



STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 CONSTRUCTION AND
 MATERIALS BUREAU
 CENTRAL LABORATORY

BORING LOG

**Springfield
 BF 0134(43)
 VT 11 Culvert 57**

Boring No.: **B-101**

Page No.: 1 of 1

Pin No.: 13c334

Checked By: **END**

Boring Crew: Gomes, Judkins, Emerson
 Date Started: 7/25/16 Date Finished: 7/25/16
 VTSPG NAD83: N 291889.55 ft E 1637993.49 ft
 Station: 327+95 Offset: 18.81
 Ground Elevation: 568.0 ft

Type: WB Casing SS Sampler
 I.D.: 4 in 1.5 in
 Hammer Wt: N.A. 140 lb.
 Hammer Fall: N.A. 30 in.
 Hammer/Rod Type: Auto/AWJ
 Rig: CME 45C SKID SUB>><<SUB>> = 1.42

| Groundwater Observations | | |
|--------------------------|------------|------------------|
| Date | Depth (ft) | Notes |
| 07/25/16 | | No W.T. observed |
| | | |

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
|------------|------------|---|--------------------|--------------------|----------|--------|---------|
| | | Asphalt Pavement, 0.0 ft - 0.5 ft | | | | | |
| 2.5 | | A-1-b, GrSa, gry-brn, Moist, Rec. = 0.8 ft Field Note:, Rollercone, Cleaned out casing | 2-3-3-3 (6) | 10.5 | 33.5 | 55.8 | 10.7 |
| 5.0 | | A-2-4, GrSiSa, gry-brn, Moist, Rec. = 0.8 ft Field Note:, Rollercone, Cleaned out casing | 4-6-8-8 (14) | 9.3 | 26.2 | 44.6 | 29.2 |
| 7.5 | | A-2-4, SiSa, gry-brn, Moist, Rec. = 1.0 ft Field Note:, Rollercone, Cleaned out casing | 8-4-7-5 (11) | 9.0 | 18.3 | 52.2 | 29.5 |
| | | A-3, Sa, brn, Moist, Rec. = 1.0 ft | 3-4-3-3 (7) | 12.9 | 5.3 | 86.7 | 8.0 |
| | | A-3, GrSa, brn, Moist, Rec. = 0.5 ft | 1-R@3.5" (R) | 17.0 | 20.8 | 72.1 | 7.1 |
| 10.0 | | Hole stopped @ 9.8 ft Remarks: Hole collapsed at 9.3 feet. 1.) Hit culvert at 9.8 feet. Aborted drilling operations. | | | | | |

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
 <<SUB>><<SUB>> is the hammer energy correction factor.
 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.



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BORING LOG

Springfield
 BF 0134(43)
 VT 11 Culvert 57

Boring No.: **B-101A**
 Page No.: 1 of 1
 Pin No.: 13c334
 Checked By: **END**

Boring Crew: Gomes, Judkins, Emerson
 Date Started: 7/25/16 Date Finished: 7/26/16
 VTSPG NAD83: N 291890.35 ft E 1637998.41 ft
 Station: 327+99.99 Offset: 18.81
 Ground Elevation: 567.9 ft

Type: WB Sampler SS
 I.D.: 4 in 1.5 in
 Hammer Wt: N.A. 140 lb.
 Hammer Fall: N.A. 30 in.
 Hammer/Rod Type: Auto/AWJ
 Rig: CME 45C SKID = 1.42

| Groundwater Observations | | |
|--------------------------|------------|----------------------|
| Date | Depth (ft) | Notes |
| 07/26/16 | 16.6 | W.T. before drilling |
| | | |
| | | |

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Run (Dip deg.) | Core Rec. % (RQD %) | Drill Rate minutes/ft | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
|------------|------------|---|----------------|---------------------|-----------------------|--------------------|--------------------|----------|--------|---------|
| | | Asphalt Pavement, 0.0 ft - 0.43 ft | | | | | | | | |
| 5 | | | | | | | | | | |
| 10 | | Field Note: NXDC, Cleaned out casing Field Note: No Recovery, Rock stuck in end of sampler | | | | 6-7-11-9 (20) | | | | |
| 15 | | A-1-a, SaGr, brn, Moist, Rec. = 0.5 ft, Lab Note: Broken rock was within sample Field Note: NXDC, Cleaned out casing | | | | 7-7-11-9 (18) | 12.3 | 50.1 | 42.7 | 7.2 |
| | | A-1-a, SaGr, brn, Moist, Rec. = 0.1 ft 16.4 ft - 17.0 ft | | | | 11-13-11-13 (24) | 8.9 | 73.2 | 22.7 | 4.1 |
| | | A-1-a, SaGr, brn, Moist, Rec. = 0.3 ft 18.3 ft - 19.0 ft | | | | 16-15-6-5 (21) | 11.3 | 59.7 | 31.2 | 9.1 |
| 20 | | A-2-4, SiSa, brn, Moist, Rec. = 1.0 ft | | | | 2-2-2-2 (4) | 29.2 | 0.8 | 75.4 | 23.8 |
| 25 | | 24.4 ft - 25.0 ft A-1-b, SaGr, gry-brn, Moist, Rec. = 0.5 ft, Lab Note: Broken and weathered rock was within sample | | | | 12-44-R@5" (R) | 12.0 | 54.8 | 30.1 | 15.1 |
| 30 | | 28.7 ft - 30.0 ft A-1-b, SaGr, blk, Moist, Rec. = 0.1 ft, Lab Note: Broken and weathered rock was within sample | 1 (70) | 94 (21) | 3 | R@1" (R) | 8.2 | 52.3 | 32.3 | 15.4 |
| 35 | | 30.1 ft - 35.1 ft, Gray to dark gray, Biotite-muscovite-quartz-plagioclase gneissic SCHIST, Slightly vuggy along some plagioclase foliations, rust and brown staining along joints. Hard, Slightly weathered, Poor rock, NX, RMR=39 | | | 4 | | | | | |
| 40 | | 35.1 ft - 40.1 ft, Gray to dark gray, Biotite-muscovite-quartz-plagioclase gneissic SCHIST, Few vugs along plagioclase foliations and rust staining along joints. Hard, Slightly weathered, Fair rock, NX, RMR=50 | 2 (70) | 100 (66) | 3 | | | | | |
| | | Hole stopped @ 40.1 ft | | | 2 | | | | | |
| | | Remarks: Hole collapsed at 19.1 feet. | | | 2 | | | | | |
| | | | | | 2 | | | | | |
| | | | | | 2 | | | | | |
| | | | | | 3 | | | | | |

