

**APPENDIX C**  
**WELL DEVELOPMENT LOGS**

Parcel 15

### Groundwater Well Development Log

Fort McClellan, Alabama

PROJECT: 774645 COST CODE: 01020300 DELIVERY ORDER CK05

Page 1 of 2

SITE ID: LOCATION ID: PPMP75-6P01 (Well Number) Static Water Level: 1.80 ft <sup>KA or KA 1.80</sup>

Target Purge Volume: 1.8 gal WELL DEPTH: 12.90 (ft from TOC) Well Casing Diameter: (opt) 2" Recovery Depth: less than 11.80  
11.1 columns

Date 1999	Time 24hr	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
2/4/99	13:57		1.80	0	22.1	6.26	8.72	433	.07		TM	Brown
	14:01		9.08	3	20.4	6.30	.916	869	.25			"
	14:06		9.65	6	21.3	6.37	1.868	300	.39			"
	14:10		12.11	8	22.2	6.39	1.865	355	1.85			"
	14:12		WELL IS DRY									
	14:57		5.28	9	22.9	5.74	1.09	<sup>KA 45</sup> <del>607</del>	.83		KA	Brown
	15:03		8.03	11	21.9	5.85	1.02	<sup>KA</sup> <del>954</del>	2.14		KA	
	15:08		9.25	13	21.8	5.95	1.02	1004	2.46		KA	Brown
	15:18		10.61	15	21.5	6.24	1.19	750	3.39		KA	Milky brown
	15:27		11.71	17.5	21.9	6.25	1.30	487	.91		KA	" "
	15:33		<del>11.40</del> KA 19.0	19.0	21.9	6.41	1.30	963	.25		KA	Milky brown

less than 11.80

# Parcel 75

## Groundwater Well Development Log

Fort McClellan, Alabama

PROJECT: 774645 COST CODE: 01020300 DELIVERY ORDER CK05

Page 2 of 2

SITE ID: LOCATION ID: PPMP-75-6P01 (Well Number) Static Water Level: 1.80 ft

Target Purge Volume: 1.8 gal WELL DEPTH: 12.90 (ft from TOC) Well Casing Diameter: (opt) 8" Recovery Depth: less than 11.80

Date 1999	Time 24hr	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
2/11/99	15:49		less than 11.80	21.0	21.3	6.96	1.40	288	2.14		KA	light colored brown
	16:00		less than 11.80	23.0	21.2	6.88	1.45	57.5	1.70		KA	clear
	16:17		less than 11.80	25.0	20.8	6.92	1.49	36.2	2.56		KA	clear
	16:35		less than 11.80	27.0	20.4	6.89	1.53	35.0	2.05		KA	clear
	16:49		less than 11.80	30.0	20.1	6.95	1.55	41.4	2.24		KA	clear
	17:06		less than 11.80	32.0	20.0	7.09	1.57	17.2	2.51		KA	clear
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# Parcel 5 Groundwater Well Development Log

Fort McClellan, Alabama

PROJECT: 774645 COST CODE: 01020300 DELIVERY ORDER CK05

Page 1 of 2

SITE ID: LOCATION ID: PPMP-75-GP02 (Well Number) Static Water Level: 3.02 ft

Target Purge Volume: 2.59 gal WELL DEPTH: 19.24 (ft from TOC) Well Casing Diameter: (opt) 2" Recovery Depth: \_\_\_\_\_  
 Water Column = 16.22

Date 1999	Time 24hr	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
2/5/99	08:41		3.02	0	18.1	6.70	.576	254	1.82		Kevin Arnold	initially brown
	08:52		7.54	2.5	18.4	7.46	.551	171	1.80		KA	light brown, mostly clear
	08:57		8.71	5.0	18.2	7.85	.566	57.2	2.99		KA	clear
	09:05		9.42	7.5	18.9	8.13	.491	20.1	1.96		KA	"
	09:13		10.05	10.0	18.9	8.31	.481	9.6	1.86		KA	"
	09:30		10.12	12.5	19.1	8.54	.481	580	1.93		KA	more brown than initial brown
	09:40		10.99	15.0	19.1	8.57	.482	252	2.23		KA	clearing up
	09:53		11.52	17.5	19.1	8.51	.490	204	1.48		KA	clearing up
	10:02		12.12	20.0	19.1	8.43	.446	147	.96		KA	clearing up
	10:17		12.25	22.5	18.9	8.37	.405	371	1.10		KA	dirty after surging
	10:26		12.81	25.0	19.2	8.32	.390	146	.72		KA	clearing up quickly

# Parcel 75

## Groundwater Well Development Log

Fort McClellan, Alabama

PROJECT: 774645 COST CODE: 01020300 DELIVERY ORDER CK05

SITE ID: LOCATION ID: PPMP 75 - 6P02 (Well Number) Static Water Level: 3.02 ft

Target Purge Volume: 2.59 gal WELL DEPTH: 19.24 (ft from TOC) Well Casing Diameter: (opt) 2" Recovery Depth: \_\_\_\_\_

*water column 16.22*

Date 1999	Time 24hr	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
<u>2/5/99</u>	<u>10:41</u>	<u>1</u>	<u>12.68</u>	<u>27.5</u>	<u>19.2</u>	<u>8.34</u>	<u>.380</u>	<u>109</u>	<u>1.65</u>	<u>1</u>	<u>KA</u>	<u>clearing up</u>
	<u>10:52</u>	<u>5</u>	<u>12.93</u>	<u>30.0</u>	<u>19.4</u>	<u>8.29</u>	<u>.397</u>	<u>15.1</u>	<u>.93</u>	<u>5</u>	<u>KA</u>	<u>clear</u>
	<u>11:04</u>	<u>5</u>	<u>12.91</u>	<u>32.5</u>	<u>19.7</u>	<u>8.25</u>	<u>.419</u>	<u>163</u>	<u>1.51</u>	<u>5</u>	<u>KA</u>	<u>1.4% dirty</u>
	<u>11:15</u>	<u>5</u>	<u>13.04</u>	<u>35.0</u>	<u>19.5</u>	<u>8.11</u>	<u>.409</u>	<u>28.9</u>	<u>.97</u>	<u>5</u>	<u>KA</u>	<u>clearing up</u>
	<u>11:20</u>	<u>Not</u>	<u>13.05</u>	<u>36.5</u>	<u>19.4</u>	<u>8.05</u>	<u>.410</u>	<u>13.4</u>	<u>1.09</u>	<u>5</u>	<u>KA</u>	
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# Parcel 15

## Groundwater Well Development Log

Fort McClellan, Alabama

PROJECT: 774645 COST CODE: 01020300 DELIVERY ORDER CK05

Page 1 of 2

SITE ID: LOCATION ID: PPM175-6P03 (Well Number) Static Water Level: 3.58 ft

Target Purge Volume: 2.28 gal WELL DEPTH: 17.86 (ft from TOC) Well Casing Diameter: (opt) 2" Recovery Depth: \_\_\_\_\_  
2.28 water column = 14.28

Date 1999	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
<u>2/5/99</u>	<u>13:14</u>		<u>3.58</u>	<u>0</u>	<u>20.0</u>	<u>7.10</u>	<u>2.72</u>	<u>245</u>	<u>2.49</u>		<u>KA</u>	
	<u>13:21</u>		<u>10.10</u>	<u>2</u>	<u>18.9</u>	<u>7.26</u>	<u>2.61</u>	<u>161</u>	<u>2.87</u>			
	<u>13:25</u>		<u>11.09</u>	<u>4</u>	<u>19.2</u>	<u>7.27</u>	<u>2.75</u>	<u>236</u>	<u>2.30</u>			
	<u>13:41</u>		<u>?</u>	<u>6</u>	<u>19.7</u>	<u>7.28</u>	<u>2.83</u>	<u>336</u>	<u>2.57</u>			
	<u>13:54</u>		<u>13.65</u>	<u>8</u>	<u>19.9</u>	<u>7.21</u>	<u>2.65</u>	<u>160</u>	<u>2.61</u>			
	<u>14:14</u>		<u>14.20</u>	<u>10</u>	<u>20.2</u>	<u>7.13</u>	<u>2.53</u>	<u>324</u>	<u>1.40</u>			
	<u>14:24</u>		<u>15.67</u>	<u>12</u>	<u>20.2</u>	<u>7.20</u>	<u>2.57</u>	<u>87</u>	<u>2.39</u>			
	<u>14:36</u>		<u>dry</u>	<u>14</u>	<u>20.2</u>	<u>7.24</u>	<u>2.62</u>	<u>363</u>	<u>1.69</u>			
	<u>15:08</u>		<u>16.82</u>	<u>16</u>	<u>20.2</u>	<u>7.24</u>	<u>2.59</u>	<u>130</u>	<u>2.58</u>			
	<u>15:39</u>		<u>16.82</u>	<u>18</u>	<u>19.9</u>	<u>7.26</u>	<u>2.58</u>	<u>81</u>	<u>2.87</u>			
	<u>16:13</u>		<u>16.82</u>	<u>20</u>	<u>20.0</u>	<u>7.12</u>	<u>2.74</u>	<u>86.3</u>	<u>2.87</u> <u>2.22</u>			

# Parcel 75 Groundwater Well Development Log

Fort McClellan, Alabama

PROJECT: 774645 COST CODE: 01020300 DELIVERY ORDER CK05

Page 2 of 2

SITE ID: LOCATION ID: PPMP75 6P03 (Well Number) Static Water Level: 3.56 ft

Target Purge Volume: 2.28 gal WELL DEPTH: 17.86 (ft from TOC) Well Casing Diameter: (opt) 2" Recovery Depth: \_\_\_\_\_

Date 1999	Time 24hr	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
<u>2/15/99</u>	<u>16:25</u>		<u>17.00</u>	<u>1.5</u>	<u>19.1</u>	<u>7.30</u>	<u>2.62</u>	<u>57</u>	<u>1.72</u>			
	<u>16:40</u>		<u>17.10</u>	<u>1.0</u>	<u>19.0</u>	<u>7.29</u>	<u>2.60</u>	<u>56</u>	<u>1.70</u>			
	<u>17:00</u>		<u>17.31</u>	<u>.5</u>	<u>19.0</u>	<u>7.29</u>	<u>2.60</u>	<u>55</u>	<u>1.71</u>			
	<u>17:10</u>		<u>17.31</u>	<u>.3</u>	<u>19.0</u>	<u>7.29</u>	<u>2.60</u>	<u>55</u>	<u>1.71</u>			
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## Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887  
 Form Completed by: Loz McMillan  
 Well Developed by (person/firm): Loz McMillan / IT Group

Parcel No.: PPMP-66-MW01  
 Well No.: MW01  
 Date started: ~~10-18-00~~ ~~10-19-00~~  
10-18-00 10-19-00

## Monitoring Well Information

Development Method: Surge + Purge  
 Development Equipment: Water Pump  
 Casing Diameter: 2" Diameter PVC

