



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

BORING LOG

**Moretown
BF 0167(16)
VT-100 Bridge 2**

Boring No.: **B-101**

Page No.: **1 of 2**

Pin No.: **16b010**

Checked By: **SPM**



STATE OF VERMONT
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BORING LOG

**Moretown
BF 0167(16)
VT-100 Bridge 2**

Boring No.: **B-101**

Page No.: **2 of 2**

Pin No.: **16b010**

Checked By: **SPM**

Boring Crew: <u>Gonyaw, Judkins, Olden</u>		Type: <u>WB</u>	Casing <u>SS</u>	Groundwater Observations		
Date Started: <u>10/10/17</u>	Date Finished: <u>10/11/17</u>	I.D.: <u>4 in</u>	<u>1.5 in</u>	Date	Depth (ft)	Notes
VTSPG NAD83: <u>N 636356.58 ft E 1569650.85 ft</u>		Hammer Wt: <u>N.A.</u>	<u>140 lb.</u>	<u>10/11/17</u>	<u>19.2</u>	<u>W.T. during drilling</u>
Station: <u>67+1.2</u>	Offset: <u>7.70</u>	Hammer Fall: <u>N.A.</u>	<u>30 in.</u>			
Ground Elevation: <u>622.1 ft</u>		Hammer/Rod Type: <u>Auto/AWJ</u>				
		Rig: <u>CME 45C SKID</u>	<u>CE = 1.42</u>			

Boring Crew: <u>Gonyaw, Judkins, Olden</u>		Type: <u>WB</u>	Casing <u>SS</u>	Groundwater Observations		
Date Started: <u>10/10/17</u>	Date Finished: <u>10/11/17</u>	I.D.: <u>4 in</u>	<u>1.5 in</u>	Date	Depth (ft)	Notes
VTSPG NAD83: <u>N 636356.58 ft E 1569650.85 ft</u>		Hammer Wt: <u>N.A.</u>	<u>140 lb.</u>	<u>10/11/17</u>	<u>19.2</u>	<u>W.T. during drilling</u>
Station: <u>67+1.2</u>	Offset: <u>7.70</u>	Hammer Fall: <u>N.A.</u>	<u>30 in.</u>			
Ground Elevation: <u>622.1 ft</u>		Hammer/Rod Type: <u>Auto/AWJ</u>				
		Rig: <u>CME 45C SKID</u>	<u>CE = 1.42</u>			

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 %
		Asphalt Pavement, 0.0 ft - 0.5 ft								
2.5		A-1-b, SaGr, gry, Moist, Rec. = 0.9 ft, Lab Note: Broken rock was within sample				12-11-13-15 (24)	8.9	60.5	21.5	18.0
		A-1-b, SaGr, brn, Moist, Rec. = 0.6 ft, Lab Note: Broken rock, decomposing wood, and wood fibers were within sample					9.1	49.1	37.3	13.6
		A-2-4, Sa, brn, Moist, Rec. = 1.3 ft				9-8-6-5 (14)	10.0	14.4	73.4	12.2
5.0		A-2-4, Sa, brn, Moist, Rec. = 1.4 ft				3-3-3-3 (6)	13.9	2.0	83.0	15.0
		Field Note: NXDC, Cleaned out casing								
7.5		A-4, GrSaSi, gry-brn, Moist, Rec. = 1.0 ft, Lab Note: Broken rock was within sample				10-11-17-26 (28)	11.9	23.3	38.3	38.4
		Field Note: NXDC, Cleaned out casing								
10.0		A-4, SiSa, brn, Moist, Rec. = 1.5 ft				17-24-30-R@5" (54)	12.6	8.9	46.9	44.2
		Field Note: NXDC, Cleaned out casing								
		A-2-4, SiSa, brn, Moist, Rec. = 1.1 ft				15-20-R@5" (R)	14.3	2.7	70.6	26.7
12.5		Field Note: NXDC, Cleaned out casing								
		A-4, SaSi, brn, Moist, Rec. = 1.3 ft				5-17-26-26 (43)	14.5	15.9	30.1	54.0
		Field Note: NXDC, Cleaned out casing								
15.0		A-4, SaSi, gry, Moist, Rec. = 1.4 ft				14-22-29-30 (51)	15.3	8.0	21.7	70.3
		Field Note: NXDC, Cleaned out casing								
17.5		A-4, SaSi, gry, Moist, Rec. = 1.4 ft				21-30-32-R@2.5" (62)	14.8	11.8	24.4	63.8
		Field Note: NXDC, Cleaned out casing								
		A-4, Si, gry, Moist, Rec. = 1.2 ft				21-41-R@5" (R)	12.7	16.7	17.0	66.3

