



| WBS ELEMENT NO33454.1.1  |                       | ID No. B-4096                    | COUNTY Davidson               | GEOLOGIST P. Weaver/P. Alton |                   |    |    |    |    |           |      |                           |       |   |  |
|--|-----------------------|----------------------------------|-------------------------------|------------------------------|-------------------|----|----|----|----|-----------|------|---------------------------|-------|---|--|
| SITE DESCRIPTION Bridge 140 Over Rich Fork Creek on US 29-70/I-85 Business |                       |                                  |                               |                              | GROUND WATER (ft) |    |    |    |    |           |      |                           |       |   |  |
| BORING NO. B1-A  | BORING LOCATION 20+11 | OFFSET 19ft LT                   | ALIGNMENT -L-                 | 0 HR.                        | NM                |    |    |    |    |           |      |                           |       |   |  |
| COLLAR ELEV. 656.4 ft  | NORTHING 771983.07    | EASTING 1651394.29               | 24 HR. 4.8                    |                              |                   |    |    |    |    |           |      |                           |       |   |  |
| TOTAL DEPTH 66.0 ft  | DRILL MACHINE CME 850 | DRILL METHOD Wash Rotary/HQ Core | HAMMER TYPE 140 lb. Automatic |                              |                   |    |    |    |    |           |      |                           |       |   |  |
| DATE STARTED 2/18/04   | COMPLETED 2/20/04     | SURFACE WATER DEPTH NA           |                               |                              |                   |    |    |    |    |           |      |                           |       |   |  |
| ELEV. (ft)   | DEPTH (ft)            | BLOW COUNT                       |                               |                              | BLOWS PER FOOT    |    |    |    |    | SAMP. NO. | LOG  | SOIL AND ROCK DESCRIPTION |       |   |  |
|  |                       | 0.5ft                            | 0.5ft                         | 0.5ft                        | 0                 | 20 | 40 | 60 | 80 |           |      |                           | 100   |   |  |
| 656.4  |                       |                                  |                               |                              |                   |    |    |    |    |           |      | 656.4                     | 0.00  |   |  |
| 655.4  | 1.0                   | 3                                | 2                             | 3                            |                   |    |    |    |    |           | W    | 653.4                     | 3.0   | ALLUVIAL: Loose, Brown, Silty, Fine to Coarse SAND  |  |
| 652.9  | 3.5                   | 3                                | 2                             | 3                            |                   |    |    |    |    |           | SS-8 | 20.6%                     | 647.4 | 9.0   | ALLUVIAL: Medium Stiff to Stiff, Grey, Clayey, Fine Sandy SILT |
| 650.4  | 6.0                   | 3                                | 4                             | 5                            |                   |    |    |    |    |           | ST-1 | W                         | 647.4 | 9.0   |  |
| 647.9  | 8.5                   | 3                                | 3                             | 3                            |                   |    |    |    |    |           | W    | 645.4                     | 11.0  | ALLUVIAL: Loose, Grey, Coarse to Fine SAND  |  |
| 642.9  | 13.5                  | 1                                | 1                             | 1                            |                   |    |    |    |    |           | W    | 639.4                     | 17.0  | ALLUVIAL: Soft, Grey, Clayey, Fine Sandy SILT   |  |
| 637.9  | 18.5                  | 3                                | 2                             | 1                            |                   |    |    |    |    |           | W    | 634.9                     | 21.5  | ALLUVIAL: Very Loose, Grey, Silty, Coarse to Fine SAND  |  |
| 632.9  | 23.5                  | 14                               | 14                            | 19                           |                   |    |    |    |    |           | SS-9 | 19.4%                     | 624.9 | 31.5  | RESIDUAL: Hard, Grey with White, Coarse to Fine Sandy SILT     |
| 627.9  | 28.5                  | 18                               | 22                            | 38                           |                   |    |    |    |    |           | M    | 624.9                     | 31.5  | WEATHERED ROCK: Grey Metadiorite  |  |
| 622.9  | 33.5                  | 52                               | 48/0.3                        |                              |                   |    |    |    |    |           |      | 619.9                     | 36.5  | CRYSTALLINE ROCK: Grey with White, Slightly Weathered, Hard, Metadiorite with Close to Moderately Close Fracture Spacing                            |  |
| 620.1  | 36.3                  | 60/0.2                           |                               |                              |                   |    |    |    |    |           |      | 615.6                     | 40.8  | WEATHERED ROCK: Brown and Grey with White, Severely Weathered, Soft to Very Soft, Metadiorite with Close to Very Close Fracture Spacing             |  |
| 610.1  | 46.3                  | 100/0.4                          |                               |                              |                   |    |    |    |    |           |      | 609.6                     | 46.8  | CRYSTALLINE ROCK: Brown and Grey with White, Moderately Weathered, Medium to Moderately Hard, Metadiorite with Very Close to Close Fracture Spacing |  |
|  |                       |                                  |                               |                              |                   |    |    |    |    |           | RS-1 | 601.5                     | 54.9  | CRYSTALLINE ROCK: Grey with White, Slightly to Very Slightly Weathered, Hard to Very Hard, Metadiorite with Wide Fracture Spacing                   |  |
|  |                       |                                  |                               |                              |                   |    |    |    |    |           |      | 590.4                     | 66.0  | Coring Terminated at Elevation 590.4 feet in Crystalline Rock: Metadiorite  |  |

Note: Drill fluid = creek water + bentonite  
Mud density = 64.5 lbs./cu. ft.  
Slurry was used for soil and weathered rock drilling.  
Creek water alone was used for rock coring.