Beginning Measurements  
 Depth to Water (ft): 8.0  
 Total depth of Well (ft): 26.0

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)
10-18-00 08:15	0	7.89	6.32	3.63	570	2.68	19.2	D Brown	
08:30	5	19.2	6.49	3.67	148.8	2.74	21.9	L Brown	
08:45	10	22.29	6.39	3.71	79.8	2.70	22.1	L Gray	
09:00	15	23.5	6.39	3.70	78.9	2.71	22.1	L Gray	
09:15	20	25.9	6.37	3.70	78.6	2.70	22.1	L Gray	Well went Dry
10-19-00 08:35	20.45	8.0	6.06	3.13	330	2.59	20.7	D Gray	adding volume that was abstracted on 10-18-00 20.
08:50	20.90	13.7	6.68	3.10	12.69	2.76	20.4	Clear	Purging At .036 gpm

Parcel No.: PPM R-66-MW01  
 Well ID: MW01  
 Date: 10-19-2000

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)
09:05	21.35	13.95	6.68	3.14	6.35	2.40	22.3	Clear <del>Gray</del>	Moved pump up
09:20	21.80	14.0	6.67	3.18	9.32	2.80	22.3	Clear	
09:35	22.25	14.2	6.63	3.20	5.47	2.25	23.9	Clear	
09:50	<del>22.95</del>	14.25	6.64	3.20	3.40	2.28	21.5	Clear	Moved pump Down
10:05	37.25	18.80	6.87	3.13	9.89	2.46	19.6	Clear	Increase Flow Rate to .5 GPM
10:20	44.75	20.15	6.80	3.13	8.21	2.41	22.9	Clear	Took Sample
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*Plot*

$TDW\ 26.0\ minus\ DTW\ 8 = 18 \times .163 = 2.93 \times 5 = 14.67 + 10 = 24.67$

Note: Approx 10 GALLONS of PORTABLE WATER was used to set Sand Pack for this well

# Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887  
 Form Completed by: David Tindell  
 Well Developed by (person/firm): David Tindell

Parcel No.: PPMP66M402  
 Well No.: PPMP66MW02  
 Date started: 10-17-00

## Monitoring Well Information

Development Method: Surge Purge  
 Development Equipment: Horiba P.T.P. turbidimeter, water level meter  
 Casing Diameter: 2in

Purge Volume = 25.35 gal. of water  
 Beginning Measurements  
 Depth to Water (ft): 4.78  
 Total depth of Well (ft): 23.61

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)
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09:30	2	7.54	6.18	1.58	784	3.04	23.5	Black	Purge Rate is .163 gal/min @ 23 ft TOC
09:45	4	9.30	6.11	1.51	120.6	1.06	23.9	dark	0937 Raise Pump to 20 ft TOC
10:00	8	10.95	6.08	1.55	50.2	1.09	24.1	clear	0945 increase flow rate .26 gal/min
10:15	12	12.51	6.05	1.51	33.7	1.46	23.6	clear	1036 Raise Pump to 17 ft TOC
10:30	16	13.10	6.12	1.46	42.7	1.30	24.3	clear	
10:45	20	14.02	6.17	1.54	88.1	1.44	24.4	cloudy	
11:00	24.00	14.97	6.20	1.53	85.0	1.20	24.4	cloudy	1102 Lower Pump to 20 ft TOC slow rate to .2 gal/min .29 gal/min

TOC Total Depth (23.61) - 4.78 (water level) = 18.83 ft water

18.83 ft x .163 (2nd diameter) = 3.07 gallons with volume

3.07 x 5 well volumes = 15.35 gallons + 10 gallons added during drilling = 25.35 gal. of water to purge from well

Parcel No.: PPM66mw  
 Well ID: PPM66mw02  
 Date: 10-17-00

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)
11:15	27	14.98	6.24	1.57	519	1.37	23.9	cloudy	
11:30	30.0	18.47	6.32	<del>1.76</del> <sup>1.59</sup>	536	1.51	23.7	cloudy	1135 slow purge Rate to 1399 gallons permeate
11:45	32.0	18.37	6.31	1.54	497	2.14	25.4	cloudy	
12:00	34.00	17.40	6.27	1.55	152	3.54	26.1	cloudy	
12:15	36.00	15.96	6.22	1.55	106	3.78	26.4	cloudy	
12:30	38.00	14.20	6.21	1.58	79	4.02	26.7	cloudy	
12:45	40.00	13.80	6.21	1.58	57	4.57	26.8	cloudy	
13:00	42.00	12.70	6.19	1.59	36.20	3.81	27.0	cloudy	
13:15	44.00	12.37	6.17	1.62	42.0	3.60	27.1	cloudy	
14:20	52.00	11.01	6.15	1.62	6.75	1.69	27.3	clear	
14:30	53.00	10.79	6.14	1.61	9.9	1.70	27.3	clear	
14:40	54.00	10.69	6.13	1.60	9.8	1.78	27.2	clear	

Well is developed as per  
 Base wide sampling and Analysis 51.5  
 plus 5.5 hours for div top  
 549 gallons removed from well  
 take sample for picture

### Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796 887  
 Form Completed by: RON McMillan  
 Well Developed by (person/firm): RON McMillan / IT Group

Parcel No.: PPMP-66-MW03  
 Well No.: 66-MW03  
 Date started: 10-18-00

#### Monitoring Well Information

Development Method: Surge + Purge  
 Development Equipment: WALKER Pump  
 Casing Diameter: 2" Diameter PVC

Beginning Measurements  
 Depth to Water (ft): 10.7 7.89  
 Total depth of Well (ft): 26.15

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)
11:35	0	7.89	6.91	2.79	480	2.41	25.2	D. Brown	Purging AT .5 GPM
12:35	7.5	9.97	7.02	3.69	340	1.88	27.5	L Brown	" " " "
12:50	15	9.97	<del>6.89</del> 7.02 <i>pre</i>	3.77	199.3	2.36	23.9	D GRAY	" " " "
13:05	22.5	9.97	6.83	3.79	139.2	2.48	23.1	L GRAY	" " " "
13:20	30.00	9.97	6.83	3.81	83.0	2.68	22.4	Foggy	" " " "
13:35	37.5	10.02	6.79	3.07	60.3	2.59	22.6	CLEAR	" " " "
13:50	45.0	10.02	6.76	3.06	56.6	2.49	23.2	CLEAR	" " " "

Note: APPROX 54 GALLONS OF PORTABLE WATER USED TO SET SAND PACK FOR WELL PPMP-66-MW03

Parcel No.: DDMP-66-mw03  
 Well ID: 66-mw03  
 Date: 10-18-2000

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)
14:05	52.5	10.05	6.68	3.05	28.3	2.59	22.8	Clear	Purging At 156 PM well seems to charge more
14:20	60.0	10.12	6.77	3.05	27.9	2.61	22.7	Clear	Purging At 156 PM
14:35	67.5	10.2	6.77	3.07	17.8	2.57	23.1	Clear	Purging At 156 PM
14:50	75.0	10.2	6.81	3.06	9.85	2.46	23.8	Clear	
15:05	82.5	10.2	6.82	3.06	9.62	2.58	22.8	Clear	
15:15	90.0	10.2	6.82	3.06	8.02	2.65	22.6	Clear	Collected Sample
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## Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887  
 Form Completed by: Reginald Goins  
 Well Developed by (person/firm): Reginald Goins

Parcel No.: 94(7)  
 Well No.: PPMP-66-MW04  
 Date started: 10/30/20

### Monitoring Well Information

Development Method: SURGE AND PURGE  
 Development Equipment: HORIZONTAL V-10 (Rental)  
TURBIDITY METER, WATER LEVEL METER, WELL PUMP, PID  
 Casing Diameter: 2.1

Beginning Measurements  
 Depth to Water (ft): 17.94 (LG) 10-30-20  
8.66  
 Total depth of Well (ft): 26.60

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)
14:50									purge rate 0.167 gal/min (1500) lower pump to 26.60ft TOC
15:05	4	10.77	7.05	2.23	999	9.36	23.2	dark gray	after readings raised pump 2ft. (1512)
15:20	6	9.70	7.10	2.25	999	9.35	23.6	dark gray	purge rate 0.67 gal/min (1525) 20-10-30-20 lower pump to (15) 10-30-20 raised pump 2ft (1525)
15:35	+0.16	12.2	7.02	2.19	999	10.37	20.2	dark gray	raised pump 2ft (1540) purge (15) 10-30-20
15:50	31	15.3	7.09	2.24	999	9.53	20.3	dark gray	purge rate 1 gal/min
16:05	46	14.64	6.98	2.41	483	7.75	20.9	cloudy	purge rate 1 gal/min
16:10									for stop pump at 16:10 pumped 5 more gallons

**CALCULATIONS**  
 WATER COLUMN = 26.60 ft TOC - 8.66 ft = 17.94 ft  
 WELL VOLUME = 17.94 x 0.163 (2" case) = 2.92 gal  
 PURGE VOLUME = (2.92 gal x 5) + 35 gal (H<sub>2</sub>O used to install well) = 49.6 gal

Total PV = 51 gallons

## Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887

Parcel No.: \_\_\_\_\_

Form Completed by: Ron McMillanWell No.: PPMP-66-MW04Well Developed by (person/firm): Ron McMillan / I T GroupDate started: 10-31-00

## Monitoring Well Information

Development Method: Surge & Purge

Development Equipment: \_\_\_\_\_

Beginning Measurements

Depth to Water (ft): 12.71 <sup>R2</sup> 8.60Total depth of Well (ft): 26.0Casing Diameter: 2" PVC

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)
<del>10-30-00</del> 10-31-00	51.0								
08:00		8.60	5.98	2.45	535	1.78	18.1	D GRAY	Purging At 5.6pm 1 ft From Bottom
08:15	58.5	11.10	5.80	2.40	389	1.20	19.0	M GRAY	
08:30	65.0	11.9	5.80	2.50	178	2.40	20.0	2.6 GRAY	Moved Pump up 2 ft.
08:45	73.5	10.83	5.75	2.43	60.3	2.45	20.0	CLEAR	
09:00	81.0	10.85	5.83	2.43	1282	9.68	19.8	CLEAR	
09:15	88.5	10.85	5.80	2.43	10.3	9.52	20.1	CLEAR	
09:30	96.0	10.79	5.81	2.43	8.49	9.57	20.0	CLEAR	

Parcel No.: PPMP-66  
 Well ID: MW04  
 Date: 10-31-00

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)
09:45	103.5	10.77	5.82	2.43	7.92	9.79	20.0	Clear	
10:00	111.0	10.77	5.82	2.43	8.91	9.76	20.1	Clear	Collected Sample
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## Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887Form Completed by: Jewel W. CunninghamWell Developed by (person/firm): Jewel Cunningham IT CorpParcel No.: Parcel 66Well No.: MW05Date started: 10/19/00Monitoring Well Information TD-DTW =  $23.34 \times .163 = 3.8 \times 5$ Development Method: Surge + PurgeDevelopment Equipment: Whaler Pump, PID,Water Level, Horiba and DRT meter.Casing Diameter: 2" pvc Flush mount

