Figures – Project Location, Surficial Geology, & Bedrock Geology Map

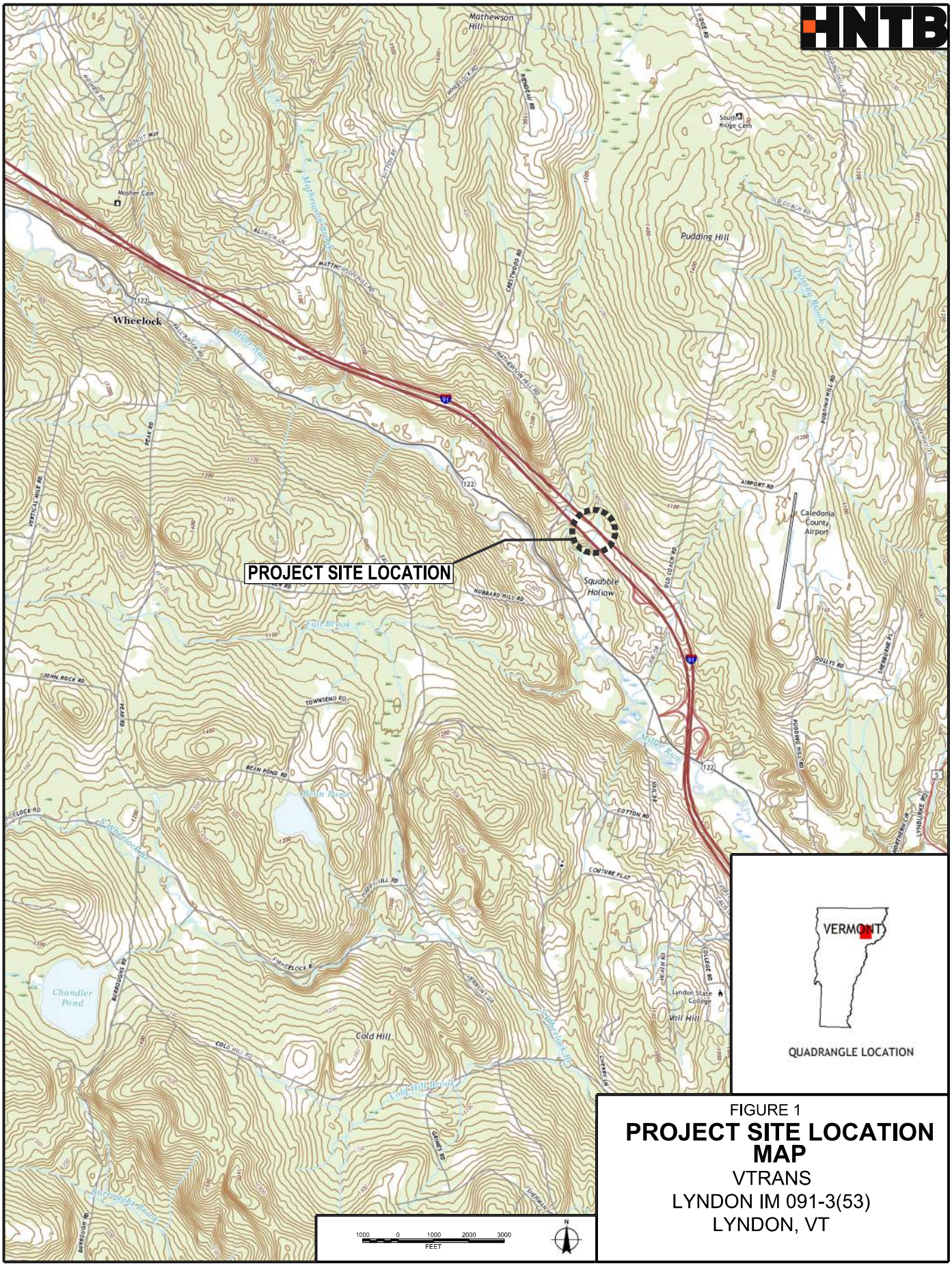


FIGURE 1

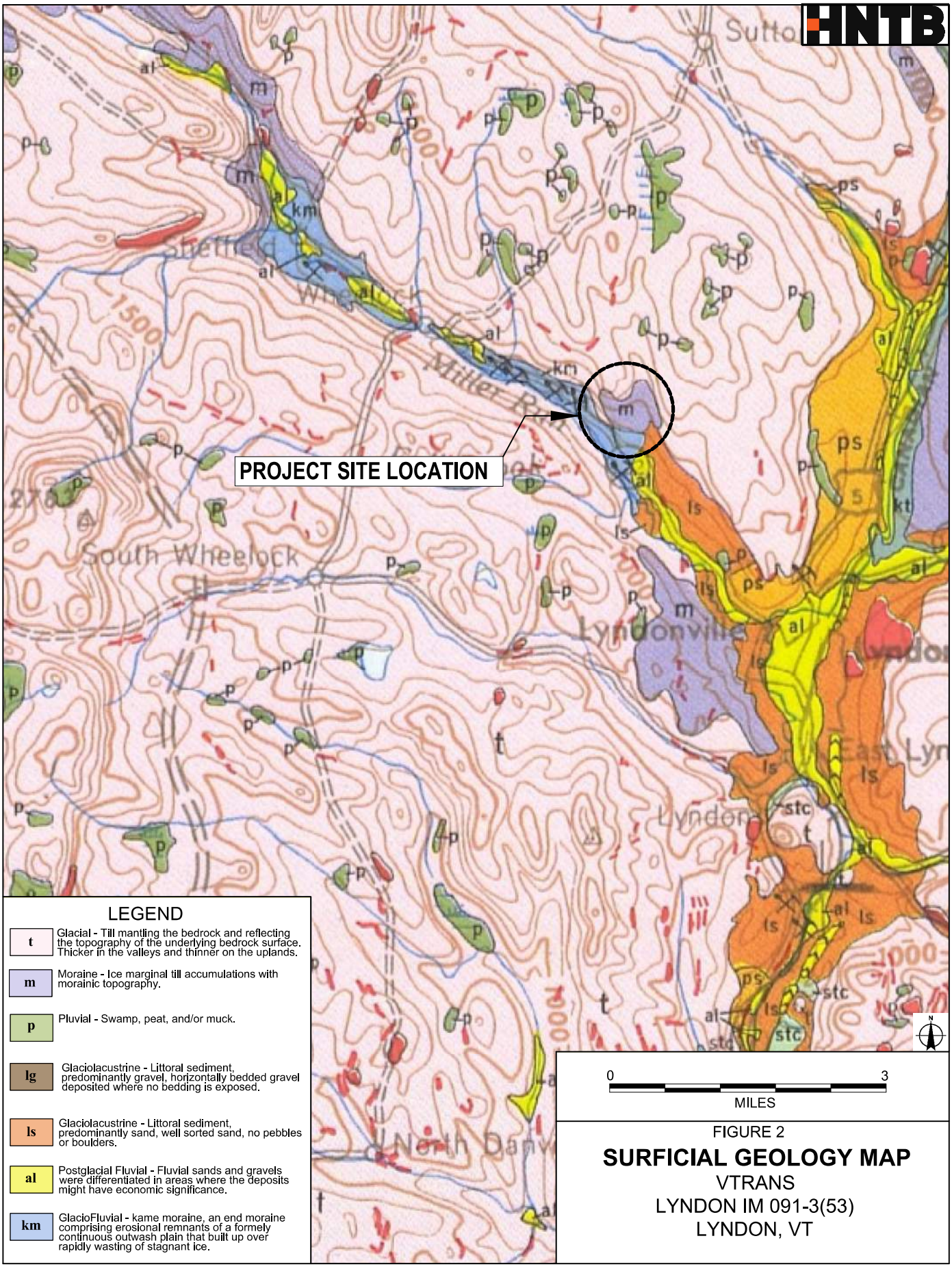
PROJECT SITE LOCATION MAP

VTRANS

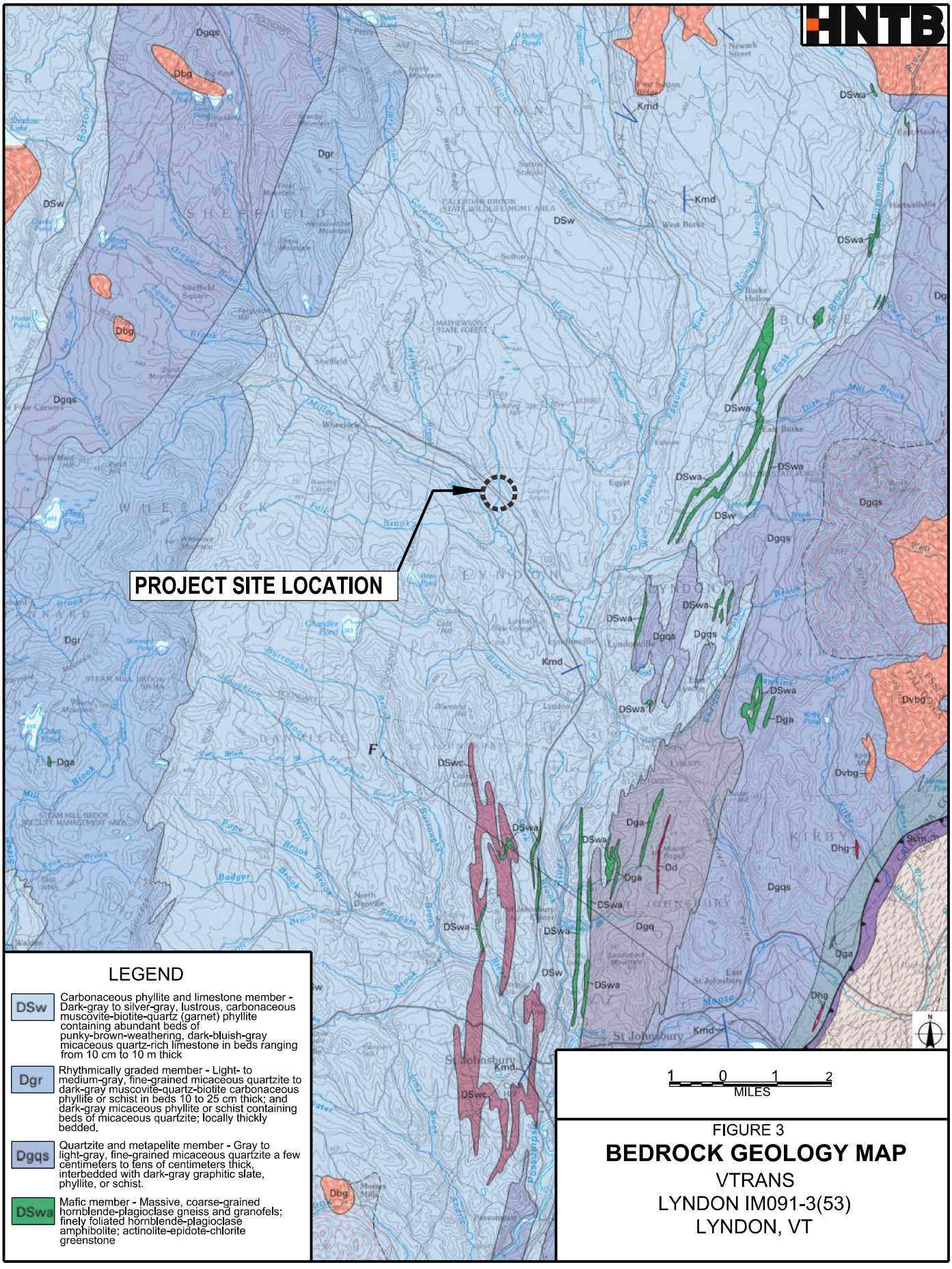
LYNDON IM 091-3(53)

LYNDON, VT

Basemaps: U.S.G.S. Lyndonville, VT Quadrangle US Topo, 2018

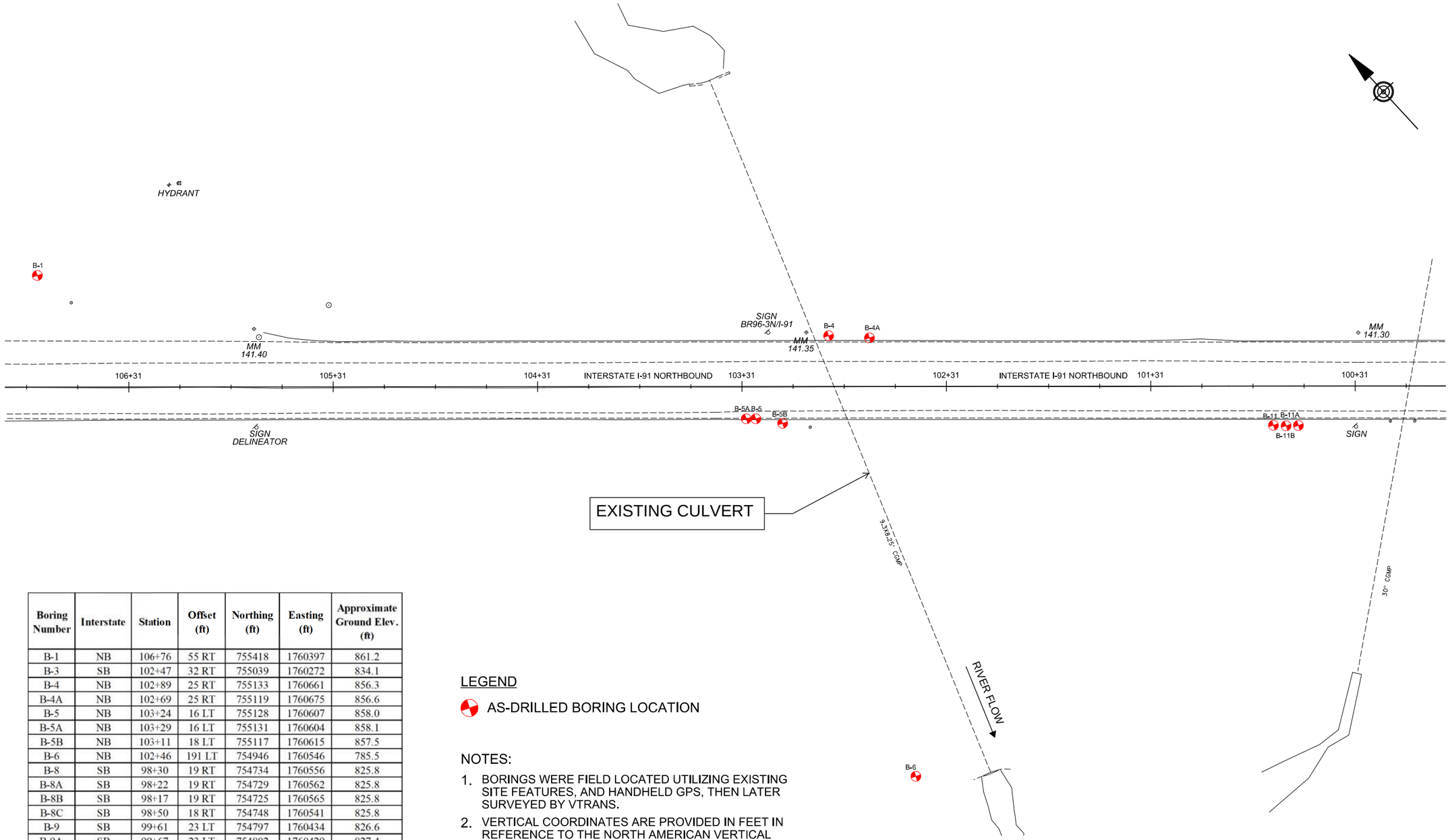


Basemap: Surficial geologic map of Vermont - 1970



Basemap: U.S.G.S. Geologic Map of Vermont - 2011

Appendix I – As-Drilled Boring Location Plan



Boring Number	Interstate	Station	Offset (ft)	Northing (ft)	Easting (ft)	Approximate Ground Elev. (ft)
B-1	NB	106+76	55 RT	755418	1760397	861.2
B-3	SB	102+47	32 RT	755039	1760272	834.1
B-4	NB	102+89	25 RT	755133	1760661	856.3
B-4A	NB	102+69	25 RT	755119	1760675	856.6
B-5	NB	103+24	16 LT	755128	1760607	858.0
B-5A	NB	103+29	16 LT	755131	1760604	858.1
B-5B	NB	103+11	18 LT	755117	1760615	857.5
B-6	NB	102+46	191 LT	754946	1760546	785.5
B-8	SB	98+30	19 RT	754734	1760556	825.8
B-8A	SB	98+22	19 RT	754729	1760562	825.8
B-8B	SB	98+17	19 RT	754725	1760565	825.8
B-8C	SB	98+50	18 RT	754748	1760541	825.8
B-9	SB	99+61	23 LT	754797	1760434	826.6
B-9A	SB	99+67	23 LT	754802	1760429	827.4
B-10	SB	97+89	183 LT	754563	1760441	760.5
B-11	NB	100+71	19 LT	754953	1760791	854.8
B-11A	NB	100+59	19 LT	754945	1760800	854.8
B-11B	NB	100+65	19 LT	754949	1760795	854.8
B-12	SB	96+97	24 LT	754610	1760619	823.1
B-12A	SB	96+91	24 LT	754605	1760624	823.1

