# APPENDIX D

# WELL DEVELOPMENT LOGS

# Parcel 93
# Groundwater Well Development Log

Fort McClellan , Alabama

PROJECT: **774645** COST CODE: **01020300** DELIVERY ORDER **CK05**



**SITE ID:** **LOCATION ID:** FTA-13-GP10 (Well Number) **Static Water Level:** 7.48 ft

Target Purge Volume: _____ gal WELL DEPTH: 15.85 (ft from TOC) Well Casing Diameter: (opt) 2'' **Recovery Depth:** _____

| Date 1998 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-6-98 | 08 :24 | | | 8.24 | Start | Pumping | | | | | W. Allen S. Smith | Brown - murky |
| | 08 :30 | .5 | 9.25 | 3.0 | 10.2 | 5.65 | .206 | 1122 | 9.97 | | | |
| | 08 :31 | | | Stop | Pumping | | | ~~H22~~ | 9.97 | | | |
| | 08 :55 | | | Pumping | Again | | | | | | | |
| | 08:59 | | | Stopped pumping - No current in control Box | | | | | | | | |
| | 09 :23 | | | Pumping | Again | | | | | | | |
| | 09 :25 | .3 | 11.25 | 3.6 | 16.0 | 5.73 | .232 | 1004 | 7.23 | | | |
| | 09 :35 | .3 | 11.82 | 6.6 | 18.4 | 5.79 | .234 | 1112 | 6.74 | | | |
| | 09 :45 | .3 | 12.39 | 9.6 | 18.6 | 5.91 | .233 | 1504 | 6.98 | | | |
| | 09 :55 | .3 | 12.48 | 12.6 | 18.8 | 5.99 | .232 | 459 | 6.72 | | | |
| | 10 :05 | .3 | 12.12 | 15.6 | 19.5 | 5.97 | .232 | 322 | 6.76 | | | |

# Parcel 43
# Groundwater Well Development Log

Fort McClellan , Alabama

PROJECT: **774645** COST CODE: **01020300** DELIVERY ORDER **CK05**



**SITE ID:** **LOCATION ID:** FTA-93-GP 10 (Well Number) **Static Water Level:** 7.98 ft

Target Purge Volume: _____ gal WELL DEPTH: 15.85 (ft from TOC) Well Casing Diameter: (opt) 2in **Recovery Depth:** _____

| Date 1998 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-6-99 | 10:15 | .3 | 11.12 | 18.6 | 18.1 | 5.31 | .225 | 665 | 6.43 | | S. Smith w. Allen | TAN - murky |
| | 10:25 | .3 | 12.42 | 21.6 | 19.0 | 6.02 | .229 | 202 | 7.16 | | | |
| | 10:35 | .3 | 12.46 | 24.6 | 18.2 | 5.89 | .224 | 212 | 6.75 | | | Clearing |
| | 10:45 | .3 | 10.45 | 27.6 | 18.8 | 5.46 | .230 | 335 | 6.44 | | | |
| | 10:55 | .3 | 12.52 | 30.6 | 19.3 | 5.47 | .228 | 1010 | 6.24 | | | |
| | 11:05 | .3 | 12.38 | 33.6 | 20.0 | 5.47 | .231 | 241 | 6.77 | | | |
| | 11:15 | .3 | 10.32 | 36.6 | 19.6 | 5.48 | .226 | 730 | 6.56 | | | |
| | 11:24 | .3 | 12.02 | 39.6 | 15.8 | 5.45 | .227 | 1240 | 8.07 | | | murky |
| | 11:30 | | Stopped Pumping - Pump cut off | | | | | | | | | |
| | 11:34 | | | Pumping Again | | | | | | | | |
| | 11:45 | .3 | 12.05 | 42.9 | 19.6 | 6.02 | .229 | 1481 | 6.76 | | | murky |

# Parcel 13
# Groundwater Well Development Log

Fort McClellan , Alabama

PROJECT: **774645** COST CODE: **01020300** DELIVERY ORDER **CK05**



**SITE ID:** **LOCATION ID:** FTA-93-GP10 (Well Number) **Static Water Level:** 7.48 ft

Target Purge Volume: _____ gal WELL DEPTH: 15.85 (ft from TOC) Well Casing Diameter: (opt) 2'0 **Recovery Depth:** _____

| Date 1998 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-6-98 | 11 :50 | | stopped | | pumping = no current at regulator | | | | | | W. Allen S. Smith | murky |
| | 11 :55 | | Pumping | | Again | | | | | | | |
| | 12 :00 | .3 | 13.52 | 45.9 | 14.4 | 5.97 | .223 | 1257 | 6.81 | | | murky |
| | 12 :01 | | | well | Dry | | | | | | | |
| | 12 :15 | | Pumping | | Again | | | | | | | |
| | 12 :20 | .3 | 11.05 | 48.9 | 17.8 | 5.96 | .215 | 1458 | 7.8-1 | | | murky |
| | : | | | | | | | | | | | |
| | : | | | | | | | | | | | |
| | : | | | | | | | | | | | |
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# Parcel 93
# Groundwater Well Development Log

Fort McClellan , Alabama

PROJECT: **774645** COST CODE: **01020300** DELIVERY ORDER **CK05**



**SITE ID:** **LOCATION ID:** ETA-93-GP11 (Well Number) **Static Water Level:** 4.52 ft

Target Purge Volume: _____ gal WELL DEPTH: 15.95 (ft from TOC) Well Casing Diameter: (opt) 2" **Recovery Depth:** _____

| Date 1998 | Time 24hr 1400 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-6-99 | 14:05 | .3 | 7.22 | 1.5 | 13.7 | 6.41 | 1.14 | 999 | 9.62 | | W. Allen | dingy, muddy |
| | 14:10 | .3 | 8.44 | 3.0 | 16.7 | 6.58 | .929 | 999 | 7.82 | | | |
| | 14:15 | .3 | 8.73 | 4.5 | 16.7 | 6.50 | .892 | 999 | 7.82 | | | |
| | 14:25 | .3 | 8.92 | 7.5 | 19.4 | 6.35 | .870 | 999 | 6.98 | | | cloudy |
| | 14:35 | .3 | 11.44 | 10.5 | 16.5 | 6.51 | 1.20 | 999 | 8.23 | | | " " |
| | 14:40 | — | well | empty, | | recharge | | | | | | |
| | : | | | | | | | | | | | |
| | : | | | | | | | | | | | |
| | : | | | | | | | | | | | |
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# Parcel 93

# Groundwater Well Development Log

Fort McClellan , Alabama

PROJECT: 774645 COST CODE: 01020300 DELIVERY ORDER CK05



SITE ID: LOCATION ID: FTA-9B-GP07 11 (Well Number) Static Water Level: 8 ft

Target Purge Volume: ____ gal WELL DEPTH: 15.9 (ft from TOC) Well Casing Diameter: (opt) 2" Recovery Depth: ____

| Date 1998/9 | Time 24hr 1305 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 JAN | 13:10 | .2 | 9.3 | 1 | 16.5 | 6.29 | 1.28 | 999 | 9.25 | NA | OKA | BROWN, MUDDY |
| | 13:15 | .2 | 10.3 | 2 | 18.9 | 6.29 | 1.26 | 999 | 5.21 | | | " " |
| | 13:20 | .2 | 10.7 | 3 | 18.0 | 6.10 | .818 | 999 | 5.98 | | | TAN, Muddy |
| | 13:30 | .2 | 12.1 | 5 | 18.3 | 6.02 | .775 | 999 | 8.71 | | | " " |
| | 13:40 | .2 | 14.3 | 7 | 21.1 | 6.29 | 1.16 | 999 | 7.68 | | | |
| | 14:45 | — | 13.3 | 7 | Restarted Pump | | | | | | | |
| | 14:46 | — | — | 7.5 | well Dry - Photo | | | sample | Taken | | | |
| | : | LAST Line used | | | | | | | | | | |
| | : | | | | OKA | | | | | | | |
| | : | | | | | 01-07-98 | | | | | | |
| | : | | | | | | | | | | | |

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15 DECEMBER 1998

# Parcel 93
# Groundwater Well Development Log

Fort McClellan , Alabama

PROJECT: **774645** COST CODE: **01020300** DELIVERY ORDER **CK05**



**SITE ID:** **LOCATION ID:** FTA-93-GP23 (Well Number) **Static Water Level:** 5.25 ft

Target Purge Volume: _____ gal WELL DEPTH: 21.15 (ft from TOC) Well Casing Diameter: (opt) 2" **Recovery Depth:** 20.54

| Date 1998 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-5-99 | 08:22 | | | Start | pumping | | | | | | W. Allen S. Smith | murky-gry |
| | 08:25 | 0.50 | 8.53 | 1.5 | 13.0 | 6.19 | 1.80 | 1000 | 8.25 | | | |
| | 08:30 | 0.50 | 8.91 | ~~2.0~~ 4.0 | 14.4 | 6.35 | 1.61 | 1010 | 7.48 | | | |
| | 08:40 | 0.50 | 10.40 | 9.00 | 14.2 | 6.28 | 1.46 | 1042 | 6.86 | | | |
| | 08:50 | 0.50 | 11.80 | 11.50 | 16.4 | 6.11 | 1.53 | 1276 | 5.91 | | | |
| | 09:00 | 0.50 | 13.23 | 13.0 | 12.7 | 6.55 | 1.52 | 566 | 7.75 | | | |
| | 09:10 | 0.50 | 13.49 | 15.5 | 12.0 | 6.83 | 1.30 | 5.60 | 7.80 | | | |
| | 09:12 | | Stopped Pumping Pump clogged | | | | | | | | | |
| | 09:55 | | | Pumping Again | | | | | | | | |
| | 10:00 | 0.50 | 13.95 | 18.0 | 14.0 | 6.30 | 1.50 | 999 | 6.50 | | | |
| | 10:10 | 0.50 | 14.45 | 20.5 | 15.0 | 6.70 | 1.50 | 999 | 7.30 | | | |

