

**CH2MHILL**

PROJECT NUMBER

177556.SA.FE

BORING NUMBER

MW-176

SHEET 1 of 3

**SOIL BORING LOG**

PROJECT : Memphis Depot Remedial Investigation Plan LOCATION : Memphis, TN

ELEVATION:

DRILLING CONTRACTOR : Prosonic Corporation

NAME OF DRILLER : Adam Marshall

DRILLING METHOD/EQUIPMENT : Rotasonic Drilling

SIZE/TYPE OF BIT : 4 X 6"

OVERBURDEN THICKNESS : DEPTH DRILLED INTO ROCK : N/A

TOTAL DEPTH OF BORING : 96 ft-bgs

WATER LEVELS : START : 10/25/2005 END : 10/25/2005

LOGGER : Mike Karafa/ATL

| DEPTH BELOW SURFACE (FT) |       |      |     | STANDARD     | SOIL DESCRIPTION                                                                                                     | COMMENTS                                                                                   |
|--------------------------|-------|------|-----|--------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| SAMPLE INTERVAL (FT)     |       |      |     | PENETRATION  | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY. | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. FID (ppm) |
| RECOVERY (FT)            |       |      |     | TEST RESULTS |                                                                                                                      |                                                                                            |
| #/TYPE                   |       |      |     | 6"-6"-6" (N) |                                                                                                                      |                                                                                            |
| 5                        | 0-6   | 100% | N/A | N/A          | 0-1: SILTY SAND, SOIL, dark brown, grass roots<br>1-6: SILT, brown, loose, dry, loess                                | 0.0<br>0.0                                                                                 |
| 10                       | 6-16  | 100% | N/A | N/A          | 6-26: SILT, brown, stiff, damp, loess                                                                                | 0.0                                                                                        |
| 15                       |       |      |     |              |                                                                                                                      |                                                                                            |
| 20                       | 16-26 | 100% | N/A | N/A          |                                                                                                                      |                                                                                            |
| 25                       |       |      |     |              |                                                                                                                      |                                                                                            |
| 30                       | 26-36 | 100% | N/A | N/A          | 26-33: SILTY SAND, brown, stiff, fine grain, loess                                                                   | 0.0                                                                                        |



CH2MHILL

PROJECT NUMBER

177556.SA.FE

BORING NUMBER

MW-176

SHEET 2 of 3

## SOIL BORING LOG

PROJECT : Memphis Depot Remedial Investigation Plan LOCATION : Memphis, TN

ELEVATION:

DRILLING CONTRACTOR : Prosonic Corporation

NAME OF DRILLER : Adam Marshall

DRILLING METHOD/EQUIPMENT: Rotosonic Drilling

SIZE/TYPE OF BIT : 4 X 6"

OVERBURDEN THICKNESS : DEPTH DRILLED INTO ROCK : N/A

TOTAL DEPTH OF BORING : 96 ft-bgs

WATER LEVELS : START : 10/25/2005 END : 10/25/2005

LOGGER : Mike Karafa/ATL

| DEPTH BELOW SURFACE (FT) | DEPTH BELOW SURFACE (FT) |        |     | STANDARD<br>PENETRATION<br>TEST<br>RESULTS<br>6"-6"-6"<br>(N) | SOIL DESCRIPTION                                                                                                                                                                                         | COMMENTS                                                                                            |
|--------------------------|--------------------------|--------|-----|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
|                          | SAMPLE INTERVAL (FT)     |        |     |                                                               |                                                                                                                                                                                                          |                                                                                                     |
|                          | RECOVERY (FT)            | #/TYPE |     |                                                               |                                                                                                                                                                                                          |                                                                                                     |
|                          |                          |        |     |                                                               |                                                                                                                                                                                                          |                                                                                                     |
|                          |                          |        |     |                                                               |                                                                                                                                                                                                          | DEPTH OF CASING, DRILLING RATE,<br>DRILLING FLUID LOSS,<br>TESTS, AND INSTRUMENTATION.<br>FID (ppm) |
| 35                       | 26-36                    | 100%   | N/A | N/A                                                           | 33-34: SILTY SAND, orange, loose, fine grain, damp<br>34-39: SAND, tan, fine grain, loose, damp                                                                                                          | 0.0<br>1.5                                                                                          |
| 40                       | 36-46                    | 100%   | N/A | N/A                                                           | 39-44: SAND, orangish tan, fine to medium grain, gravel, sub-<br>angular chert, up to 1/2"                                                                                                               | 1.1                                                                                                 |
| 45                       |                          |        |     |                                                               | 44-46: SAND, light tan, fine to course grain, loose, dry, gravel<br>subangular, up to 1"                                                                                                                 | 1.4<br>4.5                                                                                          |
| 50                       | 46-56                    | 100%   | N/A | N/A                                                           | 46-48.5: SAND, tanish orange, loose, damp, fine to med. grain<br>47: (1" thick, SANDY CLAY, dark brownish red lense)<br>48.5-53: SAND, tan, fine to medium grain, loose, damp, gravel<br>pea-sized chert | 2.3<br>2.6<br>5.6<br>1.1                                                                            |
| 55                       |                          |        |     |                                                               | 53-58: SAND, light tan, fine grain, loose, dry, chert gravel up<br>to 1.5" (56-58')                                                                                                                      | 0.6                                                                                                 |
| 60                       | 56-66                    | 100%   | N/A | N/A                                                           | 58-64: GRAVELLY SAND, tan brown, fine to medium grain,<br>loose, pea-sized gravel, up to 1.5"                                                                                                            | 1.4                                                                                                 |
| 65                       |                          |        |     |                                                               | 64-65: SAND, orangish tan, loose, fine to medium grain, damp,<br>pea-sized chert<br>65-66: SAND, light tan, loose, damp, fine grain<br>65.5: (1" SANDY CLAY, orange, sticky lense)                       | 2.5<br>1.5<br>0.0<br>0.0                                                                            |