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N values have not been corrected for hammer energy. CE 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.

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 %
		Field Note: NXDC, Cleaned out casing								
22.5		A-4, SaGrSi, gry, Moist, Rec. = 1.0 ft, Lab Note: Broken rock was within sample				41-19-R@1" (R)	12.2	24.3	22.7	53.0
		A-2-4, GrSiSa, gry-brn, Moist, Rec. = 1.1 ft, Lab Note: Broken rock was within sample				29-39-R@3.5" (R)	15.7	29.4	40.7	29.9
		Field Note: NXDC, Cleaned out casing								
25.0		A-2-4, SiSaGr, gry, Moist, Rec. = 0.4 ft				30-R@2.5" (R)	10.9	42.0	30.6	27.4
		Field Note: NXDC, Cleaned out casing								
27.5		A-1-a, Gr, gry, Moist, Rec. = 0.2 ft, Lab Note: Broken rock was within sample	1 (70)	68 (12)	3	R@3.5" (R)	6.5	75.3	17.1	7.6
		27.3 ft - 32.3 ft, Gray/green, Weakly foliated GREENSTONE, with brown staining and pitting along joints and core run. Moderately hard, Moderately weathered, Poor rock, NX, RMR=33			3					
30.0					4					
					2					
					3					
32.5		32.3 ft - 37.3 ft, Gray/green, Weakly foliated GREENSTONE, with brown staining and pitting along joints and core run. Moderately hard, Moderately weathered, Poor rock, NX, RMR=38	2 (70)	68 (29)	4					
					3					
					2					
					2					
					3					
37.5		Hole stopped @ 37.3 ft								
		Remarks: Hole collapsed at 5.7 feet.								

Notes:
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BORING LOG

Moretown
BF 0167(16)
VT-100 Bridge 2

Boring No.: **B-102**

Page No.: 1 of 1

Pin No.: 16b010

Checked By: SPM

Boring Crew: Olden, Judkins, Gonyaw

Date Started: 10/11/17 Date Finished: 10/16/17

VTSPG NAD83: N 636341.79 ft E 1569709.24 ft

Station: 67+62.0 Offset: 1.10

Ground Elevation: 623.8 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
Rtg: CME 45C SKID CE = 1.42