# Parcel 13
# Groundwater Well Development Log

Fort McClellan , Alabama

PROJECT: **774645** COST CODE: **01020300** DELIVERY ORDER **CK05**



**SITE ID:** **LOCATION ID:** FTA-13-GP23 (Well Number) **Static Water Level:** 5.25 ft

Target Purge Volume: _____ gal WELL DEPTH: 21.15 (ft from TOC) Well Casing Diameter: (opt) 2" **Recovery Depth:** 20.54

| Date 1998 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-5-99 | 10 :20 | .50 | 14.80 | 23.0 | 17.0 | 6.70 | 1.10 | 999 | 6.90 | | W. Allen S. Smith | murky-gray |
| | 10 :30 | .50 | 16.15 | 25.5 | 18.0 | 6.60 | 1.70 | 999 | 7.50 | | | |
| | 10 :40 | .50 | 16.82 | 28.0 | 17.9 | 6.80 | 1.70 | 999 | 10.9 | | | |
| | 10 :50 | .50 | 17.15 | 30.5 | 18.0 | 6.80 | 1.40 | 999 | 7.50 | | | |
| | 11 :00 | .50 | 17.65 | 33.0 | 19.0 | 7.0 | 1.40 | 999 | 6.70 | | | |
| | 11 :10 | .50 | 18.26 | 35.0 | 19.0 | 6.90 | 1.40 | 999 | 7.40 | | | |
| | 11 :20 | .50 | 18.70 | 37.5 | 17.0 | 7.20 | 1.20 | 200 | 7.30 | | | |
| | 11 :30 | .50 | 19.20 | 40.0 | 18 | 7.0 | 1.0 | 210 | 7.0 | | | |
| | 11 :40 | .50 | 19.50 | 42.5 | 20 | 7.0 | .80 | 999 | 6.50 | | | |
| | 11 :50 | .25 | 20.00 | 43.75 | 20 | 7.3 | .64 | 630 | 6.90 | | | |
| | 12 :00 | .25 | 20.5 | 45.00 | 19 | 7.10 | .69 | 999 | 6.90 | | | |

# Parcel 93
# Groundwater Well Development Log

Fort McClellan , Alabama

PROJECT: **774645** COST CODE: **01020300** DELIVERY ORDER **CK05**



**SITE ID:** **LOCATION ID:** FTA-93-6P23 (Well Number) **Static Water Level:** 5.25 ft

Target Purge Volume: _____ gal WELL DEPTH: 21.15 (ft from TOC) Well Casing Diameter: (opt) 2" **Recovery Depth:** 20.54

| Date 1998 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-5-98 | 12:05 | .35 | 20.65 | 4625 | 20 | 7.2 | .72 | 999 | 7.2 | [illegible] | W. Allen S. Smith | murky gray |
| | 12:06 | | | well | Dry | | | | | | | |
| | 12:15 | | | Pumping Again | | | | | | | | |
| | 12:20 | .35 | 20.54 | 4750 | 22 | 7.0 | .63 | 999 | 7.0 | | | |
| | : | | | | | | | | | | | |
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# Parcel 93

# Groundwater Well Development Log

Fort McClellan , Alabama

PROJECT: **774645** COST CODE: **01020300** DELIVERY ORDER **CK05**



**SITE ID:** **LOCATION ID:** FTA-93-GP24 (Well Number) **Static Water Level:** 6'2 ft

Target Purge Volume: _____ gal WELL DEPTH: 19.7 (ft from TOC) Well Casing Diameter: (opt) 2" **Recovery Depth:** _____

| Date 1998 9 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04 JAN | 14:20 | .3 | 7.6 | 1.5 | 14.8 | 6.95 | .643 | 999 | 9.16 | N/A | OKD | Gray, cloudy |
| | 14:25 | .3 | 8.5 | 3 | 15.9 | 6.75 | .551 | 557 | 8.09 | | | " " |
| | 14:30 | .3 | 9.1 | 4.5 | 16.2 | 6.80 | .540 | 357 | 9.58 | | | cloudy |
| | 14:40 | .3 | 9.5 | 7.5 | 14.9 | 6.53 | .472 | 198 | 9.16 | | | cloudy |
| | 14:50 | .3 | 10.35 | 10.5 | 13.3 | 6.40 | .475 | 117 | 9.90 | | | clearing |
| | 15:00 | .3 | 10.9 | 13.5 | 13.1 | 6.41 | .497 | 105 | 14.19 | | | cloudy clearing |
| | 15:10 | .3 | 11.6 | 16.5 | 19.7 | 6.84 | .544 | 714 | 8.34 | | | cloudy gray |
| | 15:20 | .3 | 12.8 | 19.5 | 17.6 | 6.54 | .613 | 286 | 9.34 | | | cloudy clearing |
| | 15:30 | .3 | 13.7 | 22.5 | 15.9 | 6.69 | .623 | 245 | 10.63 | | | " " |
| | 15:40 | .3 | 14.7 | 25.5 | 15.6 | 6.87 | .635 | 186 | 10.50 | | | " " |
| — | 15:50 | .3 | 15.8 | 28.5 | 20.8 | 6.94 | .685 | 174 | 7.91 | — | — | " " |

# Parcel 93

# Groundwater Well Development Log

Fort McClellan , Alabama

PROJECT: **774645** COST CODE: **01020300** DELIVERY ORDER **CK05**



**SITE ID:** **LOCATION ID:** FTA-93-GP24 (Well Number) **Static Water Level:** 6.2 ft

Target Purge Volume: ____ gal WELL DEPTH: 19.7 (ft from TOC) Well Casing Diameter: (opt) 2' **Recovery Depth:** _____

| Date 1998 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 JAN | 16:00 | .3 | 17.0 | 31.5 | 17.6 | 7.06 | .679 | 559 | 9.60 | NA | OKA | GRAY, CLOUDY |
| — | 16:05 | .3 | 18.2 | 33 | NO READINGS | | TAKEN / WELL DRY | | | — | — | |
| | : | LAST | LINE | USED | | | | | | | | |
| | : | | | | | | | | | | | |
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# Parcel 93
# Groundwater Well Development Log

Fort McClellan , Alabama

PROJECT: **774645** COST CODE: **01020300** DELIVERY ORDER **CK05**



**SITE ID:** **LOCATION ID:** FTA-93-6P24 (Well Number) **Static Water Level:** 16.2 ft

Target Purge Volume: _____ gal WELL DEPTH: 19.9 (ft from TOC) Well Casing Diameter: (opt) 2 in. **Recovery Depth:** 18.5

| Date 1998 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-5-98 | 15:13 | .3 | 16.2 | | START Pumping | | | | | | W. Allen S. Smith | Murky Gray |
| | 15:15 | .3 | 17.2 | .6 | 13 | 6.7 | .55 | 1140 | 4.6 | | | |
| | 15:25 | .3 | 18.05 | 3.6 | 13 | 7.3 | .58 | 1014 | 10.5 | | | |
| | 15:26 | | Stop Pumping - well Dry | | | | | | | | | |
| | 16:15 | | Pumping Again | | | | | | | | | |
| | 16:20 | .3 | 18.5 | 5.1 | 12 | 6.8 | .52 | 291 | 10.3 | | | |
| | : | | | | | | | | | | | |
| | : | | | | | | | | | | | |
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# Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 774645
Form Completed by: Jewel M Cunningham
Well Developed by (person/firm): B.D. - J.C. IT Corp

Parcel No.: FTA-93
Well No.: FTA-93-MW01
Date started: 10/24/01

## Monitoring Well Information

PID - 0.3

Development Method: Surge + Purge
Development Equipment: whaler pump, PID; DTW meter Horiba
Casing Diameter: 2" pvc

Beginning Measurments
Depth to Water (ft): 4.29
Total depth of Well (ft): 32.59

| 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.) |
|---|---|---|---|---|---|---|---|---|---|
| 10:30 | — | 4.29 | 6.66 | .298 | >1000 | 3.88 | 21.6 | Black | Surge well with Surge block .5 gal/— |
| 10:45 | 7.5 | 11.21 | 6.77 | .295 | " " | 2.19 | 21.7 | Black | " " |
| 11:00 | 15 | 13.39 | 6.86 | .286 | " " | 1.43 | 22.2 | " | " " |
| 11:15 | 22.5 | 13.65 | 6.94 | .268 | " " | 0.99 | 23.2 | Dark Gray | 1 gal/— Surged with pump Raised F.R. |
| 11:30 | 37.5 | 17.05 | 6.99 | .364 | " " | .01 | 23.0 | Black | " " |
| 11:45 | 52.5 | 25.82 | 7.07 | .308 | " " | 0.0 | 21.9 | Dark Gray | " " |
| 12:00 | 67.5 | 29.01 | 7.12 | .299 | " " | 0.0 | 21.1 | " " | " " |

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

32.59 - 4.29 = 28.30 x .163 = 4.61 x 5 = 23.05 + 100gal. = 123.05

QC'd [illegible] 10/30/01

Parcel No.: FTA-93
Well ID: FTA-93-M0001
Date: 10/24/01 - 10/25/01

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 12 :15 | 82.5 | 32.59 | 7.19 | .291 | >1000 | 0.0 | 23.1 | Black | Well went Dry Stopped pumping |
| : | | | | | | | | | Only 2" of recovery |
| : | | | | | | | | | in 30. min |
| 1245: | 82.5 | 29.81 | 7.50 | .341 | >1000 | 8.01 | ~~8.02~~ 23.7 | Black | Restart pump .1 gal/m |
| 13 :00 | 84 | 30.40 | 7.49 | .339 | >1000 | 5.98 | 23.6 | Black | " " |
| 13 :15 | 85.5 | — | 7.42 | .334 | >1000 | 4.09 | 22.9 | Black | Well Dry |
| : | | | | | | | | | 10/25/00 Restart |
| 09 :15 | 85.5 | 4.25 | 5.66 | .500 | 30.0 | 8.09 | 19.4 | Clear | ~~.033~~ Pump set 14' PID-0.0 .030 g/m. Sustained Rate |
| 09 :30 | 85.95 | 4.29 | 6.29 | .335 | 22.0 | 6.03 | 19.5 | Clear | Sample well with. Pump set pump near bottom .5 g/m |
| 09 :45 | 93.45 | 15.4 | 6.82 | .386 | 774 | 4.90 | 19.4 | Dark Grey | " " " |
| 10 :00 | 100.95 | 26.51 | 7.25 | .424 | 514 | 4.72 | 19.3 | Lt Gray | " " " |
| 10 :15 | 108.45 | 32.59 | 7.31 | .441 | >100 | 5.15 | 20.6 | Brownish Gray | Well went Dry |

Parcel No.: FTA-93
Well ID: FTA-93-MW01
Date: 10/26/01

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09:15 | 108.45 | 4.25 | 6.63 | .387 | 74.1 | 0.3 | 19.5 | Clearish | set pump 5' from bottom .25g/min |
| 09:30 | 112.2 | 8.19 | 6.95 | .374 | 48.1 | 0.0 | 20.5 | Clearish | " " " " |
| 09:45 | 115.95 | 11.91 | 7.00 | .381 | 41.2 | 0.04 | 19.9 | Clearish | " " " " |
| 10:00 | 119.70 | 14.76 | 7.32 | .443 | 33.7 | 0.80 | 21.7 | " | " " .1 ~~.125~~g/m |
| 10:15 | 121.2 | 15.91 | 7.14 | .394 | 49.1 | 0.69 | 21.0 | " | " " " " |
| 10:30 | 122.7 | 16.01 | 7.03 | .429 | 44.5 | 0.03 | 21.4 | Clearish | " " " " |
| 10:45 | 124.2 | 16.07 | 7.08 | .417 | 59.1 | 1.09 | 21.6 | " | " " " " |
| 11:00 | 125.7 | 16.21 | 7.36 | .425 | 57.8 | 0.61 | 21.9 | " | " " " " |
| 11:15 | 127.2 | 16.35 | 7.21 | .421 | 47.3 | 0.49 | 21.5 | " | " " " " |
| 11:30 | 128.7 | 16.49 | 7.40 | .428 | 41.9 | 0.0 | 21.1 | " | " " " " |
| 11:45 | 130.2 | 16.60 | 7.26 | .431 | 52.3 | 0.09 | 21.9 | " | " " " " |
| 12:00 | 131.7 | 16.69 | 7.30 | .399 | 45.1 | 0.20 | 22.0 | " | " " " " |