LEGEND

AS-DRILLED BORING LOCATION

NOTES:

1. BORINGS WERE FIELD LOCATED UTILIZING EXISTING SITE FEATURES, AND HANDHELD GPS, THEN LATER SURVEYED BY VTRANS.
2. VERTICAL COORDINATES ARE PROVIDED IN FEET IN REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. HORIZONTAL COORDINATES ARE PROVIDED IN FEET IN REFERENCE TO THE NORTH AMERICAN ADUTM OF 1983 (NAD 83), VERMONT STATE PLANE GRID COORDINATE SYSTEM.

No.	Revisions	Date	By

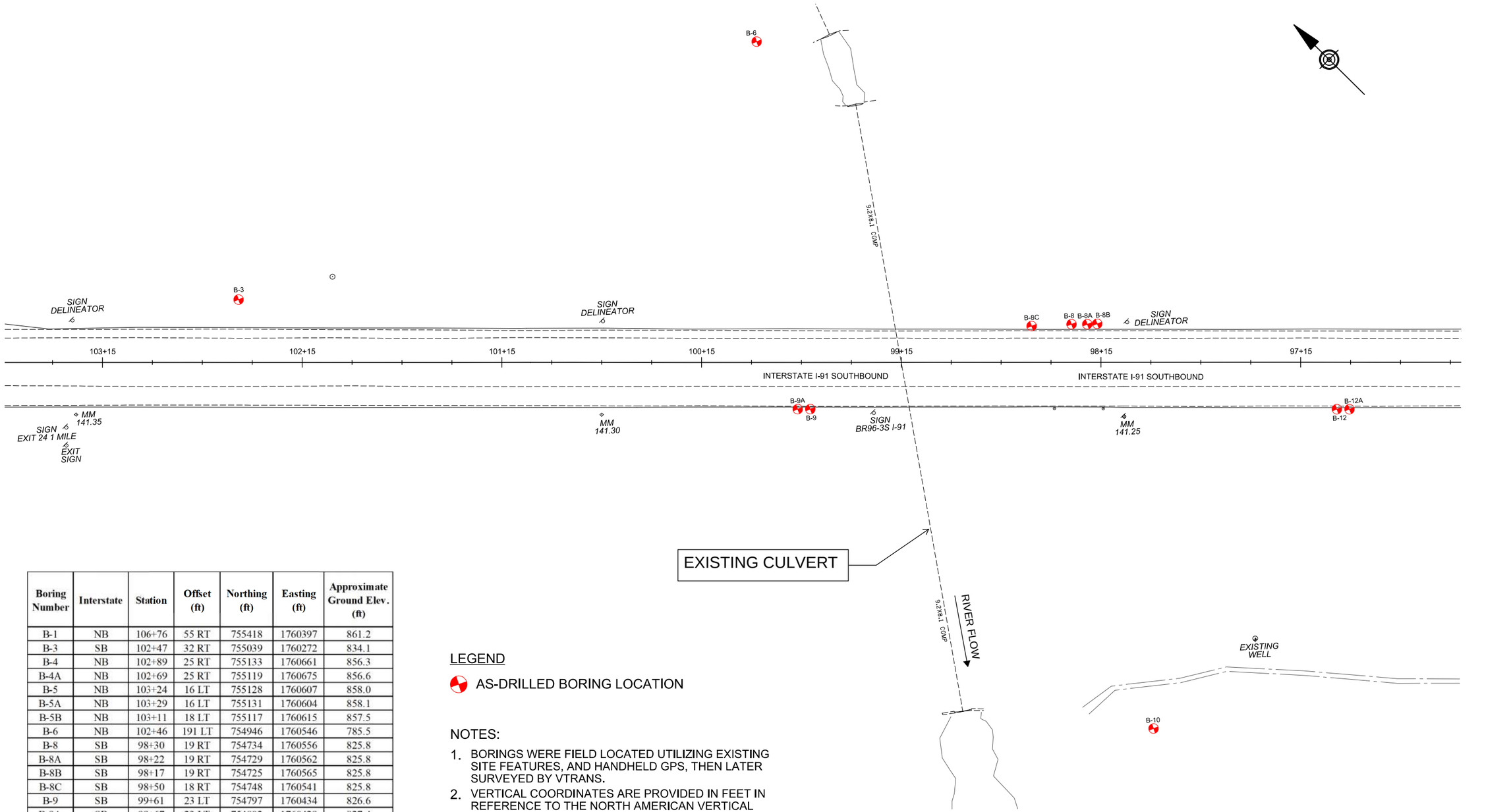
Approved	Date

HNTB Corporation

VTRANS LYNDON IM 091-3(53)
INTERSTATE I-91 NORTHBOUND
LYNDONVILLE, VT

Designed	Drawn	Checked	Date

Job No.	
File Name	
Sheet No.	OF
Dwg. No.	



Boring Number	Interstate	Station	Offset (ft)	Northing (ft)	Easting (ft)	Approximate Ground Elev. (ft)
B-1	NB	106+76	55 RT	755418	1760397	861.2
B-3	SB	102+47	32 RT	755039	1760272	834.1
B-4	NB	102+89	25 RT	755133	1760661	856.3
B-4A	NB	102+69	25 RT	755119	1760675	856.6
B-5	NB	103+24	16 LT	755128	1760607	858.0
B-5A	NB	103+29	16 LT	755131	1760604	858.1
B-5B	NB	103+11	18 LT	755117	1760615	857.5
B-6	NB	102+46	191 LT	754946	1760546	785.5
B-8	SB	98+30	19 RT	754734	1760556	825.8
B-8A	SB	98+22	19 RT	754729	1760562	825.8
B-8B	SB	98+17	19 RT	754725	1760565	825.8
B-8C	SB	98+50	18 RT	754748	1760541	825.8
B-9	SB	99+61	23 LT	754797	1760434	826.6
B-9A	SB	99+67	23 LT	754802	1760429	827.4
B-10	SB	97+89	183 LT	754563	1760441	760.5
B-11	NB	100+71	19 LT	754953	1760791	854.8
B-11A	NB	100+59	19 LT	754945	1760800	854.8
B-11B	NB	100+65	19 LT	754949	1760795	854.8
B-12	SB	96+97	24 LT	754610	1760619	823.1
B-12A	SB	96+91	24 LT	754605	1760624	823.1

LEGEND

AS-DRILLED BORING LOCATION

NOTES:

1. BORINGS WERE FIELD LOCATED UTILIZING EXISTING SITE FEATURES, AND HANDHELD GPS, THEN LATER SURVEYED BY VTRANS.
2. VERTICAL COORDINATES ARE PROVIDED IN FEET IN REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. HORIZONTAL COORDINATES ARE PROVIDED IN FEET IN REFERENCE TO THE NORTH AMERICAN ADUTM OF 1983 (NAD 83), VERMONT STATE PLANE GRID COORDINATE SYSTEM.

No.	Revisions	Date	By

Approved	Date

HNTB Corporation

VTRANS LYNDON IM 091-3(53)
INTERSTATE 91 SOUTH BOUND
LYNDONVILLE, VT

Designed	Drawn	Checked	Date

Job No.	
File Name	
Sheet No.	OF
Dwg. No.	

Appendix II – Boring Logs

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-1**
Page No.: 1 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Bub Thompson, Debojit Sarker
Date Started: 9/27/22 Date Finished: 9/28/22
VTSPG NAD83: N 755412.00 ft E 1760414.00 ft
Station: 106+59 Offset: 62 RT
Ground Elevation: 859.6 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	MOBILE B-57	C_F = 1.42

Groundwater Observations

Date	Depth (ft)	Notes
09/28/22	25.8	See Note 1

Top of Well Elevation: 862.4 ft

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Run (Dip deg.)	Core Rec. % (RQD %)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Class:, A-2-4; Gr, Bn mf(+) Sand, some Silt, trace(-) mf Gravel, Top 4": Grass, roots, trace mica, Moist, Rec. = 1.17 ft				1-3-3-4 (6)				
		Boulder encountered and removed., Moist, 2.0 ft - 4.0 ft				50/2"				
5		Classification:, A-1-B; *Gr, Bn cmf(+) Sand, little m(+)f Gravel, some(-) Silt, trace mica, Moist, Rec. = 1.33 ft				6-4-5-5 (9)		33.0	45.0	22.0
		Visual Class:, A-1-B; Gr, Bn, Bk cm(+)f Sand, little(+) mf Gravel, trace(-) Silt, trace(-) mica, Moist, Rec. = 1.58 ft				7-9-11-11 (20)				
		Classification:, A-4; *Gr, Bn cmf(+) Sand, and(+) Silt, little m(+)f Gravel, Moist, Rec. = 1.75 ft				8-10-11-14 (21)		16.0	38.0	46.0
10		Visual Class:, A-2-4; Gr, cmf Sand, trace(+) mf Gravel, trace(-) Clayey Silt, Moist, Rec. = 1.58 ft				13-18-36-32 (54)				
15		Classification:, A-4; *Gr, Bn, Bk cmf(+) Sand, and(+) Silt, little(+) m(+)f Gravel, Moist, Rec. = 1.67 ft				27-39-50-50 (89)	10.8	19.0	34.0	47.0
20		Visual Class:, A-2-4; Gr, Bn, Wh, Bk cmf(+) Sand, little(+) m(+)f Gravel, trace(-) Clayey Silt, Moist, Rec. = 1.58 ft				24-51-58-91 (109)				
25		Classification:, A-4; Gr, *Bn, Bk cmf(+) Sand, and(+) Silt, little(-) cmf Gravel, Moist, Rec. = 1.67 ft				33-42-55-55 (97)		13.0	41.0	46.0
30		Classification:, A-4; *Gr, Bn SILT, cmf(+) Sand, trace(+) m(+)f Gravel, Moist, Rec. = 1.67 ft				29-49-47-73 (96)		13.0	37.0	50.0
		Heavy rig chatter at 32'. Heavy rig chatter continued to 34'. Sample attempted at 34' but reached refusal with split spoon sampler. Roller bit advance continued to 39' with heavy rig chatter. Drilling spoils contained fragmented rock., 31.0 ft - 39.0 ft								

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-1**
Page No.: 2 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Bub Thompson, Debojit Sarker
Date Started: 9/27/22 Date Finished: 9/28/22
VTSPG NAD83: N 755412.00 ft E 1760414.00 ft
Station: 106+59 Offset: 62 RT
Ground Elevation: 859.6 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	MOBILE B-57	C_F = 1.42

Groundwater Observations

Date	Depth (ft)	Notes
09/28/22	25.8	See Note 1

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Run (Dip deg.)	Core Rec. % (RQD %)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
40		39.0 ft - 44.0 ft, Black and gray, Carbonaceous PHYLLITE, fine grained, slightly fractured to sound continuity, very close to extreme close fracture spacing, laminated to very thin bedding. Medium to moderately hard, Unweathered, Very good rock, NX		C-1	99 (97)	Top of Bedrock @ 39.0 ft				
45		44.0 ft - 49.0 ft, Black and gray, Carbonaceous PHYLLITE, Same as above. Medium to moderately hard, Unweathered, Very good rock, NX		C-2	100 (93)					
50		Hole stopped @ 49.0 ft								
55										
60										
65										

Remarks:
1. Groundwater reading taken prior to completion of drilling on 9/28/22 at 7:30 AM
2. Groundwater monitoring well, with standpipe, installed.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-3**
Page No.: 1 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Bub Thompson, Debojit Sarker
Date Started: 10/03/22 Date Finished: 10/04/22
VTSPG NAD83: N 755040.00 ft E 1760273.00 ft
Station: 102+46 Offset: 33 RT
Ground Elevation: 833.7 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	MOBILE B-57	C_F = 1.42

Groundwater Observations

Date	Depth (ft)	Notes
10/04/22	43.38	See Note 1

Top of Well Elevation: 836.6 ft

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Class:, A-3; Gr, Wh cm(+)f SAND, trace f Gravel, trace(-) Silt, trace roots & grass, Moist, Rec. = 1.5 ft		2-4-5-4 (9)				
		Visual Class:, A-2-4; Gr, Wh, Dk Bn, cmf SAND, trace mf Gravel, trace Silt, Moist, Rec. = 1.42 ft		5-7-6-8 (13)				
5		Classification:, A-2-4; *Gr, Wh cmf(+) SAND, little(+) Silt, trace(-) f Gravel, Moist, Rec. = 1.42 ft		6-6-4-5 (10)		7.0	74.0	19.0
		Visual Class:, A-2-4; Gr, Wh c(+)mf SAND, trace mf Gravel, trace(-) Silt, Moist, Rec. = 1.83 ft		6-6-5-6 (11)				
		Visual Class:, A-2-4; Gr, Wh cmf SAND, trace (+) mf Gravel, trace Clayey Silt, Moist, Rec. = 1.0 ft		3-4-12-9 (16)				
10		Visual Class:, A-3; Gr, Dk, Bn cmf SAND, trace(-) f Gravel, trace (-) Silt, Moist, Rec. = 1.5 ft		6-8-9-11 (17)				
15		Classification:, A-4; *Gr SILT, cmf(+) Sand, trace(-) f Gravel, Moist, Rec. = 1.58 ft		4-3-7-7 (10)		3.0	22.0	75.0
20		Visual Class:, A-2-4; Gr, Bn, cmf Sand, trace(+) mf Gravel, trace(-) Silt, Moist, Rec. = 1.33 ft		13-15-16-17 (31)				
25		Classification:, A-2-4; *Gr, Dk Bn, Wh cmf(+) SAND, some Silt, little mf(+) Gravel, Moist, Rec. = 1.42 ft		7-15-23-28 (38)		18.0	57.0	25.0
30		Visual Class:, A-1-B; Gr, Dk Bn, Bk c(+)mf Sand, some(-) mf Gravel, trace(-) Silt, Moist, Rec. = 1.25 ft		15-16-17-17 (33)				
		Heavy rig chatter from 31' to 34'. Water loss continuous from 32' to 34', 31.0 ft - 34.0 ft						
		Classification:, A-3; *Gr, Bn, Bk c(+)mf SAND, trace mf(+) Gravel, trace Silt, Moist,		7-9-9-11 (18)		9.0	85.0	6.0