CH2MHILL

PROJECT NUMBER

177556.SA.FE

BORING NUMBER

MW-176

SHEET 3 of 3

## SOIL BORING LOG

PROJECT : Memphis Depot Remedial Investigation Plan LOCATION : Memphis, TN

ELEVATION:

DRILLING CONTRACTOR : Prosonic Corporation

NAME OF DRILLER : Adam Marshall

DRILLING METHOD/EQUIPMENT: Rotosonic Drilling

SIZE/TYPE OF BIT : 4 X 6"

OVERBURDEN THICKNESS : DEPTH DRILLED INTO ROCK : N/A

TOTAL DEPTH OF BORING : 96 ft-bgs

WATER LEVELS : START : 10/25/2005

END : 10/25/2005

LOGGER : Mike Karafa/ATL

| DEPTH BELOW SURFACE (FT) |       |      |     | STANDARD     | SOIL DESCRIPTION                                                                                                     | COMMENTS                                                                                   |
|--------------------------|-------|------|-----|--------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| SAMPLE INTERVAL (FT)     |       |      |     | PENETRATION  | SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY. | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. FID (ppm) |
| RECOVERY (FT)            |       |      |     | TEST RESULTS |                                                                                                                      |                                                                                            |
| #/TYPE                   |       |      |     | 6"-6"-6" (N) |                                                                                                                      |                                                                                            |
| 70                       | 66-76 | 100% | N/A | N/A          | 66-72: SAME AS 65-66'<br>66: (3" SANDY CLAY)                                                                         | 0.0<br>0.0                                                                                 |
| 75                       |       |      |     |              | 72-74: SAND, orange, loose, damp, fine to medium grain<br>72: (1" SANDY CLAY, lense, orange, sticky)                 | 0.0<br>0.0                                                                                 |
|                          |       |      |     |              | 74-76: SAND, orange, fine grain, loose, damp                                                                         | 0.0                                                                                        |
|                          |       |      |     |              | 76-79: SAND, orange, fine to medium grain, loose, wet                                                                | 9.6                                                                                        |
| 80                       | 76-86 | 100% | N/A | N/A          | 79-83: SAND, orange, fine to medium grain, gravel up to 2", subrounded chert, wet                                    | 0.0                                                                                        |
|                          |       |      |     |              | 83-84: SAND, orangish tan, loose, fine grain, wet                                                                    | 0.0                                                                                        |
| 85                       |       |      |     |              | 84-86: SAND, orange, fine to course grain, loose, wet<br>84.5: (1" thick SANDY CLAY, gray, sticky, wet)              | 0.0<br>0.0                                                                                 |
|                          |       |      |     |              | 85.5: (2" thick SANDY CLAY, gray, sticky, wet)                                                                       | 0.0                                                                                        |
|                          |       |      |     |              | 86-86.5: SILTY SAND, orange, sticky, wet, fine to med. grain                                                         | 0.0                                                                                        |
|                          |       |      |     |              | 86.5-89: SILTY CLAY, orange, stiff, damp                                                                             | 0.0                                                                                        |
| 90                       | 86-96 | 100% | N/A | N/A          | 89-96: SILTY CLAY, dark gray, very stiff, damp                                                                       | 0.0                                                                                        |
| 95                       |       |      |     |              |                                                                                                                      |                                                                                            |

TD @ 96' BGS