NCDOT BORE SINGLE 07104004.GPJ NC DOT.GDT 4/6/04



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|--|-----------------------|----------------------------------|---|------------------------------|-------------------|-----------|----------|---------|-----|---|
| SITE DESCRIPTION Bridge 140 Over Rich Fork Creek on US 29-70/I-85 Business |                       |                                  |   |                              | GROUND WATER (ft) |           |          |         |     |   |
| BORING NO. B1-A  | BORING LOCATION 20+11 | OFFSET 19ft LT                   | ALIGNMENT -L-                             | 0 HR.                        | NM                |           |          |         |     |   |
| COLLAR ELEV. 656.4 ft  | NORTHING 771983.07    | EASTING 1651394.29               | 24 HR. 4.8                                |                              |                   |           |          |         |     |   |
| TOTAL DEPTH 66.0 ft  | DRILL MACHINE CME 850 | DRILL METHOD Wash Rotary/HQ Core | HAMMER TYPE 140 lb. Automatic             |                              |                   |           |          |         |     |   |
| DATE STARTED 2/18/04   | COMPLETED 2/20/04     | SURFACE WATER DEPTH NA           |   |                              |                   |           |          |         |     |   |
| CORE SIZE HQ   |                       | TOTAL RUN 31.1 ft                |   | DRILLER R. Toothman          |                   |           |          |         |     |   |
| ELEV. (ft)   | DEPTH (ft)            | RUN (ft)                         | DRILL RATE (Min/ft)                       | RUN                          |                   | SAMP. NO. | STRATA   |         | LOG | DESCRIPTION AND REMARKS   |
|  |                       |                                  |   | REC. (%)                     | RQD (%)           |           | REC. (%) | RQD (%) |     |   |
|  |                       |                                  |   |                              |                   |           |          |         |     | Begin Coring @ 34.3 ft  |
| 622.1  | 34.3                  | 2.0                              | 2:45                                      | (0.0)                        | NA                |           | (0.0)    | NA      |     | WEATHERED ROCK: Grey Metadiorite  |
| 620.1  | 36.3                  | 2.30                             | 2:30                                      | 0%                           |                   |           | 0%       |         |     |   |
| 619.9  | 36.5                  | 4.8                              | N=60/0.2<br>4:00/0.8                      | (4.6)                        | (4.3)             |           | (4.3)    | (4.3)   |     | CRYSTALLINE ROCK: Grey with White, Slightly Weathered, Hard, Metadiorite with Close to Moderately Close Fracture Spacing  |
| 615.1  | 41.3                  | 5.0                              | 4:45<br>4:30<br>4:00<br>4:00              | 96%                          | 90%               |           | 100%     | 100%    |     | 1 jt @ 20°<br>1 partially healed vertical fracture<br>1 jt @ 50°  |
|  |                       |                                  | 2:30<br>3:30<br>3:00<br>2:45<br>3:30      | (2.2)                        | NA                |           | (2.5)    | NA      |     | WEATHERED ROCK: Brown and Grey with White, Severely Weathered, Soft to Very Soft, Metadiorite with Close to Very Close Fracture Spacing   |
| 610.1  | 46.3                  | 4.6                              | N=100/0.4<br>3:30<br>4:00<br>5:00<br>5:30 | (4.5)                        | (0.0)             |           | (6.8)    | (0.0)   |     | CRYSTALLINE ROCK: Brown and Grey with White, Moderately Weathered, Medium to Moderately Hard, Metadiorite with Very Close to Close Fracture Spacing                             |
| 609.7  | 46.7                  | 3.9                              | 4:15<br>5:00<br>5:30                      | (2.6)                        | (0.3)             |           | 67%      | 8%      |     | Iron staining of fabric<br>All fractures are heavily iron stained<br>Numerous high angle (>60°) fractures throughout  |
| 605.1  | 51.3                  | 5.0                              | 6:00<br>7:00/0.9<br>0:35/0.1              | (1.1)                        | (1.1)             | RS-1      | (11.1)   | (11.1)  |     | *Note: Run #4 cut short due to clogged bit<br>CRYSTALLINE ROCK: Grey with White, Slightly to Very Slightly Weathered, Hard to Very Hard, Metadiorite with Wide Fracture Spacing |
| 601.2  | 55.2                  | 4.7                              | 4:00<br>4:30<br>6:30                      | (4.7)                        | (4.7)             |           | 100%     | 100%    |     | 1 natural fracture @ 20°  |
| 600.1  | 56.3                  | 1.1                              | 3:10<br>7:00/0.9<br>0:35/0.1              | (5.0)                        | (5.0)             |           | 100%     | 100%    |     | *Note: Run #7 cut short to accommodate 0.5 ft. of core left in hole from Run #6   |
| 595.1  | 61.3                  | 4.7                              | 4:00<br>4:00<br>5:00<br>4:30<br>6:30      | (4.7)                        | (4.7)             |           | 100%     | 100%    |     |   |
| 590.4  | 66.0                  |                                  | 3:30<br>3:30<br>3:45<br>4:10<br>4:30/0.7  |                              |                   |           |          |         |     | Coring Terminated at Elevation 590.4 feet in Crystalline Rock: Metadiorite  |

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