Parcel No.: FTA -93
Well ID: FTA - 93 - MW01
Date: 10/26/01

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 12 :15 | 133.2 | 16.78 | 7.32 | .392 | 49.0 | 0.0 | 22.1 | Slightly Clear | Pump set 5' from bottom 1gl |
| 12 :30 | 134.7 | 16.91 | 7.29 | .404 | 33.9 | 0.01 | 21.9 | " " | " " " " " |
| 12 :45 | 136.2 | 16.95 | 7.40 | .419 | 38 | 0.0 | 22.5 | " " | Taking Sample Photo |
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Daniel Estrada

# Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 774645
Form Completed by: MARK SHOEMAKER (IT)
Well Developed by (person/firm): MARK SHOEMAKER (IT)

Parcel No.: 93
Well No.: ETA-93-MW02
Date started: 11/8/01

## Monitoring Well Information

Development Method: SURGE + PURGE
Development Equipment: WATER PUMP; NORTEK U-10; ORION TURBIDITY METER; PHOTOVAC PID
Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 5.98 FLUSH
Total depth of Well (ft): 23.71 FLUSH

INITIAL PID = 0.0 ppm

| 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.) |
|---|---|---|---|---|---|---|---|---|---|
| 15:25 | 0 | 5.98 | 6.91 | 0.639 | OFF SCALE | 9.12 | 21.0 | BLACK | INITIAL MEASUREMENTS |
| 15:45 | 20 | 18.10 | 6.24 | 0.742 | 793 | 0.94 | 20.6 | GRAY VERY TURBID | PUMP 1' OFF BOTTOM FLOW 1 GPM |
| 16:00 | 27.5 | 18.22 | 6.44 | 0.777 | 1093 | 1.34 | 20.4 | GRAY VERY TURBID | FLOW 0.5 GPM |
| 16:15 | 35 | 18.39 | 6.01 | 0.803 | 874 | 2.21 | 20.3 | GRAY VERY TURBID | FLOW 0.5 GPM END FOR DAY |
| 07:45 | 35 | 7.19 | 6.27 | 0.470 | 453 | 3.22 | 17.7 | CLOUDY | RESUME DEVELOPMENT 11/9/01 FLOW 0.3 GPM |
| 08:00 | 39.5 | 11.33 | 6.29 | 0.433 | 198 | 5.04 | 18.4 | CLOUDY | PUMP @ 22' FLOW 0.3 GPM |
| 08:15 | 44 | 12.71 | 6.28 | 0.441 | 110 | 3.83 | 18.9 | SLIGHTLY CLOUDY | PUMP @ 22' FLOW 0.3 GPM |

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

23.71 - 5.98 = 17.73 x 0.163 = 2.89 x 5 = 14.45 + 20 = 34.45 gal

[illegible]
11-12-01

Parcel No.: 93
Well ID: FTA-93-MW02
Date: 11/9/01

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 08:30 | 48.5 | 16.23 | 6.70 | 0.467 | 162 | 4.00 | 18.9 | CLOUDY | PUMP @ 22' FLOW 0.3 GPM |
| 08:45 | 53 | 17.96 | 6.84 | 0.499 | 84 | 3.68 | 18.8 | SLIGHTLY CLOUDY | PUMP @ 22' FLOW 0.3 GPM |
| 09:00 | 54.5 | 18.03 | 6.91 | 0.497 | 104 | 3.32 | 17.8 | SLIGHTLY CLOUDY | PUMP @ 22' FLOW @ 0.1 GPM |
| 09:15 | 56 | 17.97 | 6.99 | 0.475 | 38 | 3.39 | 17.1 | CLEAR | PUMP @ 22' FLOW @ 0.1 GPM |
| 09:30 | 57.5 | 17.98 | 6.95 | 0.473 | 8.2 | 3.36 | 17.5 | CLEAR | PUMP @ 22' FLOW @ 0.1 GPM |
| 09:45 | 59 | 17.99 | 6.97 | 0.471 | 7.3 | 2.83 | 17.7 | CLEAR | PUMP @ 22' FLOW @ 0.1 GPM |
| 10:00 | 60.5 | 17.93 | 6.96 | 0.471 | 4.8 | 3.31 | 17.6 | CLEAR | PUMP @ 22' FLOW @ 0.1 GPM |
| 10:00 | — | — | — | — | — | — | — | — | CEASE DEVELOPMENT |
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11/9/01

# Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 774645.15020600
Form Completed by: J. Alexander
Well Developed by (person/firm): J. Alexander

Parcel No.: FTA 93
Well No.: MW03
Date started: 11 1 01

## Monitoring Well Information

Development Method: surge + pump
Development Equipment: grunfos pump, WL indicator, Horiba U10, HF turbidimeter
Casing Diameter: 4"

Beginning Measurments
Depth to Water (ft): 5.62' bTOC
Total depth of Well (ft): 74.42' 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.) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Surge 1st 15 min. |
| 09:50 | Ø | 5.62 | 6.71 | .029 | >999 | 1.69 | 19.3 | dk gray opaque | 1.5gpm 1.5ft off bottom |
| 10:05 | 22.5 | 26.20 | 6.78 | .293 | >999 | 4.72 | 19.2 | " | 1gpm 1.5 ft off bottom |
| 10:20 | 37.5 | 38.78 | 8.23 | .295 | 390 | 6.23 | 19.8 | gray cloudy | .5gpm " " |
| 10:35 | 45 | 44.12 | 8.36 | .291 | >999 | 5.65 | 19.8 | dk gray v. cloudy | .5gpm " " |
| 10:50 | 52.5 | 48.55 | ~~7.98~~ 8.32 | .317 | 510 | 5.51 | 20.7 | " | .5gpm " " |
| 11:05 | 60 | 53.52 | 7.98 | .291 | 365 | 4.62 | 20.8 | " | .25gpm " " |
| 11:20 | 63.375 | 55.85 | 7.80 | .323 | 229 | 3.30 | 21.1 | gray cloudy | .25gpm " " |

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

74.42 - 5.62 = 68.8 x .653 = 44.93 x 5 = 224.650 + 100 = 324.65

QC'd [illegible] 11/12/01

Parcel No.: FTA 93
Well ID: MW03
Date: 11/01

| | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11:35 | ~~78~~ 67.5 | 57.14 | 7.91 | .330 ~~.303~~ @11/01 | 106 | 2.89 | 21.3 | gr. cloudy | .25 ~~.25~~ gpm @10/31/01 1.5 ft off bottom |
| 2hr. | 11:50 | 71.25 | 60.38 | 7.80 | .336 | 129 | 2.98 | 21.2 | " | ~.25 gpm 1.5 ft off bottom |
| | 12:05 | 75 | 62.04 | 7.51 | .344 | 439 | 3.40 | 21.7 | " | .25 gpm 1.5 ft off bottom |
| | 12:20 | ~~78.75~~ ~~66.38~~ @11/01 | 61.72 | 7.13 | .346 | 828 | 2.85 | 21.3 | " | pump had stopped briefly .25 gpm 1.5 ft off bottom |
| | 12:35 | 82.5 | 66.58 | 6.99 | .353 | 920 | 3.13 | 21.6 | " | .25 gpm 1.5 ft. off bottom |
| 3hr. | 12:50 | 86.25 | 69.18 | 6.85 | .347 | >999 | 2.48 | 21.8 | " | .25 gpm 1.5 ft off bottom |
| | 13:05 | 90 | 71.22 | 6.79 | .322 | >999 | 2.92 | 21.8 | " | .25 gpm 1.5 ft off bottom |
| | 14:20 | 90 | 66.98 | 6.90 | .340 | >999 | 3.21 | 21.0 | " | 1 gpm 1.5 ft off bottom |
| | 14:25 | 95 | 63.05 | 6.92 | .337 | >999 | 3.11 | 21.1 | " | .5 gpm 1.5 ft off bottom |
| | 14:40 | 102.5 | 65.70 | 7.06 | .353 ~~.291~~ @11/01 | 288 | 6.56 | 21.4 | gr. cloudy | .25 gpm 1.5 ft off bottom |
| | 14:55 | 106.25 | 70.05 | 7.07 | .354 | 315 | 7.13 | 21.4 | " | .25 gpm 1.5 ft off bottom |
| | 15:10 | 110 | 72.62 | 7.06 | .341 | >999 | 4.05 | 21.7 | gr. v. cloudy | .25 gpm ~~1.5~~ 0.5 ft off bottom @11/01 |
| 4hr. | 1515 | 111.25 | well gone dry | | | | | | | |

Parcel No.: FTA 93
Well ID: MW03
Date: 11 2 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| | 15:35 | 111.25 | 69.65 | 80% recovery | not reached | in 20 min. | | | | 11 1 01 |
| ½ | 07:40 | 111.25 | 15.12 | 6.99 | .339 | >999 | 2.47 | 18.8 | gray v. cloudy | 1 gpm .5 ft off bottom 11 2 01 |
| | 07:55 | 126.25 | 28.95 | 7.17 | .352 | 392 | 6.31 | 19.1 | gray cloudy | .75 gpm 1.5 ft " |
| | 08:10 | 137.5 | 36.65 | 7.12 | .349 | 56 | 6.37 | 19.9 | clear | .75 gpm 2.5 ft " |
| | 08:25 | 148.75 | 41.90 | 7.12 | .349 | 53 | 6.52 | 20.3 | " | .75 gpm 4.5 ft " |
| 1 hr | 08:40 | 160 | 45.91 | 7.15 | .349 | 34 | 5.37 | 20.7 | " | .25 gpm 6.5 ft " |
| | 08:55 | 163.75 | 49.16 | 7.49 | .349 | 20 | 5.23 | 21.0 | " | .25 gpm 8.5 ft " |
| | 09:10 | 167.5 | 54.10 | 7.15 | .349 | 19 | 5.42 | 20.9 | " | .25 gpm ~~10.5~~ 8.5 ft " 11 2 01 |
| | 09:25 | 171.25 | 59.36 | 7.15 | .348 | 20 | 5.03 | 21.5 | " | .25 gpm ~~12.5~~ 8.5 ft " 11 2 01 |
| 6 hr | 09:40 | 175 | 63.10 | 7.15 | .353 | 122 | 5.12 | 21.3 | " | .25 gpm ~~12.5~~ 8.5 ft " 11 2 01 |
| | 09:55 | 178.75 | 68.72 | 7.15 | .353 | 235 | 5.24 | 21.1 | cloudy | .5 gpm lowered to 1 ft off bottom |
| 8.5 hr | 10:10 | 186.25 | 72.18 | 7.15 | .353 | 601 | 5.41 | 21.1 | cloud | .5 gpm 1 ft off bottom |

