

## MP-212 – Boxes 1 and 2



## MP-212 – Boxes 3 and 4



## MP-212 – Boxes 5 and 6



## MP-212 – Boxes 7 and 8



MP-212 – Box 9





## GEOTECHNICAL BORING LOG

Prepared By: MBL Date: 3/5/14Checked By: JCM Date: 3/5/14

SHEET 1 OF 1

|   |               |   |    |                                  |                                     |                                |  |              |             |   |
|---|---------------|---|----|----------------------------------|-------------------------------------|--------------------------------|--|--------------|-------------|---|
| BECHTEL NO.: 25847  |               | AMEC PROJECT NO.: 6468-13-1072                    |    | COUNTY: Roane, TN                |                                     | GEOLOGIST: N. Smith            |  |              |             |   |
| SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee |               |   |    | DRILLER: G. Bilbrey/J. Walker    |                                     | Boring Orientation             |  |              |             |   |
| BORING NO.: MP-213  |               | DRILL METHOD: Mud Rotary/Core                     |    | DRILL MACHINE: CME-75 (TSD)      |                                     | Inclination: 28°               |  |              |             |   |
| GROUND ELEV.: 813.0 ft (NAVD88)                                     |               | NORTHING: 571,009 US ft (NAD83)                   |    | EASTING: 2,448,149 US ft (NAD83) |                                     | Azimuth: N 34° W               |  |              |             |   |
| TOTAL DEPTH: 177.3 ft   |               | SAMPLE METHODS: ASTM D 2488-09a; 2113-08; 6032-08 |    | ROD TYPE: AWJ                    |                                     | HAMMER (ID): NA-Sampler pushed |  |              |             |   |
| DATE STARTED: 7/22/13   |               | COMPLETED: 7/31/13                                |    | HOLE DIA.: 4"                    |                                     | CASING DEPTH: 15.6 ft          |  |              |             |   |
| CORE SIZE: HQ3  |               | BITS USED: 4" Roller Cone                         |    |                                  |                                     |                                |  |              |             |   |
| ELEV.<br>(ft)   | DEPTH<br>(ft) | BLOW COUNT<br>0.5ft 0.5ft 0.5ft                   |    |                                  | BLOWS PER FOOT<br>0 20 40 60 80 100 |                                |  | SAMP.<br>NO. | L<br>O<br>G | SOIL DESCRIPTION AND REMARKS  |
|   |               |   |    |                                  |                                     |                                |  |              |             |   |
|   |               |   |    |                                  |                                     |                                |  |              |             | Ground Surface 0.0  |
|   | 0.0           | NA  | NA | NA                               |                                     |                                |  | SS-1         |             | FILL: Gravelly LEAN CLAY (CL), brown (7.5YR 4/4) and reddish yellow (7.5YR 6/8), mottled, moist, low plasticity fines, some fine gravel, few fine to coarse sand, few organics, weak to strong HCl reaction               |
|   | 3.0           |   |    |                                  |                                     |                                |  |              |             |   |
|   |               | NA  | NA | NA                               |                                     |                                |  | SS-2         |             | 3.0ft: As above to yellowish brown (10YR 5/4) and red (10R 4/6), mottled, low to moderate plasticity fines, little fine gravel, trace fine to medium sand, weak HCl reaction  |
|   | 5.8           |   |    |                                  |                                     |                                |  |              |             | 5.0   |
|   |               | NA  | NA | NA                               |                                     |                                |  | SS-3         |             | RESIDUAL SOIL: CLAYEY GRAVEL (GC), dusky red (10R 3/2) with very dark gray (N 3/), mottled, moist, fine gravel, little low plasticity fines, little fine to coarse sand, strong HCl reaction                              |
|   | 8.3           |   |    |                                  |                                     |                                |  |              |             | 7.0   |
|   |               | NA  | NA | NA                               |                                     |                                |  | SS-4         |             | WEATHERED ROCK: CALCAREOUS SILTSTONE, sampled as CLAYEY GRAVEL (GC), dusky red (10R 3/2) with dark gray (N 4/), mottled, moist, fine gravel, little low plasticity fines, little fine to coarse sand, strong HCl reaction |
|   | 10.6          |   |    |                                  |                                     |                                |  |              |             |   |
|   |               | NA  | NA | NA                               |                                     |                                |  | SS-5         |             |   |
|   | 13.8          |   |    |                                  |                                     |                                |  |              |             | 12.0  |
|   |               | NA  | NA | NA                               |                                     |                                |  | SS-6         |             | CALCAREOUS SILTSTONE-No sample penetration, very hard drilling; advance casing to bit refusal at 15.6 feet and begin rock coring  |
|   |               |   |    |                                  |                                     |                                |  |              |             | 15.6  |
|   |               |   |    |                                  |                                     |                                |  |              |             | Soil drilling halted. Log continues on geotechnical coring log  |
|   |               |   |    |                                  |                                     |                                |  |              |             | NOTE: Elevations not shown. Depths indicated on log are lengths measured along plunge of boring from ground surface.  |
|   |               |   |    |                                  |                                     |                                |  |              |             | Observed water levels:<br>3.5 ft bgs, AM 7/23/13<br>16.5 ft bgs, AM 7/24/13<br>42.7 ft bgs, AM 7/31/13  |

