

APPENDIX C

WELL DEVELOPMENT LOGS

Parcel 100
Groundwater Well Development Log

Fort McClellan, Alabama

PROJECT: 774845 COST CODE: 01020300 DELIVERY ORDER CK05

Page 1 of 2

SITE ID: LOCATION ID: FTA-100-GP02 (Well Number) Static Water Level: 12.0' ft

Target Purge Volume: _____ gal WELL DEPTH: 20.4' (ft from TOC) Well Casing Diameter: (opt) 2" Recovery Depth: _____

Date 1998	Time 24hr	Purge Rate (gal/min)	Dynamic H2O Level (ft)	Volume Purged (gal)	Temp C°	pH	Cond. mMhos/cm	Turbidity (NTU)	Dissolved oxygen (mg/L)	Redox (mV)	Prepared By:	Water Description
13 JAN.	13:50	1.0	15.53	5	19.6	6.58	.363	999	1.32	NA	MR/WA	DARK GREY
	:55	1.0	16.24	10	19.7	6.64	.374	999	2.45			" "
	14:00	1.0	16.7	15	19.7	6.65	.380	999	2.60			" "
	:10	1.2	18.1	21	19.7	6.64	.388	999	1.60			" "
	:20	1.2	19.2	28	19.8	6.67	.383	999	1.84			GREY CLOUDY
	:20	—	19.2	28	—	—	—	—	—			STOPPED/WEEL DRY
	:35	—	13.0	28	—	—	—	—	—			RESTARTED
	:45	1.2	16.86	34	—	—	—	—	—			NO READING TAKEN
	:55	1.1	17.65	39.5	19.9	6.70	.390	999	1.16			GREY CLOUDY
	15:05	1.1	19.0	45	19.7	6.70	.375	999	8.15			" "
	:05	—	19.0	45	—	—	—	—	—			STOPPED/WEEL DRY

Parcel 100
Groundwater Well Development Log

Fort McClellan, Alabama

PROJECT: 774645 COST CODE: 01020300 DELIVERY ORDER CK05

Page 2 of 2

SITE ID: LOCATION ID: FTA-100-GP02 (Well Number) Static Water Level: 12.0' ft

Target Purge Volume: _____ gal WELL DEPTH: 20.4' (ft from TOC) Well Casing Diameter: (opt) 2" Recovery Depth: _____

Date 1998	Time 24hr	Purge Rate (gal/min)	Dynamic H2O Level (ft)	Volume Purged (gal)	Temp C°	pH	Cond. mMhos/cm	Turbidity (NTU)	Dissolved oxygen (mg/L)	Redox (mV)	Prepared By:	Water Description
13 JAN	15:20	—	13.0	45	—	—	—	—	—	NA	MR/WA	RESTARTED
	:30	.3	13.76	48	20.8	6.64	.383	498	2.24			GREY THICK CLOUDY
	:40	.3	13.8	51	20.9	6.63	.380	161	1.69			" "
	:50	.25	13.67	54	20.8	6.74	.388	150	8.84			" "
	16:00	.3	13.91	57	21.2	6.64	.377	164	2.64			" "
	:10	.3	14.0	60	20.9	6.67	.382	29.2	8.03			CLEARING
	:20	.3	14.05	63	21.0	6.59	.377	83.6	1.46			CLEARING
	:30	.3	14.07	66	20.8	6.64	.377	22.5	7.99			"
	:40	.3	14.09	69	19.6	6.59	.336	5.75	7.96			
	:50											
	17:00											

Parcel 100

Groundwater Well Development Log

Fort McClellan, Alabama

PROJECT: 774645 COST CODE: 01020300 DELIVERY ORDER CK05

Page 1 of 1

SITE ID: LOCATION ID: FTA-100-GP04 (Well Number) Static Water Level: 9.3 ft

Target Purge Volume: _____ gal WELL DEPTH: 22.3 (ft from TOC) Well Casing Diameter: (opt) 2" Recovery Depth: _____

Date 1998	Time 07:55 24hr 0800	Purge Rate (gal/min)	Dynamic H2O Level (ft)	Volume Purged (gl)	Temp C°	pH	Cond. mMhos/cm	Turbidity (NTU)	Dissolved oxygen (mg/L)	Redox (mV)	Prepared By:	Water Description
12 JAN	08:00	1.2	14.6	6	19.7	6.74	.363	999	8.74	NA	MARK R.	DARK GREY
	:05	1.2	18.5	12	20.4	6.94	.336	999	8.02			" "
	:07	1.2	—	14.5	—	—	—	—	—			STOPPED/WELL DRY
	08:40	—	10.0	14.5	—	—	—	—	—			RESTARTED
	:45	.5	12.5	17	19.9	6.74	.370	999	3.96			DARK GREY
	:50	.5	13.7	19.5	20.4	6.88	.379	999	7.29			CLOUDY GREY
	09:00	.3	13.75	22.5	21.0	6.82	.383	999	2.20			" "
	:10	.3	13.8	25.5	21.2	6.81	.387	720	2.02			" "
	:20	.3	13.85	28.5	21.1	6.82	.387	218	1.87			" "
	:30	.3	13.9	31.5	21.1	6.81	.389	50.9	1.93			CLEARING
	:40	.3	13.9	34.5	21.2	6.84	.389	35.1	2.02			" "
	:50	.3	13.95	37.5	21.4	6.82	.390	19.7	7.21			CLEAR



Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 783149
 Form Completed by: James Dendy / Tim Rice
 Well Developed by (person/firm): IT

Parcel No.: 152
 Well No.: 658P-152-MW01
 Date started: 09/16/99

Monitoring Well Information

Development Method: Surging & pumping
 Development Equipment: Surge block, water pump
horizontal turb meter
 Casing Diameter: 2" OD
 Flush mount or Stickup: flush mount

Beginning Measurements

Depth to Water (ft): 6.92'
 Total depth of Well (ft): 10.98'

COMPLETED
9/22/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
9:05	0	6.92	6.71	.601	>1000	2.01	24.8	Dark brown	
9:20	5	10.17	6.77	.521	>1000	1.25	25.1	Dark brown	Well pump dry 9:26
10:10	5	7.30	6.82	.517	>1000	4.10	25.3	brown	restarted pump
10:25	10	9.79	6.57	.506	>1000	3.53	26.0	lt. brown	well dry @ 10:31
11:20	15	7.20	6.47	.493	>1000	3.84	26.0	brown	restarted pump @ bottom of screen after surging
11:40	20	9.30	6.72	.486	350	3.14	27.5	lt brown	
12:00	25	9.30	6.76 4.29	.492	85.2	3.57	22.2 27.1	almost clear	

Parcel No.: 152
 Well ID: GSDP-152-MWD1
 Date: 9/16/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
12:20	29	10.15	6.77	.485	>1000	2.30	26.7	brown	1224 well dry stop pump to recharge well
13:18	30	7.20	6.78	.491	217	3.75	26.3	lt brown	1334 Bailed dry
:									development complete
:									
:									
:									
:									
:									
:									
:									
:									
:									

* Too low to read

Groundwater Well Development Log

Fort McClellan, Alabama



Project Number: 783149
 Form Completed by: T. Rice
 Well Developed by (person/firm): IT

Parcel No.: GSP-152
 Well No.: MW02
 Date started: 10/22/99

Monitoring Well Information

Development Method: Bail
 Development Equipment: Bailer, Hoiler, Turb. meter
 Casing Diameter: 2" flush mount
pipe not trimmed measurements from top of well casing

Beginning Measurements

Depth to Water (ft): 8.22'
 Total depth of Well (ft): 10.19'

WC = 1.97

COMPLETED
11-4-99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
8:17	0	8.22	5.94	.520	>1000	.96	19.1	brown	
8:33	2								bailed dry
8:48	2	8.68	6.42	.504	118.9	1.90	19.2	lt brown	
8:58	3.25								bailed dry
9:16	3.25	8.65	6.46	.519	103.7	2.73	19.4	lt brown	
9:24	4.25								bailed dry
9:44	4.25	8.67	6.47	.510	95.3	2.75	20.2	lt brown	

Parcel No.: G5BP-152
 Well ID: MW02
 Date: 10/22/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
9:54	5.25	—	—	—	—	—	—	—	bailed dry
10:12	5.25	8.66	6.44	.508	92.5	9.45	21.5	sl brown	
10:20	6.25	—	—	—	—	—	—	—	bailed dry
10:38	6.25	8.66	6.43	.503	66.3	2.69	22.1	almost clear	
10:46	7.25	—	—	—	—	—	—	—	bailed dry
11:01	7.25	8.74	6.45	.502	61.0	2.85	23.0	almost clear	
11:10	8.25	—	—	—	—	—	—	—	bailed dry
11:25	8.25	8.69	6.44	.490	58.7	3.40	21.6	almost clear	
11:33	9.25	—	—	—	—	—	—	—	bailed dry
:									End dev. for today
:									
:									
:									

Groundwater Well Development Log

Fort McClellan, Alabama



Project Number: 783149
 Form Completed by: T. Rice
 Well Developed by (person/firm): IT / Miller Drilling

Parcel No.: G5BP-152
 Well No.: MW04
 Date started: 10/7/99

Monitoring Well Information

Development Method: Surge/Purge
 Development Equipment: Surge block/whale pump/
Inst. meter
 Casing Diameter: 2" ~~STEEL~~ Flush mount

Beginning Measurements
 Depth to Water (ft): 4.48'
 Total depth of Well (ft): 35.10'

COMPLETED10/13/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
10:15	0	10.4	7.11	.367	>1000	1.40	20.5	dk grey	NONE
10:35	15	13.69	7.48	.354	>1000	0.69	20.4	dk grey	
10:55	25	15.42	7.55	.348	>1000	0.72	19.8	dk grey	
11:15	33	14.82	7.47	.349	514	8.45	20.2	grey	
11:35	40	15.55	7.41	.351	>1000	8.45	20.4	dk grey	
11:55	48	18.48	7.47	.347	>1000	1.31	20.3	dk grey	
12:15	56	20.20	7.45	.353	>1000	0.65	20.1	dk grey	

