish clayey sandy Silt				slop	
	115						
		Reddish Brown, hard sandy Silt (ML) w large Limestone pebbles 118'	Bedrock 118'				
	120	Limestone, bluish gray - wavy laminations				3' pieces	121-122 Rods drop
13		121'-122' VOID	0 ppm				
	125	122' Limestone again same as before					
		126' VOID → 131'					128-131 Rods drop
	130						
		Limestone bluish gray thinly laminated fractured filled w/ white calcite					pieces only little core
14	135		0 ppm			~4' core at base 6' pieces on top	
	140						

HTW DRILLING LOG

PROJECT: Ft McClellan - T-38 | INSPECTOR: J. Dickson | HOLE NO.: MW-59 | SHEET: OF 3 SHEETS 3

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts / Recovery g	REMARKS h
14	140	Limestone more massive bluish gray w/calcite fracture fills 4" pieces 143					
	145	Shaley Limestone - bluish black w/ wavy laminations w/white calcitic fracture filling.					
15	150		0 ppm			5-6'	Broken core chunks only spreads out in bag!
	155						
16	160	Limestone whiteish blue not nearly as wavy laminated more massive - 3-4" pieces white calcite fracture filling	0 ppm			4'	Broken Core
	165	BOB					

Appendix A2

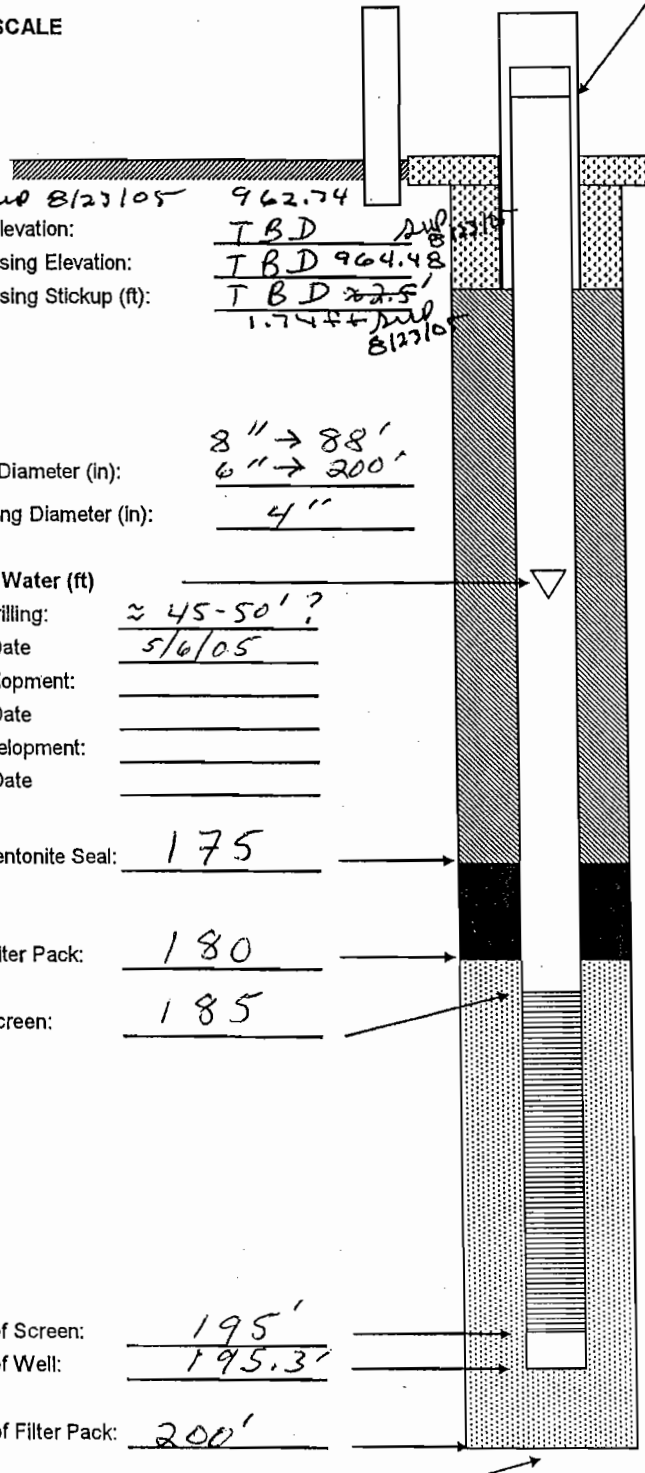
Well Completion Data for 2005 RFI Wells

Bhate Environmental Associates

WELL CONSTRUCTION DIAGRAM (Above Grade)

Project/Phase:	Ft. McClellan T-38	Well/Boring No.:	MW-56
Location:	Anniston Al.	Drilling Method:	Rotosonic
Client:		Date(s):	5/6/05 - 5/
Drilling Contractor:	Boart Long-Year	Northing (NAD 83):	TBD 1173997.38 Est'd 8/23/05
Driller:	Ken Gobell	Easting (NAD 83):	TBD 675184.99 Surv 8/23/05
Geologist:	Jeff Dickson	Bhate Project #:	9-05-0136

NOT TO SCALE



Surface Elevation: TBD Surv 8/23/05 962.74

Top of Casing Elevation: TBD 964.48

Top of Casing Stickup (ft): TBD ~~2.5'~~ 1.74 ± Surv 8/23/05

Borehole Diameter (in): 8" → 88', 6" → 200'

Well Casing Diameter (in): 4"

Depth to Water (ft)

During Drilling: ≈ 45-50'?