10 15 well gone dry

Parcel No.: FTA93
Well ID: FTA 93 MW03
Date: 11 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09:00 | 186.25 | 4.77 | 6.23 | .324 | 50.4 | 0.41 | 18.1 | green sl. cloudy | Jeff Alexander 11 8 01 .15 gpm 20ft off bottom |
| 09:15 | 188.50 | 11.85 | 7.19 | .341 | 33.9 | 0.10 | 18.8 | " | " 18ft " |
| 09:30 | 190.75 | 15.05 | 7.25 | .344 | 31.3 | 0.00 | 19.1 | clear | " 16ft " |
| 09:45 | 193 | 17.78 | 7.27 | .345 | 29.8 | 0.04 | 19.4 | " | " 14ft " |
| 10:00 | 195.25 | 20.04 | 7.26 | .345 | 27.1 | 0.02 | 19.5 | " | " 12ft " |
| 10:15 | 197.5 | 22.32 | 7.26 | .344 | 24.3 | 0.02 | 19.5 | " | " 10 ft " |
| 10:30 | 199.75 | 25.30 | 7.26 | .344 | 22.0 | 0.02 | 19.6 | " | " 10ft " |
| 10:45 | 202 | 26.92 | 7.27 | .346 | 22.2 | 0.01 | 19.8 | " | " 10ft " |
| 11:00 | 204.25 | 28.25 | 7.27 | .348 | 22.1 | 0.01 | 19.8 | " | " 10ft " |
| 11:15 | 206.50 | 29.10 | 7.22 | .348 | 20.1 | 0.03 | 20.3 | " | " 10ft " |
| 11:30 | 208.75 | 30.12 | 7.19 | .349 | 18.5 | 0.02 | 20.2 | " | " 10ft " |
| 11:45 | 211 | 31.12 | 7.32 | .338 | 40.13 | 0.00 | 20.0 | " | " 10ft " |

Parcel No.: FTA 93
Well ID: MW03
Date: 11 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| hrs | 12:00 | 213.25 | 32.13 | 7.28 | .342 | 44.50 | 0.06 | 20.1 | clear | .15 gpm 5ft off bottom |
| | 12:15 | 215.5 | 33.98 | 7.31 | .336 | 16.5 | 0.00 | 20.3 | " | " " " |
| | 12:30 | 217.75 | 35.12 | 7.30 | .348 | 22.1 | 0.04 | 20.3 | " | " " " |
| | 12:45 | 220 | 36.22 | 7.28 | .351 | 25.9 | 0.03 | 20.4 | " | " " " |
| hrs | 13:00 | 222.25 | 36.45 | 7.26 | .354 | 16.4 | 0.03 | 20.4 | " | " " " |
| | 13:15 | 224.5 | 36.60 | 7.25 | .356 | 17.3 | 0.05 | 20.5 | " | " " " |
| | 13:30 | 226.75 | 38.00 | 7.27 | .356 | 17.4 | 0.02 | 20.7 | " | " " " |
| | 13:45 | 229 | 39.65 | 7.27 | .354 | 16.9 | 0.01 | 20.9 | " | " " " |
| 11 hrs | 14:00 | 231.25 | 40.51 | 7.29 | .348 | 13.9 | 0.02 | 20.9 | " | " " " |
| | 14:15 | 233.50 | 41.80 | 7.29 | .345 | 12.8 ~~13.0~~ 11.80 | 0.02 | 21.1 | " | " " " |
| | 14:30 | 235.75 | 43.12 | 7.29 | .345 | 13.0 | 0.02 | 21.0 | " | " " " |
| | 14:45 | 238 | 44.60 | 7.29 | .344 | 13.3 | 0.02 | 19.9 | " | " " " |
| 12 hrs. | 15 00 | 240.25 | 45.30 | 7.29 | .344 | 13.3 | 0.02 | 20.0 | " | " " " |

PHOTO SAMPLE COLLECTED; 12 hrs. met.

# Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 774645
Form Completed by: Jewell [illegible]
Well Developed by (person/firm): BH. JC FTCorp

Parcel No.: FTA - 93
Well No.: FTA - 93 - MW04
Date started: 10/30/01

## Monitoring Well Information

Development Method: Surge + Purge
Development Equipment: Whaler pump; DTW meter
P.H. Meter Horiba
Casing Diameter: 2" pvc

Beginning Measurments
Depth to Water (ft): 4.80
Total depth of Well (ft): 18.42

| 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.) |
|---|---|---|---|---|---|---|---|---|---|
| 14:35 | — | 4.80 | 6.42 | .393 | >1000 | 4.82 | 26.04 | Black | Surged well with Block Set pump at Bottom .5gl/m |
| 14:50 | 7.5 | 9.41 | 6.42 | .364 | >1000 | 3.03 | 25.34 | Dark Gray | " " " " |
| 15:06 | 15 | 10.01 | 6.45 | .397 | >1000 | 2.23 | 24.75 | " " | Surged well with Pump set at bottom .5gal/m |
| 15:20 | 22.5 | 10.21 | 6.42 | .350 | >1000 | 1.70 | 24.22 | " " | " " " " |
| 15:35 | 30 | 10.36 | 6.23 | .290 | 269 | 2.01 | 24.41 | ~~Clear~~ Cloudy | Surged well pump set 13.42 " " |
| 15:50 | 37.5 | 10.38 | 6.14 | .250 | 114.0 | 1.59 | 24.27 | " | " " " " |
| 16:05 | 45 | 10.39 | 6.14 | .237 | 68.8 | 3.01 | 24.17 | Slightly Cloudy | " " " " |

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

18.42 - 4.80 = 13.62 x .163 = 2.22 x 5 = 11.10 + ~~17.10~~ 6 = 17.10

OCD [illegible] 10/31/01

Parcel No.: FTA-93
Well ID: FTA-93-MW04
Date: 10/30/01

| 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 :20 | 52.5 | 10.40 | 6.10 | .243 | 42.2 | 2.97 | 24.63 | Slightly Cloudy | Pump set at 13.42 .5 gal/min |
| 16 :35 | 60 | 10.41 | 6.05 | .236 | 25.8 | 3.69 | 24.3 | Clearish | " " " " |
| 16 :50 | 67.5 | 10.41 | 6.08 | .235 | 16.9 | 3.66 | 22.57 | Clear | " " " |
| 17 :05 | 75 | 10.40 | 6.04 | .239 | 10.0 | 3.61 | 22.1 | Clear | Taking Photo Sample |
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# Groundwater Well Development Log

Fort McClellan , Alabama

roject Number: 774645.15020600
orm Completed by: Kyle Wilson
/ell Developed by (person/firm): Jeff Alexander (IT), Kyle Wilson (IT)

Parcel No.: 93
Well No.: MW05
Date started: 11/9/01

## Monitoring Well Information

evelopment Method: Surge & Pump
evelopment Equipment: Grundfos pump #008128, PAS generator, Horiba U-10 005770
asing Diameter: 4"

Beginning Measurments
Depth to Water (ft): 5.62
Total depth of Well (ft): 79.20

| 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.) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | rate. depth (off bottom) |
| 08:05 | Ø | 5.62 | 6.10 | .392 | 297 | 1.24 | 17.4 | gray cloudy | surging @ 1gpm bottom interval |
| 08:20 | 15 | 25.30 | 6.83 | .374 | >999 | 1.80 | 18.3 | dk.gr.cloudy | 1 gpm 1 ft off bottom Surge again |
| 08:35 | 30 | 37.85 | 7.21 | .313 | >999 | 1.92 | 19.5 | gray cloudy | 1 gpm 1 ft surging |
| 08:50 | 45 | 54.00 | 7.21 | .307 | >999 | 1.72 | 19.9 | gray w cloudy | .5 gpm 1 ft surging |
| 09:05 | 52.5 | 62.00 | 7.11 | .349 | >999 | 1.78 | 19.8 | cloudy | .5 gpm 1 ft |
| 09:20 | 60 | Top of pump | 6.98 | .348 | >999 | 1.60 | 20.1 | gray v. cloudy | .5 gpm 1 ft then to bottom |
| 09:25 | 62.5 | well | gpm | dry | | | | > | 11 9 01 |

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

79.20 - 5.62 = 73.58' x .653 = 48.05 x 5 = 240.24 + 150 gal. = 390.24

GCL [signature] 11/28/01

Parcel No.: FTA93
Well ID: MW05
Date: 11 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1/12 | 09:20 | 62.5 | 4.35 | 6.51 | .531 | 242 ~~242~~ 11/12/01 | 2.53 | 18.5 | gray cloudy | [illegible] 11/12/01 .5 gpm 3ft offbottom |
| | 09:35 | 70 | 15.72 | 7.09 | .389 | 22.9 | 2.45 | 20.0 | gray sl. cloudy | .25 gpm 5ft " |
| hr | 09:50 | 73.75 | 19.42 | 7.21 | .498 | 30.4 | 3.41 | 20.7 | clearing | .25 gpm 7ft " |
| | 10:05 | 77.5 | 22.50 | 7.21 | .501 | 22.5 | 4.13 | 20.9 | clear | .15 gpm 9ft " |
| | 10:20 | 80 | 25.72 | 7.18 | .510 | 21.9 | 2.95 | 20.3 | " | " 11ft " |
| | 10:35 | 82.25 | 27.90 | 7.15 | .518 | 19.6 | 3.68 | 21.5 | " | " 13ft " |
| 3hr | 10:50 | 84.50 | 31.45 | 7.23 | .528 | 20.1 | 3.18 | 21.1 | " | " 15ft " |
| | 11:05 | 86.75 | 34.00 | 7.21 | .527 | 25.1 | 3.15 | 22.1 | " | " 17ft " |
| | 11:20 | 89 | 35.17 | 7.10 | .527 | 25.2 | 3.16 | 22.2 | " | " 19ft " |
| | 11:35 | 91.25 | 37.20 | 7.22 | .527 | 26.3 | 3.15 | 22.6 | " | " 19ft " |
| 4hrs | 11:50 | 93.5 | 38.72 | 7.10 | .539 | 24.3 | 2.30 | 23.1 | " | " 19ft " |
| | 12:05 | 95.75 | 41.13 | 7.22 | .495 | 19.7 | 2.30 | 22.2 | " | " 5ft " |