Parcel No.: G58P-152Well ID: MW04Date: 10/7/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
12:35	62	18.93	7.48	.350	543	0.55	20.0	lt grey	NONE
12:55	70	18.22	7.48	.333	31.0	1.43	20.1	clear	
13:15	75	17.88	7.49	.329	88.3	1.11	20.7	almost clear	
13:35	80	17.76	7.56	.329	18.7	1.15	20.9	clear	
13:55	85	17.71	7.59	.352	10.90	1.20	21.3	clear	Well development
:									complete
:									NTU = 10.90
:									
:									
:									
:									
:									

ENTERED
2/22/00
bgsn

Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 783149
Form Completed by: Tim Rice
Well Developed by (person/firm): Miller Drilling/IT

Parcel No.: 152
Well No.: GSBP-152-MW05
Date started: 9/13/99

Monitoring Well Information

Development Method: Surging / Pumping
Development Equipment: Surge Valve, Whale Pump
Horizon, Turb. meter
Casing Diameter: 2"
Flush mount or Stickup: Stickup.

Beginning Measurements
Depth to Water (ft): 9.80
Total depth of Well (ft): 23.85

COMPLETED
9/15/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
10:15	0	9.80	7.24	.327	>1000	0.14	20.6	dk grey	began pumping
10:35	10	13.60	6.89	.338	>1000	1.20	21.5	grey	
10:55	20	14.61	6.78	.338	374	1.80	21.8	lt grey	surged w/ pump after reading
11:15	30	16.00	6.89	.336	262	1.05	21.1	grey	
11:35	38	16.65	6.77	.333	750	1.04	20.8	grey	surged w/ pump
11:55	46	15.47	6.67	.332	79	1.75	20.7	almost clear	pump moved to mid-section
12:15	52	18.79	6.70	.339	>1000	1.85	20.4	grey	

Parcel No.: 152
 Well ID: GSP-152-MW05
 Date: 9/13/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
12:35	60	18.75	6.63	.337	611	2.90	20.4	grey	
12:55	68	16.58	6.61	.336	436	1.29	21.0	grey	
13:15	76	15.60	6.73	.331	15.5	1.81	20.9	clear	moved pump to Tagel screen
13:35	84	17.90	6.91	.336	801	10.21	20.6	grey	
13:55	92	16.60	6.68	.334	103.5	1.76	21.1	almost clear	
14:15	100	16.60	6.92	.330	17.6	1.78	21.2	clear	development complete
:									NTU = 17.60
:									
:									
:									
:									
:									
:									

Groundwater Well Development Log

Fort McClellan, Alabama



Page 1 of 2

Project Number: 783149
Form Completed by: Tim Rice
Well Developed by (person/firm): Tim Rice / IT Corp.

Parcel No.: 152
Well No.: GSBP 152 - MW06
Date started: 9/10/99

Monitoring Well Information

Development Method: Surging + pumping
Development Equipment: INTE pump, surge block
Casing Diameter: 2"
Flush mount or Stickup: Stickup

Beginning Measurements

Depth to Water (ft): 7.3'
Total depth of Well (ft): 20.0'

COMPLETED
[Signature] 9/15/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
09:55	0	10.0 7.3	7.18	.310	71000	1.97	21.5	lt gray	started pump
10:30	25	*	6.93	.328	71000	2.08	21.3	lt gray	
11:00	50	*	6.89	.326	300	2.77	21.5	lt gray	
11:30	75	*	6.98	.331	>1000	1.79	22.2	dk gray	
12:00	90	11.20	7.01	.328	45.6	2.28	22.3	almost clear	
12:30	105	11.00	6.59	.322	40.3	2.70	21.8	clear	
13:00	120	10.50	7.06	.329	28.2	2.82	21.9	Clear	

* DONT HAVE H₂O INDICATOR

Parcel No.: 152
 Well ID: GSRP-152-MW06
 Date: 9/10/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
13:30	130	10.1	7.02	.322	23.8	2.32	22.8		
14:00	140	9.8	6.96	.331	7.5	1.91	24.1	clear	development complete
:									NTU = 7.5
:									
:									
:									
:									
:									
:									
:									
:									
:									
:									

ENTERED
2/22/1999
by sm

Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 783149
Form Completed by: M. ROBERTS (MDC)
Well Developed by (person/firm): MILLER DRILLING Co.