CLINCH RIVER SMR BORE FINAL CLINCH FINAL LOGS.GPJ CLINCH BORING DATA TEMPLATE.GDT 3/5/14



# GEOTECHNICAL CORING LOG

Prepared By: MBL Date: 3/5/14

Checked By: JCM Date: 3/5/14

SHEET 1 OF 4

|   |               |             |   |                                 |                       |                  |   |                                  |   |                     |                    |
|---|---------------|-------------|---|---------------------------------|-----------------------|------------------|---|----------------------------------|---|---------------------|--------------------|
| BECHTEL PROJECT NO.: 25847  |               |             |   | AMEC PROJECT NO.: 6468-13-1072  |                       |                  |   | COUNTY: Roane, TN                |   | GEOLOGIST: N. Smith |                    |
| SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee |               |             |   |                                 |                       |                  |   | DRILLER: G. Bilbrey/J. Walker    |   |                     | Boring Orientation |
| BORING NO.: MP-213  |               |             |   | DRILL METHOD: Mud Rotary/Core   |                       |                  |   | DRILL MACHINE: CME-75 (TSD)      |   |                     | Inclination: 28°   |
| GROUND ELEV.: 813.0 ft (NAVD88)                                     |               |             |   | NORTHING: 571,009 US ft (NAD83) |                       |                  |   | EASTING: 2,448,149 US ft (NAD83) |   |                     | Azimuth: N 34° W   |
| TOTAL DEPTH: 177.3 ft   |               |             | SAMPLE METHODS: ASTM D 2488-09a; 2113-08; 6032-08 |                                 |                       |                  |   |                                  | HAMMER (ID): NA-Sampler pushed  |                     |                    |
| DATE STARTED: 7/22/13   |               |             | COMPLETED: 7/31/13                                |                                 | CASING DEPTH: 15.6 ft |                  | CORE BARREL TYPE: HQ3/Diamond Impregnated core bits |                                  |   |                     |                    |
|   |               |             |   |                                 |                       |                  |   |                                  |   |                     |                    |
| ELEV.<br>(ft)   | DEPTH<br>(ft) | RUN<br>(ft) | DRILL<br>RATE<br>(Min/ft)                         | RUN<br>REC.<br>(ft)<br>%        |                       | RQD<br>(ft)<br>% | SAMP.<br>NO.  | L<br>O<br>G                      | ROCK DESCRIPTION AND REMARKS  |                     |                    |
|   |               |             |   |                                 |                       |                  |   |                                  | Begin Coring @ 15.6 ft  |                     |                    |
|   | 15.6<br>17.3  | 1.7         | 8:18<br>8:38/0.7                                  | (1.7)<br>100%                   | (1.5)<br>88%          | Run 1            |   |                                  | CALCAREOUS SILTSTONE, dusky red (10R 3/2) to dark reddish gray (10R 3/1), with trace dark greenish gray (10GY 4/1), medium strong to strong, laminated to very thinly bedded, locally with moderately bedded appearance, fresh, interbedded with trace to little, laminated to thin, locally to moderately bedded, LIMESTONE (MICRITE/WACKESTONE), gray to dark gray (N 5/-N 4/) and gray (5Y 5/1); trace fossils, moderately to strongly bioturbated, trace calcite filled pits and burrows, strong HCl reaction<br><b>(Lincolnshire Formation -Fleanor Member-Unit B)</b><br>15.9-16.1ft: FZ, 0°, PR-SR, PO, C, III<br>17.6,17.8,17.9,18.3,18.5,19.4,19.7,19.8,20.5,20.8,21.6,22.1ft: BJ, 0°, PS-PR, B-C, II-III<br>18.3ft: J, 70°, PR, O, C, III<br>18.5-19.2ft: FZ, highly weathered, 0.7' core loss<br>19.7ft: J, 80-90°, SR, O, C, III<br>23.6,24.0,24.4ft: J, 80-90°, SR-PR, VT-PO, C, III<br>22.6,24.1ft: BJ, 0°, PS, T-PO, B, II |                     |                    |
|   |               | 5.0         | 4:16<br>3:16<br>2:32<br>4:16<br>7:25              | (4.3)<br>86%                    | (2.1)<br>42%          | Run 2            |   |                                  |   |                     |                    |