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-3**
Page No.: 2 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Bub Thompson, Debojit Sarker
Date Started: 10/03/22 Date Finished: 10/04/22
VTSPG NAD83: N 755040.00 ft E 1760273.00 ft
Station: 102+46 Offset: 33 RT
Ground Elevation: 833.7 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	MOBILE B-57	C_F = 1.42

Groundwater Observations

Date	Depth (ft)	Notes
10/04/22	43.38	See Note 1

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Rec. = 1.17 ft						
		Heavy rig chatter from 34' to 39'. 1' boulder at 36'. Water loss from 38' to 40' then return., 36.0 ft - 39.0 ft						
40		Visual Class:, A-1-B; Gr, Bn, Bk c(+)mf SAND, little(+) m(+)f Gravel, trace(-) Silt, Moist, Rec. = 1.33 ft		17-19-23-24 (42)				
45		Classification:, A-4; *Gr, Bn, Bk SILT, and cmf(+) Sand, trace(-) f Gravel, Moist, Rec. = 1.58 ft		36-38-40-72 (78)		1.0	43.0	56.0
50		Visual Class:, A-1-B; Gr, Wh cmf Sand, some mf Gravel, trace(-) Silt, Moist, Rec. = 0.5 ft		110/6"				
55		Classification:, A-4; *Gr SILT, little cmf(+) Sand, trace(-) f Gravel, Moist, Rec. = 1.83 ft		19-23-41-58 (64)	13.5	1.0	16.0	83.0
60		Visual Class:, A-2-4; Gr cmf(+) Sand, little (+) mf Gravel, trace Clayey Silt, Moist, Rec. = 0.42 ft		100/5"				
		Water loss from 63' to 64', 60.0 ft - 64.0 ft						
65		No Recovery. Heavy rig chatter from 64' to 67'. Drilling spoils fragmented rock., 64.0 ft - 67.0 ft		55/0.5"				
		Hole stopped @ 67.0 ft						

Remarks:
1. Groundwater reading taken prior to completion of drilling on 10/4/22 at 8:15 AM
2. Groundwater monitoring well, with standpipe, installed.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-4**
Page No.: 1 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Mike Mataroozo, Mario Barahona
Date Started: 10/04/22 Date Finished: 10/05/22
VTSPG NAD83: N 755134.00 ft E 1760662.00 ft
Station: 102+88 Offset: 26 RT
Ground Elevation: 856.3 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	VERSADRILL GT-8	C_F = 1.45

Groundwater Observations		
Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Class:, A-1-B; Dk Bn c(+)mf Sand, some(+) cmf(+) Gravel, little(-) Silt, fill, Dry, Rec. = 0.67 ft	4-6-9-8 (15)				
		Classification:, A-2-4; *Lt Bn cmf(+) SAND, some(-) Silt, trace(-) f Gravel, Dry, Rec. = 1.42 ft	8-7-7-8 (14)		1.0	77.0	22.0
5		Visual Class:, A-1-B; Dk Bn c(+)mf Sand, some(+) c(+)mf Gravel, trace(-) Silt, fill, Boulder at approximately 5.7', Dry, Rec. = 0.5 ft	14-18-21-50/1" (39)				
		Boulder encountered from 5.7' to 8.5', 6.0 ft - 9.0 ft					
10		Visual Class:, A-1-B; Dk Bn c(+)mf SAND, some(-) cmf(+) Gravel, trace (+) Silt, Moist, Rec. = 0.33 ft	7-2-3-10 (5)				
		1' boulder from 13' to 14', 11.0 ft - 14.0 ft					
15		Visual Class:, A-1-A; Gr, Bn c(+)mf GRAVEL, some(-) c(+)mf Sand, trace Silt, Moist, Rec. = 0.42 ft	10-35-4-3 (39)				
		2' boulder from 17 ft to 19 ft., 16.0 ft - 19.0 ft					
20		No recovery, 19.0 ft - 24.0 ft	25-50/1"				
25		Visual Class:, A-1-B; Dk Bn, cmf(+) SAND, some(-) cmf(+) Gravel, little(-) Silt, fill, Moist, Rec. = 0.58 ft	45-54-47-68 (103)				
30		Classification:, A-4; *Bn, Gr cmf(+) SAND, and Silt, trace mf(+) Gravel, MTW, Rec. = 1.17 ft	5-8-16-16 (24)		7.0	49.0	44.0
		Potential perched water at 29', 31.0 ft - 34.0 ft					
		Visual Class:, A-1-B; Bn c(+)mf Sand, some(+) cm(+)f Gravel, little (-) Silt, Moist, Rec. = 0.75	12-25-13-19				

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-4**
Page No.: 2 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Mike Mataroozo, Mario Barahona
Date Started: 10/04/22 Date Finished: 10/05/22
VTSPG NAD83: N 755134.00 ft E 1760662.00 ft
Station: 102+88 Offset: 26 RT
Ground Elevation: 856.3 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	VERSADRILL GT-8	C_E = 1.45

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		ft	(38)				
		Heavy rig chatter from 38' to 39', 36.0 ft - 39.0 ft					
40		Visual Class:, A-1-B; Dk Bn cm(+)f SAND, little(+) cm(+)f Gravel, little(-) Silt, MTW, Rec. = 1.08 ft	17-68-28-32 (96)				
		Classification:, A-4; *Dk Gr cmf(+) Sand, and(+) Silt, trace mf(+) Gravel, MTW, Rec. = 1.17 ft	28-43-53-51 (96)	11.8	10.0	40.0	50.0
45		Visual Class:, A-2-4; Dk Gr, Bn cmf(+) SAND, little(+) Silt, little(-) cmf(+) Gravel, trace quartz, MTW, Rec. = 0.67 ft	16-28-27-36 (55)				
		Visual Class:, A-1-A; Dk Gr c(+)mf GRAVEL, some c(+)mf Sand, trace Silt, MTW, Rec. = 0.75 ft	30-44-41-88 (85)				
50		Classification:, A-4; *Dk Gr, Bn SILT, and(+) cmf(+) Sand, trace f Gravel, MTW, Rec. = 1.08 ft	15-23-22-17 (45)	18.1	8.0	42.0	50.0
		Classification:, A-4; *Dk Bn, Gr SILT, and(+) cmf(+) Sand, trace(-) f Gravel, trace wood, MTW, Rec. = 1.17 ft	9-18-28-28 (46)		8.0	46.0	46.0
55		Classification:, A-4; *Dk Gr, Bn cmf(+) Sand, and(-) Silt, little m(+)f Gravel, Quartz boulder from 55.7-56.3 ft., MTW, Rec. = 0.75 ft	26-20-23-42 (43)		20.0	42.0	38.0
		Visual Class:, A-1-B; Bn to Gr c(+)mf Sand, some (+) cm(+)f Gravel, little (-) Silt, trace quartz, MTW, Rec. = 1.0 ft	97-41-31-30 (72)				
		Heavy rig chatter to 57.5 ft then to 59 ft. Complete loss of water from 57.5' to 59', 58.0 ft - 59.0 ft					
60		Visual Class:, A-1-B; Gr to Bn c(+)mf SAND, little(+) mf(+) Gravel, littleSilt, Moist, Rec. = 0.83 ft	15-21-11-31 (32)				
		Visual Class:, A-2-4; T4: Same as above, B7: Lt, Br, cmf(+) SAND, trace (+) Silt, Moist, Rec. = 0.92 ft	29-9-6-7 (15)				
		Obstruction, likely culvert, has been struck at a depth of 64.5 ft. Borehole terminated at 64.5 ft. OFFSET HOLE., 63.0 ft - 64.5 ft	6-3/0"				
65							
		Hole stopped @ 66.0 ft					

Remarks:
1. Obstruction, likely culvert, struck with split spoon at 64.5-ft bgs. Boring terminated at 64.5-ft.
2. Borehole offset 18-ft south, new name B-4A.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-4A**
Page No.: 1 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Mario Barahona/ Debojit Sarker
Date Started: 10/06/22 Date Finished: 10/17/22
VTSPG NAD83: N 758846.00 ft E 1614804.00 ft
Station: 102+68 Offset: 25 RT
Ground Elevation: 856.1 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	VERSADRILL GT-8	C_E = 1.45

Groundwater Observations

Date	Depth (ft)	Notes
10/17/22	65.61	See Note 1
10/18/22	77.22	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description) Top of Well Elevation: 856.1 ft	Well Diagram	Run (Dip deg.)	Core Rec. % (RQD %)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0		Advanced w/6" casing and DTHH. See boring log B-4 for soil description betweeb 0' to 45', 0.0 ft - 5.0 ft								
5		Advanced w/6" casing and DTHH. See boring log B-4 for soil description., 5.0 ft - 10.0 ft								
10		Advanced w/6" casing and DTHH. See boring log B-4 for soil description., 10.0 ft - 15.0 ft								
15		Advanced w/6" casing and DTHH. See boring log B-4 for soil description., 15.0 ft - 20.0 ft								
20										
25										
30										

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

STATE OF VERMONT
AGENCY OF TRANSPORTATION
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BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-4A**
Page No.: 2 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Mario Barahona/ Debojit Sarker
Date Started: 10/06/22 Date Finished: 10/17/22
VTSPG NAD83: N 758846.00 ft E 1614804.00 ft
Station: 102+68 Offset: 25 RT
Ground Elevation: 856.1 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.

Hammer/Rod Type: Auto/AWJ
Rig: VERSADRILL GT-8 C_F = 1.45

Groundwater Observations

Date	Depth (ft)	Notes
10/17/22	65.61	See Note 1
10/18/22	77.22	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Run (Dip deg.)	Core Rec. % (RQD %)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
40										
45										
		Intermittent heavy rig chatter from 45' to 59'. No water return through advance, 46.0 ft - 50.0 ft								
50										
55										
60		Visual Class:, A-1-B; Dk Gr, Bn c(+)mf SAND, little(+) mf(+) Gravel, little(-) Silt, wood lodged at tip of spoon, water loss continuous through advance, Moist, Rec. = 0.33 ft				8-8-11-100/4" (16)				
65		Classification:, A-2-4; *Dk Gr, Bn cmf(+) Sand, some(+) Silt, some(-) c(+)mf Gravel, Moist, Rec. = 1.25 ft				27-22-16-16 (38)	11.1	27.0	40.0	33.0
		Visual Class:, A-2-4; T9": Bn, Bk cmf(+) SAND, little Silt, trace f Gravel; B13": Gr, Bk, Bn c(+)mf Sand, little mf Gravel, trace (-) Silt, intermittent water loss, Moist, Rec. = 1.83 ft				15-15-13-12 (28)				
		Classification:, A-2-4;* Gr, Bn cmf(+) SAND, some Silt, Moist, Rec.				5-6-5-9 (11)		1.0	68.0	31.0

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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

STATE OF VERMONT
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BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-4A**
Page No.: 3 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Mario Barahona/ Debojit Sarker
Date Started: 10/06/22 Date Finished: 10/17/22
VTSPG NAD83: N 758846.00 ft E 1614804.00 ft
Station: 102+68 Offset: 25 RT
Ground Elevation: 856.1 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	VERSADRILL GT-8	C_E = 1.45

Groundwater Observations

Date	Depth (ft)	Notes
10/17/22	65.61	See Note 1
10/18/22	77.22	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Run (Dip deg.)	Core Rec. % (RQD %)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		= 0.75 ft								
		Visual Class:, A-2-4; Dk Gr, Bn cmf(+) SAND, little(-) Silt, trace(-) f Gravel, Moist, Rec. = 0.75 ft				11-18-17-24 (35)				
75		Classification:, A-2-4; *Gr, Bn, Bk cmf(+) SAND, little(-) Silt, trace(-) f Gravel, trace wood, Moist, Rec. = 1.08 ft				10-9-25-21 (34)	15.4	2.0	87.0	11.0
		Visual Class:, A-1-b; Dk Gr, Bk, Wh c(+)mf SAND, little mf Gravel, trace(+) Silt, continuous water loss through advance, Moist, Rec. = 0.83 ft				9-16-25-87 (41)				
80		Visual Class:, A-2-4; Gr, Bn, Bk cmf SAND, trace(+) mf Gravel, trace(-) Silt, Moist, Rec. = 0.92 ft				32-22-12-57 (34)				
		Visual Class:, A-2-4; Gr cmf(+) SAND, trace f Gravel, trace(-) Silt, Moist, Rec. = 0.42 ft				82-50/0"				
		Visual Class:, A-1-B; Gr cmf SAND, little(+) mf Gravel, trace Silt, Moist, Rec. = 1.33 ft				92-49-41-102/5" (90)				
85		Visual Class:, A-1-A; Dk Gr to Gr Bk c(+)mf Sand, and mf Gravel, trace(-) Silt, Roller bit refusal, Moist, Rec. = 0.08 ft				66/0.5"				
		86.0 ft - 89.0 ft, Black and gray, GRANITE, fine to medium grained, extremely to moderately fractured, very close to extremely close joint spacing, very thin to laminated bedding. Moderately hard to medium hard, Unweathered to slightly weathered, Good rock, NX		C-1	92 (39)	Top of Bedrock @ 86.0 ft				
90		89.0 ft - 94.0 ft, Black and gray, Carbonaceous PHYLLITE, fine grained, sound to slightly fractured, extremely close to very close joint spacing, laminated bedding. Hard to medium hard, Unweathered to slightly weathered, Good rock, NX		C-2	98 (82)					
95		94.0 ft - 96.0 ft, Black and gray, Carbonaceous PHYLLITE, Same as above. Hard to medium hard, Unweathered to slightly weathered, Good rock, NX		C-3	100 (92)					
		Hole stopped @ 96.0 ft								
100		Remarks: 1. Groundwater reading taken prior to completion of drilling on 10/17/22 at 9:40 AM. 2. Groundwater reading taken after completion of drilling on 10/18/22 at 8:00 AM. 3. Groundwater monitoring well, with flushmount, installed.								