Parcel No.: G5BP-152
Well No.: MW12 MW07
Date started: 10/5/99

Monitoring Well Information

Development Method: PURGE WITH PUMP
Development Equipment: 2" SURGE BLOCK
WHALE PUMP
Casing Diameter: 2" STICK UP

Beginning Measurements
Depth to Water (ft): 10.5' (TOC)
Total depth of Well (ft): 21.8' (TOC)

COMPLETED
10/13/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
10:30	—	—	—	—	—	—	—	—	SET UP WELL FOR DEVELOPMENT USING 2" SURGE BLOCK
:45	0	10.5	6.20	.521	>1000	1.10	18.4	GREY MUDDY	BEGIN PUMPING AT BOTTOM
11:00	~18	Too Low To READ	—	—	—	—	—	GREY CLOUDY	WELL PUMPED DRY
:20	~28	11.5'	6.40	.419	>1000	1.25	19.1	" "	RESTARTED PUMPING ON BOTTOM
:40	~38	12.25'	6.39	.397	323	2.16	19.3	" "	MOVED PUMP UP/DOWN SCREEN, INCREASED PUMP RATE IN ORDER TO DRAIN HEAVY SEDIMENT
:55	~56	Too Low	—	—	—	—	—	" "	WELL PUMPED DRY
12:20	~56	11.0'	6.39	.393	>1000	1.55	19.8	" "	RESUMED PUMPING ON BOTTOM

Parcel No.: G5BP-152Well ID: ~~AWJ-2~~ MW07Date: 10/5/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
12:40	~60	11.6'	6.37	.393	>1000	1.36	20.2	GREY CLOUDY	MOVED PUMP UP/DOWN SCREEN
13:00	~64	12.0'	6.30	.370	>1000	1.95	20.1	" "	" " " " "
:20	~68	11.8'	6.31	.370	465	2.70	20.2	" "	" " " " "
:40	~72	11.74'	6.35	.370	59	1.98	20.3	CLEARING	
14:00	~76	11.8'	6.35	.369	29	1.91	20.3	CLEAR	
:20	~80	11.9'	6.34	.371	13.3	1.66	19.9	"	RESET PUMP TO 19.0' (TOC)
:40	~84	12.02'	6.35	.367	246	1.39	20.0	GREY CLOUDY	
15:00	~88	12.0'	6.36	.369	30.7	1.65	19.8	CLEAR	
:20	~92	12.05'	6.36	.371	15.3	1.88	19.8	"	RESET PUMP TO 17.0' (TOC)
:40	~96	11.9'	6.37	.370	12.9	1.87	19.9	"	RESET PUMP TO 15.0' (TOC)
16:00	~100	12.15'	6.36	.369	10.4	2.23	19.6	"	RESET PUMP TO 13.0' (TOC)
:20	~104	12.1'	6.38	.370	37.1	1.34	19.9	"	
:40	~108	12.12'	6.35	.370	15.0	1.74	19.2	"	END OF DEVELOPMENT, BREAKDOWN/DECON

Groundwater Well Development Log

Fort McClellan, Alabama



Project Number: 783/49
 Form Completed by: M. ROBERTS (MDC)
 Well Developed by (person/firm): MILLER DRILLING CO.

Parcel No.: GSRP-152
 Well No.: MW08
 Date started: 10/4/99

Monitoring Well Information

Development Method: PURGE w/ PUMP
 Development Equipment: 2" SURGE BLOCK
WHALE PUMP
 Casing Diameter: 2"
 Flush mount or Stickup: STICK UP

Beginning Measurements
 Depth to Water (ft): 8.6'
 Total depth of Well (ft): 22.6'

COMPLETED
10/13/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
08:30	0	8.6'	—	—	—	—	—	—	SET UP WELL FOR DEVELOPMENT USING 2" SURGE BLOCK
:45	0	8.6'	7.19	.282	>1000	0.01	19.4	GREY MUDDY	BEGIN PUMPING ON BOTTOM
:51	~7.0	—	—	—	—	—	—	" "	WELL PUMPED DRY
09:15	~7.0	9.6'	7.03	.369	>1000	2.01	19.1	" "	RESTARTED PUMP AT BOTTOM
:22	~15.5 ~8.5	—	—	—	—	—	—	" "	WELL PUMPED DRY
:55	~15.5	9.6'	6.93	.373	>1000	4.18	19.1	" "	RESTARTED PUMP AT BOTTOM
10:15	~20.5	11.75'	6.82	.371	>1000	3.19	20.0	GREY CLOUDY	MOVED PUMP UP/DOWN SCREEN

Parcel No.: GSBP-152Well ID: mw08Date: 10/4/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
10:35	~25.5	12.4'	6.79	.361	>1000	1.83	20.0	GREY CLOUDY	MOVED UP/DOWN SCREEN
:55	~30.5	12.6'	6.78	.362	>1000	1.37	20.0	" "	MOVED PUMP UP/DOWN SCREEN
11:15	~35.5	12.8'	6.81	.362	>1000	1.42	20.1	" "	MOVED PUMP UP/DOWN SCREEN
:35	~40.5	12.95'	6.85	.360	>1000	1.38	20.2	" "	NONE
:55	~45.5	14.9'	6.87	.362	>1000	1.36	20.0	" "	NONE
12:15	~50.5	13.9'	6.86	.361	>1000	1.39	20.1	" "	NONE
:35	~55.5	13.65'	6.91	.358	345	1.92	21.0	" "	NONE
:55	~60.5	13.40'	6.91	.360	245	1.48	21.1	" "	NONE
13:15	~65.5	12.5'	6.92	.362	187	1.57	21.6	" "	NONE
:35	~70.5	13.0'	6.90	.362	>1000	2.19	21.3	" "	NONE
:55	~75.5	13.9'	6.91	.358	>1000	1.54	21.0	" "	NONE
14:15	~80.5	14.3'	6.90	.357	690	1.62	20.9	" "	NONE
:35	~85.5	13.2'	6.87	.353	270	2.33	21.2	" "	NONE