Parcel No.: FTA 93
Well ID: MW05
Date: 11 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) rate |
|---|---|---|---|---|---|---|---|---|---|---|
| | 12:20 | 98 | 43.42 | 7.24 | .480 | 13.3 | 2.32 | 21.9 | clear | .15 gpm 5 ft off bottom |
| | 12:35 | 100.25 | 46.32 | 7.21 | .478 | 17.4 | 2.32 | 21.4 | " | .15 gpm " " |
| 5 hrs | 12:50 | 102.5 | 47.90 | 7.21 | .472 | 17.9 | 2.85 | 22.0 | " | .15 gpm " " |
| | 13:50 | 102.5 | 41.65 | 7.51 | .469 | 9.88 | 2.82 | 20.0 | " | .5 gpm " " |
| | 14:05 | 104.75 | 45.58 | ~~7.09~~ 7.12 11/15/01 | .502 | 13.8 | 2.66 | 21.7 | " | .15 gpm " " |
| | 14:20 | 107 | 47.95 | 7.09 | .534 | 16.6 | 2.33 | 22.3 | " | .15 gpm " " |
| | 14:35 | 109.25 | 49.28 | 7.07 | .534 | 15.9 | 2.69 | 22.2 | " | .15 gpm " " |
| 6 hrs | 14:50 | 111.5 | 51.56 | 7.07 | .545 | 14.6 | 2.42 | 22.3 | " | .15 gpm " " |
| | 15:05 | 113.75 | 52.10 | 7.07 | .542 | 17.8 | 2.23 | 22.~~8~~ 4 11/15/01 | " | " " " |
| | 15:20 | 116 | 53.75 | 7.07 | .542 | 18.1 | 2.11 | 22.~~5~~ 4 11/15/01 | " | " " " |
| | 15:35 | 118.25 | 54.20 | 7.08 | .539 | 17.8 | 2.51 | 22.4 | " | " " " |
| 7hr | 15:50 | 120.5 | 56.50 | 7.11 | .535 | 16.4 | 2.36 | 22.5 | " | " " " |

STOP PUMPING FOR DAY — 11 12 01

Parcel No.: _____
Well ID: _____
Date: 11 13 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) rate | depth |
|---|---|---|---|---|---|---|---|---|---|---|
| 08:10 | 120.5 | 12.45 | 6.51 | .472 | 65 | 2.33 | 18.7 | clear | .2 gpm | 5ft off bottom |
| 08:25 | 122.75 | 17.18 | 7.14 | .458 | 17.2 | 1.48 | 19.9 | " | .15 gpm | " " " |
| 08:40 | 125 | 21.22 | 7.23 | .465 | 12.5 | 2.13 | 20.0 | " | " | " " " |
| 08:55 | 127.25 | 27.10 | 7.23 | .470 | 11.9 | 2.05 | 20.0 | " | " | " " " " |
| 09:10 | 129.5 | 30.40 | 7.25 | .472 | 13.1 | 2.23 | 20.4 | " | " | " " " " |
| 09:25 | 131.75 | 31.90 | 7.21 | .478 | 12.9 | 2.11 | 20.6 | " | " | " " " " |
| 09:40 | 134 | 32.68 | 7.18 | .481 | 12.5 | 1.85 | 20.9 | " | " | " " " " |
| 09:55 | 136.25 | 35.12 | 7.11 | .476 | 11.8 | 1.63 | 21.1 | " | " | " " " " |
| 10:10 | 138.5 | 37.68 | 7.09 | .491 | 10.8 | 1.12 | 20.8 | " | " | " " " " |
| 10:25 | 140.75 | 41.98 | 7.11 | .501 | 11.1 | 1.67 | 20.9 | " | " | " " " |
| 10:40 | 143 | 44.40 | 7.11 | .505 | 11.4 | 1.59 | 20.9 | " | " | " " " |
| 10:55 | 145.25 | 47.15 | 7.11 | .508 | 10.8 | 1.36 | 22.0 | " | " | " " " |

Parcel No.: FTA93MW05
Well ID: MW05
Date: 111301

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 11:10 | 147.5 | 49.63 | 7.16 | .511 | 10.2 | 1.46 | 22.1 | clear | .15 gpm 5ft off bottom |
| 12:15 | 147.5 | 42.95 | 7.00 | .492 | 15.1 | 2.89 | 23.6 | clear | .15 gpm 5ft off bottom |
| 12:30 | 149.75 | 47.32 | 6.89 | .501 | 9.8 | 1.53 | 21.8 | " | " " " " |
| 12:45 | 152 | 51.52 | 6.84 | .520 | 12.9 | 1.26 | 21.5 | " | " " " " |
| 13:00 | 154.25 | 55.68 | 6.82 | .533 | 12.1 | 1.01 | 21.3 | " | " " " " |
| hrs 13:15 | 156.5 | 56.12 | 6.93 | .528 | 14.5 | 1.34 | 22.4 | " | " " " " |
| 13:30 | 158.75 | 57.72 | 7.00 | .521 | 18.7 | 1.66 | 22.3 | " | " " " " |
| 13:45 | 161 | 58.38 | 6.98 | .513 | 12.8 | 1.62 | 22.3 | " | " " " " |
| 14:00 | 163.75 | 59.10 | 7.04 | .510 | 12.2 | 1.74 | 22.1 | " | " " " " |
| 14:15 | 165.5 | 59.90 | 7.02 | .508 | 12.6 | 1.59 | 22.2 | " | " " " " |
| : development complete. 12 hours met readings stable | | | | | | | | | |
| : | | | | | | | | | 11 13 01 |

# Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 774645
Form Completed by: [signature]
Well Developed by (person/firm): BH JC / IT Corp

Parcel No.: FTA-93
Well No.: FTA-93-MW06
Date started: ~~10/28/01~~ 10/29/01

## Monitoring Well Information

PID - 0.0

Development Method: Surge + Purge
Development Equipment: Whaler Pump, DTW mete Horiba PID
Casing Diameter: 2" pvc

Beginning Measurments
Depth to Water (ft): 7.27
Total depth of Well (ft): 16.45

| 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 | — | 7.27 | 6.59 | .547 | >1000 | 4.39 | 22.38 | Dark Brown | Surged well and with Block Set Pump at Bottom 1gal/— |
| 10:45 | 15 | 11.41 | 6.71 | .583 | >1000 | 2.72 | 22.14 | " " | " " 1gal/— |
| 11:00 | 30 | 14.01 | 6.85 | .592 | >1000 | 2.41 | 21.9 | " " | " " " |
| 11:15 | 45 | 16.45 | 6.87 | .601 | >1000 | 2.09 | 21.72 | " " | Well Dry |
| | | | | | | | | | Resumed pumping |
| 12:15 | 45 | 9.10 | 7.09 | .452 | >1000 | 6.02 | 22.28 | Dark Brown | Pump at Bottom 1gal/— |
| 12:30 | 60 | 13.21 | 6.98 | .479 | >1000 | 5.17 | 22.91 | " " | " " |

TD - DTW = WC x 2"/4" well = One PV x 5 = Min PV + $H_2O$ to install well = Min $H_2O$ to remove
16.45 - 7.27 = 9.18 x .163 = 1.49 gal x 5 = 7.45 + 500 = 507.45

ac'd. [signature] 10/30/01

Parcel No.:
Well ID: FTA-93 MW06
Date: 10/28/01
29-30

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 12:45 | 75 | 15.01 | 6.85 | .502 | >1000 | 4.82 | 23.10 | Dark Brown | Shut pump off for |
| | | | | | | | | | recovery. Restart pump |
| 13:30 | 75 | 9.12 | 7.30 | .427 | 459 | 5.65 | 22.53 | Brown | Pump at Bottom .5gal/min |
| 13:45 | 82.5 | 10.29 | 7.18 | .415 | 430.1 | 4.22 | 23.11 | Brownish | " " " " |
| 14:00 | 90 | 11.09 | 6.64 | .370 | 315.0 | 4.07 | 22.33 | Cloudy | " " " " |
| 14:15 | 97.5 | 11.98 | 6.72 | .379 | 312.9 | 4.13 | 21.15 | Cloudy | " " " " |
| 14:30 | 105 | 13.02 | 7.45 | .397 | >1000 | 3.40 | 20.33 | Very Cloudy | " " " " |
| 14:45 | 112.5 | 13.93 | 6.73 | .392 | >1000 | 2.89 | 20.70 | very Cloudy | " " " " |
| 15:00 | 120 | 15.00 | 6.74 | .394 | 701 | 3.42 | 20.32 | " " | |
| 15:15 | 127.5 | 16.45 | 6.76 | .394 | 268.1 | 3.89 | 19.91 | " " | Well went Dry |
| | | | | | | | | | 10/30/01 |
| 09:15 | 127.5 | 8.15 | 6.31 | .537 | 856.0 | 3.28 | 16.68 | Dark Brown | Pump set 3' From bottom .1gal/min |

**Water Quality Equipment Used** PID meter; DTW meter; Horiba; whaler pump.

**Comments**

Parcel No.: FTA-93
Well ID: FTA-93-MW06
Date: 10/30/01

| 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 | 129 | 8.81 | 6.90 | .288 | 90.4 | 2.08 | 19.74 | Cloudy | Pump set 3' From bottom .1gal/m |
| 09 :45 | 130.5 | 9.43 | 6.49 | .293 | 59.8 | 1.73 | 21.02 | Clearish | " " " " |
| 10 :00 | 132 | 9.63 | 6.57 | .302 | 32.5 | 2.01 | 22.28 | Clear | " " " " |
| 10 :15 | 133.5 | 9.89 | 6.58 | .295 | 20.9 | 1.70 | 23.15 | Clear | " " .08gal/m |
| 10 :30 | 134.7 | 9.92 | 6.54 | .297 | 16.9 | 1.77 | 24.03 | Clear | " " " " |
| 10 :45 | 135.9 | 9.91 | 6.54 | .294 | 10.0 | 1.90 | 23.99 | Clear | Taking Photo sampler |
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Daniel Enright 10/30/01

# Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 774645
Form Completed by: Jewel D Campbell
Well Developed by (person/firm): BG - JC / IT Corp

Parcel No.: FTA-93
Well No.: FTA-93-MC007
Date started: 10/~~28~~ 29/01

## Monitoring Well Information

PID - 0.0

Development Method: Surge and Purge
Development Equipment: Drundfoss pump, DTW meter, Horiba PID meter
Casing Diameter: 4" PVC

Beginning Measurments
Depth to Water (ft): 7.25
Total depth of Well (ft): 76.70

| 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.) |
|---|---|---|---|---|---|---|---|---|---|
| 11:15 | — | 7.25 | 7.38 | .381 | >1000 | 6.31 | 20.24 | Cloudy | Surged well with Block Set pump at Bottom 1gal/m |
| 11:30 | 15 | 16.60 | 7.48 | .375 | >1000 | 6.09 | 19.72 | Cloudy | " " |
| 11:45 | 30 | 21.81 | 7.75 | .357 | 189 | 6.62 | 19.23 | Slightly Cloudy | " " |
| 12:00 | 45 | 26.99 | 8.01 | .370 | 120.0 | 7.01 | 20.65 | " " | Surge well with pump. Set pump at Top of Screen |
| 12:15 | 60 | 30.01 | 7.89 | .362 | 100.6 | 5.91 | 20.43 | " " | " " 1gal/— |
| 12:30 | 75 | 33.16 | 7.38 | .358 | 90.1 | 4.64 | 20.21 | " " | " " " |
| 12:45 | 90 | 35.99 | 7.59 | .378 | 57.9 | 4.90 | 20.45 | Slightly Clear | " " " |