|   |               | 22.3        |   |                                 |                       |                  |   |                                  | 28.5,28.6ft: BJ, 0°, PS, T-PO, B, II<br>29.6ft: J, 80°, SR, VT, B, II   |                     |                    |
|   |               | 5.0         | 2:55<br>3:45<br>4:52<br>5:02<br>5:39              | (5.0)<br>100%                   | (4.7)<br>94%          | Run 3            |   |                                  |   |                     |                    |
|   |               | 27.3        |   |                                 |                       |                  |   |                                  | 39.6-40.7ft: FZ, moderately weathered, 0.5' core loss<br>40.7-41.0ft: J, 80°, SR-PR, VT-PO, A-B, II   |                     |                    |
|   |               | 5.0         | 2:59<br>3:35<br>3:16<br>3:17<br>3:16              | (5.0)<br>100%                   | (4.9)<br>98%          | Run 4            |   |                                  |   |                     |                    |
|   |               | 32.3        |   |                                 |                       |                  |   |                                  | 48.9-49.8ft: FZ/J, 80-90°, PR-SR, T-PO, B, II, 0.3' core loss (mechanical)  |                     |                    |
|   |               | 5.0         | 2:23<br>2:20<br>2:36<br>2:36<br>2:49              | (5.0)<br>100%                   | (5.0)<br>100%         | Run 5            |   |                                  |   |                     |                    |
|   |               | 37.3        |   |                                 |                       |                  |   |                                  | 52.9ft: J, 90°, SR, T, B, II  |                     |                    |
|   |               | 5.0         | 2:16<br>2:37<br>8:39<br>6:40<br>3:04              | (4.5)<br>90%                    | (4.2)<br>84%          | Run 6            |   |                                  |   |                     |                    |
|   |               | 42.3        |   |                                 |                       |                  |   |                                  |   |                     |                    |
|   |               | 5.0         | 2:01<br>2:12<br>2:22<br>2:28<br>2:26              | (5.0)<br>100%                   | (5.0)<br>100%         | Run 7            |   |                                  |   |                     |                    |
|   |               | 47.3        |   |                                 |                       |                  |   |                                  |   |                     |                    |
|   |               | 5.0         | 4:59<br>4:36<br>10:26<br>5:26<br>3:41             | (4.7)<br>94%                    | (4.0)<br>80%          | Run 8            |   |                                  |   |                     |                    |
|   |               | 52.3        |   |                                 |                       |                  |   |                                  |   |                     |                    |
|   |               | 5.0         | 3:23<br>3:30<br>3:01<br>3:22<br>3:11              | (5.0)<br>100%                   | (5.0)<br>100%         | Run 9            |   |                                  |   |                     |                    |
|   |               | 57.3        |   |                                 |                       |                  |   |                                  |   |                     |                    |
|   |               | 5.0         | 2:32<br>2:48<br>3:14<br>2:34<br>2:47              | (5.0)<br>100%                   | (5.0)<br>100%         | Run 10           |   |                                  |   |                     |                    |
|   |               | 62.3        |   |                                 |                       |                  |   |                                  |   |                     |                    |
|   |               | 5.0         | 2:57<br>3:06                                      | (5.0)<br>100%                   | (4.9)<br>98%          | Run 11           |   |                                  |   |                     |                    |
|   |               |             |   |                                 |                       |                  |   |                                  | 66.8,66.9ft: J, 10-20°, PS, O, C, II  |                     |                    |