Parcel No.: GSBP-152Well ID: MW08Date: 10/4/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
14:55	~90.5	13.15'	6.86	.353	40.5	2.13	21.1	CLEARING	None
15:15	~95.5	13.0'	6.87	.356	25.1	1.97	21.2	CLEAR	RESET PUMP TO MIDDLE OF WATER COLUMN
:35	~99	12.2'	6.87	.355	124	2.18	21.8	GREY CLOUDY	
:55	~103	11.95'	6.90	.357	18.12	1.90	21.8	CLEAR	RESET PUMP AT TOP OF WATER COLUMN
16:15	~107	12.15'	6.89	.356	6.2	1.66	21.6	CLEARING	
:35	~111	12.2	6.88	.357	16.1	1.68	21.5	CLEAR	
:55	~115	12.3	6.88	.357	8.9	1.71	21.5	CLEAR	JAR SAMPLE TAKEN, END OF DEVELOPMENT
17:00	—	—	—	—	—	—	—	—	BREAK DOWN/DECON
:									
:									
:									
:									

Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 783/49
77464503Form Completed by: M. ROBERTS (MDC)Well Developed by (person/firm): MILLER DRILLING Co.Parcel No.: GSP-152Well No.: 6-09 MW09Date started: 9/30/99

Monitoring Well Information

Development Method: PURGE WITH PUMPDevelopment Equipment: 2" SURGE BLOCK
WHALE PUMPCasing Diameter: 2"Flush mount or Stickup: STICK UP

Beginning Measurements

Depth to Water (ft): 9.7'Total depth of Well (ft): 22.1'

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
14:00	0	9.7'	6.79	.378	>1000	0.54	20.4	GREY MUDDY	STARTED PUMPING AT BOTTOM
:07	~8	Too Low TO READ	—	—	—	—	—	" "	WELL PUMPED DRY
:35	~8	10.6'	6.80	.387	>1000	2.31	21.4	" "	RESTARTED PUMP AT BOTTOM
:40	~10.5	12.5	—	—	—	—	—	—	STOPPED PUMP WENT BAD
:50	~10.5	11.5	—	—	—	—	—	—	RESTARTED w/NEW PUMP
15:00	~15.5	14.8	6.65	.371	>1000	2.83	22.1	GREY CLOUDY	
:10	~20.5	Too Low	—	—	—	—	—	" "	WELL PUMPED DRY

Parcel No.: GSBP-152Well ID: mw09Date: 9/30/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
15:40	~20.5	10.9'	6.68	.371	>1000	2.53	22.2	GREY CLOUDY	RESUMED PUMPING
16:00	~25.5	15.35	6.65	.360	>1000	2.85	22.6	" "	MOVED PUMP UP/DOWN SCREEN
:20	~30.5	16.45	6.64	.360	566	1.81	22.6	" "	" " " " " "
:40	~35.5	16.9	6.63	.362	>1000	1.94	22.0	" "	" " " " " "
17:00	~40.5	17.75	6.64	.361	>1000	1.74	21.2	" "	STOPPED END OF DAY
—	—	—	—	—	—	—	—	—	10/1/99
08:00	~40.5	9.55'	6.20	.391	>1000	1.67	17.1	GREY MUDDY	RESTART DEVELOPMENT WITH PUMP AT BOTTOM
:20	~47.5	14.7	6.12	.375	501	2.41	18.1	GREY CLOUDY	MOVED PUMP UP/DOWN SCREEN
:40	~51.5	14.5	6.44	.369	201	1.90	18.3	" "	" " " " " "
09:00	~55.5	14.05'	6.46	.364	>1000	1.85	19.0	" "	" " " " " "
:20	~60.5	15.2'	6.61	.372	95	2.31	19.1	CLEARING	
:40	~64.5	14.25'	6.73	.374	31	2.28	19.6	CLEAR	
10:00	~68.5	14.3	6.68	.366	29	1.91	19.8	CLEAR	

Parcel No.: GSP-152
 Well ID: MW09
 Date: 10/1/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
10:20	~72.5	14.3'	6.74	.371	30	2.63	20.6	CLEAR	RESET PUMP AT MIDDLE OF WATER COLUMN
:40	~76.5	14.4'	7.14	.363	16.3	2.00	20.1	CLEAR	MOVED PUMP UP/DOWN SCREEN
11:00	~80.5	14.4'	7.22	.362	130	2.11	20.7	CLOUDY	
:20	~84.5	14.35	7.17	.359	21.3	1.78	22.7	CLEAR	
:40	~88.5	14.33	7.27	.356	9.27	1.84	23.2	CLEAR	RESET PUMP AT TOP OF WATER COLUMN
12:00	~92.5	14.32	7.26	.355	11.9	1.53	24.0	CLEAR	
:30	~96.5	14.4	7.33	.354	4.75	1.35	25.2	CLEAR	END OF DEVELOPMENT
:									
:									
:									
:									
:									
:									



Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 783149
Form Completed by: M. ROBERTS
Well Developed by (person/firm): M. ROBERTS / MILLER DRILLING

Parcel No.: GSP-152
Well No.: MW10
Date started: 9/13/99

Monitoring Well Information

Development Method: Pumping
Development Equipment: SURGE BLOCK / WHALE PUMP
Casing Diameter: 2"
Flush mount or Stickup: STICK UP

Beginning Measurements

Depth to Water (ft): 9.0'
Total depth of Well (ft): 25.5

COMPLETED
Jeff Jan 9/15/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
09:00	0	9.0	7.09	.343	>1000	3.75	22.4	DARK GREY	START / 3 PUMP ON BOTTOM
:20	~20	15.0	7.08	.367	>1000	1.16	23.1	" "	MOVED PUMP UP 1/2 DOWN SCREEN RESET PUMP ON BOTTOM
:40	~35	12.95	6.88	.358	>1000	1.16	23.4	" "	MOVED PUMP UP 1/2 DOWN SCREEN RESET PUMP ON BOTTOM
10:00	~45	*	6.87	.358	>1000	1.31	23.5	" "	MOVED PUMP UP 1/2 DOWN SCREEN RESET PUMP ON BOTTOM
:20	~55	*	6.85	.356	760	1.54	22.9	CLOUDY GREY	MOVED PUMP UP 1/2 DOWN SCREEN RESET PUMP ON BOTTOM
:40	~65	*	6.72	.356	311	1.64	23.5	" "	MOVED PUMP UP 1/2 DOWN SCREEN RESET PUMP ON BOTTOM
11:00	~75	*	6.75	.355	265	1.47	23.6	" "	MOVED PUMP UP 1/2 DOWN SCREEN RESET PUMP ON BOTTOM

* I NO LONGER HAVE WATER LEVEL INDICATER AT THIS TIME

Parcel No.: GSBP-152
 Well ID: MW10
 Date: 9/13/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
11:20	~85	*	6.77	.358	186	1.50	22.9	CLOUDY GREY	PUMPING AT BOTTOM
:40	~100	*	6.64	.354	228	1.51	22.8	" "	" " "
12:00	~110	*	6.55	.356	67.3	1.69	22.9	CLOUDY CLEARING	" " "
:20	~117	*	6.51	.352	208	1.81	22.7	CLOUDY GREY	" " "
:40	~125	*	6.54	.351	354	1.90	23.3	" "	" " "
13:00	~132	*	6.70	.364	122	2.10	23.3	" "	" " "
:20	~140	*	6.70	.357	15.3	1.76	23.7	CLEAR	RESET PUMP TO MID-SCREEN AFTER THIS READING
:40	~147	*	6.81	.359	22	1.87	24.3	"	PUMPING AT MID-SCREEN
14:00	~155	*	6.93	.364	13.8	2.15	24.2	"	MOVED PUMP TO TOP OF SCREEN AFTER THIS READING
:20	~160	12.6	6.85	.357	49	1.54	24.3	CLEARING	PUMPING AT TOP OF SCREEN
:40	~165	12.1	6.86	.358	15.2	1.31	25.6	CLEAR	DEVELOPMENT COMPLETE
:									
:									



Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 783149
Form Completed by: DREW STORM
Well Developed by (person/firm): DREW STORM (ITCOP)

Parcel No.: GSRP-152-(7)
Well No.: GSRP-152-MW11
Date started: 10/1/99

Monitoring Well Information

Development Method: Purge w pump
Development Equipment: 2" dia SURGE BLOCK, PVC RISER
(2) EACH ELECTRIC "WHALE" PUMPS.
Casing Diameter: 2" dia SCH 40 PVC.