Date: 5/6/05

Pre Development:

Date

Post Development:

Date

Top of Bentonite Seal: 175

Top of Filter Pack: 180

Top of Screen: 185

Bottom of Screen: 195'

Bottom of Well: 195.3'

Bottom of Filter Pack: 200'

Borehole Depth: 200'

Protective Casing

Type: steel/locking

Dimensions: 6"x6"

Length: 5'

Guard Posts: yes

Existing

Surface Pad

Dimensions: 3'x3'

Type: cement

Well Casing (riser)

Manufacturer: Johnson

Type/Material: PVC

Diameter (in): 4"

Connection: threaded

Well Screen

Manufacturer: Johnson

Type/Material: PVC

Slot Size (in): 10

Slot Type: Continuous (Factory Slot)

Connection: threaded

Annular Seal

Type: 8 bags of bentonite chips to 50', portland/bentonite grout to surface

Installation: (Gravity) (Tremie) Pressure

Bentonite Seal

Manufacturer: DSI

Type: (Pellets) Slurry

Installation: 6-in Lifts (Gravity) Tremie Pressure

Volume: 1 5 gal bucket

Hydration Time:

Filter Pack Material

Manufacturer: DSI

Product Name: Silica Sand

Size: 20/40 #1

Volume (ft3): 4 bags

Installation: Tremie ✓ Gravity

Sump/End Cap

Type: PVC

Length: 4"

Backfill Material

Type: DSI - Sand + drill cuttings

Volume: 22.9 ± ft3 Surv 8/9/05

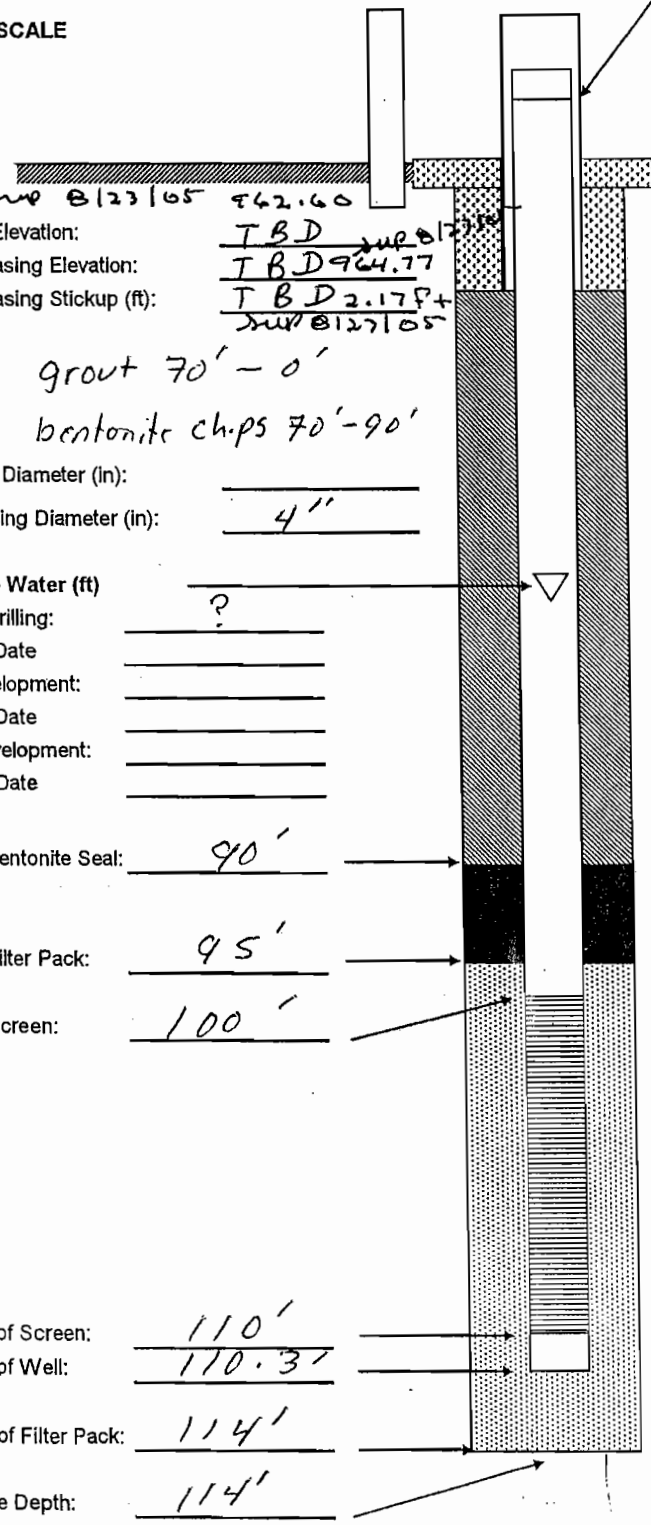
Comments:

Bhate Environmental Associates

WELL CONSTRUCTION DIAGRAM (Above Grade)

Project/Phase:	Ft. McClellan T-38	Well/Boring No.:	MW-57
Location:	Anniston al.	Drilling Method:	Rotosonic
Client:	Matrix	Date(s):	5/12/05 - 5/13/05
Drilling Contractor:	Boart Long-Year	Northing (NAD 83):	TBD 1173998.40 surv 8/23/05
Driller:	Ken Gobell	Easting (NAD 83):	TBD 675150.99 surv 8/23/05
Geologist:	Jeff Dickson	Bhate Project #:	9-05-0136

NOT TO SCALE



Protective Casing
- Type: steel/locking
- Dimensions: 6"x6"
- Length: 5'
- Guard Posts: yes

Surface Elevation: TBD surv 8/23/05
Top of Casing Elevation: TBD 644.77
Top of Casing Stickup (ft): TBD 2.17 surv 8/23/05

Surface Pad
- Dimensions: 3'x3'
- Type: cement

Well Casing (riser)
- Manufacturer: Johnson
- Type/Material: PVC
- Diameter (in): 4"
- Connection: threaded

Borehole Diameter (in): ____
Well Casing Diameter (in): 4"

Well Screen
- Manufacturer: Johnson
- Type/Material: PVC
- Slot Size (in): 10
- Slot Type: Continuous (Factory Slot)
- Connection: threaded

Depth to Water (ft)
- During Drilling: ?
- Date: ____
- Pre Development: ____
- Date: ____
- Post Development: ____
- Date: ____

Annular Seal
- Type: bentonite chips to 70' grout portland + Bentonite @ 70'-0'
- Installation: (Gravity) (Tremie) Pressure