Notes:
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2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

STATE OF VERMONT
AGENCY OF TRANSPORTATION
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CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-5**
Page No.: 1 of 1
Pin No.: 19a189
Checked By: MEB

Boring Crew: Mike Mataroozo, Mario Barahona
Date Started: 8/31/22 Date Finished: 8/31/22
VTSPG NAD83: N 755124.00 ft E 1760613.00 ft
Station: 103+18 Offset: 15 LT
Ground Elevation: 858.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig: VERSADRILL GT-8	C_E = 1.45	

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		2" Top coarse asphalt; 6" subbase, 0.0 ft - 1.0 ft					
		Visual Class:, A-1-B; Gr, Bn, c(+)mf SAND, some(-) cmf(+) Gravel, trace Silt, Rec. = 0.58 ft	7-9				
		Visual Class:, A-1-B; Bn to Dk Bn, cm(+)f SAND, little f Gravel, trace (-) Silt, fill, Dry, Rec. = 1.5 ft	9-11-10-9 (21)				
5		Classification:, A-2-4; *Lt Bn to Gr cmf(-) SAND, some c(+)mf Gravel, some(-) Silt, Damp, Rec. = 1.17 ft	48-28-36-43 (64)		30.0	47.0	23.0
		Visual Class:, A-1-A; B4": Dk Gr c(+)mf Sand, and (-) c(+)mf Gravel, trace Silt T6": Lt Bn cm(+)f SAND, trace f Gravel, trace (-) Silt, fill, Damp, Rec. = 0.83 ft	46-68-36-43 (104)				
		No Recovery. 1' boulder from 8' to 9'. Water loss from 8' to 10', 8.0 ft - 10.0 ft	60/2"				
10		No Recovery. 1' boulder from 10' to 11'. Casing bent towards NW of hole, 10.0 ft - 11.0 ft	70/1"				
		Hole stopped @ 11.0 ft					
15		Remarks: 1. Boring terminated and offset due to boulder. Could not advance due to bend in casing 2. Borehole offset 4.7-ft north, new name B-5A.					
20							
25							
30							

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
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CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-5A**
Page No.: 1 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Mike Mataroozo, Mario Barahona
Date Started: 8/31/22 Date Finished: 9/01/22
VTSPG NAD83: N 755127.00 ft E 1760609.00 ft
Station: 103+22 Offset: 15 LT
Ground Elevation: 858.1 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig: VERSADRILL GT-8	C_E = 1.45	

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		See boring B-5 for soil description, 0.0 ft - 5.0 ft					
5		Water loss continuous from 5' to 15', 5.0 ft - 15.0 ft					
10							
15		No recovery. Coarse gravel at tip of spoon. Water return at 15', 15.0 ft - 19.0 ft	70/2"				
20		Visual Class:, A-1-B; Gr, Bn c(+)mf Sand, and(-) c(+)mf Gravel, trace wood, Wet, Rec. = 0.33 ft	70-50/1"				
		1' boulder from 23' to 27'. No water return from 23' to 29', 21.0 ft - 24.0 ft					
25		No Recovery., Wet, 24.0 ft - 29.0 ft	50/0"				
30		Visual Class:, A-1-A; Gr, Bn c(+)mf GRAVEL, some(-) c(+)mf Sand, trace(+) Silt, Wet, Rec. = 0.5 ft	25-48-50/2"				
		2' boulder from 30' to 32'. Continuous water loss to 34', 31.0 ft - 34.0 ft					
		Visual Class:, A-1-B; Bn, Gr c(+)mf SAND, some(-) c(+)mf Gravel, trace(+) Silt	7-76-50/2"				

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

STATE OF VERMONT
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CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-5A**
Page No.: 2 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Mike Mataroozo, Mario Barahona
Date Started: 8/31/22 Date Finished: 9/01/22
VTSPG NAD83: N 755127.00 ft E 1760609.00 ft
Station: 103+22 Offset: 15 LT
Ground Elevation: 858.1 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig: VERSADRILL GT-8	C_E = 1.45	

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		2' boulder from 35' to 37'. No water loss. Couldn't advanced past 39 ft due to bend in casing. Hole offset., 36.0 ft - 39.0 ft					
40		Hole stopped @ 39.0 ft					

Remarks:
1. Boring terminated and offset due to boulder. Could not advance due to bend in casing
2. Borehole offset 17.5-ft south, new name B-5B.

45
50
55
60
65

Notes:
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2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

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BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-5B**
Page No.: 1 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenney Smith, Mario Barahona/ Debojit Sarker
Date Started: 9/28/22 Date Finished: 10/03/22
VTSPG NAD83: N 755111.00 ft E 1760619.00 ft
Station: 103+05 Offset: 20 LT
Ground Elevation: 857.5 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_E = 0.97

Groundwater Observations

Date	Depth (ft)	Notes
09/30/22	49.53	See Note 1
10/03/22	46.5	See Note 2
10/03/22	39.4	See Note 3

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Top of Well Elevation: 857.5 ft						
		6 inch casing advanced with DTHH from 0' to 34'. See boring B-5B for soil description., 0.0 ft - 34.0 ft						
5								
10								
15								
20								
25								
30								
		Visual Class:, A-1-B; Dk Gr to Gr, Bk c(+)mf SAND, little(+) mf Gravel, trace(-) Silt,		32-72/2"				

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-5B**
Page No.: 2 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenney Smith, Mario Barahona/ Debojit Sarker
Date Started: 9/28/22 Date Finished: 10/03/22
VTSPG NAD83: N 755111.00 ft E 1760619.00 ft
Station: 103+05 Offset: 20 LT
Ground Elevation: 857.5 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_F = 0.97

Groundwater Observations

Date	Depth (ft)	Notes
09/30/22	49.53	See Note 1
10/03/22	46.5	See Note 2
10/03/22	39.4	See Note 3

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		low rig chatter, Moist, Rec. = 0.67 ft						
40		Classification:, A-2-4; *Gr, Wh, Bk cmf(+) Sand, some(+) Silt, some(-) m(+)f Gravel, Moist, Rec. = 1.58 ft		57-45-58-59 (103)		30.0	39.0	31.0
45		Classification:, A-2-4; *Gr, Bn, Bk, Wh cmf(+) Sand, some(+) Silt, some(-) c(+)mf Gravel, trace mica, Moist, Rec. = 1.25 ft		30-71-80-100 (151)		28.0	38.0	34.0
50		Visual Class:, A-1-B; Gr, Bn c(+)mf Sand, some(+) m(+)f Gravel, trace(-) Silt,, Moist, Rec. = 0.75 ft		23-40-49-16 (89)				
		Continuous water loss from 49' to 54', 51.0 ft - 54.0 ft						
55		Visual Class:, A-1-B; Dk Gr, Bn cm(+)f Sand, some cmf(+) Gravel, little(-) Silt, Moist, Rec. = 0.67 ft		12-16-21-50/1" (37)	11.3	16.0	37.0	47.0
60		Visual Class:, A-1-B; Gr c(+)mf Sand, some(+) cm(+)f Gravel, trace Silt, MTW, Rec. = 0.17 ft		100/2"				
65		64.0 ft - 69.0 ft, Attempted to core at 64'. Core barrel spun for 30 sec then dropped to 65.5', met resistance for 10 sec then dropped again to 68 ft. At 68 ft, resistance for 22 sec then dropped to 69'. 1.5' boulder from 64' to 65.5'.						
		Classification:, A-4; Lt Bn cmf(+) SAND, and(-) Silt, trace(-) f Gravel, Wet, Rec. =		47-60-58-50		2.0	61.0	37.0

Notes:
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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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-5B**
Page No.: 3 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenney Smith, Mario Barahona/ Debojit Sarker
Date Started: 9/28/22 Date Finished: 10/03/22
VTSPG NAD83: N 755111.00 ft E 1760619.00 ft
Station: 103+05 Offset: 20 LT
Ground Elevation: 857.5 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_E = 0.97

Groundwater Observations

Date	Depth (ft)	Notes
09/30/22	49.53	See Note 1
10/03/22	46.5	See Note 2
10/03/22	39.4	See Note 3

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.67 ft		(118)				
75		Classification:, A-2-4; *Gr, Dk Bn cmf(+) SAND, some(-) Silt, trace mf(+) Gravel, Moist, Rec. = 0.75 ft		9-9-12-21 (21)		9.0	67.0	24.0
80		No recovery. Possible rock at 78.5 ft, 79.0 ft - 81.0 ft		50/0"				
		Slow advance w/RB. 400 to 500 psi down pressure from 79 ft to 83 ft, then intermittent advance through 84 ft. Cuttings show fragmented rock, no water loss through advance, cuttings fizzed w/HCL, 81.0 ft - 84.0 ft						
85		No recovery, 84.0 ft - 84.0 ft		50/0"				
		Hole stopped @ 84.0 ft						
90		Remarks: 1. Groundwater reading taken prior to completion of drilling on 9/30/22 at 8:00 AM. 2. Groundwater reading taken prior to completion of drilling on 10/3/22 at 9:30 AM. 3. Groundwater reading taken after completion of drilling on 10/3/22 at 11:50 AM. 4. Groundwater monitoring well, with flushmount, installed.						
95								
100								

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-6**
Page No.: 1 of 1
Pin No.: 19a189
Checked By: MEB

Boring Crew: Bub Thompson, Debojit Sarker
Date Started: 9/28/22 Date Finished: 9/29/22
VTSPG NAD83: N 754937.00 ft E 1760545.00 ft
Station: 102+41 Offset: 197 LT
Ground Elevation: 784.1 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	MOBILE B-57	C_E = 1.42

Groundwater Observations

Date	Depth (ft)	Notes
09/29/22	7.6	See Note 1
09/29/22	6.8	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description) Top of Well Elevation: 787.1 ft	Well Diagram	Run (Dip deg.)	Core Rec. % (RQD %)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Class:, A-2-4; Gr, Wh cm(+)f SAND, some(-) mf Gravel, trace(-) Clayey Silt, trace roots & grass, Moist, Rec. = 1.17 ft				5-9-15-13 (24)				
		Classification:, A-1-A; *Gr, Bk c(+)mf GRAVEL, little cmf Sand, trace Silt, Moist, Rec. = 0.42 ft				11-5-7-10 (12)		82.0	12.0	6.0
5		Visual Class:, A-1-B; Br, Gr, Bk cm(+)f SAND, little(+) mf Gravel, trace(-) Silt, Moist, Rec. = 1.17 ft				7-7-7-6 (14)				
		Classification:, A-2-4; *Gr cmf(+) Sand, some(+) Silt, some c(+)mf Gravel, Wet, Rec. = 1.33 ft				9-10-11-10 (21)		28.0	40.0	32.0
		Visual Class:, A-2-4; Gr, Bn cmf(+) SAND, trace(+) mf Gravel, trace(-) Silt, Moist, Rec. = 1.33 ft				13-19-25-23 (44)				
10		Visual Class:, A-1-B; Gr, Bn, Bk cm(+)f SAND, little(+) mf Gravel, trace(-) Silt, Moist, Rec. = 1.67 ft				12-18-22-19 (50)				
		Classification:, A-4; *Gr, Bn, Bk cmf Sand, and(-) Silt, some c(+)mf Gravel, Moist, Rec. = 1.58 ft				10-23-32-40 (55)	9.2	30.0	34.0	36.0
15		Visual Class:, A-1-B; Gr, Bn cmf SAND, little m(+)f Gravel, trace Silt, Moist, Rec. = 1.08 ft				19-28-92-50/1" (120)				
		Classification:, A-2-4; *Gr, Wh, Bn cmf(+) Sand, and(-) Silt, some(-) cmf(+) Gravel, Moist, Rec. = 1.33 ft				39-75-55/1"		33.0	32.0	35.0
		Water loss from 18' to 19', 18.0 ft - 19.0 ft								
		Visual Class:, A-1-A; Bk, Gr mf Gravel, some cmf Sand, trace (-) Silt, moderate rig chatter, Moist, Rec. = 0.42 ft				50/1"				
20		20.0 ft - 25.0 ft, Black and gray, Carbonaceous PHYLLITE, Fine grained, sound, very close to extremely close joint spacing, laminated bedding. Medium to moderately hard, Unweathered to slightly weathered, Good rock, NX		C-1	96 (90)	Top of Bedrock @ 20.0 ft				
25		25.0 ft - 30.0 ft, Black and gray, Carbonaceous PHYLLITE, Quartz & limestone intrusion, fine grained, slightly to moderate fractured, very close to extremely close joint spacing, laminated beding. Moderately hard to medium hard, Unweathered, Good rock, NX		C-2	100 (67)					
30		Hole stopped @ 30.0 ft								

Remarks:
1. Groundwater reading prior to completion of drilling on 9/29/22 at 7:40 AM.
2. Groundwater reading taken after completion of drilling on 9/29/22 at 11:50 AM
3. Groundwater monitoring well, with standpipe, installed.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-8**
Page No.: 1 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Debojit Sarker
Date Started: 10/18/22 Date Finished: 10/20/22
VTSPG NAD83: N 754734.00 ft E 1760557.00 ft
Station: 98+29 Offset: 18 RT
Ground Elevation: 825.1 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_F = 0.97

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Class:, A-1-B; Dk Gr, Bk c(+)mf SAND, little mf Gravel, trace Silt, top soil, trace asphalt, MTD, Rec. = 0.5 ft	1-3-4-5 (7)				
		Visual Class:, A-1-B; T3": Dk Gr, Bk mf Gravel and cmf Sand, trace Silt; M9": Gr, Bn cm(+)f SAND, trace(+) mf Gravel, trace(-) Silt; B4": Gr, Bn mf(+) SAND, trace Silt, trace(-) Gravel, MTD, Rec. = 1.33 ft	5-6-8-12 (14)				
5		Visual Class:, A-1-B; Bn, Gr cmf SAND, little mf Gravel, trace Silt, Moist, Rec. = 0.17 ft	103/3"				
		Visual Class:, A-1-A; Dk, Bk, Gr m(+)f Gravel, some(+) cmf Sand, trace Silt, Moist, Rec. = 0.5 ft	23-29-15-8 (44)				
		Visual Class:, Continuous water loss from 8' to 14'	18-52/0.5"				
10							
		Visual Class:, No recovery, MTD	16-10-7-11 (17)				
15							
		Visual Class:, A-1-B; Dk, Gr, Wh cmf SAND, little mf Gravel, trace Clayey SILT, MTD, Rec. = 0.75 ft	24-20-7-11 (27)				
20							
		Classification:, A-4; Gr, Bn SILT, and cmf(+) Sand, trace f Gravel, MTD, Rec. = 1.33 ft	16-18-16-17 (34)	13.1	6.0	42.0	52.0
25							
		Visual Class:, A-1-B; Gr, Bn cmf SAND, little(-) mf Gravel, trace(-) Silt, Moist, Rec. = 0.17 ft	100/5"				
30							
		Classification:, A-2-4; *Gr, Bn, Bk cmf SAND, some(+) Silt, little(-) f Gravel, Moist, Rec. = 1.17	32-40-42-29		11.0	55.0	34.0

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-8**
Page No.: 2 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Debojit Sarker
Date Started: 10/18/22 Date Finished: 10/20/22
VTSPG NAD83: N 754734.00 ft E 1760557.00 ft
Station: 98+29 Offset: 18 RT
Ground Elevation: 825.1 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_E = 0.97