Beginning Measurements

Depth to Water (ft): 6.21' TOL
Total depth of Well (ft): 21.66' TOL

COMPLETED10/13/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
08:50	5.0	9.51'	5.90	0.226	>1000	1.86	18.9	GRAY	PUMP SET AT BOTTOM OF WELL. PUMP RATE ~1.5G/MIN, GW IS DARK GRAY WITH ABUNDANT SUSPENDED SEDIMENT.
09:10	35	11.21'	5.92	0.223	7100	0.66	19.3	GRAY	CONTINUE PURGING FROM BOTTOM.
09:30	65	12.50'	6.05	0.226	>1000	2.01	18.9	GRAY	CONTINUE PURGING FROM BOTTOM.
09:50	95	13.11'	6.10	0.224	>1000	1.17	19.1	LIGHT GRAY	GROUNDWATER IS BECOMING A TRANSPARENT GRAY COLOR. RAN PUMP UP & DOWN LENGTH OF SCREEN. REDUCED PUMP RATE TO 1G/MIN. PUMP SET AT 16' FROM TOC.
10:10	115	9.89'	6.08	0.226	487	0.94	19.1	Light gray	5' OFF OF BOTTOM AFTER CIRCULATING WELL.)
10:30	~135	8.42'	6.05	0.223	400	0.81	19.3	off white	RAN PUMP UP & DOWN LENGTH OF SCREEN, SET PUMP AT 11' FROM TOC (MIDSCREEN), AFTER SAMPLE WAS TAKEN.
10:50	~150	8.42	6.06	0.223	887	1.01	19.3	CLEAR	LATE SAMPLE TAKEN ON 10/1/99. D. STORM

Parcel No.: GSBP-152Well ID: MW11Date: 10/5/99 *

* RESTART DEVELOPMENT ON THIS DATE *

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
07:45	—								SET UP WELL FOR DEVELOPMENT USING 2" SURGE BLOCK
08:00	~150	6.35'	5.09	.150	>1000	0.88	18.1	GREY CLOUDY	BEGIN PUMPING ON BOTTOM
:20	~145	8.35'	5.44	.204	169	1.03	18.2	" "	
:40	~180	8.9'	5.41	.210	40	1.77	18.4	CLEARING	
09:00	~195	8.8'	5.39	.212	13.2	1.14	18.4	CLEAR	RESET PUMP TO 17.0' (TOC)
:20	~110	9.1'	5.40	.214	8.2	1.39	18.0	"	RESET PUMP TO 13.0' (TOC)
:40	~125	9.05'	5.41	.214	3.2	1.09	18.2	"	
10:00	~140	9.1'	5.41	.214	2.2	1.27	18.1	"	TAKE JAR SAMPLE, END OF DEVELOPMENT
:									BREAKDOWN/DECON
:									
:									
:									
:									

**Groundwater Well Development Log**

Fort McClellan, Alabama

Project Number: 783149
Form Completed by: M. ROBERTS (M.D.C.)
Well Developed by (person/firm): MILLER DRILLING CO.

Parcel No.: G5BP-152
Well No.: MW12
Date started: 10/6/99

Monitoring Well Information

Development Method: PURGE w/ PUMP
Development Equipment: 2" SURGE BLOCK
WHALE PUMP
Casing Diameter: 2" FLUSHMOUNT

Beginning Measurements

Depth to Water (ft): 8.55'
Total depth of Well (ft): 14.4'

COMPLETED10/13/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
12:15	0	8.55'	—	—	—	—	—	—	BEGIN SETUP OF WELL FOR DEV. USING A 2" SURGE BLOCK
:30	0	8.55'	6.50	.381	>1000	0.94	23.6	TAN MUDDY	BEGIN PUMPING ON BOTTOM
:35	~6.0	Too Low To READ	—	—	—	—	—	" "	WELL PUMPED DRY
13:30	~6.0 9.5	9.5'	6.44	.372	>1000	1.18	25.6	" "	RESUMED PUMPING ON BOTTOM
:50	~10.0	13.1'	6.47	.356	>1000	1.74	25.1	TAN CLOUDY	
:55	~11.0	Too Low To READ	—	—	—	—	—	" "	WELL PUMPED DRY
15:25	~11.0	10.3'	6.49	.413	>1000	1.57	26.6	" "	RESUMED PUMPING ON BOTTOM

Parcel No.: GSP-152Well ID: MW12Date: 10/6/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
15:40	~13.0	12.4'	6.74	.411	316	2.62	27.0	TAN CLOUDY	
16:00	~15.5	Too Low To Read	6.48	.379	>1000	1.36	25.7	" "	WELL PUMPED DRY
—	—	—	—	—	—	—	—	—	FINISH DEVELOPMENT ON 10/7/99
08:30	~15.5	8.65'	—	—	—	—	—	—	BEGIN SETUP FOR DEVELOPMENT
:45	~15.5	8.65'	6.17	.446	14.4	2.33	21.8	CLEAR	TAKE INITIAL READING AND JAR SAMPLE WITH BAILER
:55	~15.5	8.65'	6.35	.431	260	1.49	21.3	TAN CLOUDY	PUMP AT BOTTOM TO REMOVE REMAINING SEDIMENT
:58	~19.0	Too Low	—	—	—	—	—	—	WELL PUMPED DRY
09:00	~19.0	—	—	—	—	—	—	—	BREAK DOWN/DECON
:									
:									
:									
:									
:									

**Groundwater Well Development Log**

Fort McClellan, Alabama

Project Number: 783149
Form Completed by: M. ROBERTS (MDR)
Well Developed by (person/firm): MILLER DRILLING CO.