CLINCH RIVER SMR CORE FINAL CLINCH FINAL LOGS.GPJ CLINCH BORING DATA TEMPLATE.GDT 3/5/14



|   |  |   |                       |   |                                |                    |
|---|--|---|-----------------------|---|--------------------------------|--------------------|
| BECHTEL PROJECT NO.: 25847  |  | AMEC PROJECT NO.: 6468-13-1072                    |                       | COUNTY: Roane, TN                                   | GEOLOGIST: N. Smith            |                    |
| SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee |  |   |                       | DRILLER: G. Bilbrey/J. Walker                       |                                | Boring Orientation |
| BORING NO.: MP-213  |  | DRILL METHOD: Mud Rotary/Core                     |                       | DRILL MACHINE: CME-75 (TSD)                         |                                |                    |
| GROUND ELEV.: 813.0 ft (NAVD88)                                     |  | NORTHING: 571,009 US ft (NAD83)                   |                       | EASTING: 2,448,149 US ft (NAD83)                    |                                | Inclination: 28°   |
|   |  |   |                       |   |                                | Azimuth: N 34° W   |
| TOTAL DEPTH: 177.3 ft   |  | SAMPLE METHODS: ASTM D 2488-09a; 2113-08; 6032-08 |                       |   | HAMMER (ID): NA-Sampler pushed |                    |
| DATE STARTED: 7/22/13   |  | COMPLETED: 7/31/13                                | CASING DEPTH: 15.6 ft | CORE BARREL TYPE: HQ3/Diamond Impregnated core bits |                                |                    |

| ELEV.<br>(ft) | DEPTH<br>(ft) | RUN<br>(ft) | DRILL<br>RATE<br>(Min/ft)            | REC.<br>(ft)<br>% | RQD<br>(ft)<br>% | SAMP.<br>NO. | L<br>O<br>G | ROCK DESCRIPTION AND REMARKS   |
|---------------|---------------|-------------|--------------------------------------|-------------------|------------------|--------------|-------------|--|
|               |               |             |                                      |                   |                  |              |             | Continued from previous page   |
|               | 67.3          | 5.0         | 2:24<br>2:34<br>3:10                 |                   |                  | Run 12       |             | CALCAREOUS SILTSTONE, dusky red (10R 3/2) to dark reddish gray (10R 3/1), with trace dark greenish gray (10GY 4/1), medium strong to strong, laminated to very thinly bedded, locally with moderately bedded appearance, fresh, interbedded with trace to little, laminated to thin, locally to moderately bedded, LIMESTONE (MICRITE/WACKESTONE), gray to dark gray (N 5/-N 4/) and gray (5Y 5/1); trace fossils, moderately to strongly bioturbated, trace calcite filled pits and burrows, strong HCl reaction<br>(Lincolnshire Formation -Fleanor Member-Unit B) (continued)<br>72.0ft: J, 90°, PR, O, B, II |
|               | 72.3          | 5.0         | 6:14<br>4:34<br>4:10<br>4:08<br>3:46 | (5.0)<br>100%     | (4.9)<br>98%     | Run 13       |             | 74.2-74.7ft: J, 90°, SR, VT, B-C, II   |
|               | 77.3          | 5.0         | 4:02<br>3:17<br>2:51<br>2:41<br>2:23 | (5.0)<br>100%     | (5.0)<br>100%    | Run 14       |             | 81.0ft: BJ, 0°, PR, T, B, II<br>81.9-82.2.0ft: J, 90°, SR, T, B, II  |
|               | 82.3          | 5.0         | 2:47<br>3:01<br>2:50<br>3:13<br>3:23 | (5.0)<br>100%     | (5.0)<br>100%    | Run 15       |             | 85.6-86.6ft: J, 80-90°, SR-PR, T-PO, B, II-III, 0.3' core loss   |
|               | 87.3          | 5.0         | 3:08<br>4:24<br>3:59<br>6:05<br>7:05 | (4.7)<br>94%      | (4.0)<br>80%     | Run 16       |             | 89.5ft: J, 70°, SR, VT, A, I<br>90.4,90.5ft: BJ, 0°, PO-O, B, II<br>90.4-90.9ft: J, 80°, SR-PR, T-PO, B, II, with trace calcite  |
|               | 92.3          | 5.0         | 2:52<br>2:31<br>2:43<br>5:46<br>3:16 | (5.0)<br>100%     | (4.5)<br>90%     | Run 17       |             |  |
|               | 97.3          | 5.0         | 2:33<br>2:58<br>3:17<br>3:43<br>3:37 | (5.0)<br>100%     | (5.0)<br>100%    | Run 18       |             | CALCAREOUS SILTSTONE, black (N 2.5/), greenish black (10Y 2.5/1), and very dark gray (N 3/), to dark grayish olive (10Y 4/2) and very dark greenish gray (10Y 3/1), strong, laminated to thinly bedded, fresh, interbedded with little to some, laminated to thin LIMESTONE (MICRITE/WACKESTONE), gray (N 6/-N 5/); slightly to moderately bioturbated, trace calcite filled pits and burrows, strong HCl reaction<br>96.1-96.7ft: J, 80-90°, VT, A, I-II, mostly healed with calcite  |
|               | 102.3         | 5.0         | 3:32<br>3:24<br>3:36<br>3:38<br>4:01 | (5.0)<br>100%     | (5.0)<br>100%    | Run 19       |             | 102.9-103.3ft: FZ, 0°, PS-PR, T-PO, A-B, II, slightly weathered  |
|               | 107.3         | 5.0         | 2:34<br>3:02<br>3:12<br>3:56<br>3:21 | (5.0)<br>100%     | (4.5)<br>90%     | Run 20       |             | 110.0,110.1,111.7ft: BJ, 0-5°, PL, T-PO, B, II, with trace calcite and pyrite  |
|               | 112.3         | 5.0         | 2:38<br>2:32<br>3:22<br>3:03<br>3:12 | (5.0)<br>100%     | (4.9)<br>98%     | Run 21       |             |  |
|               |               |             | 5:27                                 |                   |                  |              |             |  |