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 2. <<SUB>><<SUB>> is the hammer energy correction factor.
 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.



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BORING LOG

Springfield
BF 0134(43)
VT 11 Culvert 57

Boring No.: B-102
Page No.: 1 of 1
Pin No.: 13c334
Checked By: END

Boring Crew: Judkins, Gomes
Date Started: 7/26/16 Date Finished: 7/27/16
VTSPG NAD83: N 291911.84 ft E 1637938.37 ft
Station: 327+44.37 Offset: -12.45
Ground Elevation: 569.9 ft

Type: WB Sampler SS
I.D.: 4 in 1.5 in
Hammer Wt: N.A. 140 lb.
Hammer Fall: N.A. 30 in.
Hammer/Rod Type: Auto/AWJ
Rig: CME 45C SKT<SUB><<SUB>> = 1.42

| Groundwater Observations | | |
|--------------------------|------------|----------------------|
| Date | Depth (ft) | Notes |
| 07/27/16 | 12.1 | W.T. after drilling |
| 07/27/16 | 17.0 | W.T. before drilling |

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Run (Dip deg.) | Core Rec. % (RCD %) | Drill Rate minutes/ft | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
|------------|------------|---|----------------|---------------------|-----------------------|----------------------|--------------------|----------|--------|---------|
| | | Asphalt Pavement, brn, Moist, 0.0 ft - 0.58 ft | | | | | | | | |
| | | A-1-b, GrSa, brn, Moist, Rec. = 1.4 ft | | | | 10-15-18-8 (33) | 9.0 | 31.9 | 53.4 | 14.7 |
| | | Field Note:, NXDC, Cleaned out casing | | | | 8-11-14-14 (25) | 10.0 | 10.9 | 60.6 | 28.5 |
| | | A-2-4, SiSa, brn, Moist, Rec. = 1.4 ft | | | | 24-18-14-12 (32) | 7.6 | 36.1 | 49.6 | 14.3 |
| | | Field Note:, NXDC, Cleaned out casing | | | | 9-9-10-5 (19) | 9.0 | 25.2 | 59.0 | 15.8 |
| | | A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft | | | | 3-3-2-2 (5) | 25.0 | 8.2 | 39.6 | 52.2 |
| | | Field Note:, Rollercone, Cleaned out casing | | | | 3-3-2-7 (5) | 19.2 | 14.8 | 53.8 | 31.4 |
| | | A-2-4, GrSa, brn, Moist, Rec. = 1.0 ft | | | | 7-5-3-4 (8) | 17.4 | 21.7 | 60.6 | 17.7 |
| | | A-4, SaSi, brn, Moist, Rec. = 0.9 ft | | | | 3-5-14-15 (19) | 11.9 | 33.9 | 54.2 | 11.9 |
| | | Field Note:, Rollercone, Cleaned out casing | | | | 15-12-18-12 (30) | 14.0 | 32.5 | 51.9 | 15.6 |
| | | A-2-4, SiGrSa, brn, Moist, Rec. = 0.7 ft | | | | 9-12-26-25 (38) | 13.7 | 31.4 | 42.5 | 26.1 |
| | | Field Note:, NXDC, Cleaned out casing | | | | | | | | |
| | | A-2-4, SiSa, brn, Moist, Rec. = 1.0 ft, Lab Note: Broken rock was within sample | | | | 15-20-20-R@2.5" (40) | 16.2 | 16.8 | 52.8 | 30.4 |
| | | Field Note:, NXDC, Cleaned out casing | | | | | | | | |
| | | A-2-4, GrSa, gry, Moist, Rec. = 0.9 ft, Lab Note: Broken rock was within sample | | | | R@5" (R) | 15.8 | 34.8 | 48.3 | 16.9 |
| | | Field Note:, NXDC, Cleaned out casing | | | | | | | | |
| | | Field Note:, No Recovery | | | | R@3.5 (R) | | | | |
| | | Field Note:, NXDC, Cleaned out casing | | | | | | | | |
| | | A-1-b, SaGr, gry, Moist, Rec. = 0.3 ft, Lab Note: Broken rock was within sample | | | | R@5" (R) | 7.6 | 58.9 | 22.8 | 18.3 |
| | | 42.0 ft - 47.0 ft, Gray to white, Muscovite-biotite-plagioclase-quartz granitic GNEISS, Rust and brown staining along joints. Hard, Slightly weathered, Fair rock, NX, RMR=47 | 1 (65) | 80 (18) | 5 3 3 2 2 | | | | | |
| | | Hole stopped @ 47.0 ft | | | | | | | | |
| | | Remarks: Hole collapsed at 14.4 feet. | | | | | | | | |

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