



MACTEC Engineering and Consulting
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FIELD BOREHOLE LOG

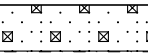
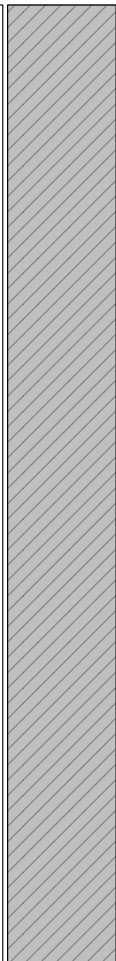

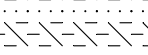





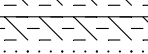



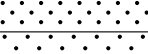
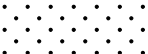

BOREHOLE NO.: **DR1-4**

TOTAL DEPTH: **136**

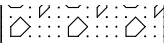
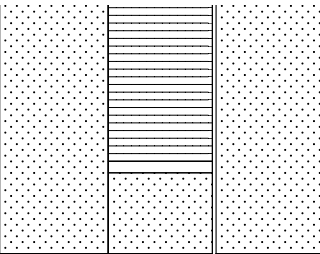
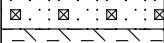
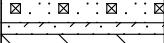
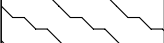
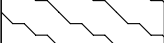
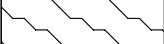

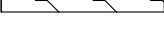
| PROJECT INFORMATION | | DRILLING INFORMATION | |
|---------------------|---------------------|---------------------------|---------------------|
| PROJECT: | DDMT | DRILLING CO.: | ProSonic |
| SITE LOCATION: | Memphis, TN | DRILLER: | David Wilcox |
| JOB NO.: | 6301-04-0002 | RIG TYPE: | RotoSonic |
| LOGGED BY: | Bill Payne | TOP OF CASING ELEVATION: | 292.78' |
| PROJECT MANAGER: | Tom Holmes | GROUND SURFACE ELEVATION: | 292.99' |
| DATE DRILLED: | 5/11/04 | | |

NOTES:

- 1) Drilling technique: 0 to 136 ft, bgs 6-inch diameter borehole with roto sonic.
- 2) Well construction: 2-inch diameter schedule 40 PVC casing set to 126.5 ft, bgs with 20 ft of 0.01-inch slot well screen.
- 3) Well screens the fluvial aquifer.
- 4)  Stabilized water level measured on 6/25/04

| DEPTH | SOIL SYMBOLS | USCS | SOIL DESCRIPTION | FID ppm | WELL COMPLETION | | WELL DESCRIPTION |
|-------|---|-------|--|---------|---|--|------------------|
| 0 |  | FILL | dark gray railroad bed fill, coarse grain sand to coarse GRAVEL | |  |  | Grouted Annulus |
| |  | CL | brown silty CLAY | 0.0 | | | |
| -5 |  | | | 0.0 | | | |
| -10 |  | | | 0.0 | | | |
| -15 |  | | | 0.0 | | | |
| |  | CL | brown fine grain sandy, silty, CLAY | 0.0 | | | |
| -20 |  | | | 0.0 | | | |
| |  | SW | mottled reddish-brown, light brown and light gray clayey, silty, fine to coarse grain SAND with <10% fine chert gravel | 0.0 | | | |
| -25 |  | | | 0.6 | | | |
| -30 |  | SM | reddish-brown silty fine grain SAND | 0.0 | | | |
| |  | GP-SP | light brown subangular fine chert GRAVEL and medium to coarse grain SAND | 0.0 | | | |
| -35 |  | | | 0.0 | | | |
| |  | SP | brown medium to coarse grain SAND with <25% subangular to subrounded fine to coarse gravel | 0.0 | | | |
| -40 |  | GW-SW | yellowish-brown subangular to subrounded fine to coarse | 0.0 | | | |

| DEPTH | SOIL SYMBOLS | USCS | SOIL DESCRIPTION | FID ppm | WELL COMPLETION | | WELL DESCRIPTION |
|-------|--------------|-------|---|------------|-----------------|--|-------------------------------|
| -45 | | SP | GRAVEL and medium to coarse grain SAND | 0.0 | | | |
| -50 | | | | 1.0 | | | |
| -55 | | | | 3.6 | | | |
| -60 | | | | 16 | | | |
| -65 | | | brown medium to coarse grain SAND and subangular fine GRAVEL | 114.4/35.2 | | | |
| -70 | | SP | light brown fine grain SAND with <5% fine gravel | | | | |
| -75 | | SP | yellowish-brown medium to coarse grain SAND with <5% fine gravel | 3.9 | | | |
| -80 | | SP | brown medium to coarse grain SAND with <20% subrounded fine gravel | 0.0 | | | |
| -85 | | SP | brown fine to medium grain SAND with <5% coarse gravel | | | | |
| -90 | | SP | SAND and fine GRAVEL | 5.5 | | | |
| -95 | | SP | brown medium to coarse grain SAND with ~25% subangular to subrounded, fine to coarse gravel | 0.0 | | | |
| -100 | | SP | light brown fine grain SAND with <5% coarse grain sand | 11.2 | | | |
| -105 | | SW-GW | light brown fine grain to coarse grain SAND and fine to coarse GRAVEL | 0.0 | | | |
| -110 | | SP | light grayish-brown fine grain SAND with <10% coarse grain sand and fine gravel | NA | | | |
| -115 | | CH | grayish-red CLAY | NA | | | |
| -120 | | SP | light brown fine grain SAND | NA | | | Bentonite Seal |
| -125 | | SP | | | | | |
| -130 | | SP | light brown medium to coarse grain SAND and fine to coarse GRAVEL | NA | | | |
| -135 | | SP | light brown medium to coarse grain SAND | NA | | | |
| -140 | | SP-GP | brown medium to coarse grain SAND and subangular to subrounded fine GRAVEL | NA | | | Sand Pack / Screened Interval |
| -145 | | | | | | | |

| DEPTH | SOIL SYMBOLS | USCS | SOIL DESCRIPTION | FID ppm | WELL COMPLETION | WELL DESCRIPTION |
|-------|---|------|--|---------|--|------------------|
| -120 |  | GP | brown subangular fine GRAVEL | NA |  | |
| |  | | yellowish-brown silty CLAY with <10% coarse sand | | | |
| -125 |  | GP | brown subangular fine GRAVEL | NA | | |
| |  | GC | light yellowish brown CLAY and fine GRAVEL | | | |
| |  | CH | light yellowish brown CLAY | NA | | |
| -130 |  | CH | gray CLAY | NA |  | Bentonite Plug |
| -135 |  | | Boring Terminated at 136 ft, bgs | NA | | |