Top of Bentonite Seal: 90'

Bentonite Seal
- Manufacturer: DSI - Shur plug
- Type: (Pellets) Slurry
- Installation: 6-in Lifts (Gravity) Tremie Pressure
- Volume: 1 5gal bucket
- Hydration Time: ____

Top of Filter Pack: 95'

Filter Pack Material
- Manufacturer: DSI
- Product Name: Silica Sand
- Size: 20/40 #1
- Volume (ft3): 4 bags
- Installation: Tremie ✓ Gravity

Top of Screen: 100'

Bottom of Screen: 110'
Bottom of Well: 110.3'

Sump/End Cap
- Type: PVC
- Length: 4"

Bottom of Filter Pack: 114'

Backfill Material
- Type: DSI - Sand
- Volume: 2.3 ft3 surv

Borehole Depth: 114'

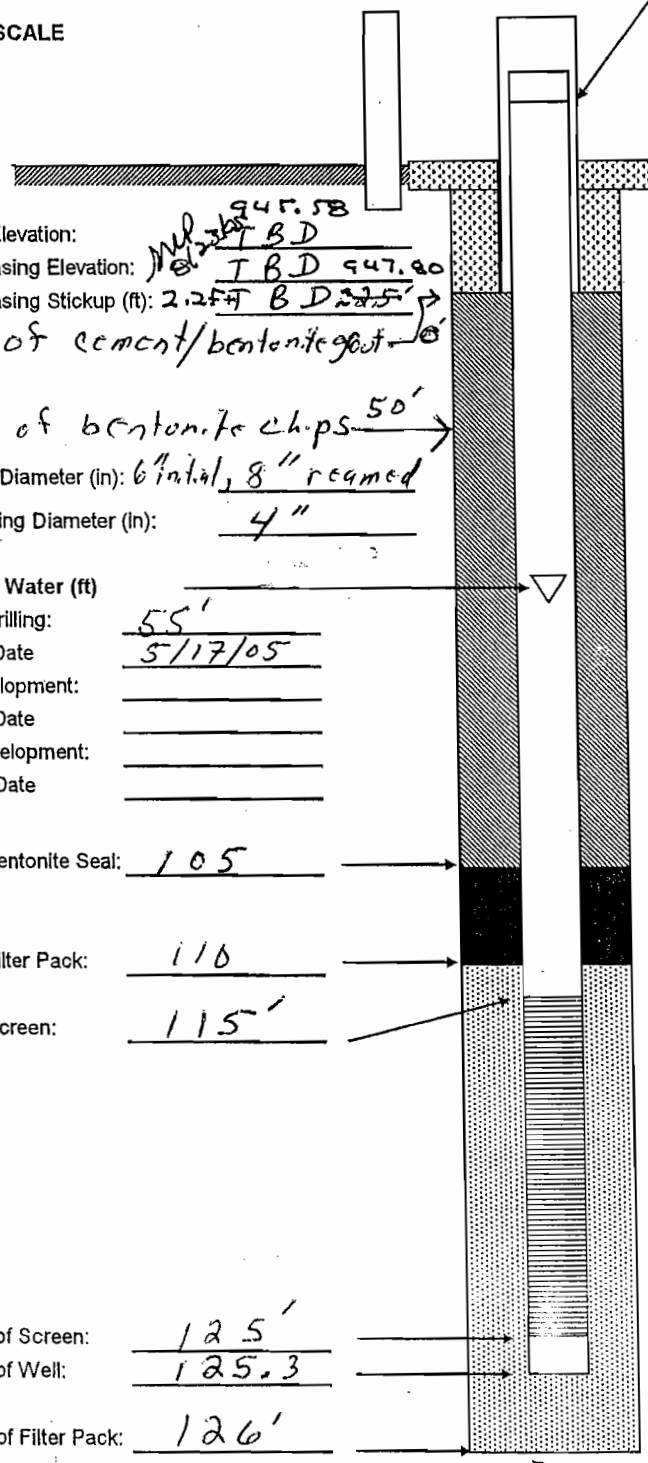
Comments: 8/9/05

Bhate Environmental Associates

WELL CONSTRUCTION DIAGRAM (Above Grade)

Project/Phase:	Ft. McClellan T-38	Well/Boring No.:	MW-58
Location:	Anniston AL.	Drilling Method:	Rotosonic
Client:	Matrix Environmental	Date(s):	5/16/05 - 5/18/05
Drilling Contractor:	Boart Long-Year	Northing (NAD 83):	TBD 1173455.09 Dup 8/25/05
Driller:	Ken Gobell	Easting (NAD 83):	TBD 675642.42
Geologist:	Jeff Dickson	Bhate Project #:	9-05-0136

NOT TO SCALE



Protective Casing
- Type: steel/locking
- Dimensions: 6" X 6"
- Length: 5'
- Guard Posts: yes

- Surface Elevation: ~~947.58~~ TBD
- Top of Casing Elevation: ~~TBD~~ TBD 947.80
- Top of Casing Stickup (ft): 2.22 ~~TBD~~ TBD

Surface Pad
- Dimensions: 3'X3'
- Type: cement

- Borehole Diameter (in): 6" initial, 8" reamed
- Well Casing Diameter (in): 4"

Well Casing (riser)
- Manufacturer: Johnson
- Type/Material: PVC
- Diameter (in): 4"
- Connection: threaded

Depth to Water (ft)
- During Drilling: 55'
- Date: 5/17/05
- Pre Development:
- Date:
- Post Development:
- Date:

Well Screen
- Manufacturer: Johnson
- Type/Material: PVC
- Slot Size (in): 10
- Slot Type: Continuous (Factory Slot)
- Connection: threaded

Annular Seal
- Type: grout to surface from 50' / chips to 50' from 105'
- Installation: (Gravity - chips) (Tremie grout) Pressure

- Top of Bentonite Seal: 105

Bentonite Seal
- Manufacturer: DSI
- Type: (Pellets) Slurry
- Installation: 6-in Lifts (Gravity) Tremie Pressure
- Volume: 5 gal bucket
- Hydration Time:

- Top of Filter Pack: 110
- Top of Screen: 115'

Filter Pack Material
- Manufacturer: DSI
- Product Name: Silica Sand
- Size: 20/40 #1
- Volume (ft3): 8 bags
- Installation: Tremie ✓ Gravity

- Bottom of Screen: 125'
- Bottom of Well: 125.3
- Bottom of Filter Pack: 126'
- Borehole Depth: 126'

Sump/End Cap
- Type: PVC
- Length: 4"

Backfill Material
- Type: DSI - Sand
- Volume: 0.43 ft3 Dup 8/9/05

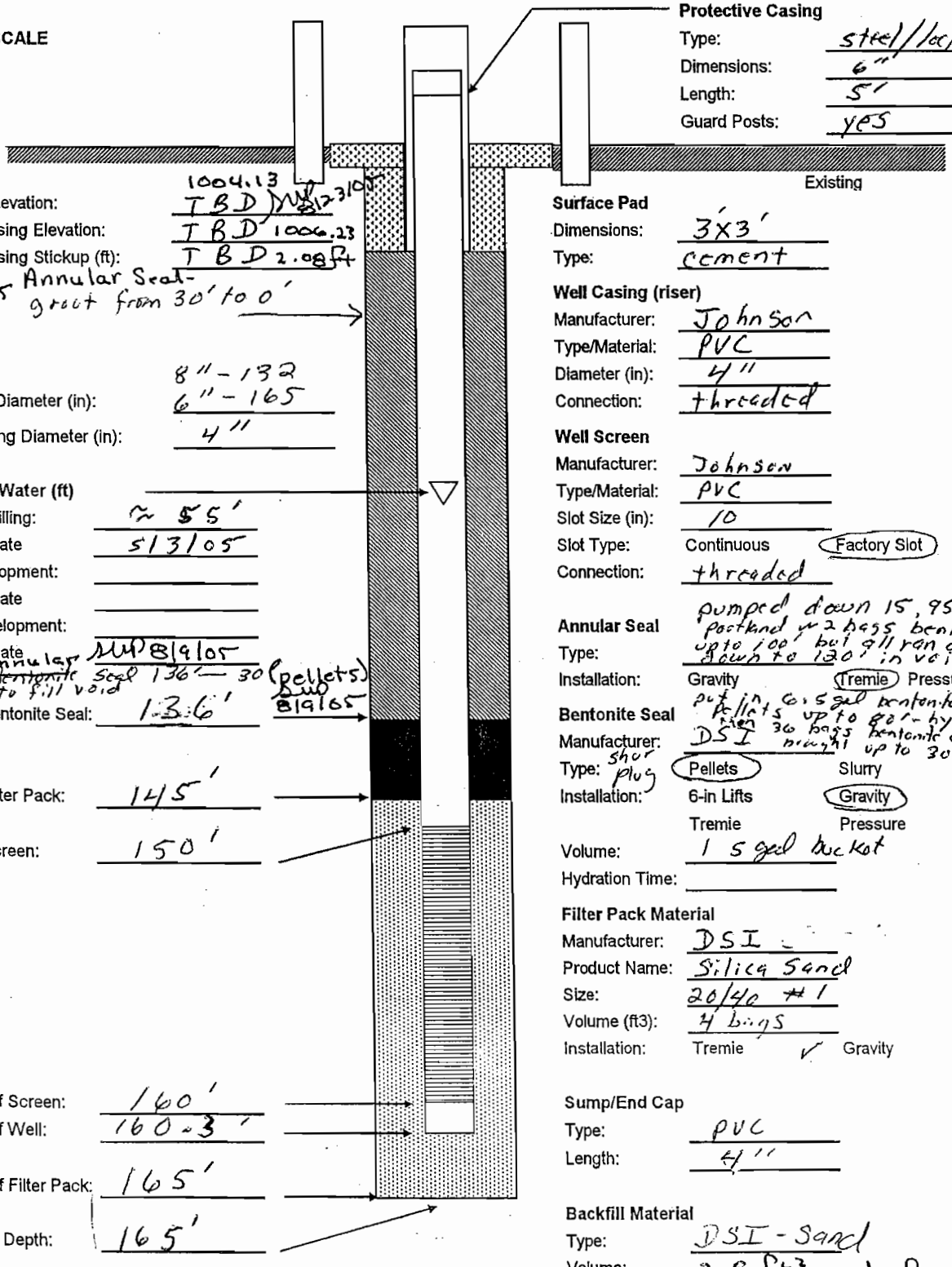
Comments:

Bhate Environmental Associates

WELL CONSTRUCTION DIAGRAM (Above Grade)

Project/Phase:	Ft. McClellan T-38	Well/Boring No.:	MW-59
Location:	Anniston Al.	Drilling Method:	Rotasonic
Client:	Matrix Environmental	Date(s):	5/3/05 - 5/6/05
Drilling Contractor:	Boart Long-Year	Northing (NAD 83):	TBD 1172262.98 MP 8/23/05
Driller:	Ken Gobell	Easting (NAD 83):	TBD 675394.61
Geologist:	Jeff Dicksow	Bhate Project #:	9-05-0136

NOT TO SCALE



Protective Casing
- Type: steel/locking
- Dimensions: 6"
- Length: 5'
- Guard Posts: yes

Surface Elevation: TBD 1004.13 MP 8/23/05
Top of Casing Elevation: TBD 1006.23
Top of Casing Stickup (ft): TBD 2.08 ft
MP 8/9/05

Borehole Diameter (in): 8" - 132, 6" - 165
Well Casing Diameter (in): 4"

Depth to Water (ft)
- During Drilling: ~ 55'
- Date: 5/3/05
- Pre Development:
- Date:
- Post Development:
- Date: MP 8/9/05

Top of Bentonite Seal: 136' MP 8/9/05
Top of Filter Pack: 145'
Top of Screen: 150'
Bottom of Screen: 160'
Bottom of Well: 160.3'
Bottom of Filter Pack: 165'
Borehole Depth: 165'