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		ft	(82)				
40		Classification:, A-2-4; *Gr, Bn, Bk SAND, some Silt, little mf(+) Gravel. Water loss at 42 ft, possible boulder, Moist, Rec. = 0.75 ft	14-18-21-17 (39)		14.0	53.0	33.0
45		Visual Class:, A-1-A; Gr, Bk, Wh cmf Gravel, some cmf Sand, trace Silt, continuous water loss, roller bit broke, rod came out without roller bit, casing broke, lead casing broke at joint, Moist, Rec. = 0.5 ft	10-8-23-31 (31)				
		Hole stopped @ 49.0 ft					
50		Remarks: 1. Borehole offset 9-ft south, new name B-8A. 2. A 6-in diameter (10-ft in length) casing, from an approximate depth of 35-ft to 45-ft bgs, was abandoned in boring B-8 after lead casing fractured at the joint.					
55							
60							
65							

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

STATE OF VERMONT
AGENCY OF TRANSPORTATION
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MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-8A**
Page No.: 1 of 1
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Debojit Sarker
Date Started: 10/20/22 Date Finished: 10/20/22
VTSPG NAD83: N 754728.00 ft E 1760562.00 ft
Station: 98+21 Offset: 18 RT
Ground Elevation: 825.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_E = 0.97

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		6 inch with DTHH to 14'. See boring B-8 for soil description, MTD, 0.0 ft - 14.0 ft					
10							
15		Hole stopped @ 14.0 ft					
20		Remarks: 1. Boring terminated and offset due to boulder. Could not advance casing 2. Borehole offset 20-ft north, new name B-8B.					
25							
30							

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

STATE OF VERMONT
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BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-8B**
Page No.: 1 of 1
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Debojit Sarker
Date Started: 11/07/22 Date Finished: 11/07/22
VTSPG NAD83: N 754725.00 ft E 1760566.00 ft
Station: 98+16 Offset: 19 RT
Ground Elevation: 824.9 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_E = 0.97

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		6 inch with DTHH to 14'. See boring B-8 for soil description. Steel drill stem broke in the hole. Stem recovered. Hole abandoned. Boring offset 15' north, MTD, 0.0 ft - 14.0 ft					
10							
15		Hole stopped @ 14.0 ft					
20		Remarks: 1. Boring terminated and offset due to boulder. Could not advance casing 2. Borehole offset 15-ft north, new name B-8C.					
25							
30							

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

STATE OF VERMONT
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BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-8C**
Page No.: 1 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Debojit Sarker
Date Started: 11/07/22 Date Finished: 11/14/22
VTSPG NAD83: N 754747.00 ft E 1760542.00 ft
Station: 98+49 Offset: 18 RT
Ground Elevation: 825.6 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_F = 0.97

Groundwater Observations

Date	Depth (ft)	Notes
11/14/22	49.0	See Note 1
11/14/22	49.0	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Top of Well Elevation: 825.6 ft						
		6 inch with DTHH to 47'. See boring B-8 for soil description. 3' boulder encountered from 38' to 41'. Intermittent boulders from 41' to 52'. Continuous water loss from 38' to 52', MTD, 0.0 ft - 52.0 ft						
5								
10								
15								
20								
25								
30								

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
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CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-8C**
Page No.: 2 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Debojit Sarker
Date Started: 11/07/22 Date Finished: 11/14/22
VTSPG NAD83: N 754747.00 ft E 1760542.00 ft
Station: 98+49 Offset: 18 RT
Ground Elevation: 825.6 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_F = 0.97

Groundwater Observations

Date	Depth (ft)	Notes
11/14/22	49.0	See Note 1
11/14/22	49.0	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
40								
45								
50								
		Classification:, A-1-B; *Dk Gr, Bk cmf GRAVEL, some cmf Sand, little(+) Silt, Moist, Rec. = 0.75 ft		11-62-64-17 (126)		53.0	28.0	19.0
55		Visual Class:, A-1-B; Gr cmf SAND, little Silt, trace mf Gravel, Moist, Rec. = 1.5 ft		13-14-19-28 (33)				
60		Classification:, A-2-4; *Dk Gr, Bn cmf(+) Sand, some Silt, some c(+)mf Gravel, trace organic fibers, Moist, Rec. = 1.33 ft		14-22-18-15 (40)	13.4	23.0	44.0	33.0
65		No recovery; Lead casing broke. Unable to recover from 55-ft to 65-ft bgs., 64.0 ft - 64.0 ft		55/1"				
		Hole stopped @ 64.0 ft						

Remarks:
1. Groundwater reading taken prior to completion of drilling on 11/14/22 at 10:20 AM.
2. Groundwater reading taken after completion of drilling on 11/14/22 at 2:00 PM.
3. A 3-in diameter (10-ft in length) casing, from an approximate depth of 55-ft to 65-ft bgs, was abandoned in boring B-8C after lead casing fractured at the joint
4. Groundwater monitoring well, with flushmount, installed.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

STATE OF VERMONT
AGENCY OF TRANSPORTATION
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CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-9**
Page No.: 1 of 1
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Debojit Sarker
Date Started: 11/09/22 Date Finished: 11/09/22
VTSPG NAD83: N 754796.00 ft E 1760432.00 ft
Station: 99+61 Offset: 26 LT
Ground Elevation: 826.6 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_F = 0.97

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Class:, A-1-B; Bn, Gr, Wh cmf Gravel, some cmf Sand, trace Silt, trace asphalt, MTD, Rec. = 0.75 ft	2-2-6-4 (8)				
		Classification:, A-4; *Bn, Wh cmf(+) Sand, and Silt, and c(+)mf Gravel, MTD, Rec. = 1.17 ft	7-6-5-7 (11)	7.9	37.0	27.0	36.0
5		Visual Class:, A-2-4; Bn cmf SAND, little Silt, trace f Gravel, MTD, Rec. = 1.42 ft	1-3-4-4 (7)				
		Visual Class:, A-2-4; Bn, Gr cmf Sand, little(+) Clayey Silt, trace mf Gravel, Moist, Rec. = 1.42 ft	3-4-6-5 (10)				
		Classification:, A-4; *Bn, Gr, Wh cmf(+) Sand, and Silt, some m(+)f Gravel, MTD, Rec. = 1.17 ft	21-24-16-19 (40)		34.0	26.0	40.0
10							
		Visual Class:, A-1-B; Bn, Gr, Bk, Wh cmf Gravel, some cmf Sand, trace Silt. 6" casing bent at 15'; Hole abandoned, MTD, Rec. = 0.5 ft	13-13-100/3				
15		Hole stopped @ 16.0 ft					
20		Remarks: 1. Boring terminated and offset due to boulder. Could not advance due to bend in casing 2. Borehole offset 6.3-ft south, new name B-9A.					
25							
30							

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-9A**
Page No.: 1 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny/ Mike/ Kenny, MEB/ JW/ DS
Date Started: 11/28/22 Date Finished: 12/01/22
VTSPG NAD83: N 754800.00 ft E 1760427.00 ft
Station: 99+67 Offset: 26 LT
Ground Elevation: 826.8 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	VERSADRILL GT-8	C_F = 1.45

Groundwater Observations

Date	Depth (ft)	Notes
12/01/22	50.0	See Note 1
12/07/22	52.75	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description) Top of Well Elevation: 826.8 ft	Well Diagram	Run (Dip deg.)	Core Rec. % (RQD %)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		See log B-9 for sampling between 0 to 16 ft. Advanced w/DTHH to 10' after advancing w/6" casing, 0.0 ft - 9.0 ft										
5												
		6" casing stopped at 12', advanced w/DTHH due to approximate 1' boulder, 9.0 ft - 14.0 ft										
10												
		2' boulder from 14' to 16', 14.0 ft - 19.0 ft										
15												
		Classification:, A-1-B; *Br, Gr mf(+) GRAVEL, some c(+)mf Sand, little Silt, Dry, Rec. = 0.75 ft				7-10-11-24 (21)		56.0	29.0	15.0		
20												
		Visual Class:, A-1-B; Br, Gr cm(+)f SAND, little(+) c(+)mf Gravel, little(-) Silt, Dry, Rec. = 1.17 ft				7-13-15-16 (28)						
25												
		Visual Class:, A-1-B; Bn, Gr c(+)mf SAND, little(+) cmf(+) Gravel, little(-) Silt, Dry, Rec. = 1.67 ft				10-18-22-21 (40)						
30												
		Visual Class:, A-1-B; Dk Bn c(+)mf SAND, little(+)				19-36-34-32						

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-9A**
Page No.: 2 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny/ Mike/ Kenny, MEB/ JW/ DS
Date Started: 11/28/22 Date Finished: 12/01/22
VTSPG NAD83: N 754800.00 ft E 1760427.00 ft
Station: 99+67 Offset: 26 LT
Ground Elevation: 826.8 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	VERSADRILL GT-8	C_F = 1.45

Groundwater Observations

Date	Depth (ft)	Notes
12/01/22	50.0	See Note 1
12/07/22	52.75	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Run (Dip deg.)	Core Rec. % (RQD %)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		cmf(+) Gravel, trace(+) Silt, trace slag, Dry, Rec. = 1.42 ft				(70)						
		1.5' boulder encountered from 37' to 38.5', 36.0 ft - 39.0 ft										
40		Visual Class:, A-1-B; Lt Gr cmf GRAVEL, little(+) mf Sand, trace(-) Silt, Rec. = 0.75 ft				10-23-13-25 (36)						
		Classification:, A-1-B; *Lt Gr, Bn c(+)mf GRAVEL, some cmf Sand, little Silt, Rec. = 0.83 ft				22-18-13-7 (31)		57.0	25.0	18.0		
		Classification:, A-4; T11": *Dk Bn cmf(+) Sand, and(+) Silt, trace f Gravel, mottling, B5": Lt Gr cm GRAVEL, and mf Sand, trace(-) Silt, Damp, Rec. = 1.33 ft				3-8-19-32 (27)	22.2	4.0	48.0	48.0	27	6
45		Visual Class:, A-1-B; Gr, same as above, Dry, Rec. = 0.42 ft				100/5"						
		Classification:, A-4; Bn SILT, and cmf(+) Sand, trace mf Gravel, Moist, Rec. = 0.67 ft				10-15-8-11 (23)	13.8	8.0	37.0	55.0		
50		Visual Class:, A-2-4; Same as above, Moist, Rec. = 0.83 ft				10-10-8-10 (18)						
		Classification:, A-4; *Bn, Gr SILT, and cmf(+) Sand, trace f Gravel, mottling, Moist, Rec. = 2.0 ft				10-15-16-11 (31)		4.0	42.0	54.0		
		Classification:, A-2-4; *Bn, Dk Gr cmf(+) SAND, some Silt, little(-) mf(+) Gravel, Damp, Rec. = 1.75 ft				6-12-24-24 (36)						
55		Visual Class:, A-2-4; Bn, Bn mf(+) SAND, little cmf Gravel, little Silt, Damp, Rec. = 1.92 ft				55-45-54-41 (99)	12.1	10.0	58.0	32.0		
		Visual Class:, A-2-4; Gr mf SAND, little Silt, little(-) mf Gravel, Wet, Rec. = 1.17 ft				25-22-14-16 (36)						
60		Visual Class:, A-2-4; Gr Bn f SAND, little Silt, trace mf Gravel, MTW, Rec. = 1.17 ft				10-11-14-26 (25)						
		Classification:, A-2-4; *Bn, Dk Bn cmf(+) SAND, some Silt, some c(+)mf Gravel, mottling, Moist, Rec. = 1.17 ft				24-43-38-55 (81)		24.0	51.0	25.0		
		Classification:, A-2-4; *Gr, Bn cmf(+) Sand, some Silt, some m(+)f Gravel, mottling, Moist, Rec. = 1.17 ft				21-28-29-42 (57)		20.0	47.0	33.0		
65		Visual Class:, A-1-B; Gr, Lt Bn cmf SAND, little mf Gravel, trace Silt, mottling, Moist, Rec. = 0.92 ft				44-50-100/5"						
		2' boulder from 67' to 69', 67.0 ft - 69.0 ft										
		Visual Class:, A-1-B; T4": Gr cmf SAND, little mf				45-100/4"						

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-9A**
Page No.: 3 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny/ Mike/ Kenny, MEB/ JW/ DS
Date Started: 11/28/22 Date Finished: 12/01/22
VTSPG NAD83: N 754800.00 ft E 1760427.00 ft
Station: 99+67 Offset: 26 LT
Ground Elevation: 826.8 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	VERSADRILL GT-8	C_F = 1.45

Groundwater Observations

Date	Depth (ft)	Notes
12/01/22	50.0	See Note 1
12/07/22	52.75	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Run (Dip deg.)	Core Rec. % (RQD %)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		Gravel, trace Silt B8": Gr SILT & CLAY, some cmf Sand, Wet 4.2' boulder from 69.8' to 74', 70.0 ft - 74.0 ft										
75		Visual Class:, A-4; Gr CLAYEY SILT, some f SAND, Wet, Rec. = 1.58 ft				30-34-50-95 (84)	15.0				23	9
		3' boulder from 76' to 79', 76.0 ft - 79.0 ft										
80		Visual Class:, A-4; Gr CLAYEY SILT, some f Sand, Wet, Rec. = 0.75 ft				45-100/6"						
		Decomposed rock from 80' to 83', 80.0 ft - 83.0 ft										
85		83.0 ft - 88.0 ft, Black and gray, Carbonaceous PHYLLITE, fine grained, sound to moderately fractured, very close joint spacing, laminated bedding. Medium to moderately hard, Unweathered to slightly weathered, Good rock, NX		C-1	90 (72)		Top of Bedrock @ 83.0 ft					
90		88.0 ft - 93.2 ft, Black and gray, Carbonaceous PHYLLITE, fine grained, sound to moderately fractured, very close to close joint spacing, laminated bedding. Moderately hard to medium hard, Unweathered, Good rock, NX		C-2	100 (69)							
95		Hole stopped @ 93.2 ft										
100		Remarks: 1. Groundwater reading taken prior to completion of drilling on 12/1/22 at 9:46 AM. 2. Groundwater reading taken after installation of monitoring well on 12/7/22 at 9:05 AM. 3. A 4-in diameter (45-ft in length) casing, from an approximate depth of 25-ft to 70-ft bgs, was abandoned in boring B-9A. 4. Stratastar truck rig hammer, Cn=0.97, used between depths of 19 to 59-ft (S-1 to S-14). 5. Versadrill GT-8 truck rig hammer, Cn=1.45, used between depths of 59 to 81-ft (S-15 to S-21). 6. Groundwater monitoring well, with flushmount, installed.										