CLINCH RIVER SMR CORE FINAL CLINCH FINAL LOGS.GPJ CLINCH BORING DATA TEMPLATE.GDT 3/5/14



|   |               |             |                                      |   |               |                       |              |   |  |   |  |  |
|---|---------------|-------------|--------------------------------------|---|---------------|-----------------------|--------------|---|--|---|--|--|
| BECHTEL PROJECT NO.: 25847  |               |             |                                      | AMEC PROJECT NO.: 6468-13-1072                    |               |                       |              | COUNTY: Roane, TN                                   |  | GEOLOGIST: N. Smith   |  |  |
| SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee |               |             |                                      |   |               |                       |              | DRILLER: G. Bilbrey/J. Walker                       |  | Boring Orientation<br>Inclination: 28°<br>Azimuth: N 34° W  |  |  |
| BORING NO.: MP-213  |               |             |                                      | DRILL METHOD: Mud Rotary/Core                     |               |                       |              | DRILL MACHINE: CME-75 (TSD)                         |  |   |  |  |
| GROUND ELEV.: 813.0 ft (NAVD88)                                     |               |             |                                      | NORTHING: 571,009 US ft (NAD83)                   |               |                       |              | EASTING: 2,448,149 US ft (NAD83)                    |  |   |  |  |
| TOTAL DEPTH: 177.3 ft   |               |             |                                      | SAMPLE METHODS: ASTM D 2488-09a; 2113-08; 6032-08 |               |                       |              |   |  | HAMMER (ID): NA-Sampler pushed  |  |  |
| DATE STARTED: 7/22/13   |               |             |                                      | COMPLETED: 7/31/13                                |               | CASING DEPTH: 15.6 ft |              | CORE BARREL TYPE: HQ3/Diamond Impregnated core bits |  |   |  |  |
|   |               |             |                                      |   |               |                       |              |   |  |   |  |  |
| ELEV.<br>(ft)   | DEPTH<br>(ft) | RUN<br>(ft) | DRILL<br>RATE<br>(Min/ft)            | RUN<br>REC.<br>(ft)<br>%                          |               | ROD<br>(ft)<br>%      | SAMP.<br>NO. | L<br>O<br>G   | ROCK DESCRIPTION AND REMARKS   |   |  |  |
|   |               |             |                                      |   |               |                       |              |   | Continued from previous page   |   |  |  |
|   | 117.3         | 5.0         | 5:30<br>4:44<br>4:46<br>3:58         | (5.0)<br>100%                                     | (5.0)<br>100% |                       |              |   | CALCAREOUS SILTSTONE, dusky red (10R 3/2) to dark reddish gray (10R 3/1), with trace very dark greenish gray (10Y 3/1), strong, laminated to very thinly bedded, locally with moderately bedded appearance, fresh, interbedded with trace to little, laminated to thin, locally to moderately bedded, LIMESTONE (MICRITE/WACKESTONE), gray (N 5/); moderately to strongly bioturbated, trace calcite filled pits and burrows, strong HCl reaction<br>117.7ft: BJ, 0°, PS, T, B, II |   |  |  |