Beginning Measurements

Depth to Water (ft): 5.25Total depth of Well (ft): 28.59= 19 + 40= 59 gals

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)
09:30	—	5.25	6.89	405	>1000	2.38	21.2	Dark Black	1 gal / 7.5 min
09:45	2 gal	8.89	6.92	406	>1000	1.98	21.1	Dark Black	
10:00	4 gal	8.91	6.88	431	" "	2.08	22.0	Black	1/2 gal / 1 min
10:15	11.5 gal	9.61	6.91	440	" "	2.45	22.1	"	Surging Well
10:30	19 gal	9.65	6.90	451	" "	2.38	22.3	"	
10:45	26.5 gal	9.89	6.93	453	" "	2.32	22.4	"	
/	/	/	/	/	/	/	/		Pump stopped: Pulled pump for repair

Parcel No.: Parcel 66  
 Well ID: MW 05  
 Date: 10/19/00

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)
13:00	26.5	8.92	6.92	.411	>1000	2.06	25.1	Black	1/2 gal/min
13:15	34	9.26	6.91	.431	>1000	3.17	24.6	Black	Steadily Dark
13:30	41.5	9.49	6.95	.445	" "	2.98	24.4	"	DTW dropping
13:45	49	9.86	6.97	.492	" "	3.49	23.9	"	gradually
14:00	56.5	10.05	6.98	.516	" "	3.99	23.2	"	Surging well
14:15	64	10.46	6.97	.487	" "	3.58	23.3	"	Pumping at very
14:30	71.5	10.91	6.95	.447	" "	3.32	23.5	Black	High rate.
14:45	79	11.36	6.91	.448	" "	3.01	23.1	"	Well has good recovery.
15:00	86.5	11.79	6.93	.418	" "	2.74	23.0	"	Obtained regained
15:15	94	12.02	6.93	.439	" "	2.69	23.0	"	gallons at 1418 but NTU's very high
15:30	97	12.39	6.93	.467	" "	2.72	23.2	"	Reduced flow rate at 1515
15:45	100	12.72	6.96	.459	" "	2.48	23.5	"	

Parcel No.: Parcel 66  
 Well ID: MW05  
 Date: 10/19/00

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)
16:00	103	12.99	6.94	.464	>1000	2.51	23.4	Gray/Black	
16:15	106	13.30	6.95	.472	>1000	2.45	23.5	Black Grayed	
16:30	109	13.91	6.93	.490	" "	2.21	22.4	Black	Shut down
16:45	112	14.40	6.90	.495	" "	2.08	21.6	Black	for the Day
:									10/20/00
13:00	112	5.69	7.07	1.05	199	5.18	23.4	Cloudy	1/2 pt/min
13:15	113	6.99	7.07	1.03	182	5.01	24.1	Cloudy	Pump set
13:30	114	8.45	7.06	1.00	180	4.80	24.8	Cloudy	at Mid-Screen
13:45	115	8.49	7.06	.802	176	4.69	24.9	Slightly Cloudy	
14:00	116	8.58	7.06	.698	172	4.51	25.1	"	
<del>13:00</del> 14:15	117	8.62	7.07	.633	173	4.37	25.4	"	
14:30	118	8.69	7.05	.629	189	4.21	25.6	"	No change in Clarity

Parcel No.: Parcel 66  
 Well ID: MW05  
 Date: 10/20/00

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)
14:45	119	8.71	7.03	.622	215	4.09	25.7	slightly Cloudy	
<del>14:50</del> 15:00	120	8.73	7.00	.615	242	3.91	25.7	"	
15:15	121	8.75	7.00	.607	268	3.78	25.8	"	
15:30	122	8.80	6.99	.792	201	3.92	25.8	"	
15:45	123	8.87	6.98	1.03	162	4.02	25.6	"	8hr Limitation met
16:00	124	8.92	6.98	1.08	134	4.10	25.7	"	taking photo sample
:									NTU - 134 1600
:									10/20/00
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*Limit Entry*  
*[Signature]*

## Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887  
 Form Completed by: David Tindell  
 Well Developed by (person/firm): David Tindell

Parcel No.: PPMP66  
 Well No.: PPMP66MNO9  
 Date started: 10-18-00

### Monitoring Well Information

Development Method: Surge/Purge  
 Development Equipment: Horiba, P.T.D. water level meter, turbidimeter  
 Casing Diameter: 2in

Beginning Measurements  
 Depth to Water (ft): 4.49 TOC  
 Total depth of Well (ft): 28.49 TOC

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)
15:35	7	10.90	6.05	1.01	216	1.35	24.2	Black	Pump set at 28.49 ft from TOC
15:50	12	12.40	6.16	1.05	223	1.12	24.1	cloudy	Purge rate is .38 gallons per minute 1550 Purge Rate is now <del>23</del> <sup>240</sup> gallons
16:05	17	14.25	6.14	1.14	209	.75	23.8	cloudy	~33 gallons per minute 1607 Raise pump to 20 ft TOC
16:20	22	15.20	6.13	1.07	466	.61	24.0	cloudy	
16:35	27	16.50	6.15	1.15	426	.08	23.8	cloudy	
16:45	30	16.71	6.14	1.18	243	1.82	23.4 <del>23.6</del> <sup>23.4</sup> <sub>10-18-00</sub>	cloudy	
09:55	33	9.55	6.19	1.22	93.0	1.58	22.6	Black	10-19-00 pump set at 20 ft TOC Purge Rate is .2 gallons per minute

Purge volume = Total depth 28.49 ft TOC - 4.49 ft TOC water level = 24.00 ft of water  
 $24.00 \times 1.63$  (2 inch diameter well) = 3.919 gallons well volume  
 $3.919 \text{ gallons} \times 5 \text{ well volumes} = 19.595 \text{ gallons}$   
 $19.595 \text{ gallons} + 15 \text{ gallons added during drilling} = 34.595 \text{ gallons of water to purge from well}$

Parcel No.: PPMP66MU  
 Well ID: PPMP MW06  
 Date: 10-19-00

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)
10:05	36.0	10.70	6.18	1.23	73.1	1.98	22.8	cloudy	10-19-00 Pump Sep at 20 ft TOC Purge Rate is .3 gallons per minute, rate increased at 1000
10:20	40	11.50	6.27	1.24	68.5	2.22	22.3	cloudy	1010 Purge Rate slowed to .26 gallons per minute
10:35	44	<del>11.60</del> 11.50	6.27	1.36	75.9	2.32	22.8	cloudy	1036 pump stops due to Battery
10:50	47	11.52	6.20	1.26	152.3	2.03	24.0	cloudy	1040 Change Battery Begin Pumping Purge Rate Now is .2 gallons per minute
13:45	50	10.54	6.17	1.51	162.6	1.98	25.5	cloudy	Pump stopped between 1320-1335
13:55	53	11.70	6.20	1.37	26.2	2.04	25.7	cloudy	1335 Start Pumping again
14:05	56	12.10	6.20	1.34	14.0	2.68	25.7	clear	
14:20	59	12.60	6.26	1.35	18.6	3.65	25.6	clear	1410 Purge Rate slowed to .2 gallons per minute
15:30	62	10.50	6.23	1.35	42.7	2.46	25.1	clear	1425 Pump Breaks down Repair Pump 1515 Begin Purging again
15:45	65	12.82	6.25	1.25	23.5	3.32	25.1	clear	
16:00									
:									

*David Threlk* 10-19-00

Parcel No.: PPMP 66 MW  
 Well ID: PPMP MW06  
 Date: 10/20/00

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)
09:15	65	5.69	6.70	1.33	79	4.32	21.8	Clearish	1 pt/min
09:30	66.5	8.96	6.72	1.25	39	3.94	22.8	"	
09:45	68	8.89	6.74	1.29	31	3.76	22.3	"	1/2 pt/min
10:00	69	8.78	6.75	.802	22	3.42	23.2	"	
10:15	70	8.74	6.75	.828	20	3.40	23.5	"	NTU's Falling
10:30	71	8.79	6.74	.846	18	3.37	23.7	Clearish	Parameter meas. 7.5min
10:37.5	71.5	8.80	6.74	1.848	13	3.26	23.8	"	
10:45	72	8.82	6.75	.850	11	3.21	24.0	Clear	Parameters Good
10:52.5	72.5	8.81	6.74	.853	10	3.18	24.3	Clear	
:									Taking Photo Sample Time - 1100
:									Continuation from David T. Development
:									book. 10/20/00 NTU-10

### Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887  
 Form Completed by: David Tindell  
 Well Developed by (person/firm): David Tindell

Parcel No.: PPM P66 MW  
 Well No.: PPM P66 MW 07  
 Date started: 10-17-08

#### Monitoring Well Information

Development Method: Surge/Purge  
 Development Equipment: Horiba, P.D. water level meter, Turbidity meter  
 Casing Diameter: 2 in

Beginning Measurements  
 Depth to Water (ft): 5.88 TOC  
 Total depth of Well (ft): 29.51 TOC  
 Purge Volume = 4425 gallons

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)
16:15	3	9.07	6.27	3.08	999	1.26	24.8	Black	Pump set at 29 ft TOC Purge Rate 2.2 gallons per minute
16:30	6	10.01	6.22	3.00	750	0.23	23.7	Black	
16:45	9	11.20	6.16	2.92	999	1.16	24.5	Black	1635 Raise pump to 25 ft TOC
16:50	19	21.19	6.37	2.96	999	.89	22.5	Black	1645 increase flow rate to 2.9 gallons per minute
8:55	22	9.70	6.05	3.13	999	1.52	22.4	Black	10-18-00 Pump set at 23 ft TOC Purge Rate is 2.9 gallons per minute
09:10	26	10.90	6.09	3.10	999	1.27	22.6	Black	0900 Purge Rate increased to 2.6 gallons per minute
09:25	29	11.70	6.10	2.98	918	.82	22.6	Black	0915 flow Purge Rate to 2.9 gallons per minute

$$\text{Purge Volume} = \text{Total Depth} (29.51 \text{ ft}) - \text{water Level} (5.88) = 23.63$$

$$23.63 \times 1.63 (2 \text{ in diameter}) = 3.85$$

$$3.85 \times 5 \text{ well volume} = 19.25 \text{ gallons}$$

$$19.25 + 25 (\text{gallons added during drilling}) = 44.25 \text{ gallons to purge from well}$$

