

| PROJECT NUMBER   | BORING NUMBER |  |  |  |  |
|------------------|---------------|--|--|--|--|
| 148071.FI.SB     | MW-79         |  |  |  |  |
| SOIL BORING LOG  |               |  |  |  |  |
| SOIL BOILING LOG |               |  |  |  |  |

PROJECT : Memphis Depot: Dunn Field Expanded RI LOCATION: Memphis, TN

ELEVATION: 285.03 feet MSL (TOC): 285.4 feet MSL (ground)
DRILLING METHOD AND EQUIPMENT USED: 4.2
WATER LEVELS: 73.29 feet BTOC (64.000): nd) DRILLING CONTRACTOR: Tri-State Testing Services
4.25 ID Hollow-Stem Auger with 4 inch CME sampler

| WATER LEVELS: 72.38 feet BTOC (01/2001) START: 12/05/2000 END: 12/05/2000 LOGGER |                           |        |                                | R : Bryan Burkingstock  |                                 |
|--|---------------------------|--------|--------------------------------|---|---------------------------------|
| DEPTH BELOW S  | SURFACE (                 | FT)    | STANDARD                       | SOIL DESCRIPTION  | COMMENTS                        |
| INTERVAL   | INTERVAL (FT) PENETRATION |        | PENETRATION                    |   |                                 |
| F  | RECOVER                   | / (IN) | TEST                           | SOIL NAME, USCS GROUP SYMBOL, COLOR,  | DEPTH OF CASING, DRILLING RATE, |
|  |                           | #/TYPE | RESULTS                        | MOISTURE CONTENT, RELATIVE DENSITY,   | DRILLING FLUID LOSS,            |
|  |                           |        | 6"-6"-6"                       | OR CONSISTENCY, SOIL STRUCTURE,   | TESTS, AND INSTRUMENTATION.     |
|  |                           |        | (N)                            | MINERALOGY.   | FID (ppm):                      |
| 1 1 1  |                           |        | Used Continuous<br>CME Sampler |   | (Soil headspace)                |
| 1 i i  | 36                        |        | ·                              | SILT, brown, moist  | Not Sampled                     |
| -i i   |                           |        |                                |   | -                               |
| l <u>L!</u>  |                           |        |                                |   | _                               |
| 1 ! !  |                           |        |                                |   |                                 |
| -  |                           |        |                                |   | -                               |
| 5_   |                           |        |                                |   | _                               |
| l i i  | 60                        |        |                                | SILT, brown, moist  |                                 |
| -  |                           |        |                                |   | -                               |
| -! !   |                           |        |                                |   | _                               |
| 1 1 1  |                           |        |                                |   |                                 |
|  |                           |        |                                |   |                                 |
| -i i   |                           |        |                                |   |                                 |
| 10   |                           |        |                                |   |                                 |
| ! !  | 60                        |        |                                | SILT, brown, moist  | 1                               |
| 1 -  |                           |        |                                |   | -                               |
| _i i   |                           |        |                                |   | _                               |
| 1 i  |                           |        |                                |   |                                 |
| <u>i</u>   |                           |        |                                |   | 1                               |
| 1 -! !   |                           |        |                                |   | -                               |
| 15   |                           |        |                                |   |                                 |
| <sup>-</sup>   |                           |        |                                |   |                                 |
| -i i   | 60                        |        |                                | SILT, brown, moist  | -                               |
| 1 _! !   |                           |        |                                |   |                                 |
| 1 ! !  |                           |        |                                |   | 1                               |
| - <del>'</del> !   |                           |        |                                |   | 1                               |
| 1 -i i   |                           |        |                                |   | _                               |
| 20   |                           |        |                                |   |                                 |
| <sup>20</sup>  |                           |        |                                |   | _                               |
| 1 -!!!   | 60                        |        |                                | SILT, brown, moist  | _                               |
| 1 ! !  |                           |        |                                |   |                                 |
| 1 - 1  |                           |        |                                |   | 1                               |
| I - <u>i</u> i   |                           |        |                                |   | -                               |
|  |                           |        |                                |   |                                 |
| ] !  |                           |        |                                |   | 1                               |
| 25   | 60                        |        |                                | SILT, transition beginning  |                                 |
| 1 _i i   |                           |        |                                |   |                                 |
| l i i  |                           |        |                                | SANDY SILT, fine grained, brown to yellowish brown to tan   | 1                               |
| -ı i   |                           |        |                                |   |                                 |
| <b>I</b> - <b>!</b> !  |                           |        |                                |   | _                               |
| 1 ! !  |                           |        |                                |   |                                 |
| ] -  |                           |        |                                |   | 1                               |
| 30   | 42                        |        |                                | SANDY SILT, tan to yellowish brown, dark red mottles  | _                               |
| i i  | 42                        |        |                                |   |                                 |
| l <u>i</u> i   |                           |        |                                |   | 1                               |
| 1 - !  |                           |        |                                | SILTY SAND, fine to coarse grained, vellowish red to tan, poorly sorted   |                                 |
| 1  |                           |        |                                | SILTY SAND, fine to coarse grained, yellowish red to tan, poorly sorted, subangular pebbles                             |                                 |
| [  |                           |        |                                |   |                                 |
| -i i   |                           |        |                                |   |                                 |
| 35   |                           |        |                                |   |                                 |
| 1 ! !  | 40                        |        |                                | SAND, fine to coarse grained yellowish red (tan), poorly sorted, 10-20% gravel<br>(small to1.5 inches wide), subangular |                                 |
|  |                           |        |                                | (Sinali to 1.0 iilolies wide), subaliyulal  |                                 |
| i i  |                           |        | Llead Continuous               |   |                                 |
| l i i  |                           |        | Used Continuous<br>CME Sampler |   |                                 |
| ] ] [  |                           |        |                                |   | 1                               |
| ] -!!!   |                           |        |                                |   | -                               |
| 40   |                           |        |                                |   |                                 |
| 1 -; ;   | 33                        |        |                                | SAND, medium to coarse grained, yellowish brown to tan  | 1                               |
| 1 <u>-</u> i i   |                           |        |                                |   |                                 |