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-10**
Page No.: 1 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Bub Thompson, Debojit Sarker
Date Started: 10/05/22 Date Finished: 10/06/22
VTSPG NAD83: N 754561.00 ft E 1760446.00 ft
Station: 97+84 Offset: 181 LT
Ground Elevation: 760.3 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	MOBILE B-57	C_F = 1.42

Groundwater Observations

Date	Depth (ft)	Notes
10/05/22	7.7	See Note 1
10/06/22	7.2	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description) Top of Well Elevation: 763.3 ft	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Class:, A-3; Dk, Gr, Bn, Bk cmf SAND, trace f Gravel, trace(-) Silt, Moist, Rec. = 0.75 ft		2-1-3-10 (4)				
		Visual Class:, A-3; Gr, Bk cmf SAND, trace(+) mf Gravel, trace Silt, Moist, Rec. = 1.58 ft		8-6-6-6 (12)				
5		Classification:, A-4; *Gr, Bn, Bk cmf(+) Sand, and Silt, trace(-) f Gravel, Moist, Rec. = 1.83 ft		7-6-8-8 (14)		6.0	54.0	40.0
		Visual Class:, A-1-B; Dk, Gr, Bn, Bk cmf SAND, little mf Gravel, trace(-) Silt, Moist, Rec. = 1.33 ft		10-15-12-11 (27)				
		Classification:, A-2-4; *Gr, Bn cmf(+) SAND, some Silt, some(-) c(+)mf Gravel, Moist, Rec. = 1.08 ft		6-5-1-2 (6)	13.8			
10		Visual Class:, A-2-4; Gr cmf Sand, some cm(+)f Gravel, trace Clayey Silt, Moist, Rec. = 2.0 ft		11-13-16-20 (29)				
		Visual Class:, A-1-B; Gr, Bn c(+)mf Sand, some cm(+)f Gravel, trace(-) Silt B5": Bn cmf Sand, Moist, Rec. = 0.92 ft		68-61-104/5"				
15		Visual Class:, A-1-A; Gr m(+)f GRAVEL, little cmf Sand, trace Silt, Moist, Rec. = 0.17 ft		100/2"				
		Classification:, A-4; *Gr SILT, and(-) cmf(+) Sand, little(-) mf(+) Gravel, Moist, Rec. = 1.0 ft		83-110/6"		17.0	32.0	51.0
		Visual Class:, A-1-A; Gr mf GRAVEL, little(+) cmf Sand, trace Silt, Moist, Rec. = 0.33 ft		100/4"				
20		Classification:, A-4; *Gr SILT, and(-) cmf(+) Sand, trace(+) mf(+) Gravel, Moist, Rec. = 2.0 ft		53-51-72-100/6" (123)		13.0	34.0	53.0
		Visual Class:, A-2-4; Gr mf Gravel, some cmf Sand, trace Clayey Silt, Moist, Rec. = 1.0 ft		57-100/5"				
25		Visual Class:, A-1-A; Gr mf Gravel, some(+) cmf Sand, trace Silt, Moist, Rec. = 0.33 ft		102/4"				
		Classification:, A-4; *Gr SILT, and(-) cmf(+) Sand, trace mf(+) Gravel, Moist, Rec. = 1.75 ft		42-58-64-100/3" (122)		10.0	34.0	56.0
		Visual Class:, A-1-A; Gr mf GRAVEL, little(+) cmf Sand, trac (-) Silt, Moist, Rec. = 0.83 ft		77-104/4"				
30		Visual Class:, A-1-A; Gr mf GRAVEL, little(+) cmf Sand, trace(-) Silt, Moist, Rec. = 1.17 ft		55-90-55/1"				
		Classification:, A-4; *Gr SILT, and cmf(+) Sand, trace(-) Silt, Moist, Rec. = 2.0 ft		57-65-66-85 (131)		6.0	40.0	54.0
		Visual Class:, A-1-A; Gr m(+)f Gravel, some cmf Sand, trace Silt, Moist, Rec. = 2.0		43-60-65-84				

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

STATE OF VERMONT
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CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-10**
Page No.: 2 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Bub Thompson, Debojit Sarker
Date Started: 10/05/22 Date Finished: 10/06/22
VTSPG NAD83: N 754561.00 ft E 1760446.00 ft
Station: 97+84 Offset: 181 LT
Ground Elevation: 760.3 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	MOBILE B-57	C_F = 1.42

Groundwater Observations

Date	Depth (ft)	Notes
10/05/22	7.7	See Note 1
10/06/22	7.2	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		ft		(125)				
		Classification:, A-4; *Gr SILT, and cmf(+) Sand, trace mf(+) Gravel, Moist, Rec. = 1.25 ft		26-50-100/6"	10.8	12.0	34.0	54.0
		Visual Class:, A-1-B; Gr cm(+)f SAND, little mf Gravel, trace(-) Silt, Moist, Rec. = 2.0 ft		26-27-56-97 (83)				
40		Classification:, A-2-4; *Gr cmf(+) Sand, some(+) Silt, some(-) cmf Gravel, Moist, Rec. = 1.83 ft		34-40-76-100/4" (116)		26.0	40.0	34.0
		Visual Class:, A-1-B; Gr c(+)mf SAND, some(-) mf Gravel, trace(-) Silt, Moist, Rec. = 1.58 ft		22-43-66-50/1" (109)				
45		Visual Class:, A-1-B; Gr, Wh c(+)mf Sand, some mf Gravel, trace(-) Silt, Moist, Rec. = 0.5 ft		100/6"				
		Classification:, A-4; *Gr cmf(+) Sand, and(-) Silt, some c(+)mf Gravel, Moist, Rec. = 1.58 ft		38-60-100/6"		31.0	31.0	38.0
		Visual Class:, A-2-4; Gr c(+)mf Sand, some mf Gravel, trace(-) Clayey Silt, Moist, Rec. = 0.5 ft		44-50/0"				
50		Hole stopped @ 50.0 ft						
55								
60								
65								

Remarks:
1. Groundwater reading taken prior to completion of drilling on 10/5/22 at 4:15 PM
2. Groundwater reading taken before completion of drilling on 10/6/22 at 7:45 AM.
3. Groundwater monitoring well, with standpipe, installed.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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CONSTRUCTION AND
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CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-11**
Page No.: 1 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Mike Mataroozo, Mario Barahona
Date Started: 8/29/22 Date Finished: 8/30/22
VTSPG NAD83: N 754959.00 ft E 1760788.00 ft
Station: 100+77 Offset: 17 LT
Ground Elevation: 855.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	VERSADRILL GT-8	C_E = 1.45

Groundwater Observations

Date	Depth (ft)	Notes
08/30/22	19.05	See Note 1

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Pavement 8", drilled to 1 ft, 0.0 ft - 0.7 ft					
		Visual Class:, A-1-B; Gr to Dk Gr cmf Sand, some(+) cmf Gravel, little Silt, Dry, Rec. = 1.0 ft	3-9-10-10 (19)				
		Classification:, A-2-4; *Lt to Dk Bn cmf(+) SAND, some(-) Silt, trace(-) f Gravel, Dry, Rec. = 1.58 ft	6-11-11-12 (22)		1.0	76.0	23.0
5		Visual Class:, A-1-B; Lt Bn to Bk cm(+)f SAND, some(-) cmf(+) Gravel, trace Silt, Dry, Rec. = 0.92 ft	7-22-20-9 (42)				
		Visual Class:, A-1-B; Gr to Dk Bn cmf(+) Sand, some(+) cm(+)f Gravel, little (-) Silt, Moist, Rec. = 0.5 ft	10-7-5-10 (12)				
10		Visual Class:, A-1-A; Dk Gr to Bn c(+)mf GRAVEL, some c(+)mf Sand, trace Silt, trace wood, Moist, Rec. = 0.67 ft	12-9-8-10 (17)				
		Visual Class:, A-1-B; Dk Gr to Bn cmf SAND, little f Gravel, fill, MTW, Rec. = 0.17 ft	50/2"				
15		Visual Class:, A-1-A; Dk to Lt Gr, Bn c(+)mf GRAVEL, some(-) c(+)mf Sand, trace(+) Silt, MTW, Rec. = 0.67 ft	50-19-46-50/2" (65)				
20		No Recovery. 3.5' boulder encountered from 19' to 22.5', 19.0 ft - 21.0 ft	50/0"				
		Complete water loss at 21.5' to 29', 21.0 ft - 24.0 ft					
25		No Recovery. Possible boulder from 24' to 29', MTW, 24.0 ft - 29.0 ft	50/1"				
30		Visual Class:, A-2-4; Gr cm(+)f SAND, little(+) cmf(+) Gravel, little(-) Silt, MTW, Rec. = 1.17 ft	13-13-17-15 (30)				
		Intermittent heavy rig chatter from 29' to 34', 31.0 ft - 34.0 ft					
		Visual Class:, A-1-B; Gr to Bn cm(+)f SAND, some(-) mf(+) Gravel, trace(+) Silt, MTW, Rec. =	12-15-24-22				

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-11**
Page No.: 2 of 2
Pin No.: 19a189
Checked By: MEB

Boring Crew: Mike Mataroozo, Mario Barahona
Date Started: 8/29/22 Date Finished: 8/30/22
VTSPG NAD83: N 754959.00 ft E 1760788.00 ft
Station: 100+77 Offset: 17 LT
Ground Elevation: 855.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	VERSADRILL GT-8	C_F = 1.45

Groundwater Observations

Date	Depth (ft)	Notes
08/30/22	19.05	See Note 1

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		1.17 ft	(39)				
		Intermittent heavy rig chatter from 35' to 39', 36.0 ft - 39.0 ft					
40		Visual Class:, A-2-4; Gr cm(+)f SAND, little Silt, little(-) f Gravel, MTW, Rec. = 0.5 ft	14-15-13-11 (28)				
		Intermittent heavy rig chatter from 39' to 44', 41.0 ft - 44.0 ft					
45		Visual Class:, A-2-4; Gr cm(+)f SAND, little f Gravel, trace(+) Silt, Wet, Rec. = 0.5 ft	45-50/1"				
		Heavy rig chatter from 44' to 47' and 48' to 49'., 46.0 ft - 49.0 ft					
50		Visual Class:, A-1-A; Dk Gr c(+)mf GRAVEL, some(-) cmf Sand, little(-) Silt, Rec. = 0.17 ft	50/2"				
		Intermittent heavy rig chatter from 49' to 54', 51.0 ft - 54.0 ft					
55		Visual Class:, A-2-4; Gr cm(+)f SAND, little(+) c(+)mf Gravel, trace Silt, Rec. = 0.17 ft	50/2"				
		Hole stopped @ 54.0 ft					
60							
65							

Remarks:
1. Groundwater reading taken prior to completion of drilling on 8/30/22 at 7:19 AM
2. Boring could not advance due to bend in the casing.
3. Borehole offset 6.3-ft south, new name B-11A.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-11A**
Page No.: 1 of 1
Pin No.: 19a189
Checked By: MEB

Boring Crew: Mike Mataroozo, Mario Barahona
Date Started: 8/30/22 Date Finished: 8/30/22
VTSPG NAD83: N 754950.00 ft E 1760797.00 ft
Station: 100+65 Offset: 17 LT
Ground Elevation: 854.9 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	VERSADRILL GT-8	C_F = 1.45

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		See boring B-11 for soil description from 0' to 15', 0.0 ft - 5.0 ft					
		Casing advancement stopped at 6 ft due to boulder. Advanced w/RB. Heavy rig chatter continued from 6' to 10'. Water loss from 6' to 8' then water return from 8' to 10'. Several cobbles and boulders encountered from 5' to 10'. Couldn't pass 10' w/5" casing, 5.0 ft - 10.0 ft					
10		Hole stopped @ 10.0 ft					
15		Remarks: 1. Boring terminated and offset due to boulder. Could not advance with casing. 2. Borehole offset 6.3-ft south, new name B-11B.					
20							
25							
30							

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-11B**
Page No.: 1 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Mario Barahona
Date Started: 9/26/22 Date Finished: 9/28/22
VTSPG NAD83: N 754954.00 ft E 1760792.00 ft
Station: 100+71 Offset: 17 LT
Ground Elevation: 854.9 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_F = 0.97

Groundwater Observations

Date	Depth (ft)	Notes
09/28/22	53.58	See Note 1

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description) Top of Well Elevation: 854.9 ft	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		6 inch casing with DTHH advanced to 29'. 1' boulder encountered from 27' to 28'., 0.0 ft - 29.0 ft						
30		Classification:, A-4; *Gr, Bn cmf(+) Sand, and(+) Silt, trace(+) m(+)f Gravel, Moist, Rec. = 1.58 ft		8-16-16-17 (32)	8.4	13.0	37.0	50.0
		Visual Class:, A-2-4; Gr, Bn cm(+)f SAND, little (+) Silt, little mf(+) Gravel, MTW,		12-12-17-27				

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

STATE OF VERMONT
AGENCY OF TRANSPORTATION
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CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-11B**
Page No.: 2 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Mario Barahona
Date Started: 9/26/22 Date Finished: 9/28/22
VTSPG NAD83: N 754954.00 ft E 1760792.00 ft
Station: 100+71 Offset: 17 LT
Ground Elevation: 854.9 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_E = 0.97

Groundwater Observations

Date	Depth (ft)	Notes
09/28/22	53.58	See Note 1

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Rec. = 1.08 ft		(29)				
40		Visual Class:, A-1-B; Gr c(+)mf Sand, some(+) cmf Gravel, some(-) Silt, trace wood, trace fibers, Wet, Rec. = 0.25 ft		120/4"				
		1' boulder from 39' to 40', 41.0 ft - 44.0 ft						
45		Classification:, A-4; *Gr cmf(+) SAND, and Silt, trace f Gravel, Wet, Rec. = 0.83 ft		32-58-72-63 (130)		12.0	46.0	42.0
		Casing refusal @ ~ 46 ft. Intermittent heavy rig chatter from 46' to 49', 46.0 ft - 49.0 ft						
50		Field Class:, A-4; *Dk Gr cmf(+) Sand, and Silt, little mf(+) Gravel, trace weathered granite, MTW, Rec. = 1.17 ft		42-31-48-68 (79)		18.0	40.0	42.0
55		Classification:, A-4; *Dk Gr cmf(+) Sand, and(+) Silt, little m(+)f Gravel, trace weathered granite, MTW, Rec. = 1.08 ft		59-109-70/3"				
		Boulder 56.4 to 57.4 ft. Intermittent heavy rig chatter from 57.5 to 59 ft., 56.0 ft - 59.0 ft						
60		Visual Class:, A-1-A; Dk Gr c(+)mf GRAVEL, little(+) cmf Sand, trace(+) Silt, Wet, Rec. = 0.33 ft		120/4"				
		1' boulder 59' to 60'. Intermittent heavy rig chatter from 59' to 64', 61.0 ft - 64.0 ft						
65		Classification:, A-2-4; *Dk Gr cmf(+) SAND, some Silt, little mf(+) Gravel, Wet, Rec. = 0.75 ft		72-100/3"		24.0	50.0	26.0
		Visual Class:, A-1-B; Dk Gr c(+)mf Sand, some cmf(+) Gravel, little(-) Silt, Wet,		96-100/3"				

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-11B**
Page No.: 3 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Mario Barahona
Date Started: 9/26/22 Date Finished: 9/28/22
VTSPG NAD83: N 754954.00 ft E 1760792.00 ft
Station: 100+71 Offset: 17 LT
Ground Elevation: 854.9 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_F = 0.97