Parcel No.: PPMP66  
 Well ID: PPMP66mwd7  
 Date: 10-18-00

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)
09:40	32	11.50	6.10	3.04	293	1.41	21.9	Black	10-18-00 Purge Rate is .2 gallons a minute.
09:55	<del>32</del> 35	11.10	6.13	3.04	70.5	.40	21.8	cloudy	pump set at 23 FT TO C.
10:10	37	10.90	6.15	3.03	49.7	.77	22.1	cloudy	1010 Purge Rate Has Dropped to .3 gallons per minute.
10:25	41	12.20	6.14	3.03	999	2.95	23.0	cloudy	1017 Raise pump to 19 FT From TOC.
10:40	46	15.10	6.09	3.16	999	1.43	22.0	cloudy	Increase Purge Rate to .266 gallons per minute.
10:55	51	16.02	6.11	3.08	999	1.30	22.0	cloudy	Increase Purge Rate to .33 gallons per minute.
11:15	57	17.40	6.14	3.01	999	.59	21.8	cloudy	
11:30	62	17.90	6.16	3.00	999	.59	22.2	cloudy	
11:45	70	16.91	6.17	2.94	157	.81	22.3	cloudy	1135 slow Purge Rate to .2 gallons per minute
12:55	84	12.69	6.20	2.93	33.0	.66	22.3	cloudy	1145 Lower Pump to 25 FT TO C.
13:10	87	12.91	6.16	2.93	11.3	.63	22.4	clear	22 FT TO C
13:20	89	13.02	6.18	2.93	3.5	1.16	22.6	clear	↓

Parcel No.: PPM P66  
 Well ID: PPM P66 W07  
 Date: 10-18-00

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	91	12.77	6.19	2.92	3.0	1.10	22.6	c/scr	10-18-00 Pump set at 22 ft TOC
13:35	92	12.61	6.16	2.94	3.0	.48	22.3		Purge rate 15.29 gallons per minute
:									Well is developed per Rosewide sampling and analysis plan. Get three water quality parameters within restrictions of work instructions. Total time to develop well is 6 hours, total purge volume is 92 gallons. 1345 takes sample in mason jar for picture.
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*David Tindell 10-18-00*

*David Tindell 10-18-00*

## Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887  
 Form Completed by: L. O'Hare  
 Well Developed by (person/firm): L. O'Hare / IT Group

Parcel No.: 66  
 Well No.: PPMP-66-MW08  
 Date started: 1/25/01

### Monitoring Well Information

Development Method: Surge & Purge  
 Development Equipment: Genius Pump/Generator  
 Casing Diameter: 4"

Beginning Measurements  
 Depth to Water (ft): 3.5' bgs  
 Total depth of Well (ft): 74.5' bgs

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) (Purge Rate, Pump Position, Misc.)
14:50	1	8.3	7.03	2.00	337	7.11	18.6	dark gray	1 gpm; pump set @ 73.0' bgs
15:00	7	12.8	7.07	1.97	97	8.45	17.9	dark gray	0.6 gpm
15:15	10	14.1	7.08	1.98	67	10.78	16.5	Lt. gray cloudy	1503 moved pump to 71' bgs 0.2 gpm
15:30	12	14.3	7.04	2.04	50	7.46	16.6	Lt. gray cloudy	0.13 gpm 1520 moved pump to 69' bgs
15:45	14	14.6	7.06	2.08	37	8.09	16.6	"	0.13 gpm 1538 moved pump to 67' bgs
16:00	16.5	14.85	7.04	2.12	26	9.38	16.3	"	0.16 gpm 1550 moved pump to 65' bgs
16:15	19	15.3	7.03	2.09	38	10.54	16.7	"	0.16 gpm 1604 moved pump to 62' bgs

$$TD - DTW = WC \times \frac{2'}{4'} \text{ well} = \text{One PV} \times 5 = \text{Min PV} + H2O \text{ to install well} = \text{Minimum H2O to remove}$$

$$74.5 - 3.5 \text{ } \frac{74}{4} \times .66 = 46.86 \times 5 = 234.3 + 50 = 284.3 \text{ gallons}$$

Parcel No.: 66  
 Well ID: PPMP-66-MIN08  
 Date: 1/25/01

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)
16:30	21	15.0	7.07	2.07	29	9.83	17.0	lt. gray	0.13 gpm 1619 moved pump to 65' bgs
16:45	23	14.9	7.06	2.07	21	10.52	16.3	lt. gray	0.13 gpm 1634 moved pump to 68' bgs
17:00	<del>25</del> 25 (1/25/01)	27	7.10	2.02	32	10.95	17.6	"	0.8 gpm
<sup>1/26/01</sup> 09:00	44	13.7	6.80	2.10	14	12.41	15.8	"	0.2 gpm pump @ 72' bgs
09:15	47	14.6	7.12	2.09	11	8.31	13.9	"	0.2 gpm
09:30	50	14.8	7.06	2.10	12	13.27	16.2	"	0.2 gpm
09:45	53.5	16.1	7.04	2.12	8	10.67	17.0	"	0.23 gpm 0936 moved pump to 70'
10:00	56	16.3	7.11	2.08	7	12.68	16.4	"	0.16 gpm
10:15	59	17.7	7.04	2.12	6	11.97	17.9	"	0.2 gpm
10:30	61	18.2	7.05	2.11	7	11.70	18.1	clear	0.13 gpm
10:45	68	27.4	7.05	2.08	11	9.69	19.8	clear	0.13 gpm; 1035 pumping 1 gpm 1040 0.13 gpm
11:00	73	32.6	7.06	2.04	13	10.03	19.8	clear	0.33 gpm

1/26/01  
↓

Parcel No.: 66  
 Well ID: PPMP-66-MW08  
 Date: 1/26/01

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 :15	83	36.0'	7.13	2.07	9	11.41	19.9	clear	0.7 gpm 1117 lowered pump to 72'
11 :30	98	51.0'	7.13	2.02	10	10.56	20.9	clear	1 gpm
11 :45	113	62.8'	7.11	2.04	12	11.20	20.6	"	1 gpm
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Parcel No.: 66  
 Well ID: PPMP-66-MW08  
 Date: 1-29-01

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	113.0	1.36	6.48	2.13	94.8	12.15	20.0	munky	P.V. 15.0 1.0 @ pm
14:15	128.0	7.6	6.74	2.12	83.6	16.4	19.9	CLEAR	Pump Set At 72.0 ft
14:30	143.0	12.75	6.78	2.12	72.6	18.42	20.0	CLEAR	
15:00	158.0	12.75	6.80	2.12	61.0	13.68	19.9	CLEAR	moved pump up to 70 ft
15:15	173.0	12.75	6.71	2.12	54.8	10.67	20.1	CLEAR	
15:30	188.0	12.76	6.72	2.11	40.1	9.42	20.7	CLEAR	moved pump up to 68.0 ft
15:45	203.0	12.76	6.71	2.12	20.6	9.40	20.7	CLEAR	
16:00	218.0	12.76	6.71	2.12	10.3	9.44	20.7	CLEAR	moved pump up to 66.0 ft
16:15	233.0	12.78	6.72	2.12	9.13	9.42	20.7	CLEAR	
16:30	248.0	12.78	6.71	2.12	8.68	9.42	20.7	CLEAR	moved pump up to 64.0 ft
16:45	263.0	12.78	6.71	2.11	7.36	9.44	20.7	CLEAR	
17:00	278.0	12.78	6.71	2.12	7.32	9.42	20.7	CLEAR	moved pump up to 62 ft

Parcel No.: 66  
 Well ID: DDMP-66-mw08  
 Date: 1-29-01

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)
17:15	293.0	12.79	6.70	2.11	7.10	9.43	20.8	Clear	Sample Collected.
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*Handwritten signature: Phil M. [unclear]*

## Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: \_\_\_\_\_  
 Form Completed by: Brian Rhodes  
 Well Developed by (person/firm): Rhodes / IT

Parcel No.: 66  
 Well No.: PDMP-66-MW09  
 Date started: 2-8-01

### Monitoring Well Information

Development Method: Purge & Surge  
 Development Equipment: Grundfos Pump, Redi-Flo 2, Horiba, DRT, water level indicator  
 Casing Diameter: 4"

Beginning Measurements  
 Depth to Water (ft): 2.70 bgs  
 Total depth of Well (ft): 72.0'

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)
09:15	0	2.70'	6.67	2.63	1K+	1.73	17.8	DARK	Surge, .3 gpm, 72' bgs
09:30	4.5	2.80	6.75	2.49	287	1.59	17.9	Cloudy	inc. to 1.0 gpm
09:45	19.5	3.15	6.88	2.71	168	2.72	19.2	Cloudy	
10:00	34.5	3.18	6.72	2.45	59.1	2.34	19.0	Clear	pump @ 70' bgs
10:15	49.5	3.45	6.95	2.74	35.1	2.70	18.2	Clear	pump @ 68' bgs, inc. to 1.5 gpm
10:30	63.0	3.75	6.89	2.60	41.2	2.34	18.7	Clear	pump @ 66' bgs
10:45	85.5	3.80	6.80	2.72	12.7	2.41	18.4	Clear	pump @ 64' bgs

TD - DTW = WC      4" Well      H<sub>2</sub>O to Install Well  
 72 - 2.6 = 69.4 x .653 = 45.3 x 5 = 226.6 + 525 = 751.6 to be purged

Parcel No.: 66  
 Well ID: MW09  
 Date: 2-8-01

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)
11:00	107.5	4.20	6.54	2.71	10.70	2.47	18.1	Clear	pump @ 62' bgs inc. to 2.0 gpm
11:15	137.5	4.45	6.50	2.74	9.47	2.37	18.0	Clear	pump @ 60' bgs
11:30	167.5	4.45	6.71	2.39	6.45	2.09	17.6	Clear	pump @ 58' bgs
11:45	197.5	4.50	6.40	2.27	4.49	2.04	17.9	Clear	pump @ 56' bgs
12:00	227.5	4.59	6.47	2.29	3.48	2.07	17.8	Clear	pump @ 54' bgs
12:15	257.5	4.72	6.38	2.17	3.25	2.15	17.9	Clear	pump @ 52' bgs
/	/	/	/	/	/	/	/	/	Stop to Drain Poly Tank
12:45	257.5	<del>4.20</del>	6.50	2.21	6.72	2.14	18.0	Clear	pump @ 56' bgs
13:00	287.5	4.78	6.47	2.17	4.75	2.00	19.0	Clear	pump @ 60' bgs inc. to 3.0 gpm
13:15	332.5	5.00	6.95	2.70	6.71	2.28	19.2	Clear	pump @ 64' bgs
13:30	375.5	5.08	7.10	2.95	8.00	2.71	18.6	Clear	pump @ 68' bgs inc. to 4.0 gpm
13:45	435.5	5.95	7.13	2.74	18.7	1.76	18.7	Clear	pump @ 72' bgs
14:00	495.5	6.20	7.15	2.98	21.2	2.45	18.3	Clear	