Surface Pad
- Dimensions: 3'x3'
- Type: cement

Well Casing (riser)
- Manufacturer: Johnson
- Type/Material: PVC
- Diameter (in): 4"
- Connection: threaded

Well Screen
- Manufacturer: Johnson
- Type/Material: PVC
- Slot Size (in): 10
- Slot Type: Continuous (Factory Slot)
- Connection: threaded

Annular Seal
- Type: pumped down 15,95 lb pocketful w 2 bags bentonite up to 100' but all ran out down to 130' in voip
- Installation: Gravity (Tremie) Pressure

Bentonite Seal
- Manufacturer: DSI
- Type: short plug (Pellets) Slurry
- Installation: 6-in Lifts (Gravity) Tremie Pressure
- Volume: 1 5 gal bucket
- Hydration Time:

put in 6.5 gal bentonite pellets up to 80'- hydrated then 36 bags bentonite chips brought up to 30' + hydrate

Filter Pack Material
- Manufacturer: DSI
- Product Name: Silica Sand
- Size: 20/40 #1
- Volume (ft3): 4 bags
- Installation: Tremie ✓ Gravity

Sump/End Cap
- Type: PVC
- Length: 4"

Backfill Material
- Type: DSI - Sand
- Volume: 2.9 ft3

MP 8/9/05

Comments:

Appendix A3

Well Development Forms for 2005 RFI Wells

Figure B-4 Well Development Log

	Monitoring Well Development Log	
Project Number 905-0136	Project Name: Fort McClellan	Page 1 of 3
Well/Borehole Number: CMW86-MW56	Well/Borehole Location: T-38	Static Water Level: 56.25 (ft)

Surge Technique: Surge block	Elevation: NM
Bailing Method: NA	Weather: Overcast, hot, humid
Bar. Press.: NM	Amb. Temp.: ~83°F
WATER ELEVATION DATA	
1.) Depth Water Surface: (From Casing Top as Marked) 56.25	Method of Measurement: Heron
2.) Static Water Level Elevation: NM (Casing Top Elevation minus 1)	Product obs: Yes ___ No X
3.) Depth to Well Bottom: (From Casing Top as Marked) 196.80	
4.) Height of Water Column (h): (3 minus1) 140.55	Depth to Product:
Volume of Water in Well:(x) (h) = ~~57.4~~ NM (gals) 8/9/05 (for 2" x= 0.163 gal/ft for 4" x = 0.653 gal/ft) 91.78	Method of Measurement:
Amount of Water Removed From Well: 90 gal	Was Well Pumped Dry? X Yes ___ No
Method of Water Removal: ground fos	Total Volume/Time: ~90 gal / 1.5 hr

Time	Temp °C	Conductivity	pH	Turbidity	Casing # Removed	Flow Rate	Observations
1250	NM	NM	NM	291	30 gal	1 Gpm	wht-Gry cldy
1320	NM	NM	NM	130	60 gal	1 Gpm	" "
1420	NM	NM	NM	566	90 gal	1 Gpm	" "

Recorded By:	Date:	Checked By:	Date:
[signature]	6/10/05	Steven Perry	8/9/05

Matrix Environmental Services, L.L.C.
Integrated Environmental Solutions

Because the Horiba U22-2 was inop, water quality parameters were not collected. SMP 8/9/05

Figure B-4 Well Development Log

	Monitoring Well Development Log	
Project Number 905036	Project Name: Fort McClellan	Page 2 of 3
Well/Borehole Number: MW56	Well/Borehole Location: T-38	Static Water Level: 56.18 (ft)

Surge Technique: Block	Elevation: NM
Bailing Method: NA	Weather: Sunny humid
Bar. Press.: NM	Amb. Temp.: ≈78
WATER ELEVATION DATA	
1.) Depth Water Surface: (From Casing Top as Marked) 56.18 ft BTOC	Method of Measurement: Heron
2.) Static Water Level Elevation: NM (Casing Top Elevation minus 1)	Product obs: Yes ___ No X
3.) Depth to Well Bottom: (From Casing Top as Marked) 196.80 ft BTOC	
4.) Height of Water Column (h): (3 minus1) 140.62	Depth to Product:
Volume of Water in Well:(x) (h) = 91.68 (gals) (for 2" x= 0.163 gal/ft for 4" x = 0.653 gal/ft)	Method of Measurement:
Amount of Water Removed From Well: 172.5 gal	Was Well Pumped Dry? X Yes ___ No
Method of Water Removal: grundfos	Total Volume/Time: 262.5 gal / 7.25 hrs

Time	Temp °C	Conductivity	pH	Turbidity	Casing # Removed	Flow Rate	Observations
0915	18.96	0.496	6.18	16.43	120 gal	1 gpm	clr no odor
0945	19.51	0.353	7.80	17.25	150 gal	1 gpm	clr no odor
1015	20.19	0.365	8.56	15.95	180 gal	1 gpm	clr no odor
1045	21.48	0.395	8.37	791	195 gal	1.5 gpm	gry cldy no odor
1115	22.09	0.361	7.93	993	210 gal	1.5 gpm	gry cldy no odor
1145	22.13	0.360	7.90	>1000	225 gal	1.5 gpm	gry cldy opaque
1215	23.70	0.368	7.95	968	240 gal	1.5 gpm	" "
1330	24.13	0.344	8.15	485	247.5 gal	1.25 gpm	" "

Recorded By:	Date:	Checked By:	Date:
Guy Hall	6/13/05	Steve Pulley	8/9/05

Matrix Environmental Services, LLC

DUP 8/9/05 DUP 8/9/05

1400	26.06	~~0.354~~ 0.362	~~7.6~~ 8.10	927	255 gal	1.25 gpm	" "
1500	24.18	0.359	7.66	926	262.5 gal	1.25 gpm	" "

Figure B-4 Well Development Log

	Monitoring Well Development Log	
Project Number 9050136	Project Name: Fort McClellan	Page 3 of 3
Well/Borehole Number: MW56	Well/Borehole Location: T-38	Static Water Level: 83.30 (ft)
Surge Technique: Surge block	Elevation: NM	
Bailing Method: NA	Weather: Sunny - humid	
Bar. Press. NM	Amb. Temp. 91° F	

