



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

BORING LOG

New Haven
 RREW001C
 MP 91.90

Boring No.: B-101

Page No.: 1 of 1

Pin No.: 13g524

Checked By: MLM

Boring Crew: New England Boring Contractors, DuBois & King
 Date Started: 11/22/16 Date Finished: 11/22/16
 VTSPG NAD83: N 575504.59 ft E 1460794.08 ft
 Station: 4854+21.44 Offset: 0.00
 Ground Elevation: 319.83 ft

Casing: WB Sampler: SS
 Type: WB I.D.: 4 in 1.5 in
 Hammer Wt: N.A. 140 lb.
 Hammer Fall: N.A. 30 in.
 Hammer/Rod Type: Auto/NWJ
 Rig: Volvo D53 CE = Unknown

| Groundwater Observations | | |
|--------------------------|------------|-------|
| Date | Depth (ft) | Notes |
| | | |
| | | |
| | | |

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % | LL % | PI % |
|------------|------------|--|--------------------|--------------------|----------|--------|---------|------|------|
| 5 | | Field Note:, Railroad Ballast | | | | | | | |
| 10 | | Visual Description:, CI, Dk/gry, Moist, Rec. = 0.7 ft | 20-11-7-8 (18) | 38.0 | | | | | |
| | | Visual Description:, CI, Dk/gry, Moist, Rec. = 1.0 ft | 5-5-5-7 (10) | 38.0 | | | | | |
| 15 | | Visual Description:, CI, Dk/gry, Moist, Rec. = 1.6 ft | 6-4-3-6 (7) | 36.1 | | | | | |
| | | Visual Description:, CI, Dk/gry, Moist, Rec. = 1.7 ft, Lab Note: Similar Atterberg limits to 19-21 foot sample | 2-6-3-3 (9) | 36.2 | | | | | |
| 20 | | A-7-6, CI, Dk/gry, Moist, Rec. = 2.0 ft | 2-3-4-5 (7) | 41.4 | 1.7 | 1.4 | 96.9 | 58 | 31 |
| | | A-7-6, CI, Dk/gry, Moist, Rec. = 2.0 ft, Lab Note: Similar Atterberg limits to 19-21 foot sample | 2-3-2-3 (5) | 44.9 | 2.0 | 2.3 | 95.7 | | |
| | | A-7-6, CI, Dk/gry, Moist, Rec. = 2.0 ft, Lab Note: Similar Atterberg limits to 19-21 foot sample | 2-2-4-5 (6) | 44.2 | 2.0 | 2.6 | 95.4 | | |
| 25 | | Field Note:, 2" thick layer of organics at 24.5 feet | | | | | | | |
| | | A-6, SiCl, Dk/gry, Moist, Lab Note: Similar Atterberg limits to 27-29 foot sample | 2-3-6-2 (9) | 45.0 | 8.1 | 17.4 | 74.5 | | |
| | | A-6, SiCl, Dk/gry, Moist, Rec. = 2.0 ft | 14-17-19-25 (36) | 32.7 | 7.3 | 18.3 | 74.4 | 29 | 12 |
| 30 | | A-6, SiSaCl, Dk/gry, Moist, Rec. = 1.8 ft, Lab Note: Similar Atterberg limits to 27-29 foot sample | 16-14-22-13 (36) | 28.6 | 14.7 | 26.3 | 59.0 | | |
| | | A-6, SiCl, Dk/gry, Moist, Rec. = 0.5 ft | 20-18-R (R) | 23.2 | 36.4 | 19.4 | 44.2 | 28 | 12 |
| 35 | | Hole stopped @ 33.0 ft | | | | | | | |

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 Crew: New England Boring Contractors, DuBois & King | | Type: | Casing | Sampler | Groundwater Observations | | | | |
| Date Started: 11/29/16 | Date Finished: 11/29/16 | I.D.: | WB | SS | Date | Depth (ft) | Notes | | |
| VTSPG NAD83: N 575518.47 ft E 1460795.91 ft | | Hammer Wt: | 4 in | 1.5 in | | | | | |
| Station: 4854+35.44 | Offset: 0.00 | Hammer Fall: | N.A. | 140 lb. | | | | | |
| Ground Elevation: 319.91 ft | | Hammer/Rod Type: | N.A. | 30 in. | | | | | |
| | | Hammer/Rod Type: | Auto/NWJ | | | | | | |
| | | Rig: | Volvo D53 | CE = Unknown | | | | | |

| | | | | | | | | | |
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| Boring Crew: New England Boring Contractors, DuBois & King | | Type: | Casing | Sampler | Groundwater Observations | | | | |
| Date Started: 11/29/16 | Date Finished: 11/29/16 | I.D.: | WB | SS | Date | Depth (ft) | Notes | | |
| VTSPG NAD83: N 575518.47 ft E 1460795.91 ft | | Hammer Wt: | 4 in | 1.5 in | | | | | |
| Station: 4854+35.44 | Offset: 0.00 | Hammer Fall: | N.A. | 140 lb. | | | | | |
| Ground Elevation: 319.91 ft | | Hammer/Rod Type: | N.A. | 30 in. | | | | | |
| | | Hammer/Rod Type: | Auto/NWJ | | | | | | |
| | | Rig: | Volvo D53 | CE = Unknown | | | | | |