|   |               | 5.0         | 2:35<br>2:35<br>2:36<br>2:50<br>3:23 | (5.0)<br>100%                                     | (5.0)<br>100% | Run 22                |              |   | 122.3-123.3ft: As above with LIMESTONE (PACKSTONE), dark reddish gray (10R 3/1), moderately bedded, with few carbonate clasts<br>126.7ft: SH, 0°, PL, T, B, II, with calcite   |   |  |  |
|   |               | 122.3       | 5.0                                  | 3:29<br>3:21<br>2:49<br>2:36<br>3:05              | (5.0)<br>100% | (4.8)<br>96%          | Run 23       |   |  | 127.2ft: BJ, 0°, PS, PO-O, B, II  |  |  |
|   |               | 127.3       | 5.0                                  | 6:48<br>4:16<br>5:05<br>4:54<br>4:06              | (5.0)<br>100% | (4.2)<br>84%          | Run 24       |   |  | LIMESTONE (WACKESTONE/GRAINSTONE), gray (N 5/), strong, laminated to thinly bedded, fresh, trace to few laminated Calcareous SILTSTONE partings; strong HCl reaction<br>129.3-130.1ft: J, 90°, SR-PR, T, B,II, with trace calcite |  |  |
|   | 132.3         | 5.0         | 2:25<br>2:18<br>2:14<br>2:52<br>3:17 | (5.0)<br>100%                                     | (5.0)<br>100% | Run 25                |              |   | CALCAREOUS SILTSTONE, dusky red (10R 3/2) to dark reddish gray (10R 3/1), with trace very dark greenish gray (10GY 3/1), strong, laminated to very thinly bedded, locally with moderately bedded appearance, fresh, interbedded with trace to little, laminated to thin LIMESTONE (MICRITE/WACKESTONE), gray (N 5/); trace fossils, moderately to strongly bioturbated, trace calcite filled pits and burrows, strong HCl reaction   |   |  |  |
|   |               | 5.0         | 2:54<br>2:29<br>2:33<br>3:01<br>3:15 | (5.0)<br>100%                                     | (5.0)<br>100% | Run 26                |              |   |  |   |  |  |
|   |               | 142.3       | 5.0                                  | 2:34<br>2:33<br>2:34<br>3:02<br>4:15              | (5.0)<br>100% | (5.0)<br>100%         | Run 27       |   |  |   |  |  |
|   |               | 147.3       | 5.0                                  | 4:15<br>3:05<br>3:34<br>2:42<br>2:57              | (5.0)<br>100% | (5.0)<br>100%         | Run 28       |   |  | 146.9ft: J, 90°, SR, VT, T, A-B, I-II   |  |  |
|   | 152.3         | 5.0         | 3:02<br>2:57<br>2:58<br>4:58<br>4:05 | (5.0)<br>100%                                     | (4.9)<br>98%  | Run 29                |              |   | 155.1ft: BJ, 0°, PR-PS, T-PO, B, II  |   |  |  |
|   |               | 5.0         | 2:40<br>2:39<br>2:41<br>3:43         | (5.0)<br>100%                                     | (5.0)<br>100% | Run 30                |              |   | 159.6ft: SH, 10°, PL, VT-T, B, II  |   |  |  |
|   |               | 157.3       | 5.0                                  |   |               |                       |              |   |  |   |  |  |
|   |               |             | 5.0                                  |   |               |                       |              |   |  |   |  |  |