WATER ELEVATION DATA

1.) Depth Water Surface: (From Casing Top as Marked) 83.30	Method of Measurement: Heron w/ Indicator
2.) Static Water Level Elevation: NM (Casing Top Elevation minus 1)	Product obs: Yes ___ No X
3.) Depth to Well Bottom: (From Casing Top as Marked) 196.80	
4.) Height of Water Column (h): (3 minus1) 113.5	Depth to Product:
Volume of Water in Well:(x) (h) = 74.00 (gals) (for 2" x= 0.163 gal/ft for 4" x = 0.653 gal/ft)	Method of Measurement:
Amount of Water Removed From Well: 41.25	Was Well Pumped Dry? ___Yes X No
Method of Water Removal: Groundfos	Total Volume/Time: 303.75 gal / 11 hrs

~~Well Dill~~ 8/9/05

Time	Temp °C	Conductivity	pH	Turbidity	Casing # Removed	Flow Rate	Observations
0915	19.66	0.397	7.64	11.74	≈248	≈.15gpm	CLR no odor
0945	19.92	0.362	7.75	5.19	≈255.5	≈.25gpm	CLR no odor
1000	20.81	0340	7.33	5.64	≈259.25	≈.25	CLR no odor
1015	20.72	0.349	7.38	4.19	≈263	≈.25	" "
1030	20.85	0.357	7.36	6.42	≈266.75	≈.25	CLR no odor
1045	21.47	0.356	7.40	4.42	≈270.05	≈.25	" "
1100	20.74	0.358	7.39	5.54	≈273.50	≈.25	" "
1115	21.38	0.357	7.43	5.12	≈277.50	≈.25	" "
1130	22.19	0.338	7.54	4.74	≈281.25	≈.25	" "
1145	22.55	0.356	7.57	5.09	≈285.00	≈.25	" "
1200	22.75	0.338	7.53	4.69	≈288.75	≈.25	" "
1215	22.98	0.338	7.55	5.53	≈292.5	≈.25	" "
1230	22.65	0.353	7.56	8.45	≈296.25	≈.25	" "
1245	23.29	0.341	7.58	4.83	≈300.00	≈.25	" "
1300	23.23	0.339	7.59	5.18	≈303.75	≈.25	" "

Recorded By:	Date:	Checked By:	Date:
Greg Dill	6/14/05	Tom Perry	8/9/05

Matrix Environmental Services, LLC.

Figure B-4 Well Development Log

	Monitoring Well Development Log	
Project Number 9050136	Project Name: Fort McClellan	Page 1 of 2 DUP 8/9/05
Well/Borehole Number: MW57	Well/Borehole Location: T-38	Static Water Level: 22.66 (ft)

Surge Technique: Block	Elevation: NM
Bailing Method: NA	Weather: Sunny & humid
Bar. Press. NM	Amb. Temp. ~84°F
WATER ELEVATION DATA	
1.) Depth Water Surface: (From Casing Top as Marked) 22.66 ft BTOC	Method of Measurement: Heron
2.) Static Water Level Elevation: NM (Casing Top Elevation minus 1)	Product obs: Yes ___ No X
3.) Depth to Well Bottom: (From Casing Top as Marked) 112.30 ft BTOC	
4.) Height of Water Column (h): (3 minus1) 89.64 ft DUP 8/9/05	Depth to Product:
Volume of Water in Well:(x) (h) = 58.5 (gals) (for 2" x= 0.163 gal/ft for 4" x = 0.653 gal/ft)	Method of Measurement:
Amount of Water Removed From Well: ~55 gal	Was Well Pumped Dry? X Yes ___ No
Method of Water Removal: 3" grndfos	Total Volume/Time: ~55 gal / 10 min

Time	Temp °C	Conductivity	pH	Turbidity	Casing # Removed	Flow Rate	Observations
1010	NM	NM	NM	NM	0	~5 GPM	WL = 22.66
1020	NM	NM	NM	NM	1 (~55 gal) DUP 8/9/05	~5 GPM	WL = 105.9

Recorded By:	Date:	Checked By:	Date:
	6/02/05	Steve Pelly	8/9/05

Matrix Environmental Services, L.L.C.

Because the Horiba U22-2 was inop, water quality parameters were not collected. DUP 8/9/05

Figure B-4 Well Development Log

	Monitoring Well Development Log	2 DUP 8/9/05
Project Number 105036	Project Name: Fort McClellan	Page 2 of 2
Well/Borehole Number: MW57	Well/Borehole Location: CMW 156 MW 57	Static Water Level: 85.48 (ft)

Surge Technique: Surge block	Elevation: NM
Bailing Method: NA	Weather: Overcast, Humid. 83°
Bar. Press. NM	Amb. Temp. 83 f
WATER ELEVATION DATA	
1.) Depth Water Surface: (From Casing Top as Marked) 85.48	Method of Measurement: Heron
2.) Static Water Level Elevation: NM (Casing Top Elevation minus 1)	Product obs: Yes ___ No X
3.) Depth to Well Bottom: (From Casing Top as Marked) 112.30	
4.) Height of Water Column (h): (3 minus1) 26.82	Depth to Product:
Volume of Water in Well:(x) (h) = 17.48 (gals) (for 2" x= 0.163 gal/ft for 4" x = 0.653 gal/ft)	Method of Measurement:
Amount of Water Removed From Well: ≈ 30 gal	Was Well Pumped Dry? X Yes ___ No Twice
Method of Water Removal: groundfos	Total Volume/Time: ~~50 min ≈ 30 gal / 50 min~~ 85 gal, 60 mins SMP 8/9/05

Time	Temp °C	Conductivity	pH	Turbidity	Casing # Removed	Flow Rate	Observations
1035	NM	NM	NM	293	10 gal	≈ 1 gpm	white cldy
1045	NM	NM	NM	137	20 gal	≈ 1 gpm	V Sl Atk, cldy
1055	NM	NM	NM	196	≈ 22.5	≈ .25 gpm	" "
1105	NM	NM	NM	150	≈ 25	≈ .25 gpm	" "
1115	NM	NM	NM	42.6	≈ 27.5	≈ .25 gpm	" "
1125	NM	NM	NM	22.1	≈ 30.0	≈ .25 gpm	Moved Pump to bottom of well

Recorded By:	Date:	Checked By:	Date:
[signature]	8/10/05	Alan M. Polfy	8/9/05

Matrix Environmental Services, L.L.C.