| PROJECT NUMBER  | BORING NUMBER |  |  |  |  |
|-----------------|---------------|--|--|--|--|
| 148071.FI.SB    | MW-79         |  |  |  |  |
| SOIL BORING LOG |               |  |  |  |  |
| SOIL BORING LOG |               |  |  |  |  |

PROJECT : Memphis Depot: Dunn Field Expanded RI LOCATION: Memphis, TN

ELEVATION: 285.03 feet MSL (TOC); 285.4 feet MSL (ground)
DRILLING METHOD AND EQUIPMENT USED: 4.2 nd) DRILLING CONTRACTOR: Tri-State Testing Services
4.25 ID Hollow-Stem Auger with 4 inch CME sampler

|         |          | S · 72 38 | feet BTOC (01. | /2001) START :  | 12/05/2000 END: 12/05/2000 LOGGER  | : Bryan Burkingstock                                 |
|---------|----------|-----------|----------------|-----------------|--|--|
|         |          | SURFACE   |                | STANDARD        | SOIL DESCRIPTION   | COMMENTS   |
| DEFIN   |          |           | (1.1)          |                 | SOIL DESCRIPTION   | CONTINIENTS  |
|         | INTERV   | RECOVER   | N/ /INI)       | PENETRATION     | COIL NAME LICCS CROUD SYMPOL COLOR   | DEDTH OF CASING DRILLING DATE                        |
|         |          | RECOVER   | #/TYPE         | TEST            | SOIL NAME, USCS GROUP SYMBOL, COLOR,   | DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, |
|         |          |           | #/ITPE         | RESULTS         | MOISTURE CONTENT, RELATIVE DENSITY,  |  |
|         |          |           |                | 6"-6"-6"        | OR CONSISTENCY, SOIL STRUCTURE,  | TESTS, AND INSTRUMENTATION.                          |
|         |          |           |                | (N)             | MINERALOGY.  | FID (ppm):   |
|         |          |           |                |                 |  |  |
| _       |          |           |                |                 |  | =  |
| _       |          |           |                |                 |  | _  |
|         |          |           |                |                 |  |  |
| _       |          | i         |                |                 |  | -  |
| 45      |          | i         |                |                 |  |  |
|         | i        | 36        |                |                 | SAND, some fine mostly coarse grained, yellow to yellowish tan, poorly sorted  | _  |
| _       | i        | i         |                |                 | SAND, some fine mostly coarse grained, yellow to yellowish tan, poorly sorted 20% pebbles(<1/2 inch wide), subangular, moist | _  |
|         |          |           |                |                 |  |  |
| -       |          |           |                |                 |  | -  |
|         |          |           |                |                 |  |  |
|         |          |           |                |                 |  |  |
| _       |          |           |                |                 |  | _  |
| -       |          |           |                |                 |  |  |
| 50      |          | 36        |                |                 | SAND coarse grained vellow to vellowish tan subangular   | _  |
|         |          | 00        |                |                 | SAND, coarse grained, yellow to yellowish tan, subangular<br>wet (saturated interval)  |  |
| _       |          |           |                |                 | ,  | =  |
|         |          |           | ]              |                 |  | -  |
|         |          |           | ]              |                 |  |  |
| -       | <u> </u> |           | ]              |                 |  | -  |
|         |          |           | ]              |                 |  |  |
| _       |          |           | ]              |                 | SAND, with gravel to 56 feet, medium grained, tan, well sorted, moist  | -  |
| 55      |          | !         |                |                 |  |  |
|         |          | 40        |                |                 |  |  |
| _       |          |           |                |                 | SAND, no gravel, tan to 57.5 feet brownish yellow >57.5 feet, moist  | -  |
|         |          |           |                |                 | SAND, no graver, tarr to 57.5 leet brownish yellow >57.5 leet, moist   |  |
| _       |          | !         |                |                 |  | =  |
| _       |          |           |                |                 |  | _  |
|         |          |           |                |                 | SAND, medium grained, yellow, well sorted  |  |
| _       |          |           |                |                 | Two - 1 clay lenses at 59 feet separated by 3 inches of sand, moist  | =  |
| _<br>60 |          |           |                |                 | Two Today lenses at 55 feet separated by 5 mones of sand, most   |  |
|         |          | 40        |                |                 | SAND, fine grained, white to yellowish white, moist  |  |
| _       |          | 1         |                |                 |  | _  |
|         |          | •         |                |                 |  |  |
| -       |          | •         |                |                 |  | -  |
|         |          | i         |                |                 |  | _  |
| -       |          | i         |                |                 |  |  |
| _       |          | i         |                |                 |  | _  |
| 1       |          |           |                |                 | Subangular pebble traces   |  |
| 65      |          | 47        |                |                 | SAND, fine to medium grained, light yellow transitioning to brownish yellow to   |  |
|         |          | i         |                |                 | brownish light yellow, moist   |  |
| _       | i        | Ī         |                |                 |  | _  |
| _       | ı        |           | ]              |                 | Subangular pebble traces   | -  |
| - <br>- |          |           | ]              |                 |  |  |
| _       |          |           | ]              |                 |  | -  |
| ال      |          |           | ]              |                 |  | _  |
| ]       |          |           | ]              |                 | SAND, fine to medium grained, yellow, well sorted, trace pebbles, subangular   | _  |
| 70      |          | 4.0       | ]              |                 | wet  | _  |
|         |          | 49        | ]              |                 | SAND, fine grained, light yellow, well sorted, trace pebbles, subangular, wet  |  |
| _       |          |           | ]              |                 |  | -  |
|         |          |           | ]              |                 |  |  |
| _       | !        |           | ]              |                 |  | <u> </u>   |
|         |          |           | ļ              |                 | Water Table @ 72.5 feet  | _  |
|         |          |           | ]              | Used Continuous |  |  |
| -       |          |           | ]              | CME Sampler     |  | <del>-</del>   |
| 75      |          |           | ]              | J Jampioi       |  |  |
| -       |          |           | ]              |                 | SAND, fine to medium grained, light yellow to white, well soarted  | _  |
| _       |          |           | ]              |                 | at >76 feet white medium grained, sand with trace pebbles, wet   | -  |
|         |          |           | ]              |                 |  |  |
| -       |          |           | ]              |                 |  | -  |
|         |          |           | ]              |                 |  |  |
| -       |          |           | ]              |                 |  | -  |
|         |          |           | ]              |                 |  | _  |
| _       |          |           | ]              |                 |  | 1  |
| 80      |          | 24        | ]              |                 | CAND madium agained uset begunish white  | <u> </u>   |
|         |          | 21        | ]              |                 | SAND, medium grained, wet, brownish white, well sorted   |  |
| _       |          |           | ]              |                 |  | -  |
|         |          |           | ]              |                 |  |  |
|         | - '      | -         | •              | _               |  | <del>-</del>   |