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

76.70 - 7.25 = ~~45.35~~

69.45 X .653 = 45.35 x 5 = 226.75 + 75 = 301.75

QC'd [signature] 10/30/01

Parcel No.: FTA-93
Well ID: FTA-93-MW07
Date: 10/~~28~~/01
29

| 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 | 105 | 40.01 | 7.56 | .358 | 47.9 | 4.78 | 21.59 | Slightly Cloudy | Top of Screen 1gal/min |
| 13:15 | 120 | 42.35 | 8.65 | .388 | 69.1 | 6.34 | 21.49 | " " | Surge with pump PS-Mid Screen 1gal/min |
| 13:30 | 135 | 44.87 | 8.79 | .391 | 56.9 | 5.92 | 21.21 | " " | " " " |
| 13:45 | 150 | 46.32 | 8.81 | .400 | 47.6 | 5.39 | 20.49 | Clear | " " " |
| 14:00 | 165 | 48.09 | 8.62 | .397 | 39.9 | 5.76 | 20.71 | Clear | " " " |
| 14:15 | 180 | 50.71 | 8.41 | .389 | 62.1 | 5.81 | 20.19 | Clear | " " " |
| 14:30 | 195 | 52.91 | 8.04 | .421 | 41.0 | 5.49 | 19.89 | Clear | " " " |
| 14:45 | 210 | 55.13 | 7.97 | .399 | 59.2 | 5.63 | 19.71 | Clear | " " " |
| 15:00 | 225 | 57.61 | 7.84 | .407 | 79.3 | 5.33 | 19.40 | Cloudy | Set pump near bottom " |
| 15:15 | 240 | 60.92 | 7.69 | .396 | 101.2 | 5.21 | 19.31 | Cloudy | " " " |
| 15:30 | 255 | 65.02 | 7.84 | .382 | 296.1 | 5.01 | 19.1 | Brown | |
| 15:45 | 270 | 68.99 | 7.96 | .369 | 502.9 | 5.17 | 18.71 | Dark Brown | Finish for Day, Well ~~Dry~~ inside screen |

**Water Quality Equipment Used** PIP meter, DTW meter, Horiba, ~~whale~~ Grundfos pump

**Comments**

Parcel No.: FTA-93
Well ID: FTA-93 - MW07
Date: 10/30/01

| 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 | 270 | 7.31 | 7.83 | .370 | 29.4 | 7.01 | 17.9 | Clear | Pump Set 66' Deep .75g/m |
| 10 : 00 | 281.25 | 7.79 | 7.29 | .359 | 25.2 | 6.87 | 18.21 | " | " " " " |
| 10 : 15 | 292.5 | 7.81 | 7.21 | .348 | 21.0 | 7.10 | 18.71 | " | " " " " |
| 10 : 30 | 303.75 | 7.80 | 7.15 | .343 | 19.8 | 7.17 | 19.33 | Clear | " " " " |
| 10 : 45 | 315 | 7.83 | 7.41 | .339 | 15.1 | 6.99 | 18.39 | " | " " " " |
| 11 : 00 | 326.25 | 7.82 | 7.48 | .340 | 12.0 | 6.91 | 18.6 | " | " " " " |
| 11 : 15 | 337.5 | 7.80 | 7.39 | .345 | 9.8 | 6.87 | 19.21 | Clear | Taking Photo Sample |
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10/30/01

# Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 774645
Form Completed by: [illegible]
Well Developed by (person/firm): BG-JC IT Corp.

Parcel No.: ETA-93
Well No.: ETA-93-MW08
Date started: 10/25/01

## Monitoring Well Information

PID = 0.9

Development Method: Surge + Purge
Development Equipment: Whaler pump; PID; DTW meter Horiba
Casing Diameter: 2" pvc

Beginning Measurments
Depth to Water (ft): 7.39
Total depth of Well (ft): 26.30

| 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 | — | 7.39 | 7.58 | .439 | >1000 | 9.01 | 21.0 | Dark Grey | Surged well with surge block, Set pump near bottom .375 gal/min |
| 12:30 | 5.625 | 9.39 | 7.48 | .461 | >1000 | 2.73 | 22.1 | " | Surged pump Three screen, Raise Rate to .5 gal/min |
| 12:45 | 13.125 | 15.01 | 7.36 | .520 | >1000 | 2.02 | 22.3 | LT Grey | Surged pump three screen set pump on Bottom .5 gal/min |
| 13:00 | 20.625 | 15.93 | 7.35 | .519 | 790 | 2.42 | 21.9 | " | " " |
| 13:15 | 28.125 | 16.52 | 7.43 | .544 | >1000 | 4.06 | 21.4 | " | " " |
| 13:30 | 35.625 | 16.91 | 7.43 | .532 | >1000 | 4.23 | 21.7 | " | Raised rate to .75 gal/min |
| 13:45 | 46.875 | 21.60 | 7.65 | .486 | >1000 | 4.48 | 21.6 | " | Lowered rate to .50 gal/min |

TD - DTW = WC  2" well × .163 × 5 = min PV + $H_2O$ to wet all well = min $H_2O$ to remove

26.30 − 7.39 = 18.91 × .163 = 3.08 × 5 = 15.41 + 150 = 165.41 gallons

QC'd - [illegible]
10/30/01

Parcel No.: FTA-93
Well ID: FTA-93-MW08
Date: 10/25/01

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 14:00 | 61.875 | 20.24 | 7.59 | .563 | 519 | 3.02 | 20.5 | Cloudy | Pump at Bottom .5 gl/m |
| 14:15 | 69.375 | 19.59 | 7.45 | .561 | 187 | 3.21 | 20.6 | Slight Cloudy | " " " |
| 14:30 | 76.875 | 19.00 | 7.41 | .555 | 46.1 | 3.89 | 20.4 | Slightly Cloudy | Surged well pump 5' from Bottom |
| 14:45 | 84.375 | 17.79 | 7.41 | .562 | 475 | 4.18 | 20.8 | Very Cloudy | " " " " |
| 15:00 | 91.875 | 16.61 | 7.43 | .556 | 215.0 | 3.12 | 20.6 | Slight Cloudy | " " " " |
| 15:15 | 99.375 | 16.90 | 7.32 | .543 | 263 | 6.02 | 19.7 | Slight Cloudy | " " " " |
| 15:30 | 106.875 | 17.29 | 7.26 | .539 | 396 | 5.22 | 19.9 | Cloudy | Surged well with pump. 7' from bottom .5 gl/m |
| 15:45 | 114.375 | 17.60 | 7.21 | .536 | 541 | 4.82 | 19.5 | Very Cloudy | " " " |
| 16:00 | 121.875 | 17.71 | 7.18 | .530 | 976 | 4.05 | 19.9 | Dk. Gray | " " " |
| 16:15 | 129.375 | 17.99 | 7.35 | .525 | >1000 | 4.03 | 19.9 | Blackish | " " " |
| 16:30 | 144.375 | 22.01 | 7.26 | .521 | >1000 | 5.19 | 18.91 | Blackish | Surged well set pump at bottom @ 1 gal/m |
| 16:45 | 159.375 | 26.30 | 7.41 | .527 | >1000 | 5.09 | 19.3 | Blackish | Well Dry Done for the Day |

Parcel No.: FTA-93
Well ID: MW08
Date: ~~10/28/01~~ 10/29/01

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 9:30 | 159.375 | 7.45 | 6.53 | .663 | 10.1 | 5.12 | 19.93 | Clear | Pump set 5' from bm .5gal/min |
| 9:45 | 166.875 | 7.49 | 6.89 | .650 | 5.2 | 4.98 | 19.97 | Clear | " " " |
| 10:00 | 189.375 | 7.62 | 7.17 | .641 | 1.8 | 4.32 | 19.99 | Clear | " " " |
| : | | | | | | | | | Taking Photo Sample |
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# Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 774645
Form Completed by: Jeff Alexander
Well Developed by (person/firm): Jeff Alexander

Parcel No.: FTA 93
Well No.: FTA 93 MW09
Date started: 10.9.01

## Monitoring Well Information

Development Method: Surge + pump
Development Equipment: whale pump, Horiba U10 water level indicator, Orion
Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 7.92 btoc
Total depth of Well (ft): 29.13 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.) |
|---|---|---|---|---|---|---|---|---|---|
| 14.45 | Ø | 10.2 | — | — | — | — | — | — | Start @ 1gpm surge |
| 14:50 | 5g | 11.20 | 6.14 | .446 | >999 | 1.32 | 20.5 | gray cloudy | Surge throug screened interval |
| 15:00 | 15g | 11.00 | 6.86 | .464 | >999 | 3.25 | 20.5 | " | Slow to bottom 0.5 gpm) |
| 15:15 | 22.5 | 10.35 | 6.84 | .461 | >999 | 3.37 | 20.4 | " | .5 gpm |
| 15:25 | raise | | pump | to 2 | ft' off | bottom | | | |
| 15:30 | 30 | 11.12 | 6.45 | .390 | 911 | 1.74 | 20.1 | gray cloudy | +2ft .5gpm |
| 15:45 | 37.5 | 11.18 | 6.45 | .445 | 524 | 3.19 | 20.2 | " | +4ft .5gpm |

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

29.13 - 7.92 = 21.21ft. x .163 = 3.457 x5 = 17.285 + 200 gal. = 217.285 gal

ac'd 10/10/01

Parcel No.: 013
Well ID: FTA 93 MW09
Date: 10901

| | 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 | 45 | 11.26 | 6.86 | .285 | 105 | 2.61 | 20.1 | cleaning | 6 ft off bottom .5 gpm |
| | 16:15 | 52.5 | 11.89 | 6.21 | .317 | 89 | 2.12 | 20.1 | " | 8 ft off bottom slow to .25 gpm |
| | 16:30 | 60 | 11.68 | 6.36 | .393 | 68 | 2.22 | 20.2 | " | .25 gpm ↑ 8 ft |
| 10/9 | 16:30 | Stop pumping for the day | | | | | | | | |
| 10/10 | 09:15 | 60 | 8.21 | — | — | — | — | — | — | ↑ 18 ft off bottom .5 gpm |
| | 09:18 | 61.5 | 9.42 | Lower to 18 ft. off bottom | | | | | | [lower to 16 ft off bottom .5 gpm] |
| | 09:30 | 67.5 | 9.87 | 5.68 | .332 | 10.6 | 3.07 | 20.2 | clear | |
| | 09:40 | 72.5 | 10.10 | increase rate to .75 gpm | | | | | " | |
| | 09:45 | 80 | 10.58 | 6.41 | .389 | 15.6 | 2.29 | 20.3 | " | lower to 14' off bottom; .75 gpm |
| | 10:00 | 91.25 | 11.00 | 6.46 | .402 | 34 | 3.01 | 20.0 | " | lower to 12' off bottom; .75 gpm |
| | 10:15 | 102.5 | 11.42 | 6.57 | .389 | 15.6 | 2.29 | 20.3 | " | lower to 10' off bottom; .75 gpm |
| | 10:30 | 113.75 | 11.53 | 6.41 | .402 | 34 | 3.01 | 20.0 | " | ↑ 10 ft; .75 gpm |

↑ means distance is off bottom of well.