Groundwater Observations

Date	Depth (ft)	Notes
09/28/22	53.58	See Note 1

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Rec. = 0.75 ft						
		Intermittent heavy rig chatter from 78' to 79', 71.0 ft - 74.0 ft						
75		Classification:, A-4; *Dk Gr SILT, cmf(+) Sand, trace(-) f Gravel, Wet, Rec. = 1.5 ft		47-53-78-83 (131)		4.0	39.0	57.0
		Intermittent heavy rig chatter from 78' to 79', 76.0 ft - 79.0 ft						
80		Visual Class:, A-1-B; Dk Gr c(+)mf SAND, some(-) cmf(+) Gravel, little(-) Silt, trace weathered granite, Wet, Rec. = 0.67 ft		79-93-50/2"				
85		Classification:, A-4; *Dk Gr SILT, some(+) cmf(+) Sand, trace mf(+) Gravel, Wet, Rec. = 1.58 ft		34-28-40-50/3" (68)		11.0	29.0	60.0
		Boulder from 85.5' to 87'. Intermittent heavy rig chatter from 88' to 89', 86.0 ft - 89.0 ft						
90		Visual Class:, A-2-4; Dk Gr cm(+)f SAND, little(+) Silt, little(-) mf(+) Gravel, Wet, Rec. = 0.58 ft		87-100/4"				
		Intermittent heavy rig chatter from 93' to 94', 91.0 ft - 94.0 ft						
95		No recovery. Split spoon refusal, 94.0 ft - 94.0 ft Hole stopped @ 94.0 ft		50/0"				
100								

Remarks:
1. Groundwater reading taken prior to completion of drilling on 9/28/22 at 7:49 AM
2. Groundwater monitoring well, with flushmount, installed.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-12**
Page No.: 1 of 1
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny Smith, Mario Barahona
Date Started: 11/30/22 Date Finished: 11/30/22
VTSPG NAD83: N 754609.00 ft E 1760615.00 ft
Station: 97+00 Offset: 27 LT
Ground Elevation: 822.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_F = 0.97

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		Visual Class:, A-1-B; Dk Bn c(+)mf Sand, some(+) cm(+)f Gravel, trace(+) Silt, Dry, Rec. = 0.83 ft	2-3-3-4 (6)				
		Visual Class:, A-1-B; Dk Bn c(+)mf SAND, some(-) c(+)mf Gravel, trace(+) Silt, Dry, Rec. = 1.17 ft	8-7-7-5 (14)				
		Visual Class:, A-1-B; Dk Bn same as above. Boulder at 5'. Advanced w/DTHH, boulder encountered from 5' to 8.5'. Casing couldn't advance past 5'. Hole offset 6.3'	10-12-50/0"				
		Hole stopped @ 8.5 ft					
10		Remarks: 1. Boring terminated and offset due to boulder. Could not advance with casing. 2. Borehole offset 6.3-ft south, new name B-12A.					
15							
20							
25							
30							

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

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

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-12A**
Page No.: 1 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny/ Mike, MEB/ JW/ DS
Date Started: 11/30/22 Date Finished: 12/02/22
VTSPG NAD83: N 754605.00 ft E 1760620.00 ft
Station: 96+93 Offset: 27 LT
Ground Elevation: 822.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_F = 0.97

Groundwater Observations

Date	Depth (ft)	Notes
12/05/22	56.68	See Note 1
12/06/22	55.9	See Note 2

Top of Well Elevation: 822.0 ft

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		See log B-12 for sampling performed from 0' to 9'. Advanced w/6" casing & DTHH to 9', 0.0 ft - 9.0 ft								
10		Classification:, A-4; Bn cmf(+) Sand, and Silt, little mf(+) Gravel, Dry, Rec. = 0.75 ft		45-10-9-11 (19)	9.9	17.0	40.0	43.0		
15		Visual Class:, A-2-4; Gr, Bn cm(+)f SAND, some(-) Silt, little mf(+) Gravel, Moist, Rec. = 1.58 ft		11-10-10-11 (20)						
20		Classification:, A-4; Gr, Bn cmf(+) Sand, and Silt, little mf(+) Gravel, trace phylite boulder, Moist, Rec. = 1.0 ft		13-18-27-25 (45)	9.3	13.0	47.0	40.0		
25		Visual Class:, A-2-4; Br cm(+)f SAND, little(+) Silt, little(-) mf(+) Gravel, varved, Moist, Rec. = 1.08 ft		10-10-17-77 (27)						
30		Visual Class:, A-1-B; Gr c(+)mf GRAVEL, little(+) c(+)mf Sand, trace Silt, Dry, Rec. = 0.58 ft		12-20-15-12 (35)						
		No Recovery. 4' boulder encountered from 33' to 37', 34.0 ft - 36.0 ft		50/0"						

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
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CENTRAL LABORATORY

BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-12A**
Page No.: 2 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny/ Mike, MEB/ JW/ DS
Date Started: 11/30/22 Date Finished: 12/02/22
VTSPG NAD83: N 754605.00 ft E 1760620.00 ft
Station: 96+93 Offset: 27 LT
Ground Elevation: 822.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_F = 0.97

Groundwater Observations

Date	Depth (ft)	Notes
12/05/22	56.68	See Note 1
12/06/22	55.9	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
40		Classification:, A-4; *Gr, Bn cmf(+) Sand, and Silt, little mf(+) Gravel, Moist, Rec. = 1.25 ft		8-21-40-47 (61)		15.0	48.0	37.0		
45		Visual Class:, A-1-B; Gr, Lt Bn cmf SAND, some cmf Gravel, trace Silt, Dry, Rec. = 1.83 ft		27-26-31-34 (57)						
50		Classification:, A-4; *Gr, Bn cmf(+) Sand, and Silt, little c(+)mf Gravel, Dry, Rec. = 2.0 ft		3-9-13-15 (22)	23.6	18.0	43.0	39.0	30	6
55		Classification:, A-4; *Lt Bn, Bn cmf(+) Sand, and Silt, little mf Gravel, Wet, Rec. = 1.58 ft		9-11-12-14 (23)		16.0	44.0	40.0		
60		Visual Class:, A-1-B; Gr, Bn f SAND, little mf Gravel, little Silt, MTW, Rec. = 1.58 ft		11-10-9-11 (19)						
65		Classification:, A-4; *Gr SILT, and cmf(+) Sand, little f Gravel, MTW, Rec. = 1.42 ft		42-73-100/6"		10.0	39.0	51.0		
		Classification:, A-4; *Gr SILT, some cmf(+) Sand, trace f Gravel, MTW,		74-100/5"		2.0	27.0	71.0		

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

BORING LOG VTRANS LYNDON.GPJ VERMONT AOT.GDT 1/28/23

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
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BORING LOG

Lyndon
IM 091-3(53)
Interstate I-91

Boring No.: **B-12A**
Page No.: 3 of 3
Pin No.: 19a189
Checked By: MEB

Boring Crew: Kenny/ Mike, MEB/ JW/ DS
Date Started: 11/30/22 Date Finished: 12/02/22
VTSPG NAD83: N 754605.00 ft E 1760620.00 ft
Station: 96+93 Offset: 27 LT
Ground Elevation: 822.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	STRATASTAR	C_F = 0.97

Groundwater Observations

Date	Depth (ft)	Notes
12/05/22	56.68	See Note 1
12/06/22	55.9	See Note 2

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		Rec. = 0.92 ft								
75		Visual Class:, A-1-B; Gr, Wh, Bk cmf SAND, little(+) mf Gravel, trace Silt, MTW, Rec. = 0.25 ft		100/5"						
80		Classification:, A-4; *Gr, Wh, Bk SILT, and cmf(+) Sand, trace f Gravel, Moist, Rec. = 2.0 ft		70-68-60-79 (128)	8.5	4.0	37.0	59.0		
85		Classification:, A-4; *Gr, Wh, Bk SILT, some cmf(+) Sand, trace mf Gravel, Moist, Rec. = 1.75 ft		29-47-51-48 (98)	9.2	5.0	24.0	71.0		
		Roller bit refusal at 87', possible bedrock. Rock fragments in drilling spoils., 86.0 ft - 87.0 ft								
		Hole stopped @ 87.0 ft								
90		Remarks: 1. Groundwater reading taken after completion of drilling on 12/5/22 at 9:00 AM 2. Groundwater reading taken after completion of drilling on 12/6/22 at 3:00 PM 3. Stratastar truck rig hammer, Cn=0.97, used between depths of 9 to 61-ft (S-1 to S-11). Versadrill GT-8 truck rig hammer, Cn=1.45, used between depths of 64 to 89-ft (S-12 to S-17).								
95										
100										

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E 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.
4. * Indicates that soil description has been verified based upon laboratory results.
5. Strata column graphic indicates AASHTO soil classification system.

Appendix III – Field Recorded Groundwater Monitoring Well Logs

HNTB CORPORATION
Consulting Engineers

Observation Well Installation Log

WELL NO.: B-1

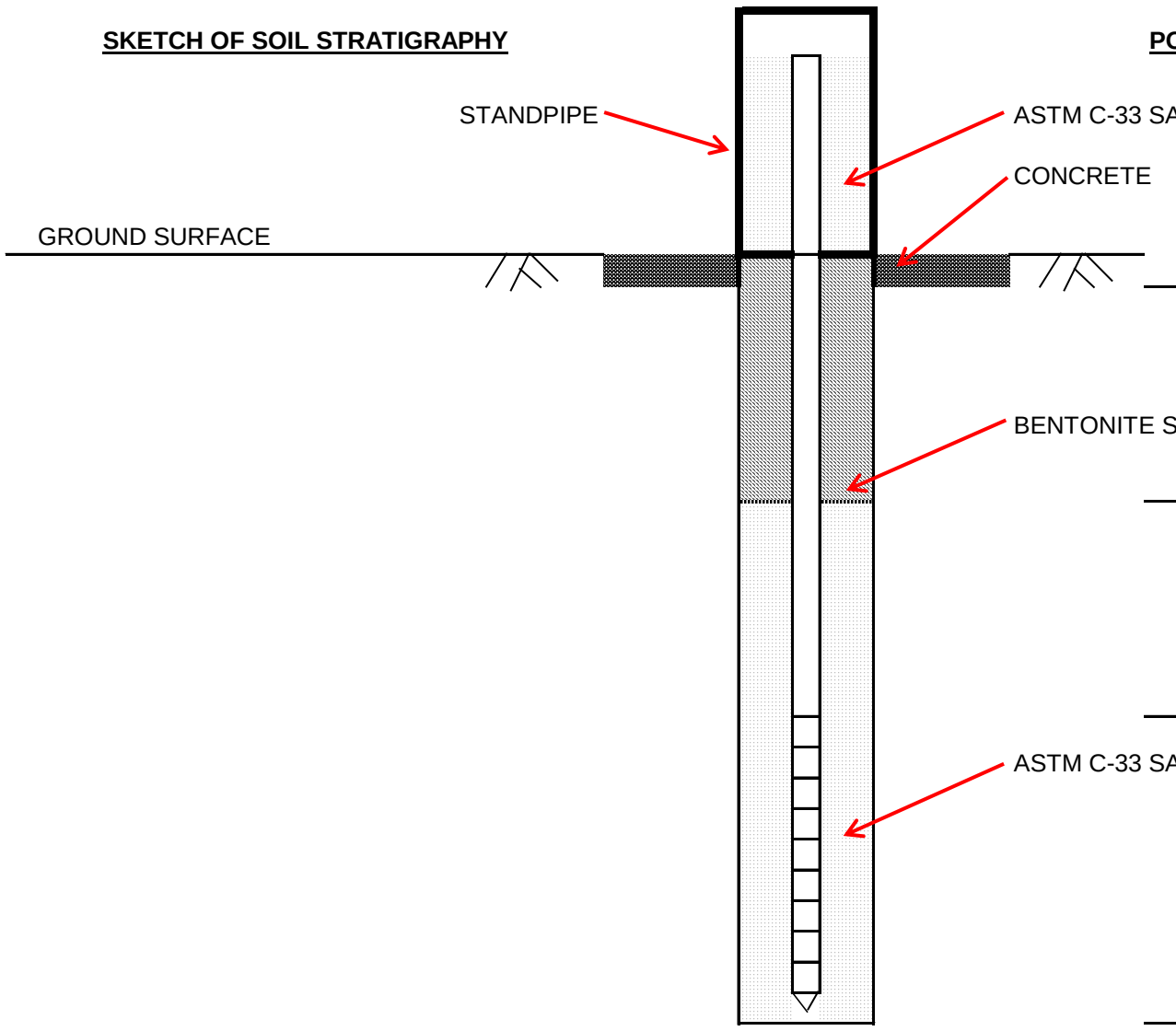
PROJECT NAME: Vtrans Lyndon IM 091-3(53) PROJECT NO.: 78773

DATE INSTALLED: 9/28/2022 INSPECTOR: Debojit Sarker BOREHOLE DEPTH: 49.0 ft

CONTRACTOR: NEBC DRILLER: Bob Thompson HELPER: Will S.

LOCATION: Lyndonville, VT GROUND ELEVATION: 861.2

SKETCH OF SOIL STRATIGRAPHY



Not to Scale

POINTS OF INTEREST

0.67 FT = CONCRETE DEPTH

10.0 FT = BENTONITE SEAL DEPTH

12.4 FT = TOP OF SCREEN DEPTH
(10' Long Screen)

32.4 FT = BOTTOM OF WELL,
BOTTOM OF SAND, WELL
CASING TIP

WELL READINGS

DATE	TIME	BY	DEPTH(FT)	ELEVATION (FT)
9/29/2022	10:30 AM	DS	24.2	837.0
9/30/2022	11:53 AM	DS	24.1	837.1
10/4/2022	3:40 PM	DS	24.0	837.2
10/5/2022	3:28 PM	DS	24.1	837.1
10/19/2022	8:26 AM	DS	23.7	837.5
11/29/2022	11:06 AM	DS	23.2	838.0
1/23/2023	1:02 PM	MEB	17.3	843.9

Depth recorded is depth below ground surface

WELL DATA

ITEM	DESCRIPTION
PVC Well Casing Inside Diameter	2"
Lock Installed	YES
Standpipe or Flushmount	STANDPIPE
Bags of Sand Used	5
Bags of Bentonite Used	1
Development	YES

NOTES:

1. Distance from top of standpipe to ground surface is 2.72 ft.
2. HOBO Data Logger installed. Serial # 21400074
3. Well cap is locked.
4. Material below monitoring well consists of drilling spoils backfilled prior to installation of monitoring well.