Parcel No.: 66  
 Well ID: MW09  
 Date: 2-8-01

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)
:					<del>17.6</del>	<del>2.57</del>	<del>18.0</del>	<del>Clear</del>	1400-1420 - Draining Poly Tank
14:30	535.5	<del>6.20</del> 2.70	7.25	3.00	17.6	2.57	18.0	Clear	
14:45	595.5	6.20	7.34	2.69	12.6	3.04	19.0	Clear	
15:00	655.5	6.35	7.27	2.70	9.34	3.13	18.9	Clear	
15:15	715.5	6.52	7.14	2.99	7.65	3.17	18.4	Clear	
15:25	755.5	6.64	7.25	3.14	6.17	3.20	18.7	Clear	
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*Brian* *llwede* *2/8/01*

## Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 796887  
 Form Completed by: Brian Rhodes  
 Well Developed by (person/firm): Rhodes / IT

Parcel No.: 66  
 Well No.: MW010  
 Date started: 2-6-01

### Monitoring Well Information

Development Method: Purge & Surge  
 Development Equipment: Grundfos Pump, Radio-Fluor, Horiba DRT, Water level indicator  
 Casing Diameter: 4"

Beginning Measurements  
 Depth to Water (ft): 6.0' (TOC)  
 Total depth of Well (ft): 74.5'

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) (Purge Rate, Pump Position, Misc.)
8:55	0	6.0	6.28	2.73	1K+	0.85	15.6	DARK	<del>0.20 gpm</del> .20 gpm surge
9:10	<del>0.20</del> 3.0	9.97	6.35	2.75	1K+	0.78	15.5	DARK	pump @ 72' bgs surge
9:25	<del>0.20</del> 6.0	12.38	6.29	2.69	485	0.91	15.7	DARK	
9:40	<del>0.20</del> 9.0	13.55	6.52	2.54	262	0.84	15.5	Cloudy	dec. to .15 gpm
9:55	11.25	13.02	6.46	2.54	185	0.95	16.3	Cloudy	
10:10	13.50	13.38	6.40	2.52	581	0.91	16.0	Cloudy	pump @ 70' bgs
10:25	15.75	14.50	6.27	2.48	147	1.10	15.9	Cloudy	

$$\text{TD} - \text{DTW} = \text{WC} \times \frac{2'}{4'} \text{ well} = \text{One PV} \times 5 = \text{Min PV} + \text{H}_2\text{O to install well} = \text{Minimum H}_2\text{O to remove}$$

$$74.5 - 6.0(\text{TOC}) \times .653 = 46.23 = 231.16 + 60 = 291.16$$

$$74.5 - 3.7 = 70.8$$

Parcel No.: 66  
 Well ID: MW010  
 Date: 2-6-01

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
10:40	18.0	14.75	6.29	2.57	84	1.00	16.0	Clear	pump @ 68' bgs
11:30	20.25	15.29	6.07	2.74	127	1.07	16.1	Cloudy	
11:45	22.50	16.10	6.34	2.52	184	1.51	17.1	Cloudy	pump @ 66' bgs
12:00	24.75	17.45	6.31	2.51	147	0.96	16.9	Cloudy	
12:15	27.0	18.35	6.52	2.51	152	1.11	16.3	Cloudy	pump @ 64' bgs
12:30	29.25	19.51	6.57	2.48	133	0.93	16.8	Cloudy	pump @ 62' bgs
12:45	31.50	19.78	6.45	2.47	68.8	0.97	16.7	Clear	pump @ 60' bgs .25 gpm
13:00	35.25	20.25	6.61	2.35	56.7	0.68	17.1	Clear	pump @ 58' bgs
13:15	39.0	20.52	6.58	2.39	47.4	0.71	17.2	Clear	pump @ 56' bgs .40 gpm
13:30	45.0	20.51	6.62	2.43	31.8	0.98	16.3	Clear	pump @ 54' bgs
13:45	51.0	20.57	6.79	2.40	22.1	1.17	16.7	Clear	pump @ 52' bgs
14:00	57.0	20.59	6.65	2.70	19.7	1.14	16.9	Clear	pump @ 56' bgs
14:15	63.0	20.60	6.47	2.57	13.6	1.18	16.6	Clear	pump @ 60' bgs

Parcel No.: 66  
 Well ID: MW010  
 Date: 2-6-01

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
14:30	69.0	20.69	6.54	2.86	187	0.53	18.7	Cloudy	pump @ 64' bgs, .40gpm Re-surge
14:45	75.0	20.90	6.48	2.75	35.1	0.79	18.4	Clear	pump @ 68' bgs inc. to .50gpm
15:00	82.50	22.75	6.34	2.49	11.7	1.20	18.5	Clear	pump @ 72' bgs
15:15	90.0	23.90	6.74	2.60	14.3	1.07	18.3	Clear	
15:30	97.50	25.65	6.40	2.48	11.2	1.19	18.0	Clear	
15:45	105.0	27.92	6.72	2.75	11.7	1.21	18.7	Clear	
16:00	112.50	30.15	6.59	2.48	9.2	1.30	18.4	Clear	
09:15	112.50	6.20	6.74	2.57	1Kf	10.31	18.0	Dark	pump @ 72' bgs Surge, .50gpm
09:30	120.00	12.97	7.01	2.59	164	1.47	17.9	Cloudy	" "
09:45	127.50	18.90	6.84	2.47	109	1.27	18.1	Cloudy	" "
10:00	135.0	22.85	6.81	2.39	54.2	1.31	18.0	Clear	" "
10:15	142.50	25.65	6.79	2.40	31.7	1.25	18.1	Clear	" "
10:30	150.00	29.15	6.57	2.41	27.7	1.29	17.9	Clear	" "

Parcel No.: 66  
 Well ID: MW010  
 Date: 2-7-01

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 : 45	157.56	31.15	6.75	2.32	26.2	1.25	17.6	Clear	Pump @ 72' bgs 50gpm
11 : 00	165.00	33.30	6.71	2.17	21.7	1.14	17.9	Clear	" "
11 : 15	172.50	35.40	6.89	2.25	19.2	1.09	18.2	Clear	" "
11 : 30	180.0	36.95	6.92	2.52	14.54	1.42	18.7	Clear	" "
11 : 45	187.50	36.97	6.95	2.47	12.76	1.41	18.6	Clear	" "
12 : 00	195.00	36.98	6.79	2.40	10.47	1.35	18.3	Clear	" "
12 : 15	202.50	36.98	6.47	2.27	9.20	1.40	18.0	Clear	" "
12 : 30	210.00	37.05	6.48	2.20	8.18	1.67	18.2	Clear	" "
12 : 45	217.50	38.25	6.40	2.35	7.88	1.09	18.0	Clear	" "
13 : 00	225.00	39.10	6.95	2.48	6.45	1.56	18.4	Clear	" Took Sample "
13 : 15	236.25	46.74	6.90	2.40	15.89	1.40	18.0	Clear	inc. flow to . 75gpm
13 : 30	247.50	53.80	6.42	2.46	21.70	1.03	18.9	Clear	" "
13 : 45	258.75	58.45	6.84	2.51	17.50	1.17	18.8	Clear	" "

Parcel No.: 66  
 Well ID: MW010  
 Date: 2-7-01

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	270.00	64.85	6.75	2.57	18.34	1.27	18.7	clear	
14:15	277.50	65.67	6.72	2.49	20.26	1.34	18.5	clear	dec. to .50 gpm to get sufficient H <sub>2</sub> O volume
14:30	285.00	64.85	6.70	2.37	31.3	1.47	18.0	clear	
14:45	292.50	63.20	6.45	2.29	24.7	1.90	18.7	clear	
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*Brian Rhoads 2/7/01*

## Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: \_\_\_\_\_  
 Form Completed by: Brian Rhodes / Mike May  
 Well Developed by (person/firm): Rhodes / FT

Parcel No.: 66  
 Well No.: FTA-66-MW011  
 Date started: 2-5-01

## Monitoring Well Information

Development Method: Surge & Purge  
 Development Equipment: Grundfos, Redi-Flow 2  
Horiba U-10, DT  
 Casing Diameter: 4"

Beginning Measurements  
 Depth to Water (ft): 5.0' hgs  
 Total depth of Well (ft): 88.0' bgs

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) (Purge Rate, Pump Position, Misc.)
10 :45	0	9.05	6.05	2.17	114	8.90	15.9	Dark	.25 gpm
10 :55	2.5	10.90	6.52	2.18	485	1.08	15.8	Dark	.25 gpm
11 :05	5.0	12.05	6.63	2.18	238	1.11	15.4	DARK	slowed to .15 gpm
11 :20	7.25	15.1	6.65	2.17	320	6.90	15.7	Cloudy	RESurge .25 gpm
11 :35	11.0	17.06	6.67	2.15	308	7.02	15.9	Cloudy	.25 gpm
11 :50	14.75	19.0	6.68	2.18	160.5	0.48	15.5	Cloudy	.25 gpm
12 :05	18.50	20.5	6.81	2.20	125.5	1.68	16.1	Cloudy	pump @ 81'

$$\text{TD} - \text{DTW} = \text{WC} \times \frac{2'}{4'} \text{ well} = \text{One PV} \times 5 = \text{Min PV} + \text{H}_2\text{O to install well} = \text{Minimum H}_2\text{O to remove}$$

$$83 - 5.0' = 78 \times .653 = 50.94 = 254.67 + 5 = 259.67$$

Parcel No.: 66  
 Well ID: MW011  
 Date: 2-5-01

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	22.25	22.95	6.83	2.24	67.2	1.24	16.4	Clear	.25 gpm
12:35	26.00	25.25	7.15	2.28	42.5	1.32	15.4	Clear	.25 gpm pump @ 79'
12:50	29.75	27.32	7.18	2.28	41.3	0.51	15.6	Clear	
13:05	33.50	29.35	7.22	2.31	32.7	1.34	15.8	Clear	inc. to .50 gpm
13:20	41.00	32.45	7.31	2.32	18.3	1.08	16.1	Clear	
13:35	48.50	36.18	7.42	2.37	18.9	1.24	16.6	Clear	pump @ 77'
13:50	56.00	41.17	7.60	2.39	11.1	1.17	17.4	Clear	
14:05	63.30	45.45	7.78	2.39	9.7	0.81	17.0	Clear	pump @ 75'
14:20	71.00	49.80	7.81	2.41	9.62	0.63	17.2	Clear	pump @ 73'
14:35	78.50	55.17	7.82	2.43	11.40	0.67	17.5	Clear	pump @ 75'
14:50	86.00	61.25	6.83	2.19	90.6	0.32	16.4	Cloudy	pump @ 77'
15:05	93.50	66.22	7.50	2.37	19.4	0.92	16.9	Clear	pump @ 79' re surge