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Run (Dip deg.) | Core Rec. % (ROD %) | Drill Rate (minutes/ft) | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % | LL % | PI % |
|------------|------------|--|----------------|---------------------|-------------------------|--------------------|--------------------|----------|--------|---------|------|------|
| | | | | | | | | | | | | |
| | | Field Note: Railroad Ballast | | | | | | | | | | |
| 2.5 | | | | | | | | | | | | |
| 5.0 | | | | | | | | | | | | |
| 7.5 | | | | | | | | | | | | |
| 10.0 | | | | | | | | | | | | |
| 12.5 | | | | | | | | | | | | |
| 15.0 | | | | | | | | | | | | |
| 17.5 | | | | | | | | | | | | |
| 20.0 | | A-7-6, Cl, Dk/gry, Moist, Rec. = 1.7 ft, Lab Note: Similar Atterberg limits to 20-22 foot sample | | | | 3-3-4-5 (7) | 39.6 | 1.9 | 1.1 | 97.0 | | |
| | | A-7-6, Cl, Dk/gry, Moist, Rec. = 2.0 ft | | | | 2-3-4-5 (7) | 41.4 | 0.4 | 0.8 | 98.8 | 56 | 31 |

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Run (Dip deg.) | Core Rec. % (ROD %) | Drill Rate (minutes/ft) | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % | LL % | PI % |
|------------|------------|--|----------------|---------------------|-------------------------|--------------------|--------------------|----------|--------|---------|------|------|
| | | | | | | | | | | | | |
| 22.5 | | A-7-6, Cl, Dk/gry, Moist, Rec. = 2.0 ft, Lab Note: Similar Atterberg limits to 20-22 foot sample | | | | 3-3-4-5 (7) | 46.4 | 1.4 | 1.1 | 97.5 | | |
| 25.0 | | A-7-6, SiCl, Dk/gry, Moist, Rec. = 2.0 ft, Lab Note: A thick layer of organic material was within sample | | | | 3-5-9-9 (14) | 43.4 | 1.1 | 9.6 | 89.3 | 43 | 16 |
| 27.5 | | A-7-6, SiCl, Dk/gry, Moist, Rec. = 2.0 ft, Lab Note: Similar Atterberg limits to 24-26 foot sample 26.75 ft - 31.55 ft, Blue gray, META-LIMESTONE, with few calcite veins. Slight brown staining on joints. Hard, Unweathered | | | | 4-5-7-9 (12) | 40.2 | 1.5 | 8.5 | 90.0 | | |
| | | A-6, SiCl, Dk/gry, Moist, Rec. = 0.3 ft | | | | R@5" (R) | 38.4 | 5.5 | 17.3 | 77.2 | 39 | 18 |
| | | A-6, GrSaCl, Dk/gry, Moist, Rec. = 0.15 ft, Lab Note: Insufficient sample size to perform Atterberg limits tests. Atterberg limits similar to 28-28.5 foot sample. 28.55 ft - 29.75 ft, White to light gray, Biotite-muscovite-quartz-plagioclase GNEISS, with faint rust staining on joints. Moderately hard, Very slightly weathered, NX | 1 (N/A) | 60 (43) | 3 | | 45.5 | 21.9 | 26.0 | 50.1 | | |
| 30.0 | | | | | 4 | | | | | | | |
| | | | | | 4 | | | | | | | |
| | | | | | 4 | | | | | | | |
| 32.5 | | | | | 3 | | | | | | | |
| 35.0 | | 33.55 ft - 34.25 ft, Gray, Loose, broken META-LIMESTONE, sub-rounded QUARTZ pebbles, calcareous SHALE, and sub-angular red SANDSTONE. NX | 2 (N/A) | 48 (0) | 5 | | | | | | | |
| | | 34.25 ft - 35.05 ft, Gray, META-LIMESTONE | | | 5 | | | | | | | |
| | | 35.05 ft - 35.75 ft, Tan, Loose, broken, sub-rounded QUARTZ, pebbles, black fissle calcareous SHALE, red sub-angular SANDSTONE pebbles, and gray META-LIMESTONE | | | 5 | | | | | | | |
| | | 35.75 ft - 36.65 ft, Gray, META-LIMESTONE, with few calcite veins. Hard, Slightly weathered | | | 5 | | | | | | | |
| 37.5 | | | | | 5 | | | | | | | |
| 40.0 | | Hole stopped @ 38.55 ft | | | | | | | | | | |
| | | Remarks: 1. Field Note: 28.4-28.55 foot sample was recovered from auger. 2. Rock core sampled cannot be confirmed as bedrock due to variability in lithology and variability in roundness of rock. | | | | | | | | | | |

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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 2 NEW HAVEN RREW 001C.GPJ VERMONT.AOT.LSDT 12/22/16