Parcel No.: FTA-93
Well ID: FTA93MW09
Date: 10 10 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 | 125 | 12.02 | 6.65 | .359 | 6.2 | 2.54 | 20.5 | clear | ↑ 10ft; .75gpm |
| 11:00 | 136.25 | 12.21 | 6.34 | .341 | 8.1 | 1.83 | 20.6 | " | " " |
| 11:15 | 147.5 | 12.39 | 6.30 | .325 | 8.9 | 1.77 | 20.8 | " | " " |
| 11:30 | 158.75 | 12.48 | 6.25 | .315 | 9.9 | 1.14 | 20.9 | " | " " |
| 11:45 | 170 | 12.80 | 6.36 | .335 | 8.7 | 1.91 | 20.8 | " | " " |
| 12:00 | 181.25 | 12.70 | 6.15 | .277 | 14.0 | 1.62 | 20.8 | " | " " |
| 12:15 | 192.5 | 13.00 | 6.27 | .309 | 9.1 | 2.30 | 20.9 | " | " " |
| 12:30 | 203.25 | 13.06 | 6.14 | .290 | 12.9 | 1.49 | 20.9 | " | " " |
| 12:45 | 214.5 | 13.12 | 6.13 | .285 | 8.4 | 1.77 | 20.8 | " | " " |
| 13:00 | 225.75 | 13.19 | 6.12 | .287 | 7.2 | 1.82 | 20.8 | " | " " |
| 13:15 | 237 | 13.18 | 6.08 | .287 | 6.5 | 1.72 | 20.7 | " | " " |
| 13:15 | PHOTO | SAMPLE | | COLLECTED | | | | | 10 10 01 |

↑ means distance off bottom

# Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 796 887
Form Completed by: Lee FLIPPEN
Well Developed by (person/firm): Lee FLIPPEN / IT Corp.

Parcel No.: FTA-93
Well No.: MW10
Date started: 10-9-01

## Monitoring Well Information

Development Method: surge + purge
Development Equipment: whale pumps, 12v. Battery
Horiba U-10 #4014, AquaFast II #2085, Heron #2089
Casing Diameter: 2" .163

Beginning Measurments
Depth to Water (ft): 7.40 ft. Flush Mount
Total depth of Well (ft): 14.66 ft. Flush Mount

PID 0.0 BZ 0.0 Screen 10.5 - 15.5 ft WC = 7.26 ft.

| Time 24hr | Purge Volume (gal) | Water Level (ft) (TOC) | pH (std units) | Conductivity (mS/cm) | Turbidity (NTU) | Dissolved oxygen (mg/L) .37 IF 10-9-01 | Temperature (°C) | Clarity (color) | Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.) — Surge Entire Screen — |
|---|---|---|---|---|---|---|---|---|---|
| 14:40 | 0 | 7.40 | 5.93 | .353 | 999+ | .37 | 19.5 | Brown | Depth 14.0 ft PR .25 gpm |
| 14:55 | 3.75 | 9.94 | 5.38 | .232 | 999+ | .13 | 21.7 | Brown | Depth 14 ft. PR .25 gpm |
| 15:10 | 7.5 | 9.84 | 5.39 | .223 | 245 | .45 | 25.8 | cloudy | Depth 14 ft. PR .25 gpm |
| 15:25 | 11.25 | 9.85 | 5.35 | .224 | 113 | .63 | 21.9 | cloudy | Depth 14 ft. PR .25 gpm |
| 15:40 | 15.0 | 9.90 | 5.35 | .223 | 56 | .60 | 21.9 | clear | Depth 14 ft. PR .25 gpm |
| 15:55 | 19.75 | 10.10 | 5.37 | .228 | 186 | .94 | 22.0 | cloudy | Depth 14 ft. PR .25 gpm |
| 16:10 | 22.5 | 10.14 | 5.39 | .227 | 290 | .90 | 22.1 | cloudy | Depth 14 ft. PR .25 gpm |

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

14.66 - 7.40 = 7.26 x .163 = 1.18 x 5 = 5.9 + 35 g = 40.9 g

DC'd 10/10/01

Parcel No.: FTA-93
Well ID: MW10
Date: 10-9-01
Lee FLIPPEN

10-10-01 PID 0.0, BZ 0.0 DTW 7.63 WC = 7.03

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 16:25 | 26.25 | 10.14 | 5.34 | .227 | 690 | .91 | 22.3 | cloudy | Stopped Parameters For the Day. ~~[illegible]~~ 10-9-01 |
| 08:55 | 26.25 | 7.63 | 5.28 | .242 | 846 | 3.01 | 20.2 | TAN | Depth 10.5 ft. PR .25 gpm |
| 2hrs 09:10 | 30.0 | 10.40 | 5.44 | .221 | 106 | 2.47 | 21.1 | cloudy | Depth 12.5 ft. PR .25 gpm |
| 09:25 | 33.75 | 10.68 | 5.44 | .222 | 25 | 2.24 | 21.3 | clear | Depth 14 ft. PR .25 gpm |
| 09:40 | 37.5 | Below Top Pump | 5.46 | .223 | 11.5 | 1.93 | 21.7 | clear | Depth 14 ft. PR .25 gpm |
| 09:55 | 41.25 | " " | 5.45 | .226 | 44 | 1.74 | 21.7 | clear | -Target P.V. reached- Depth 14 ft. PR .25 gpm |
| 3hrs 10:10 | 45.00 | " | 5.45 | .229 | 35 | 1.60 | 21.8 | clear | Depth 14 ft PR .25 gpm |
| 10:25 | 48.75 | " | 5.47 | .231 | 144 | 1.35 | 22.2 | cloudy | Depth 14 ft. PR .25 gpm |
| 10:40 | 52.5 | " | 5.48 | .241 | 108 | 1.31 | 22.8 | cloudy | Depth 13 ft. PR .20 gpm |
| 10:55 | 55.5 | 9.30 | 5.46 | .236 | 9.4 | 1.14 | 23.0 | clear | Depth 13 ft. PR .20 gpm |
| 4hrs 11:10 | 58.5 | 9.35 | 5.44 | .224 | 26 | 1.20 | 23.0 | clear | Depth 13 ft. PR .20 gpm |
| 11:25 | 61.5 | 9.40 | 5.44 | .232 | 34 | 1.11 | 22.9 | clear | Depth 12 ft. PR .20 gpm → .15 gpm ~~AR~~ LF 10-10-01 |
| 11:40 | 63.75 | 9.38 | 5.46 | .244 | 30 | .95 | 23.9 | clear | Depth 12 ft. PR .15 gpm |

Parcel No.: FTA-93
Well ID: MW 10
Date: 10-10-01

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 11:55 | 66.0 | 8.35 | 5.45 | .239 | 5.4 | .93 | 23.0 | Clear | Depth 12 ft. PR .15 gpm |
| 12:10 | 68.25 | 8.14 | 5.44 | .239 | 2.6 | 1.02 | 22.5 | Clear | Depth 12 ft. PR .15 gpm |
| 12:25 | 70.5 | 8.12 | 5.43 | .239 | 2.2 | 1.01 | 22.4 | Clear | Well Development completed Took 1 l. H2O Photo Sample [illegible] 10-10-01 Time 5¼ hrs |
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[illegible] 10-10-01

# Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 774645
Form Completed by: MARK SHOEMAKER (IT)
Well Developed by (person/firm): MARK SHOEMAKER (IT)

Parcel No.: 93
Well No.: FTA-93-MW11
Date started: 11/5/01

## Monitoring Well Information

Development Method: SURGE + PURGE
Development Equipment: WHALE PUMP, HORIBA U-10, ORION TURBIDITY METER
Casing Diameter: 0.0

Beginning Measurments
Depth to Water (ft): 6.94'
Total depth of Well (ft): 29.51'
INITIAL PID = 0.0 PPM

| 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 | 0 | 6.94 | 5.25 | 0.112 | ~~3.55~~ 327 | 3.55 | 21.2 | VERY TURBID | INITIAL MEASUREMENT |
| 15:05 | 1.5 | 8.90 | 5.05 | 0.107 | 1730 | 3.25 | 21.5 | VERY TURBID | FLOW RATE 0.1 GPM |
| 15:20 | + 3.75 5.25 | 10.64 | 5.00 | 0.109 | 1235 | 1.54 | 21.8 | VERY TURBID | FLOW RATE ADJUSTED TO 0.25 GPM |
| 15:35 | 9.0 | 10.64 | 5.03 | 0.116 | 1541 | 3.46 | 21.4 | VERY TURBID | FLOW RATE 0.25 GPM |
| 15:50 | 16.5 | 12.85 | 5.24 | 0.151 | OFF SCALE | 1.50 | 21.6 | VERY TURBID | FLOW RATE ADJUSTED TO 0.5 GPM |
| 16:05 | 24.0 | 14.24 | 5.34 | 0.147 | 1185 | 3.07 | 21.1 | VERY TURBID | FLOW = 0.5 GPM |
| 16:20 | 31.5 | 14.87 | 5.38 | 0.168 | 551 | 4.27 | 21.2 | VERY TURBID | FLOW = 0.5 GPM |