Parcel No.: 66  
 Well ID: MW011  
 Date: 2-5-01

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
15:20	101.0	69.74	6.60	2.18	1K+	1.03	18.2	DARK	Re-surge, pump #2
15:35	108.50	73.48	6.59	2.30	1K+	0.99	18.0	DARK	
15:50	116.00	79.25	6.71	2.19	1K+	0.97	18.2	DARK	
16:00									pumped dry
09:00	116.0	53.15	6.20	2.79	485	0.94	17.6	Cloudy	Resurge .15gpm
09:15	118.25	56.79	6.18	2.91	97	1.13	18.0	CLEAR	
09:30	120.50	57.80	6.14	3.15	42	1.27	18.1	CLEAR	
09:45	122.75	59.20	6.28	3.27	37.2	1.41	18.0	CLEAR	Dec to 1.0 gpm
10:00	124.25	60.00	6.34	3.31	34.7	1.52	18.2	CLEAR	
10:15	125.75	60.92	6.09	3.13	27.6	1.72	18.0	CLEAR	
10:30	127.25	61.85	6.72	3.45	19.4	1.81	18.2	CLEAR	
10:45	128.75	62.95	6.48	3.17	18.6	1.95	18.0	CLEAR	
11:00	130.25	63.55	6.27	3.00	17.4	1.99	18.6	CLEAR	

Parcel No.: 66  
 Well ID: MW011  
 Date: 2-9-01

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 : 15	131.75	64.75	6.79	3.13	14.7	2.09	18.0	clear	
09:20	134.75	26.17	6.31	2.02	19.0	1.66	18.8°	clear	pump @ 62' from toe.
09:35	137.75	31.08	6.75	2.0 <sup>2</sup> 2	4.2	2.03	18.9°	clear	" "
09:50	140.75	33.84	6.80	2.03	6.7	2.39	19.8°	clear	" "
10:05	143.75	36.53	6.82	2.03	7.2	2.23	20.6°	clear	" "
10:20	146.75	38.63	6.79	2.01	8.4	2.31	20.4°	clear	" "
10:35	149.75	39.96	6.77	2.03	6.4	2.23	20.5°	clear	pump @ 60' from toe
10:50	152.75	41.19	6.80	2.01	6.2	2.07	20.1°	clear	" "
11:05	155.75	42.84	6.38	2.06	6.0	2.17	20.0°	clear	" "
08:45	158.75	38.06	6.12	2.09	304	0.98	19.6°	cloudy	pump @ 77' from toe.
09:00	161.75	41.70	6.62	2.07	83	1.04	20.5°	slightly clear.	" "
09:15	164.75	45.36	6.66	2.08	73	1.14	20.5°	clear	" "
09:30	167.75	48.30	6.67	2.09	50	1.20	21.2°	clear.	" "

Parcel No.: 66  
 Well ID: MW-11  
 Date: 2/26/01

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)
09:45	170.75	51.24	6.71	2.09	37	1.40	21.7°	clear	pump @ 77' footer.
10:00	173.75	54.25	6.73	2.09	33	1.31	22.2°	clear.	" "
10:15	176.75	59.47	6.70	2.09	23	1.12	22.7°	clear.	" "
10:30	179.75	63.51	6.71	2.09	24	1.16	22.8°	clear.	" "
10:45	182.75	68.07	6.72	2.08	22	1.23	22.4°	clear.	" "
11:00	185.75	72.34	6.70	2.09	21	1.18	22.6°	clear.	" "
11:15	188.75	76.18	6.72	2.07	22	1.27	22.7°	clear.	Pumped dry. C
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## Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: \_\_\_\_\_  
 Form Completed by: Brian Rhodes / Mike May  
 Well Developed by (person/firm): Rhodes / May / IT

Parcel No.: 66  
 Well No.: PPMP-66-MW12  
 Date started: 2-12-01

### Monitoring Well Information

Development Method: Surge & Purge  
 Development Equipment: Grundfos Pump, Redi-Flow II  
Horiba DRT, water level indicator  
 Casing Diameter: 4"

Beginning Measurements  
 Depth to Water (ft): 2.0' Bgs  
 Total depth of Well (ft): 74.8' Bgs

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	0	2.0	9.75	1.89	1K+	8.70	16.7	DARK	Surge, pump @ 72', .20gpm
10 : 15	3.0	6.0	9.61	1.87	578	8.23	17.1	DARK	
10 : 30	6.0	9.02	9.40	1.91	1K+	1.32	15.7	DARK	
10 : 45	9.0	10.65	10.13	1.93	257	9.14	14.9	Cloudy	
11 : 00	12.0	11.38	9.87	2.04	503	7.95	15.0	Cloudy	
11 : 15	15.0	13.20	9.85	2.04	385	8.09	15.0	Cloudy	
11 : 30	18.0	15.75	9.40	2.02	310	2.72	15.1	Cloudy	

$72.8 \text{ WC} \times .653 \text{ 4" well} = 47.54 \text{ Purge Vol.} \times 5 = 237.70 + 70 = 307.70 \text{ gallons to be purged}$

Parcel No.: 66  
 Well ID: MW12  
 Date: 2-12-01

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 : 00	18.0	17.24	10.13	2.04	503	7.95	15.0	Cloudy	
13 : 15	21.0	19.71	9.87	2.04	385	8.09	15.0	Cloudy	
13 : 30	24.0	21.45	9.85	2.02	310	2.72	15.1	Cloudy	.30 gpm
13 : 45	28.5	23.64	9.99	2.02	291	8.10	14.7	Cloudy	pump @ 70'
14 : 00	33.0	25.10	9.99	2.05	225	3.07	15.8	Cloudy	
14 : 15	37.5	28.46	7.04	2.05	219	3.20	17.6	Cloudy	
14 : 30	42.0	31.25	10.09	2.04	115	3.55	16.5	Cloudy	pu @ 68'
14 : 45	46.5	34.51	7.28	2.06	97.8	3.34	15.7	Cloudy	
15 : 00	51.0	37.00	10.34	2.06	81.7	3.85	15.3	Cloudy	pump @ 66'
15 : 15	55.5	39.27	7.31	2.11	74.5	3.81	15.5	Cloudy	
15 : 30	60.0	42.38	7.27	2.08	61.0	3.51	15.5	Clear	pump @ 64'
15 : 45	64.5	46.14	7.15	2.10	42.4	3.27	15.6	Clear	pump @ 66'
10: <sup>5</sup> 30	66.0	23.26	6.32	2.09	10.0	2.24	20.7	Clear	pump @ 68'

2/15/01

Parcel No.: 66  
 Well ID: MW12  
 Date: 2-15-01

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)
11:05	67.5	26.53	8.31	2.06	10	1.67	22.0°	clear.	pump @ 68'
11:20	69.0	28.97	8.95	2.06	14	2.50	21.7°	clear.	pump @ 68'
11:35	71.5	31.03	9.39	2.04	14	2.76	22.0°	clear	pump @ 66'
11:50	73.0	32.43	9.79	2.15	32	3.24	22.0°	slightly cloudy	pump @ 66'
12:05	74.5	34.36	10.01	2.17	41	2.07	22.3°	slightly cloudy	pump @ 66'
12:20	76.0	35.37	10.00	2.16	43	3.31	23.3°	slightly cloudy.	pump @ 66'
12:35	77.5	36.78	10.02	2.18	38	3.23	23.5°	slightly cloudy	pump @ 64'
12:50	79.0	37.62	10.11	2.19	29	3.35	22.6°	clear	pump @ 64'
13:05	80.5	40.53	10.16	2.20	27	2.94	23.1°	clear.	pump @ 64'
13:20	82.0	42.75	10.17	2.08	25	2.48	24.5°	clear	pump @ 64'
13:35	83.5	45.82	10.18	2.09	31	2.53	23.7°	clear.	pump @ 62'
13:50	85.0	47.72	10.22	2.10	28	2.48	25.1°	clear	pump @ 62'
14:05	86.5	49.40	10.20	2.10	28	2.87	25.2°	clear.	pump @ 62'

Parcel No.: 66  
 Well ID: PPMP-66-MN12  
 Date: 2-15-01

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)
14:20	88.0	50.05	10.26	2.10	24	3.17	24.1°	clear.	pump @ 62'
14:35	89.5	52.95	10.26	2.10	21	3.31	24.8°	clear.	pump @ 60'
14:50	91.0	55.46	10.33	2.12	23	2.29	24.2°	clear.	pump @ 60'
15:05	92.5	56.51	10.34	2.09	20	3.54	23.3°	clear.	pump @ 60'
15:20	94.0	60.87	10.30	2.10	28	<del>2.10</del> 3.	24.0°	clear.	pump @ 60'
15:35	95.5	62.92	10.38	2.11	19	3.21	22.5°	clear.	pump @ 60'
15:50	97.0	63.76	10.23	2.06	20	3.18	21.8°	clear.	pump @ 60'
9:40	98.5	58.89	6.39	2.19	62.8	1.41	20.2°	cloudy	pump @ 72'
9:55	100.0	60.39	7.31	2.16	34.5	2.41	19.8°	slightly cloudy	pump @ 72'
10:10	101.50	63.93	7.51	2.14	26.7	8.74	20.7	clear	pump @ 72'
10:25	103.00	65.59	7.57	2.13	27.2	2.05	20.9	clear	pump @ 72'
10:40	104.50	65.95	8.26	2.18	34.0	2.98	21.3	clear	pump @ 70'

2/16/01

Parcel No.: 66  
 Well ID: ppmp-666-mu22  
 Date: 2-16-01

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)
10:55	106.00	66.20	8.09	2.20	143	8.59	20.9	cloudy	pump @ 70'
11:10	107.50	68.05	7.53	2.17	215	2.43	23.0	cloudy	pump @ 70'
11:25	109.00	70.35	8.57	2.05	594	.93	21.0	cloudy	pump @ 70'
11:40	110.50	70.21	7.96	.000	409	9.30	20.3	cloudy	pump @ 72'
12/01 14:30	113.50	42.97	6.90	2.31	54	2.79	19.4°	clear	pump @ 71' <i>pumped dry. ←</i>
14:45	116.50	44.37	7.31	2.37	45	3.06	18.0°	clear	" "
15:00	119.50	46.51	7.38	2.35	41	3.23	19.8°	clear	" "
15:15	122.50	48.54	7.41	2.35	30	3.39	19.4°	clear	" "
15:30	125.50	50.52	7.43	2.35	29	3.66	19.4°	clear	" "
15:45	128.50	52.80	7.47	2.35	25	4.28	18.5°	clear	" "
16:00	131.50	57.22	7.45	2.37	38	3.68	18.7°	clear	pump @ 69'
16:15	134.50	58.93	7.45	2.32	37	3.56	18.4°	clear	" "
16:30	137.50	59.67	7.42	2.39	31	3.72	18.5°	clear	" "

## Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887  
 Form Completed by: Mike May  
 Well Developed by (person/firm): Mike May/Leah O'hare

Parcel No.: 66  
 Well No.: MW13  
 Date started: 1/25/01

### Monitoring Well Information

Development Method: Surge + Purge  
 Development Equipment: Grinfos, Hoiba, Turbidity Meter and Water Level Indicator.  
 Casing Diameter: 4"