Groundwater Observations

Date	Depth (ft)	Notes
10/16/17		No W.T. observed

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 - 0.65 ft									
5		A-1-b, SaGr, Dk/gry, Moist, Rec. = 1.1 ft, Lab Note: Broken rock was within sample				10-15-11-12 (26)	9.9	54.6	26.0	19.4	
		A-1-b, SaGr, brn, Moist, Rec. = 0.3 ft				6.3	47.0	42.8	10.2		
		A-1-b, GrSa, brn, Moist, Rec. = 1.2 ft				10-13-12-16 (25)	7.1	33.7	53.3	13.0	
		A-1-b, GrSa, brn, Moist, Rec. = 1.6 ft Field Note:, NXDC, Cleaned out casing				7-15-13-12 (28)	4.9	40.0	48.9	11.1	
10		A-1-a, SaGr, gry, Moist, Rec. = 0.2 ft, Lab Note: Broken rock was within sample Field Note:, NXDC, Cleaned out casing				R@2.5" (R)	8.5	68.1	21.7	10.2	
		A-1-a, SaGr, gry-brn, Moist, Rec. = 0.7 ft, Lab Note: Broken rock was within sample Field Note:, NXDC, Cleaned out casing				5-10-16-17 (26)	8.4	68.2	20.6	11.2	
		A-4, SaSi, brn, Moist, Rec. = 0.8 ft				2-6-6-7 (12)	30.7	10.2	43.2	46.6	
		A-4, SiGr, brn, Moist, Rec. = 0.7 ft Field Note:, NXDC, Cleaned out casing				11-10-6-8 (16)	15.5	44.3	19.9	35.8	
15		A-4, SiSa, brn, Moist, Rec. = 1.3 ft Field Note:, NXDC, Cleaned out casing				9-10-20-23 (30)	15.7	16.0	44.0	40.0	
		Visual Description:, Broken Rock, gry, Moist, Rec. = 0.2 ft				R@3.5" (R)					
		17.3 ft - 22.3 ft, Gray/green, Weakly foliated GREENSTONE, with brown staining along joints. Hard, Very slightly weathered, Good rock, NX, RMR=69	1 (60-70)	94 (100)	3						
20											
25											
30											

Hole stopped @ 27.3 ft

Remarks:
Hole collapsed at 15.8 feet.

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
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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.

BORING LOG - 2 MORE TOWN BF0167(16).GPJ VERMONT AOT.GDT 1/19/17



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 CENTRAL LABORATORY

BORING LOG

Moretown
 BF 0167(16)
 VT-100 Bridge 2

Boring No.: B-103

Page No.: 1 of 1

Pin No.: 16b010

Checked By: SPM

Boring Crew: Gonyaw, Judkins, Olden
 Date Started: 10/04/17 Date Finished: 10/05/17
 VTSPG NAD83: N 636354.94 ft E 1569716.74 ft
 Station: 67+63.3 Offset: -14.00
 Ground Elevation: 624.3 ft

Casing: 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: Diedrich D25 CE = Unknown

Groundwater Observations		
Date	Depth (ft)	Notes
10/05/17		No W.T. observed

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 - 0.65 ft								
		A-1-b, SiSaGr, Dk/brn, Moist, Rec. = 1.4 ft, Lab Note: A lot of broken rock was within sample				9-11-9-13 (20)	11.5	52.8	26.4	20.8
		A-1-b, GrSa, brn, Moist, Rec. = 1.1 ft, Lab Note: Broken rock was within sample Field Note: NXDC, Cleaned out casing				14-16-23-R@0" (39)	3.5	37.7	47.1	15.2
5		A-1-b, GrSa, brn, Moist, Rec. = 1.5 ft, Lab Note: Broken rock was within sample Field Note: NXDC, Cleaned out casing				14-16-17-23 (33)	5.0	40.3	46.5	13.2
		A-1-b, SaGr, brn, Moist, Rec. = 1.2 ft, Lab Note: Broken rock and a small amount of decomposing wood and wood fibers were within sample Field Note: NXDC, Cleaned out casing				15-20-26-23 (46)	10.1	48.1	34.2	17.7
10		A-2-4, GrSiSa, brn, Moist, Rec. = 0.4 ft Field Note: NXDC, Cleaned out casing, Boulder				R@5" (R)	13.4	24.8	44.3	30.9
		A-4, SaSi, brn, Moist, Rec. = 1.4 ft Field Note: NXDC, Cleaned out casing				8-12-17-15 (29)	16.1	15.1	36.8	48.1
15		A-2-4, GrSiSa, gry, Moist, Rec. = 0.3 ft 15.4 ft - 20.4 ft, Gray/green, Sulfidic, weakly calcereous and weakly foliated GREENSTONE, with joints that are rusty-brown stained and pitted. Hard, Slightly weathered, Fair rock, NX, RMR=44	1 (60)	90 (40)	5	R@3.5 (R) Top of Bedrock @ 15.4 ft	11.0	23.0	49.0	28.0
		20.4 ft - 25.4 ft, Gray/green, Weakly foliated GREENSTONE, with rusty-brown staining along joints. Hard, Very slightly weathered, Fair rock, NX, RMR=49	2 (70)	100 (67)	4					
20					3					
					2					
					4					
25					3					

Hole stopped @ 25.4 ft

Remarks:
 Hole collapsed at 13.1 feet.