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

29.51 - 6.94 = 22.57 * 0.163 = 3.679 * 5 = 18.395 + 75 = 93.39 gal

RC's [illegible] 11/7/01

Parcel No.: 93
Well ID: FTA-93-MW11
Date: 11/6/01

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 16:35 | 39.0 | 15.09 | 5.36 | 0.170 | 403 | 2.10 | 21.2 | TURBID | FLOW = 0.5 GPM |
| 07:37 | 39.0 | 7.20 | 4.50 | 0.117 | OFF SCALE | 1.89 | 16.8 | TAN VERY TURBID | 11/6/01 START PUMPING |
| 07:52 | 42.0 | 8.72 | 4.90 | 0.083 | 1829 | 3.48 | 18.8 | VERY TURBID | FLOW RATE ESTABLISHED @ 0.2 GPM |
| 08:07 | 48.75 | 10.78 | 4.86 | 0.090 | 568 | 1.92 | 19.5 | TURBID | FLOW RATE ADJUSTED TO 0.45 GPM |
| 08:22 | 53.25 | 9.62 | 4.90 | 0.086 | 763 | 2.09 | 19.1 | TURBID | FLOW RATE ADJUSTED TO 0.3 GPM |
| 08:37 | 57.75 | 9.63 | 4.93 | 0.095 | 130 | 1.62 | 19.5 | CLOUDY | FLOW 0.3 GPM |
| 08:52 | 62.25 | 9.58 | 5.09 | 0.095 | 142 | 1.83 | 20.2 | CLOUDY | FLOW 0.3 GPM |
| 09:07 | 66.75 | 9.54 | 5.19 | 0.096 | 84 | 1.70 | 20.6 | SLIGHTLY CLOUDY | MOVED PUMP TO 5' FROM BOTTOM; FLOW 0.3 GPM |
| 09:22 | 71.25 | 9.29 | 5.05 | 0.094 | 300 | 1.46 | 21.0 | CLOUDY | FLOW = 0.3 GPM |
| 09:37 | 75.75 | 9.34 | 5.06 | 0.096 | 119 | 1.55 | 21.5 | SLIGHTLY CLOUDY | FLOW = 0.3 GPM |
| 09:52 | 80.25 | 9.34 | 4.94 | 0.097 | 68 | 1.80 | 21.2 | CLEAR | FLOW = 0.3 GPM |
| 10:07 | 84.75 | 9.34 | 5.06 | 0.098 | 32 | 1.24 | 21.7 | CLEAR | FLOW = 0.3 GPM |
| 10:22 | 89.25 | 9.32 | 5.14 | 0.97 | 20 | 1.42 | 21.9 | CLEAR | FLOW = 0.3 GPM |

Parcel No.: 93
Well ID: FTA-93-MW11
Date: 11/6/01

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 10:37 | 93.75 | 9.25 | 5.07 | 0.093 | 243 | 1.91 | 22.9 | VERY CLOUDY | MOVED PUMP TO 10' FROM BOTTOM; FLOW=0.3 GPM |
| 10:52 | 98.25 | 9.31 | 5.10 | 0.094 | 107 | 1.58 | 22.7 | SLIGHTLY CLOUDY | FLOW = 0.3 GPM |
| 11:07 | 102.75 | 9.28 | 5.16 | ~~0.06~~ 0.096 | 57 | 1.73 | 22.9 | CLEAR | FLOW = 0.3 GPM |
| 11:22 | 107.25 | 9.02 | 5.15 | 0.098 | 35 | 1.82 | 23.2 | CLEAR | MOVED PUMP TO 15' FROM BOTTOM; FLOW = 0.3 GPM |
| 11:37 | 111.75 | 9.18 | 5.08 | 0.095 | 175 | 1.91 | 23.3 | CLOUDY | FLOW = 0.3 GPM |
| 11:52 | 116.25 | 9.18 | 5.02 | 0.097 | 77 | 1.53 | 22.9 | CLEAR | FLOW = 0.3 GPM |
| 12:07 | 120.75 | 9.14 | 5.00 | 0.098 | 39 | 1.98 | 22.8 | CLEAR | FLOW = 0.3 GPM |
| 12:22 | 125.25 | 9.11 | 5.01 | 0.098 | 28 | 1.94 | 22.7 | CLEAR | FLOW = 0.3 GPM |
| 12:37 | 129.75 | 12.20 | 5.14 | 0.114 | 908 | 1.34 | 21.7 | TURBID | RETURNED PUMP TO 1' FROM BOTTOM - CHANGE RATE |
| 12:52 | 134.25 | 12.20 | 5.17 | 0.120 | 366 | 2.50 | 22.0 | VERY CLOUDY | FLOW RATE RE-ESTABLISHED @ 0.3 GPM |
| 13:07 | 138.75 | 12.20 | 5.23 | 0.119 | 155 | 3.06 | 22.1 | SLIGHTLY CLOUDY | FLOW = 0.3 GPM |
| 13:22 | 143.25 | 12.27 | 5.27 | 0.117 | 65 | 2.67 | 22.5 | CLEAR | FLOW = 0.3 GPM |
| 13:37 | 147.75 | 12.28 | 5.27 | 0.119 | 28 | 2.20 | 22.4 | CLEAR | FLOW = 0.3 GPM |

Parcel No.: 93
Well ID: ETR-93-MW11
Date: 11/6/01

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 13:52 | 152.75 | 10.42 | 5.23 | 0.116 | 30 | 2.04 | 22.4 | CLEAR | FLOW = 0.3 GPM |
| 14:07 | 156.75 | 10.48 | 5.20 | 0.117 | 19.1 | 1.91 | 22.4 | CLEAR | FLOW = 0.3 GPM |
| 14:22 | 161.25 | 9.89 | 5.20 | 0.119 | 18 | 1.82 | 22.4 | CLEAR | FLOW = 0.3 GPM |
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# Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887
Form Completed by: Lee FLIPPEN / JON Remo
Well Developed by (person/firm): FLIPPEN / Remo / Shaw E+I

Parcel No.: FTA 93
Well No.: MW 12
Date started: 10-10-02

## Monitoring Well Information

FINAL TD = 20.44' BGS

Development Method: Surge + purge
Development Equipment: whale pumps, Horiba U-10, Aquafast II, Heron water indicator
Casing Diameter: 2" .163

Beginning Measurments
Depth to Water (ft): 5.20 BGS
Total depth of Well (ft): 20.44 BGS

PID 1.2 BZ 0.0 Screen 10.5'-20.5' 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.) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | - Surged well screen - |
| 08:25 | Ø | 5.20 | 5.50 | .191 | 136 | 1.41 | 22.6 | cloudy | Depth 20', PRate .125 gpm |
| 08:40 | 1.875 | 7.21 | 5.24 | .127 | 138 | 1.88 | 23.4 | cloudy | Depth 20', P.R. .125 gpm |
| 08:55 | 3.75 | 7.28 | 5.24 | .135 | 561 | 1.93 | 23.2 | cloudy | Depth 20', PR .125 gpm |
| 09:10 | 5.625 | 6.91 | 5.31 | .124 | 583 | 2.89 | 23.6 | cloudy | Depth 12', PR .125 gpm |
| 09:25 | ~~7.5~~ 10.125 | 7.80 | 5.22 | .117 | 38 | 1.72 | 25.1 | cloudy | Depth 12', PR. Ø.3 gpm |
| 09:40 | 14.625 | 8.08 | 5.40 | .127 | 43 | 2.29 | 24.9 | cloudy | Depth 15', PR Ø.3 gpm |
| 9:55 | 19.125 | 7.96 | 5.32 | .131 | 36 | 1.28 | 21.6 | " | " " |

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

20.44 - 5.20 = 15.24 x .163 = 2.48 x 5 = 12.42g + 20g Loss = 32.42 g

QC'd [signature]
10/14/02

Parcel No.: FTA-93 -
Well ID: mw 12
Date: 10/10/02

J. Remo / Lee FLIPPEN

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 10:10 | 23.625 | 10.95 | 5.34 | .131 | 327 | 2.20 | 25.2 | cloudy | Depth 17' Below TOC Purge Rate 0.3 gpm |
| 2hrs 10:25 | 28.125 | 10.51 | 5.36 | .139 | 132 | 2.23 | 25.7 | cloudy Lt Brown | Depth 18' Below TOC " |
| 10:40 | 32.625 | 16.13 | 5.40 | .131 | ~~551~~ 233 LF | 2.46 | 24.2 | cloudy | " PR ~~.4~~ 0.3 gpm |
| 10:55 | 34.7 | 15.91 | 5.43 | .107 | 178 | 3.10 | 24.9 | " | " PR 0.14 gpm |
| 11:10 | 39.1 | 15.33 | 5.48 | .105 | 64 | 4.54 | 25.3 | " | " PR 0.14 gpm |
| 11:25 | 41.2 | 15.33 | 5.45 | .106 | 20 | 4.32 | 25.6 | Slightly cloudy Lt Brown | 20.0' PR 0.14 gpm |
| 11:40 | 43.3 | 15.11 | 5.45 | .123 | 17.9 | 2.89 | 24.7 | cloudy | " " |
| 11:55 | 45.4 | 15.11 | 5.49 | .115 | 33 | 3.56 | 26.0 | " | " " |
| 12:10 | 47.5 | 14.42 | 5.41 | ~~.123~~ .109 LF | 59 | 4.40 | 24.9 | " | 18' PR 0.05 (.75 g/5 min.) |
| 4hrs 12:25 | 48.25 | 13.39 | 5.46 | .114 | 34 | 4.30 | 26.0 | " | " " |
| 12:40 | 49.0 | 13.30 | 5.48 | .115 | 24 | 4.33 | 25.9 | " | " " |
| 12:55 | 49.75 | 11.25 | 5.46 | .117 | 38 | 4.41 | 25.4 | " | " " |
| 13:10 | 51.25 | 12.71 | 5.50 | .105 | 256 | 4.72 | 25.3 | " | 16' PR 0.1 gpm |
| 13:25 | 52.75 | 14.41 | 5.41 | .104 | 88 | 4.50 | 25.2 | " | 18' " |

Parcel No.: FTA-93
Well ID: mw12
Date: 10-10-02

J. Remo / L. Flippen

| 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) | |
|---|---|---|---|---|---|---|---|---|---|---|
| 13:40 | 53.5 | 16.03 | 5.54 | .095 | 69 | 4.67 | 25.2 | cloudy | Depth 18' Below TOC | Purge Rate 0.2 gpm |
| 13:55 | 54.4 | 15.81 | 5.64 | .102 | 57 | 4.89 | 25.9 | " | " | Purge Rate 0.06 gpm |
| 14:10 | 55.3 | 14.58 | 5.68 | .105 | 57 | 4.40 | 25.1 | cloudy | " | " |
| 14:25 | 56.2 | 13.71 | 5.63 | .108 | 26 | 4.65 | 25.9 | " | - 6 Hrs - " | " |
| 14:40 | 57.1 | 12.86 | 5.63 | .109 | 20 | 5.26 | 25.9 | clear | 6 1/4 hrs. time " | " |
| 14:55 | 58.0 | 12.04 | 5.65 | .111 | 19.9 | 5.02 | 25.6 | " | " | " |
| 15:10 | 58.9 | 11.40 | 5.61 | .112 | 17.6 | 5.28 | 25.5 | clear | " | " |
| 15:25 | 59.8 | 10.64 | 5.58 | .112 | 29 | 5.27 | 25.9 | clear | - 7 hours - " | " |
| 15:40 | 60.7 | 10.03 | 5.59 | .113 | 26 | 5.02 | 25.7 | clear | " | " |
| 15:55 | 61.6 | 9.74 | 5.59 | .114 | 18.1 | 5.07 | 25.9 | clear | " | " |
| 16:10 | 62.5 | 9.56 | 5.62 | .113 | 14.9 | 5.02 | 25.9 | clear | " | " |
| 16:25 | 63.4 | 9.45 | 5.52 | .113 | 10.0 | 5.02 | 25.9 | clear | — 8 hours — " | " |

—Well development completed—

10-10-02