Beginning Measurements  
 Depth to Water (ft): 13.7'  
 Total depth of Well (ft): 76.0'

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) (Purge Rate, Pump Position, Misc.)
09:30	10	13.7	7.23	1.91	1k+	5.33	15.9°	cloudy Grey	pump @ 75' bgs.
09:45	17.5	24.8	7.28	1.90	361	8.81	17.5°	cloudy Grey	" "
10:00	22.5	34.1	7.37	1.93	74	9.64	14.3°	cloudy Grey	pump @ 73' bgs.
10:15	27.5	35.4	7.36	1.92	274	11.44	16.8°	cloudy Grey	" "
10:30	32.5	46.1	7.53	1.94	46	11.56	16.6°	cloudy Grey	pump @ 71' bgs.
10:45	38.5	50.8	7.56	1.95	516	7.39	16.6°	cloudy Grey	" "
11:00	44.0	58.3	7.67	1.95	66	11.42	16.2°	cloudy Grey	" "

$$\text{TD} - \text{DTW} = \text{WC} \times \frac{2\frac{1}{4}' \text{ well}}{1000} = \text{One PV} \times \frac{5}{1000} = \text{Min PV} + \text{H2O to install well} = \text{Minimum H2O to remove}$$

$$76.0 - 13.7 = 62.3 \times 0.333 = 20.75 \times 5 = 103.75 + 2,315 = 2418.75$$

Parcel No.: 66  
 Well ID: MW13  
 Date: 11/25/01

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)
11:15	49	63.3	7.55	1.92	1k+	7.92	20.0°	cloudy gray	pump @ 75' bgs.
11:30	54	69.7	7.14	1.89	1k+	10.27	20.0°	cloudy gray	" "
<del>11:45</del> 12:00 11:45 OTD	59	66.3	7.36	2.20	709	8.82	20.4°	cloudy gray	" "
12:30	59	5.25	6.50	2.82	526	0.0	20.9°	cloudy gray	" "
12:45	62	10.05	6.44	2.78	236	0.98	20.5°	cloudy	" "
13:00	65	15.71	6.48	2.75	74	2.07	20.6°	clear	" "
13:15	68	20.96	6.49	2.75	50	1.99	20.9°	clear	" "
13:30	71	26.54	6.45	2.75	38	1.53	21.0°	clear	" "
13:45	74	32.16	6.47	2.77	29	1.49	21.2°	clear	" "
14:00	77	36.46	6.54	2.76	21	1.85	21.9°	clear	" "
14:15	80	41.38	6.52	2.76	5.9	1.83	22.1°	clear	" "
14:30	83	46.64	6.49	2.77	3.9	1.53	22.0°	clear.	pump @ 76' bgs.

pumped  
dry.

Parcel No.: 66  
 Well ID: MW13  
 Date: 2/26/01

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)
14:45	86	52.32	6.48	2.75	2.0	1.57	22.1°	clear	pump @ 76' bgs.
15:00	89	59.23	6.46	2.75	5.1	1.56	22.4°	clear	" "
15:15	92	62.49	6.43	2.76	5.8	1.59	22.4°	clear	" "
15:30	96	65.27	6.46	2.75	6.0	1.63	22.4°	clear	" "
15:45	100	68.74	6.46	2.75	4.7	1.57	22.2°	clear	" "
16:00	104	71.09	6.45	2.77	5.4	1.60	22.1°	clear	" "
16:15	108	73.64	6.47	2.75	5.6	1.63	22.1°	clear	" "
16:30	112	76.23	6.46	2.76	4.3	1.57	22.0°	clear.	" "
17:08:30	115	26.22	6.51	2.94	196	3.05	18.3°	cloudy	pump @ 72' bgs.
08:45	118	31.10	6.79	2.95	99	3.21	18.5°	cloudy	" "
09:00	121	35.86	6.74	2.91	67	2.87	19.2°	clear	" "
09:15	124	40.34	6.82	2.90	63	4.12	19.6°	clear.	" "

pumped  
dry.

Parcel No.: 66  
 Well ID: MW13  
 Date: 2/27/01

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)
09:30	128	43.65	6.78	2.90	60	3.31	20.1°	clear	pump @ 72' bgs.
09:45	132	47.62	6.81	2.92	45	3.35	20.0°	clear	" "
10:00	136	51.36	6.85	2.88	34	4.02	20.8°	clear	pump @ 70' bgs.
10:15	140	55.24	6.77	2.90	40	3.74	21.4°	clear.	" "
10:30	144	60.03	6.79	2.87	33	3.98	21.6°	clear	" "
10:45	148	63.25	6.80	2.88	41	3.50	22.0°	clear	" "
11:00	152	65.76	6.80	2.86	124	3.64	22.4°	slightly clear.	" "
11:15	156	67.89	6.79	2.84	87	3.56	22.1°	clear	" "
11:30	160	69.94	6.80	2.86	72	3.74	22.2°	clear	" "
:									
:									
:									

well was  
pumped dry

## Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 296887  
 Form Completed by: Jeff Alexander  
 Well Developed by (person/firm): Jeff Alexander IT Corp.

Parcel No.: 66  
 Well No.: PPMP-66-MW14  
 Date started: 9 27 01

## Monitoring Well Information

Development Method: Surge + pump  
 Development Equipment: whale pump, WL indicator, Horiba U10, Orion turb. mtr.  
 Casing Diameter: 2"

Beginning Measurements  
 Depth to Water (ft): 1.94 bToc  
 Total depth of Well (ft): 20.00 gToc

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) (Purge Rate, Pump Position, Misc.)
09:30	-	1.94	-	-	-	-	-	-	19 pm
09:45	10g	7.22	6.99	1.32	999	4.12	22.3	black silty	.5 gpm
10:00	13.75	10.00	7.04	1.92	999	1.82	21.6	"	.25 gpm
10:15	17.50	9.90	6.90	2.20	999	1.12	22.2	"	.25 gpm
10:30	21.25	10.12	6.91	2.39	999	2.45	23.1	"	.25 gpm
10:45	25	10.37	6.80	2.58	999	1.32	23.3	gray v. cloudy	.25 gpm
11:00	28.75	10.50	6.85	2.59	999	1.39	24.3	gray cloudy	.25 gpm

TD - DTW = WC x  $(2')/4'$  well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

$$20.00 - 1.94 = 18.06 \times .163 = 2.944 \times 5 = 14.7189 + 100g = 114.72$$

0.0% 1/4" off  
10/1/01

Parcel No.: 66  
 Well ID: PPMP 66 MWLEP  
 Date: 9 27 01

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	
11:15	32.5	10.60	6.83	2.65	999	2.00	24.1	gray cloudy	.25 gpm	
11:30	36.25	10.62	6.76	2.75	999	1.43	24.5	"	.25 gpm	
11:45	40	10.61	6.81	2.79	948	2.00	25.4	"	.25 gpm	
11:45	STOP PUMP TO GET LUNCH									
13:15	36.25	<del>10.62</del> 6.98	START 99 air							
13:30	43.75	7.49	6.87	2.91	999	1.96	28.2	gray cloudy	.25 gpm	
13:45	47.5	8.02	6.89	2.97	999	1.77	28.4	"	.25 gpm	
14:00	51.25	8.38	6.80	2.98	999	1.95	28.6	v gray cloudy	.25 gpm	
14:15	55	8.58	6.82	2.98	999	2.25	28.8	"	.25 gpm	
14:30	58.75	9.48	6.89	2.87	<del>685</del> 684	3.37	28.5	"	.25 gpm	
14:45	<del>62.5</del> 62.5	9.92	6.92	2.89	544	3.14	28.1	cloudy	.25 gpm	
15:00	66.25	10.10	6.89	2.96	471	2.30	27.9	"	.25 gpm	
15:15	70	10.29	6.87	2.98	353	2.39	27.9	"	.25 gpm	

Parcel No.: 66  
 Well ID: PPMP 66 MW 14  
 Date: 9/27-28/01

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
15:30	73.75	10.40	6.82	2.98	263	2.04	28.1	clearing	.25 gpm
15:45	77.5	10.49	6.88	3.06	230	2.05	26.6	"	.25 gpm
16:00	81.25	10.40	6.82	3.04	203	2.40	26.9	"	.25 gpm
16:15	85	10.30	6.73	3.05	189	1.43	26.3	"	.25 gpm
: STOP PUMP FOR DAY									.25 gpm
08:10	85	4.13	START AGAIN		9/28/01	—			~14 ft TOC .25 gpm
08:25	88.75	7.74	6.71	2.89	432	4.36	21.2	gray cloudy	~16 ft TOC .25 gpm
08:40	92.5	8.22	7.08	2.90	428	3.55	21.9	"	.25 gpm
08:55	96.25	8.45	7.21	2.93	158	3.87	21.8	clearing	.25 gpm
09:10	100	8.50	7.03	2.90	94	3.60	21.6	"	.25 gpm
09:25	103.75	8.70	7.12	2.92	125	3.86	22.1	"	.25 gpm
09:40	105.5	9.20	7.49	2.91	110	3.73	22.5	"	.25 gpm
09:44	Pump	rate	drops to zero,		maybe water level			has changed	

below pump.

Parcel No.: CG  
 Well ID: PPMP6CML14  
 Date: 9 27 01  
9 28 01

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)
09:35	107	9.00	6.95	2.85	105	2.71	22.8	cloudy	.25 gpm
10:10	110.75	8.60	6.94	2.89	42	2.89	22.8	clear	.25 gpm
10:25	114.5	8.50	6.96	2.83	51	2.83	23.6	clear	.25 gpm
10:35	Problems w/ pump, not drawing water, try lowering pump.								
:	: doesn't work. Pulled pump out of well. Only bottom								
:	: of two whale pumps running. Detach top pump and try								
:	: just the bottom one. Not drawing water strongly enough								
:	: to circulate water through tubing. Volume has been								
:	: reacted and 8 hours has almost been reached. Collect								
:	: sample from Horiba cup. (for photo).								
:	: <del>OKA</del>								
:	:								

# Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887  
 Form Completed by: Jeff Alexander  
 Well Developed by (person/firm): Jeff Alexander

Parcel No.: 66  
 Well No.: PPMP 66 MW15  
 Date started: 9 25 01

## Monitoring Well Information

Development Method: Surge + pump  
 Development Equipment: Whisper pump, wet indicator  
Horiba D10, Orion turb. meter  
 Casing Diameter: 2"

Beginning Measurements  
 Depth to Water (ft): 2.4 bToc  
 Total depth of Well (ft): 12.8 bToc