Values not recorded for T°, Conductivity, and pH. ~~No explanation~~. SMP 8/9/05
Values not recorded because Horiba U22-2 was inop. SMP 8/9/05

Figure B-4 Well Development Log

	Monitoring Well Development Log	sub 8/9/05
Project Number 9050136	Project Name: Fort McClellan	Page 1 of ~~3~~ 3
Well/Borehole Number: MW58	Well/Borehole Location: T-38	Static Water Level: 52.12 (ft)

Surge Technique: Block	Elevation: NM
Bailing Method: NA	Weather: Sunny & humid
Bar. Press. NM	Amb. Temp. 84°F

WATER ELEVATION DATA

1.) Depth Water Surface: (From Casing Top as Marked) 52.12 ft BTOC	Method of Measurement: Heron
2.) Static Water Level Elevation: NM (Casing Top Elevation minus 1)	Product obs: Yes ___ No X
3.) Depth to Well Bottom: (From Casing Top as Marked) 127.55 ft BTOC	
4.) Height of Water Column (h): (3 minus1) 75.48 ft	Depth to Product:
Volume of Water in Well:(x) (h) = 49.18 (gals) (for 2" x= 0.163 gal/ft for 4" x = 0.653 gal/ft)	Method of Measurement:
Amount of Water Removed From Well: 275 gal	Was Well Pumped Dry? X Yes ___ No
Method of Water Removal: grunfos 3"	Total Volume/Time: 275 gal / 2.25 hr

Time	Temp °C	Conductivity	pH	Turbidity	Casing # Removed	Flow Rate	Observations
	NM	NM	NM	NM			

Recorded By:	Date:	Checked By:	Date:
	6/2/05	Jesm. Pelfrey	8/9/05

Matrix Environmental Services, L.L.C. Integrated Environmental Solutions

Because the Horiba U22 2 was inop, water quality parameters were not collected. SMP 8/9/05

Figure B-4 Well Development Log

	Monitoring Well Development Log	DMP 8/9/05
Project Number 905C136	Project Name: Fort McClellan	Page 2 of 3
Well/Borehole Number: MW58	Well/Borehole Location: T-38	Static Water Level: 52.02 (ft)

Surge Technique: Block	Elevation: NM
Bailing Method: NA	Weather: Sunny, humid
Bar. Press. NM	Amb. Temp: ~87°F
WATER ELEVATION DATA	
1.) Depth Water Surface: (From Casing Top as Marked) 52.02 ft BTOC	Method of Measurement:
2.) Static Water Level Elevation: NA (Casing Top Elevation minus 1)	Product obs: Yes ___ No X
3.) Depth to Well Bottom: (From Casing Top as Marked) 127.55 ft BTOC	
4.) Height of Water Column (h): 75.53 ft (3 minus1)	Depth to Product:
Volume of Water in Well:(x) (h) = 49.3 (gals) (for 2" x= 0.163 gal/ft for 4" x = 0.653 gal/ft)	Method of Measurement:
Amount of Water Removed From Well: ~235	Was Well Pumped Dry? X Yes ___ No
Method of Water Removal: grundfos	Total Volume/Time: ~510 gal / 7 hrs

Time	Temp °C	Conductivity	pH	Turbidity	Casing # Removed	Flow Rate	Observations
	NM	NM	NM	NM			

Recorded By:	Date:	Checked By:	Date:
	6/3/05	Tom Perry	8/9/05

Matrix Environmental Services, LLC

Because the Horiba U22-2 was inop, water quality ~~parameters~~ parameters were not collected. DMP 8/9/05

DMP 8/9/05

Figure B-4 Well Development Log

	Monitoring Well Development Log	
Project Number 905.0136	Project Name: Fort McClellan	Page 3 of 3
Well/Borehole Number: MW58	Well/Borehole Location: T-38	Static Water Level: 51.65 (ft)

Surge Technique: Block	Elevation: NM
Bailing Method: NA	Weather: overcast, humid
Bar. Press.: NM	Amb. Temp.: 630

WATER ELEVATION DATA

1.) Depth Water Surface: (From Casing Top as Marked) 51.65 ft BTOC	Method of Measurement: Heron
2.) Static Water Level Elevation: NM (Casing Top Elevation minus 1)	Product obs: Yes ___ No V
3.) Depth to Well Bottom: (From Casing Top as Marked) 127.55 ft BTOC	Depth to Product:
4.) Height of Water Column (h): (3 minus1) 75.9 ft	Method of Measurement:
Volume of Water in Well;(x) (h) = 49.48 (gals) (for 2" x= 0.163 gal/ft for 4" x = 0.653 gal/ft)	
Amount of Water Removed From Well: 150 gal	Was Well Pumped Dry? X Yes ___ No
Method of Water Removal: grundfos	Total Volume/Time: 660 gal / 9.5 hrs

Time	Temp °C	Conductivity	pH	Turbidity	Casing # Removed	Flow Rate	Observations
1155	NM	NM	NM	>999	0	≈ 1gpm	Brn oppe
1225	↓	↓	↓	313	30 gal	≈ 1gpm	Brn cld-/
1255				147	60 gal	≈ 1gpm	Silty cldy
1325				32.1	90 gal	≈ 1gpm	Brn cldy - lowered pump
1355				40.7	120 gal	≈ 1gpm	Clr
1425				16.3	150 gal	≈ 1gpm	Clr

Recorded By:	Date:	Checked By:	Date:
	6/8/05		

Matrix Environmental Services, LLC. Integrated Environmental Solutions

No values recorded for T°, Conductivity, pH. ~~No explanation.~~ DMP 8/9/05 Values not recorded because the Horiba U22-2 was inop. DMP 8/9/05