Parcel No.: GSP-152
Well No.: MW 13
Date started: 10/6/99

Monitoring Well Information

Development Method: PURGE w/ PUMP
Development Equipment: 2" SURGE BLOCK
WHALE PUMP
Casing Diameter: 2" FLUSH MOUNT

Beginning Measurements
Depth to Water (ft): 8.0'
Total depth of Well (ft): 20.05

COMPLETED10/13/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
08:30	0	8.0'	—	—	—	—	—	—	BEGIN SET UP FOR DEVELOPMENT USING 2" SURGE BLOCK
:45	0	8.0'	5.99	.263	71000	2.45	19.5	TAN CLOUDY	BEGIN PUMPING ON BOTTOM
09:00	~10	Too Low To READ	—	—	—	—	—	—	WELL PUMPED DRY
10:30	~10	10.0'	6.17	.253	333	2.17	21.3	TAN CLOUDY	RESUMED PUMPING ON BOTTOM
:50	~12.5	12.68'	6.26	.282	221	4.24	22.4	" "	MOVED PUMP UP/DOWN SCREEN
11:10	~15.0	14.2'	6.26	.302	24.1	4.16	22.8	" "	" " " " "
:30	~17.5	17.7'	6.18	.250	329	3.16	22.2	" "	

Parcel No.: GSP-152Well ID: MW 13Date: 10/16/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
11:40	~18.0	Too Low To READ	—	—	—	—	—	—	WELL PUMPED DRY
13:15	~18.0	11.0	6.44	.290	254	3.01	22.9	TAN CLOUDY	RESUMED PUMPING AT BOTTOM
:35	~20.5	14.0	6.29	.297	246	3.95	24.1	" "	
:55	~23	15.85	6.28	.304	156	4.29	23.5	" "	
14:15	~25.5	18.1	6.35	.290	191	4.53	22.7	" "	
:25	~26	Too Low To READ	—	—	—	—	—	" "	WELL PUMPED DRY
—	—	—	—	—	—	—	—	—	END OF DEVELOPMENT FOR TODAY
—	—	—	—	—	—	—	—	—	COMPLETE DEV. ON 10/7/99
09:30	~26	8.0'	—	—	—	—	—	—	BEGIN SETUP FOR DEVELOPMENT
:45	~26	8.0'	6.23	.314	10.2	4.13	22.0	CLEAR	TAKE INITIAL READING AND JAR SAMPLE W/BAILER
:50	~26	8.0'	6.22	.309	52	2.96	20.6	CLEAR	PUMP REMAINING SEDIMENT
:55	~32	Too Low To READ	—	—	—	—	—	CLEAR	WELL PUMPED DRY
10:00	—	—	—	—	—	—	—	—	BREAK DOWN/DECON

**Groundwater Well Development Log**

Fort McClellan, Alabama

Project Number: 783149
Form Completed by: M. ROBERTS (MDC)
Well Developed by (person/firm): MILLER DRILLING CO.

Parcel No.: GSP-152
Well No.: MW 14
Date started: 10/6/99

Monitoring Well Information

Development Method: PURGE w/ PUMP
Development Equipment: 2" SURGE BLOCK
WHALE PUMP
Casing Diameter: 2" FLUSH MOUNT

Beginning Measurements

Depth to Water (ft): 8.4' 8.7'
Total depth of Well (ft): 19.3' 19.6'

COMPLETED10/13/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
07:45	0	8.7'	—	—	—	—	—	—	SETUP WELL FOR DEVELOPMENT USING 2" SURGE BLOCK
08:00	0	8.7' 8.4'	5.86	.292	>1000	1.08	19.0	TAN MUDDY	BEGIN PUMPING ON BOTTOM
:20	~13.5	9.8'	5.99	.300	503	2.25	20.8	TAN CLOUDY	MOVED PUMP UP/DOWN SCREEN
:40	~23.5	9.3'	6.21	.294	>1000	1.40	20.6	" "	" " " " "
09:00	~33.5	9.4'	6.31	.290	648	2.03	21.2	" "	" " " " "
:20	~43.5	9.75'	6.33	.295	890	1.44	21.6	" "	" " " " "
:40	~53.5	9.9'	6.31	.300	829	2.64	21.9	" "	" " " " "

Parcel No.: GSP-152Well ID: MW 14Date: 10/6/99

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
10:00	~63.5	9.85'	6.33	.301	490	2.31	21.7	TAN CLOUDY	MOVE PUMP UP/DOWN SCREEN
:20	~73.5	9.75'	6.35	.304	4.51	2.20	22.7	CLEAR	RESET PUMP TO 17.0' (TOC)
:40	~83.5	9.90'	6.34	.301	2.29	1.29	22.5	CLEAR	RESET PUMP TO 15.0' (TOC)
11:00	~93.5	9.87'	6.35	.301	2.09	1.82	22.7	CLEAR	RESET PUMP TO 13.0' (TOC)
:20	~103.5	9.81'	6.36	.307	2.42	1.94	23.4	CLEAR	RESET PUMP TO 11.0' (TOC)
:40	~113.5	9.75	6.34	.301	1.12	1.92	23.2	CLEAR	END OF DEVELOPMENT FINAL READING
:									
:									
:									
:									
:									
:									
:									

ID
DONE