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) (Purge Rate, Pump Position, Misc.)
			<u>5.75</u>						
4:10	—	1.95	<del>7.95</del>	0.95	995	0.47	21.1	br. muddy	open for one min surging; 1 ft. off bottom
9:12	1.125	3.2	—	—	—	—	—	"	.125 gpm
9:25	1.25	6.10	5.91	.853	995	1.69	22.5	"	.125 gpm
09:40	1.375	6.30	6.11	<del>0.99</del> 0.83	999	2.59	24.3	"	.125 gpm
9:55	3.25	6.87	6.13	<del>1.02</del> 0.99	999	1.63	25.4	"	.125 gpm
10:10	5.125	9.70	6.19	0.99	999	2.08	25.2	"	.125 gpm
10:25	6.625	7.94	6.20	0.99	999	3.47	24.5	"	.100 gpm

TD - DTW = WC x (2 1/4' well) = One PV x 5 = Min PV + H2O to install well = Minimum H2O to remove  
 12.8 - 2.4 = 10.4 x .163 = 1.695 x 5 = 8.48 gal + .7 gal = 15.48 gal

Reviewed by  
  
 10/08/01

Parcel No.: 66  
 Well ID: PUMP 66 MW15  
 Date: 9 26 01

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	
10:40	—	7.78	6.80	1.05	999	1.99	26.4	br muddy	. 100 gpm	
10:55	9.625	7.60	6.21	1.03	846	1.77	26.3	br. muddy	. 100 gpm	
11:05	10.625	—	—	—	742	—	—	less muddy	. 100 gpm	
11:10	11.125	7.66	6.22	1.16	376	1.48	27.0	"	. 100 gpm	
11:25	12.625	7.65	6.52	1.07	333	3.63	26.2	"	. 100 gpm	
11:30	STOP PUMP FOR LUNCH								→	
13:30	start again. surge + pump @ 1 gpm for 1 minute								1 gpm	
13:35	14.375	7.72	6.28	1.03	999	2.37	27.7	muddy	. 125 gpm	
14:05	16.25	7.90	6.36	1.16	999	3.36	28.3	muddy	. 125 gpm	
14:20	18.125	8.50	6.19	1.06	999	1.73	28.1	muddy	. 125 gpm	
14:29	—	9.25	valve popped off, full flow for ~15 sec.							~ 1 gpm
14:35	20.125	9.40	6.40	1.10	526	2.19	27.1	cloudy	. 125 gpm	
14:50	22	8.40	6.59	1.11	472	2.34	26.7	cloudy	slow to . 100 gpm	

Parcel No.: 62  
 Well ID: PPMP 66 MW 15  
 Date: 9 25 01

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
15:05	—	9.55	6.42	1.10	178	2.45	26.7	sl. cloudy	.100 gpm
15:20	—	8.00	6.51	1.11	175	3.32	26.7	sl. cloudy	.100 gpm
15:35	—	7.72	6.57	1.10	130	3.97	26.3	clear	.100 gpm
15:50	—	7.50	6.38	<del>1.11</del> 1.09	112	3.97	25.5	clear	.100 gpm
16:05	—	7.40	6.24	1.10	80	<del>2.35</del> 3.97	25.4	"	.100 gpm
16:20	—	7.40	6.45	1.10	33	2.17	24.8	"	.100 gpm
16:30	—	7.32	6.42	1.20	31	3.96	24.0	"	.100 gpm
16:40	27g	7.30	6.36	1.21	27	3.97	23.1	"	.100 gpm
16:50	28g	7.29	6.46	1.09	27	4.31	22.2	"	.100 gpm
16:53	STOP development for day								
10:00	28g	—	6.43	1.12	970	8.02	21.1	cloudy	.125 gpm
10:02	—	5.78	—	—	—	—	—	—	.125 gpm slow to .100 gpm
10:15	29.5	5.95	6.78	1.13	999	5.46	25.1	cloudy	.100 gpm

Parcel No.: 66  
 Well ID: QPM 66 MW 15  
 Date: 9 26 01

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
10:30	31.7	6.17	6.70	1.12	614*	4.75	26.9	cloudy	8' Stoc, .125 sam
10:45	32.5g	6.39	6.73	1.11	237	4.27	27.4	sl. cloudy	.100 sam
11:00	34	6.49	6.97	1.12	188	4.52	27.5	"	"
11:15	35.5	6.58	6.97	1.13	123	4.15	28.5	"	"
11:30	37	6.70	6.72	1.12	111	3.99	29.3	"	"
11:45	38.5	6.80	6.60	1.12	149	3.09	29.7	almost clear	"
12:00	40	6.79	6.71	1.12	157	3.61	29.2	mostly clear	"
12:15	41.5	6.82	<del>6.71</del> 6.96	1.13	-	4.04 30.4	29.9	clear	"
12:30	43	6.89	<del>6.96</del> 6.86	1.14	62	3.80 30.6	30.4	"	"
12:45	44.5	6.83	6.90	1.14	54	3.82 30.4	30.2	"	"
13:00	46	6.80	<del>7.06</del> 7.19	1.14	66	3.44 30.4	30.4	"	"
13:15	47.5	6.87	7.06	1.15	39	3.80 30.4	30.2	"	"
13:30	49	6.65	7.19	1.14	27	3.67 30.2	30.2	"	"

13:40 50 6.60 7.19 1.13 31 3.93 30.3  
 STOP development collect sample (for photo)

MCA

# Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887 05020300  
 Form Completed by: Jeff Alexander  
 Well Developed by (person/firm): R. Goin, J. Alexander (IT)

Parcel No.: 66  
 Well No.: PPMP-66-MW06 MW16  
 Date started: 9 20 01

## Monitoring Well Information

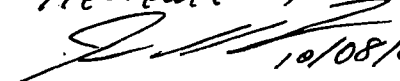
Development Method: Surge & pump  
 Development Equipment: Whale pump, w/ indicator, Heribg 1122, Orion turb. meter  
 Casing Diameter: 2"

Beginning Measurements  
 Depth to Water (ft): 3.11 b TOC  
 Total depth of Well (ft): 13.06 b TOC

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) (Purge Rate, Pump Position, Misc.)
13:51	—	3.11	6.07	3.54	999	1.42	29.3	dk gr.	.27 gpm; .5' from bottom
14:00	2.43	—	—	—	—	—	—	—	0.125 gpm
14:06	3.18	5.5	5.96	2.33	999	1.62	30.1	dk gr.	0.125 gpm
14:21	5.09	6.7	5.98	3.16	999	0.92	29.2	h	0.125 gpm raised pump 1 ft
14:36	6.925	7.7	5.99	3.42	999	0.67	30.5	h	0.125 gpm
14:40	7.425	—	—	—	—	—	—	—	0.115 gpm
14:51	8.69	8.69	6.01	3.47	999	0.77	29.9	gpm	0.115 gpm

$$\text{TD} - \text{DTW} = \text{WC} \times \frac{(2)/4' \text{ well}}{1} = \text{One PV} \times 5 = \text{Min PV} + \text{H}_2\text{O to install well} = \text{Minimum H}_2\text{O to remove}$$

$$13.06 - 3.11 = 9.95 \times .163 = 1.62 \text{ gal} \times 5 = 8.1 \text{ gal} + .79 \text{ gal} = 15.1 \text{ gal}$$

Reviewed by  
  
 10/08/01

Parcel No.: 66  
 Well ID: PPMP 66 MW16  
 Date: 9 21 01

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
15:06	10.415	9.40	6.06	3.43	999	1.72	30.4	gray	0.115 ppm
15:21	12.14	10.45	6.03	3.46	999	1.25	29.9	gray	0.115 ppm
15:36	13.86	11.00	6.12	3.43	999	1.50	29.0	gray	0.115 ppm lower pump 0.5ft.
15:51	15.59	11.45	6.05	3.37	999	1.06	29.2	"	increase to 2gpm
15:52	17.59	—	—	—	—	—	—	—	well dry
08:45	—	3.21	—	—	—	—	—	—	began development 9 21 01 pump @ bottom
08:46	—	—	—	—	—	—	—	—	1 gpm to flush out some sediment
08:48	2.0	5.00	—	—	—	—	—	gray	<del>brake</del> slow to 0.25
09:00	5.25	7.45	5.91	3.44	339	2.47	23.37	grayish	slow to .125 gpm
09:15	7.125	7.80	6.06	3.45	749	8.35	23.0	gray	.125 gpm
09:30	<del>9</del> Tot = 26.59	7.95	6.17	3.49	1176	3.85	23.2	cloudy gray	.125 gpm
09:45	28.465	8.48	5.94	3.43	933	8.10	24.5	v. cloudy	.125 gpm
10:00	30.34	9.41	5.94	3.62	>999	8.46	24.2	"	.125 gpm
10:10	—	below top of pump	—	—	—	—	—	—	raised pump rate to 1gpm went dry almost immediately

Parcel No.: 66  
 Well ID: PPMP 66 MW 16  
 Date: 9/24/01

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)
1/24 10:20	31.59	1.85	—	—	—	—	—	—	∅ 1 gpm for 1st 1 1/2 minutes; on bottom and surging
10:22	33.59	6.85	6.72	3.45	999	9.50	23.05	v. cloudy	shut to .125 gpm raise pump 1' off bottom
10:35	35.22	6.55	6.93	3.68	999	10.52	22.65	"	∅ .125 gpm
10:50	37.1	<del>6.65</del> 6.90	<del>8.19</del> 7.11	3.77	999	11.17	22.75	"	∅ .125
11:05	38.87	7.18	6.98 7.18	3.77	999	<del>11.06</del> 10.46	22.34	"	∅ .125 gpm
11:20	40.27	7.52	6.77	3.61	999	11.46	22.79	cloudy	<del>.125 gpm</del> .100 gpm
11:35	46.77	7.80	6.99	3.67	<del>704</del> 270	11.06	23.29	clearing up	.100 gpm
11:50	43.27	7.92	6.99	3.69	<del>501</del> 180	10.87	22.9	cloudy but better	.100 gpm
12:05	44.77	8.10	7.18	3.75	<del>317</del> 131	11.40	23.08	less cloudy	.100 gpm
12:20	46.27	8.24	<del>6.98</del> 7.28	3.55	<del>245</del> 93	11:59	22.91	"	.100
12:35	47.77	8.39	6.88	3.73	<del>203</del> 70	10.34	22.87	"	.100 gpm
12:50	49.27	8.50	6.97	3.77	<del>279</del> 97	<del>10.24</del> 48	22.43	"	.100

Parcel No.: 66  
 Well ID: PPMP 06 MW 16  
 Date: 9/24/01

*Horiba  
br104*

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)
13:05	50.77	8.60	6.91	3.78	<del>244</del> 59	10.14	22.99	almost clear	.100 gpm
13:20	52.27	8.73	6.98	3.78	<del>173</del> 53	11.33	23.10	"	.100 gpm
13:35	53.77	8.89	6.76	3.79	<del>185</del> 41	11.18	23.00	"	.100
13:50	55.27	8.93	7.01	3.75	<del>186</del> 47	11.40	23.10	"	.100
14:05	56.77	8.98	6.80	3.78	<del>142</del> 34	10.28	23.27	"	.100
:									
:									
:									
:									
:									
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:									

*Sample taken*

*OXA*