| PROJECT NUMBER  | BORING NUMBER |  |  |  |  |  |  |
|-----------------|---------------|--|--|--|--|--|--|
| 148071.FI.SB    | MW-79         |  |  |  |  |  |  |
| SOIL BORING LOG |               |  |  |  |  |  |  |

PROJECT: Memphis Depot: Dunn Field Expanded RI LOCATION: Memphis, TN

ELEVATION: 285.03 feet MSL (TOC); 285.4 feet MSL (ground) DRILLING CONTRACTOR: Tri-State Testing Services

DRILLING METHOD AND EQUIPMENT USED: 4.25 ID Hollow-Stem Auger with 4 inch CME sampler

START LOGGER: Bryan Burkingstock WATER LEVELS: 72.38 feet BTOC (01/2001) 12/05/2000 END: 12/05/2000 DEPTH BELOW SURFACE (FT) SOIL DESCRIPTION INTERVAL (FT) PENETRATION RECOVERY (IN) #/TYPE TEST SOIL NAME, USCS GROUP SYMBOL, COLOR. DEPTH OF CASING, DRILLING RATE, MOISTURE CONTENT, RELATIVE DENSITY, DRILLING FLUID LOSS, RESULTS OR CONSISTENCY, SOIL STRUCTURE, TESTS, AND INSTRUMENTATION. 6"-6"-6"-6" MINERALOGY (N) FID (ppm): No recovery, seems to have gone through a dense gravel layer 24 SAND, fine to coarse grained, brownish white, poorly sorted, trace pebbles 22 SAND, fine to coarse grained, brownish white, poorly sorted, trace pebbles 100\_\_ One to two inch layer of Iron Stone @ approximately 100 feet bgs CLAY, brownish yellow, very stiff, hard iron stone on top of clay - 2 inch gravel in cuttings Boring terminated at 103 feet Well set at 102.5 feet with 20 feet of screen Sand to 77 feet, Bentonite 72 feet