Figure B-4 Well Development Log

	Monitoring Well Development Log	
Project Number 905136	Project Name: Fort McClellan	Page 1 of 3
Well/Borehole Number: MW59	Well/Borehole Location: T-38	Static Water Level: 117.50 (ft)

Surge Technique Block	Elevation: NM
Bailing Method: NA	Weather: Sunny Humid
Bar. Press. NM	Amb. Temp. 87°f

WATER ELEVATION DATA

1.) Depth Water Surface: (From Casing Top as Marked) 117.50 ft BTOC	Method of Measurement: Heron
2.) Static Water Level Elevation: NM (Casing Top Elevation minus 1)	Product obs: Yes ___ No X
3.) Depth to Well Bottom: (From Casing Top as Marked) 162.60 ft BTOC	
4.) Height of Water Column (h): (3 minus1) 45.1 ft	Depth to Product:
Volume of Water in Well:(x) (h) = 29.4 (gals) (for 2" x= 0.163 gal/ft for 4" x = 0.653 gal/ft)	Method of Measurement:
Amount of Water Removed From Well: ≈90 gal	Was Well Pumped Dry? X Yes ___ No
Method of Water Removal: grunfos	Total Volume/Time: 90 gal / 3.75 hr

Time	Temp °C	Conductivity	pH	Turbidity	Casing # Removed	Flow Rate	Observations
	NM	NM	NM	NM			

Recorded By:	Date:	Checked By:	Date:
	6/6/05	Steven Pugh	8/9/05

Matrix Environmental Services, LLC

Because the Horiba U-22-G was inop, water quality parameters were not collected. AMP 8/9/05

Figure B-4 Well Development Log

	Monitoring Well Development Log	2 of 3 SMP 8/9/05
Project Number 905017G	Project Name: Fort McClellan T-38	Page 2 of 3
Well/Borehole Number: MW59	Well/Borehole Location: CMW165-MW59	Static Water Level: 118.22 (ft)

Surge Technique: Surge block	Elevation: NA
Bailing Method: NA	Weather: humid cldy
Bar. Press.: NM	Amb. Temp. ~83°f
WATER ELEVATION DATA	
1.) Depth Water Surface: (From Casing Top as Marked) 118.22	Method of Measurement: WL Indicator
2.) Static Water Level Elevation: NM (Casing Top Elevation minus 1)	Product obs: Yes ___ No V
3.) Depth to Well Bottom: (From Casing Top as Marked) 162.60	Depth to Product:
4.) Height of Water Column (h): (3 minus1) 44.38	Method of Measurement:
Volume of Water in Well:(x) (h) = 28.9 (gals) (for 2" x= 0.163 gal/ft for 4" x = 0.653 gal/ft)	
Amount of Water Removed From Well: 52 gals	Was Well Pumped Dry? X Yes ___ No
Method of Water Removal: Grundfos	Total Volume/Time: 142 gal / 6.25

Time	Temp °C	Conductivity	pH	Turbidity	Casing # Removed	Flow Rate	Observations
1040	NM	NM	NM	>1000	30gal	1 gpm	Gry opaque
~~1140~~ 1145 SMP 8/9/05	NM	NM	NM	644	~35gal	1gpm	cldy
1200	NM	NM	NM	>1000	~~28~~ 43gal SMP 8/9/05	1gpm	dry/cldy
1305	NM	NM	NM	635	~52gal	1gpm	cldy

Recorded By:	Date:	Checked By:	Date:
[signature]	6/9/05	Tom Perkins	8/9/05

Matrix Environmental Services, LLC.

No values recorded for Temp, Conductivity & pH. ~~No explanation.~~ SMP 8/9/05
1200 entry, should read 43gal, flow rate 0.5gpm.
1305 entry, should read 0.14gpm SMP 8/9/05
Water quality parameters were not collected because the Horiba U22-2 was inop.
SMP 8/9/05

Figure B-4 Well Development Log

	Monitoring Well Development Log	
Project Number 905c136	Project Name: Soft McClellan	Page 3 of 3
Well/Borehole Number: MW-59	Well/Borehole Location: CMW 168-MW59	Static Water Level: 119.33 (ft)

Surge Technique: surge block	Elevation: NM
Bailing Method: NA	Weather: Overcast
Bar. Press. NM	Amb. Temp. ≈ 75° F
WATER ELEVATION DATA	
1.) Depth Water Surface: 119.33 (From Casing Top as Marked)	Method of Measurement: Heron wl indicator
2.) Static Water Level Elevation: NM (Casing Top Elevation minus 1)	Product obs: Yes ___ No X
3.) Depth to Well Bottom: (From Casing Top as Marked) 162.60	
4.) Height of Water Column (h): (3 minus1) 43.27 DLM 8/9/05	Depth to Product:
Volume of Water in Well:(x) (h) = 7.27 (gals) (for 2" x= 0.163 gal/ft for 4" x = 0.653 gal/ft)	Method of Measurement:
Amount of Water Removed From Well: 10gal	Was Well Pumped Dry? ___ Yes X No
Method of Water Removal: ground fos 2"	Total Volume/Time: 152 gal / 6.75 hr

Time	Temp °C	Conductivity	pH	Turbidity	Casing # Removed	Flow Rate	Observations
0845	NM	NM	NM	45.3	2.5gal	.25 GPM	Clear no odor / low flow
0855	NM	NM	NM	18.34	5.0gal	.25 GPM	clear
0905	NM	NM	NM	17.98	7.5gal	.25GPM	clear
0915	NM	NM	NM	17.73	10.0gal	.25GPM	clear

6/10/05 DLM 8/9/05

Recorded By:	Date:	Checked By:	Date:
Greg Dill	~~6/10/05~~ DLM	Dlm. Pelfrey	8/9/05

Matrix Environmental Services, LLC.

No values for Temp°, Conductivity & pH. No explanation. DLM 8/9/05 - Water quality parameters were not collected because the Horiba U22-2 was inop.
Dlm. Pelfrey 8/9/05