Notes:
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BORING LOG

Moretown
BF 0167(16)
VT-100 Bridge 2

Boring No.: B-104
Page No.: 1 of 1
Pin No.: 16b010
Checked By: SPM

Boring Crew: Gonyaw, Garrow, Emerson
Date Started: 10/03/17 Date Finished: 10/04/17
VTSPG NAD83: N 636289.65 ft E 1569875.65 ft
Station: 69+38.4 Offset: -14.30
Ground Elevation: 627.5 ft

Casing: WB Sampler: SS
Type: WB 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: Diedrich D25 CE = Unknown

Groundwater Observations		
Date	Depth (ft)	Notes
10/04/17	8.1	W.T. during 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 %
		A-1-b, SaGr, brn, Moist, Rec. = 1.4 ft				3-4-6-7 (10)	5.5	47.5	41.7	10.8
2.5		A-2-4, SiGrSa, brn, Moist, Rec. = 1.6 ft				7-6-6-6 (12)	9.5	28.5	43.8	27.7
5.0		A-2-4, SiGrSa, brn, Moist, Rec. = 1.2 ft				6-4-6-7 (10)	9.3	34.2	43.9	21.9
7.5		A-2-4, GrSiSa, blk, Moist, Rec. = 1.7 ft, Lab Note: A lot of decomposing wood and wood fibers were within sample				6-7-6-5 (13)	26.9	20.6	57.6	21.8
		Field Note:, NXDC, Cleaned out casing								
		Field Note:, No Recovery				3-R@2.5"				
10.0		8.7 ft - 13.7 ft, Gray/green, Sulfidic, weakly calcerous and weakly foliated GREENSTONE, with faint brown staining along joints. Hard, Unweathered, Good rock, NX, RMR=61	1 (60)	76 (88)	10	(R)Top of Bedrock @ 8.7 ft				
12.5					6					
15.0					5					
17.5					4					
					5					
15.0		13.7 ft - 18.7 ft, Gray/green, Sulfidic, weakly calcerous and weakly foliated GREENSTONE, Hard, Unweathered, Good rock, NX, RMR=69	2 (60)	100 (100)	3					
20.0					6					
22.5					8					
					9					
					7					
		Hole stopped @ 18.7 ft								

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
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BORING LOG

**Moretown
 BF 0167(16)
 VT-100 Bridge 2**

Boring No.: **B-105**
 Page No.: 1 of 1
 Pin No.: 16b010
 Checked By: **SPM**

Boring Crew: Gonyaw, Garrow, Olden
 Date Started: 10/03/17 Date Finished: 10/03/17
 VTSPG NAD83: N 636282.08 ft E 1569842.15 ft
 Station: 69+7.5 Offset: 2.00
 Ground Elevation: 627.9 ft

Casing: WB Sampler: SS
 Type: WB 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: Diedrich D25 CE = Unknown