CLINCH RIVER SMR CORE FINAL CLINCH FINAL LOGS.GPJ CLINCH BORING DATA TEMPLATE.GDT 3/5/14



|   |               |             |  |   |               |                       |              |   |  |                                |  |
|---|---------------|-------------|--|---|---------------|-----------------------|--------------|---|--|--------------------------------|--|
| BECHTEL PROJECT NO.: 25847  |               |             |  | AMEC PROJECT NO.: 6468-13-1072                    |               |                       |              | COUNTY: Roane, TN                                   |  | GEOLOGIST: N. Smith            |  |
| SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee |               |             |  |   |               |                       |              | DRILLER: G. Bilbrey/J. Walker                       |  | Boring Orientation             |  |
| BORING NO.: MP-213  |               |             |  | DRILL METHOD: Mud Rotary/Core                     |               |                       |              | DRILL MACHINE: CME-75 (TSD)                         |  | Inclination: 28°               |  |
| GROUND ELEV.: 813.0 ft (NAVD88)                                     |               |             |  | NORTHING: 571,009 US ft (NAD83)                   |               |                       |              | EASTING: 2,448,149 US ft (NAD83)                    |  | Azimuth: N 34° W               |  |
| TOTAL DEPTH: 177.3 ft   |               |             |  | SAMPLE METHODS: ASTM D 2488-09a; 2113-08; 6032-08 |               |                       |              |   |  | HAMMER (ID): NA-Sampler pushed |  |
| DATE STARTED: 7/22/13   |               |             |  | COMPLETED: 7/31/13                                |               | CASING DEPTH: 15.6 ft |              | CORE BARREL TYPE: HQ3/Diamond Impregnated core bits |  |                                |  |
|   |               |             |  |   |               |                       |              |   |  |                                |  |
| ELEV.<br>(ft)   | DEPTH<br>(ft) | RUN<br>(ft) | DRILL<br>RATE<br>(Min/ft)                    | RUN<br>REC.<br>(ft)<br>%                          |               | RQD<br>(ft)<br>%      | SAMP.<br>NO. | L<br>O<br>G   | ROCK DESCRIPTION AND REMARKS   |                                |  |
|   |               |             |  |   |               |                       |              |   | Continued from previous page   |                                |  |
|   | 162.3         | 5.0         | 3:11<br>2:53<br>3:05<br>2:32<br>2:33<br>2:52 | (5.0)<br>100%                                     | (5.0)<br>100% | Run 31                |              |   | CALCAREOUS SILTSTONE, dusky red (10R 3/2) to dark reddish gray (10R 3/1), with trace very dark greenish gray (10GY 3/1), strong, laminated to very thinly bedded, locally with moderately bedded appearance, fresh, interbedded with trace to little, laminated to thin LIMESTONE (MICRITE/WACKESTONE), gray (N 5/); trace fossils, moderately to strongly bioturbated, trace calcite filled pits and burrows, strong HCl reaction (continued) |                                |  |
|   | 167.3         | 5.0         | 2:35<br>2:44<br>2:38<br>2:56<br>3:05         | (5.0)<br>100%                                     | (5.0)<br>100% | Run 32                |              |   | CALCAREOUS SILTSTONE, very dark gray (N 3/) and very dark greenish gray (10GY 3/1) to dark grayish olive (10Y 4/2), strong, laminated to very thinly bedded, fresh, interbedded with little, laminated to very thin LIMESTONE (MICRITE/WACKESTONE), gray (N 5/), and trace very thin chert lenses; slightly bioturbated, strong HCl reaction   |                                |  |
|   | 172.3         | 5.0         | 3:45<br>2:32<br>2:32<br>2:48<br>2:35         | (4.7)<br>94%                                      | (4.7)<br>94%  | Run 33                |              |   | RUN 33: 0.3' Core loss-left in hole at termination of boring/coring  |                                |  |
|   | 177.3         |             |  |   |               |                       |              |   | LIMESTONE (MICRITE/WACKESTONE), gray (N 6/), strong, thinly bedded and nodular (to 175.8ft) becoming laminated to very thinly bedded, fresh, with trace to few wispy/wavy Calcareous SILTSTONE partings, dark gray (N 4/); strong HCl reaction (Lincolnshire Formation-Eidson Member-Unit A)   |                                |  |
|   |               |             |  |   |               |                       |              |   | Boring and coring terminated at 177.3 feet.  |                                |  |

CLINCH RIVER SMR CORE FINAL CLINCH FINAL LOGS.GPJ CLINCH BORING DATA TEMPLATE.GDT 3/5/14