Groundwater Observations		
Date	Depth (ft)	Notes
10/03/17	7.2	W.T. during 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 %
0.0 - 0.6	Asphalt Pavement	Asphalt Pavement, 0.0 ft - 0.6 ft								
		Field Note: Appears to be GrSa								
		Field Note: Appears to be Sa								
5										
		Field Note: Appears to be SiSa								
10										
		Field Note: Appears to be cobbles								
12.5 - 17.5		12.5 ft - 17.5 ft, Gray/green, Interlayered weakly calcareous and moderately foliated GREENSCHIST, with quartz veins and porphyroclastic GREENSTONE. Rusty-brown staining and pitting along joints and foliation. Moderately hard, Slightly weathered, Fair rock, NX, RMR=42	1 (80-90)	84 (43)	4	4				
					4					
					5					
					10					
					5					
17.5 - 22.5		17.5 ft - 22.5 ft, Gray/green, Interlayered weakly calcareous and moderately foliated GREENSCHIST, with quartz veins and porphyroclastic GREENSTONE. Rusty-brown staining and pitting along joints and foliation. Moderately hard, Slightly weathered, Fair rock, NX, RMR=53	2 (80-90)	100 (80)	2					
					3					
					3					
					4					
					3					
22.5		Hole stopped @ 22.5 ft								
25		Remarks: Hole collapsed at 12.2 feet.								

Notes:
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BORING LOG

Moretown
 BF 0167(16)
 VT-100 Bridge 2

Boring No.: B-106
 Page No.: 1 of 1
 Pin No.: 16b010
 Checked By: SPM

Boring Crew: Gonyaw, Garrow, Olden
 Date Started: 10/02/17 Date Finished: 10/02/17
 VTSPG NAD83: N 636282.92 ft E 1569795.27 ft
 Station: 68+64.7 Offset: 19.00
 Ground Elevation: 626.0 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: Diedrich D25 CE = Unknown

Groundwater Observations		
Date	Depth (ft)	Notes
10/02/17	14.5	W.T. during 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 %	
5		A-1-b, GrSa, brn, Moist, Rec. = 0.9 ft, Lab Note: Grass and grass roots were within sample				2-2-3-3 (5)	10.1	35.4	46.1	18.5	
		A-2-4, GrSiSa, brn, Moist, Rec. = 1.4 ft				3-4-2-3 (6)	6.5	24.7	50.1	25.2	
		A-2-4, SiGrSa, brn, Moist, Rec. = 1.6 ft				6-4-5-4 (9)	6.4	32.2	45.1	22.7	
		A-1-b, GrSa, brn, Moist, Rec. = 1.2 ft, Lab Note: Broken rock was within sample				4-4-5-4 (9)	5.3	38.8	43.6	17.6	
10		A-1-b, SiGrSa, brn, Moist, Rec. = 0.9 ft, Lab Note: Broken rock was within sample				4-7-10-16 (17)	6.4	35.3	44.3	20.4	
		A-2-4, SiSa, brn, Moist, Rec. = 1.4 ft				4-4-5-10 (9)	10.1	19.7	57.3	23.0	
		A-2-4, SiGrSa, brn, Moist, Rec. = 0.9 ft Field Note: NXDC, Cleaned out casing				6-2-2-3 (4)	12.5	32.4	45.2	22.4	
15		A-4, SaSi, brn, Wet, Rec. = 1.1 ft, Lab Note: A small amount of decomposing wood was within sample					31.1	18.5	35.8	45.7	
		A-2-4, GrSiSa, brn, Moist, Rec. = 0.8 ft, Lab Note: Broken rock and a lot of wood and wood fibers were within sample				4-4-R@3.5" (R)	34.2	28.0	36.7	35.3	
		15.3 ft - 20.3 ft, Gray/green, Weakly calcerous and moderately foliated GREENSCHIST, with quartz veins. Faint rusty-brown staining along joints. Hard, Unweathered, Good rock, NX, RMR=63	1 (55-60)	88 (96)	2						
		20.3 ft - 25.3 ft, Gray/green, Weakly calcerous and moderately foliated GREENSCHIST, with quartz and feldspar veins. Faint rust and brown staining on joints. Hard, Unweathered, Fair rock, NX, RMR=56	2 (60-70)	76 (87)	3						
20											
25											
Hole stopped @ 25.3 ft											
Remarks: Hole collapsed at 14.9 feet.											

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
 2. N values have not been corrected for hammer energy. CE 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.

BORING LOG - 2 MORE TOWN BF-0167(16).GPJ VERMONT AOT.GDT 11/9/17