HNTB CORPORATION
Consulting Engineers

Observation Well Installation Log

WELL NO.: B-3

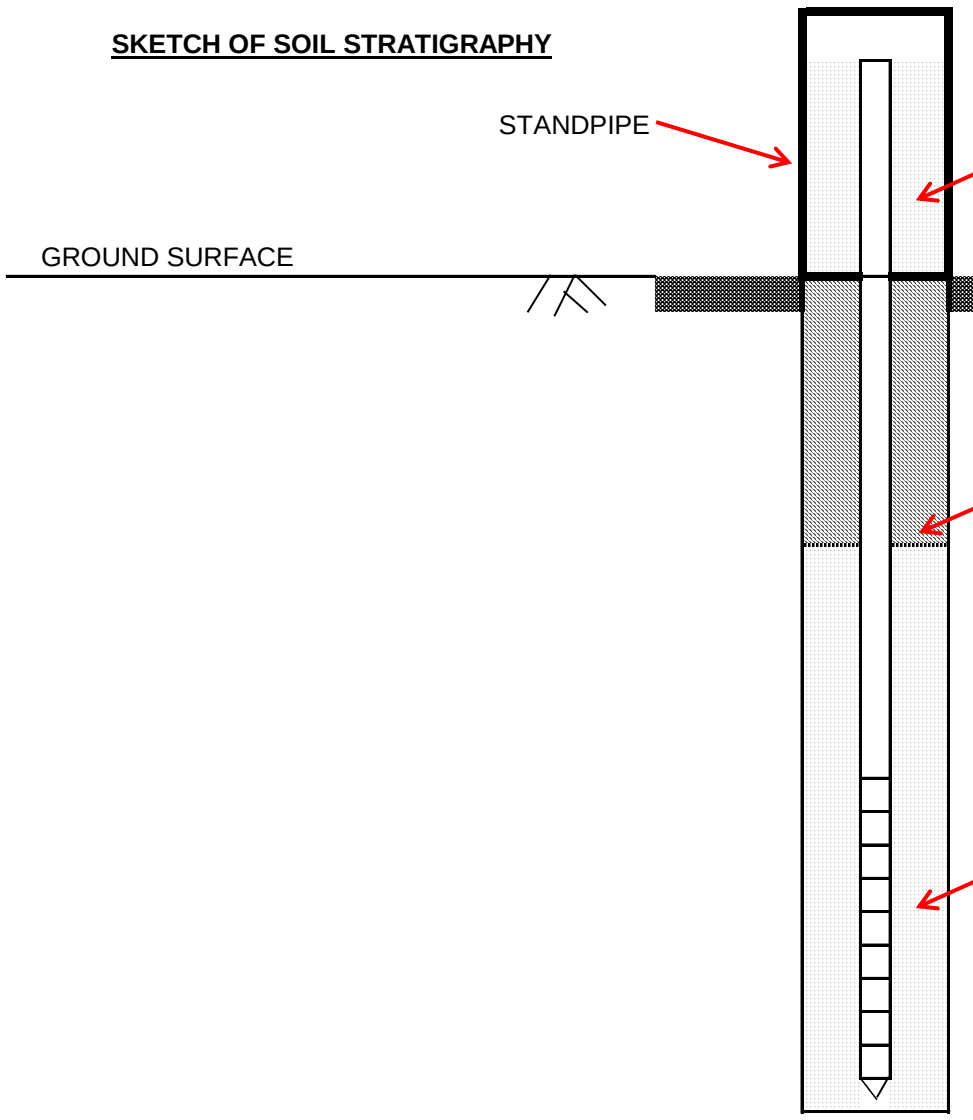
PROJECT NAME: Vtrans Lyndon IM 091-3(53) | PROJECT NO.: 78773

DATE INSTALLED: 10/4/2022 | INSPECTOR: Debojit Sarker | BOREHOLE DEPTH: 67.0 ft

CONTRACTOR: NEBC | DRILLER: Bob Thompson | HELPER: Will S.

LOCATION: Lyndonville, VT | GROUND ELEVATION: 834.1

SKETCH OF SOIL STRATIGRAPHY



Not to Scale

POINTS OF INTEREST

0.67 FT = CONCRETE DEPTH

37.0 FT = BENTONITE SEAL DEPTH

39.0 FT = TOP OF SCREEN DEPTH
(10' Long Screen)

64.0 FT = BOTTOM OF WELL, BOTTOM OF SAND, WELL CASING TIP

WELL READINGS

DATE	TIME	BY	DEPTH(FT)	ELEVATION (FT)
10/5/2022	3:37 PM	MEB	43.4	790.7
11/29/2022	10:20 AM	DS	43.6	790.5
1/23/2023	11:54 AM	MEB	43.4	790.7

Depth recorded is depth below ground surface

WELL DATA

ITEM	DESCRIPTION
PVC Well Casing Inside Diameter	2"
Lock Installed	YES
Standpipe or Flushmount	STANDPIPE
Bags of Sand Used	4
Bags of Bentonite Used	1
Development	YES

NOTES:

1. Distance from top of standpipe to ground surface is 2.86 ft.
2. HOBO Data Logger installed. Serial # 21400070
3. Well cap is locked.
4. Material below monitoring well consists of drilling spoils backfilled prior to installation of monitoring well.

HNTB CORPORATION
Consulting Engineers

Observation Well Installation Log

WELL NO.: B-4A

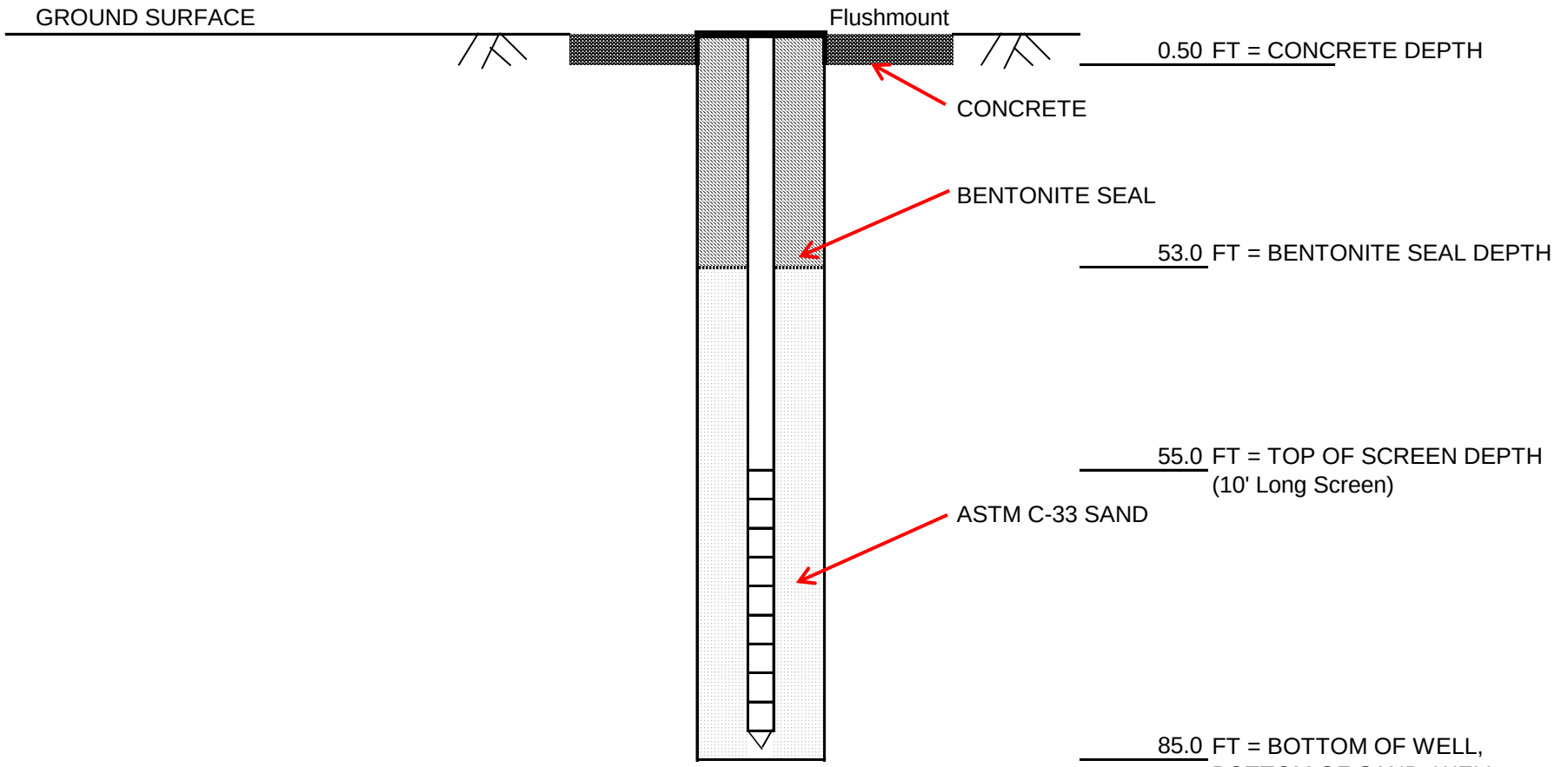
PROJECT NAME: Vtrans Lyndon IM 091-3(53) PROJECT NO.: 78773

DATE INSTALLED: 10/18/2022 INSPECTOR: Debojit Sarker BOREHOLE DEPTH: 96.0 ft

CONTRACTOR: NEBC DRILLER: Kenny Smith HELPER: Rick L.

LOCATION: Lyndonville, VT GROUND ELEVATION: 856.6

SKETCH OF SOIL STRATIGRAPHY



Not to Scale

POINTS OF INTEREST

WELL READINGS

DATE	TIME	BY	DEPTH(FT)	ELEVATION (FT)
10/20/2022	7:50 AM	DS	72.51	784.1
10/20/2022	1:10 PM	DS	72.51	784.1
11/29/2022	11:50 AM	MEB	72.2	784.4
1/23/2023	1:28 PM	MEB	71.3	785.3

Depth recorded is depth below ground surface

WELL DATA

ITEM	DESCRIPTION
PVC Well Casing Inside Diameter	2"
Lock Installed	YES
Standpipe or Flushmount	FLUSHMOUNT
Bags of Sand Used	8
Bags of Bentonite Used	1
Development	YES

NOTES:

1. Distance from top of pvc to ground surface is 2-inches.
2. HOBO Data Logger installed. Serial # 21400072
3. Flushmount installed at ground surface.
4. Material below monitoring well consists of drilling spoils backfilled prior to installation of monitoring well.

HNTB CORPORATION
Consulting Engineers

Observation Well Installation Log

WELL NO.: B-5B

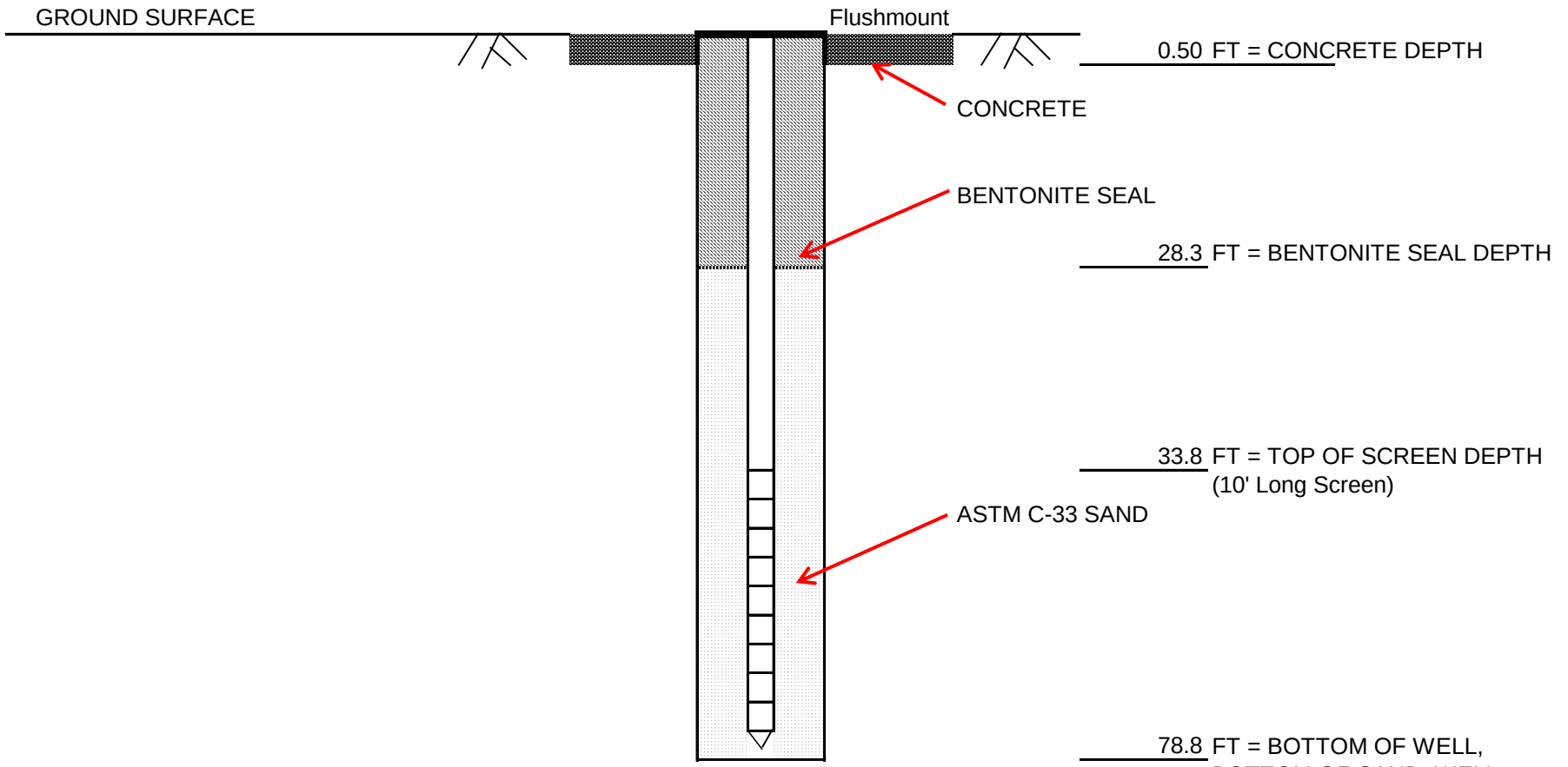
PROJECT NAME: Vtrans Lyndon IM 091-3(53) PROJECT NO.: 78773

DATE INSTALLED: 10/3/2022 INSPECTOR: Mario Barahona BOREHOLE DEPTH: 84.0 ft

CONTRACTOR: NEBC DRILLER: Kenny Smith HELPER: Rick L.

LOCATION: Lyndonville, VT GROUND ELEVATION: 857.5

SKETCH OF SOIL STRATIGRAPHY



Not to Scale

POINTS OF INTEREST

WELL READINGS

DATE	TIME	BY	DEPTH(FT)	ELEVATION (FT)
10/3/2022	3:17 PM	MEB	49.5	808.0
10/4/2022	1:26 PM	MEB	49.5	808.0
10/5/2022	3:13 PM	MEB	49.6	807.9
10/19/2022	10:39 AM	DS	49.7	807.8
11/29/2022	11:34 AM	DS	49.7	807.8
1/23/2023	1:50 PM	MEB	49	808.5

Depth recorded is depth below ground surface

WELL DATA

ITEM	DESCRIPTION
PVC Well Casing Inside Diameter	2"
Lock Installed	YES
Standpipe or Flushmount	FLUSHMOUNT
Bags of Sand Used	8
Bags of Bentonite Used	1
Development	YES

NOTES:

1. Distance from top of well to ground surface is 2-inches.
2. HOBO Data Logger installed. Serial # 21400069
3. Flushmount installed at ground surface.
4. Material below monitoring well consists of drilling spoils backfilled prior to installation of monitoring well.

HNTB CORPORATION
Consulting Engineers

Observation Well Installation Log

WELL NO.: B-6

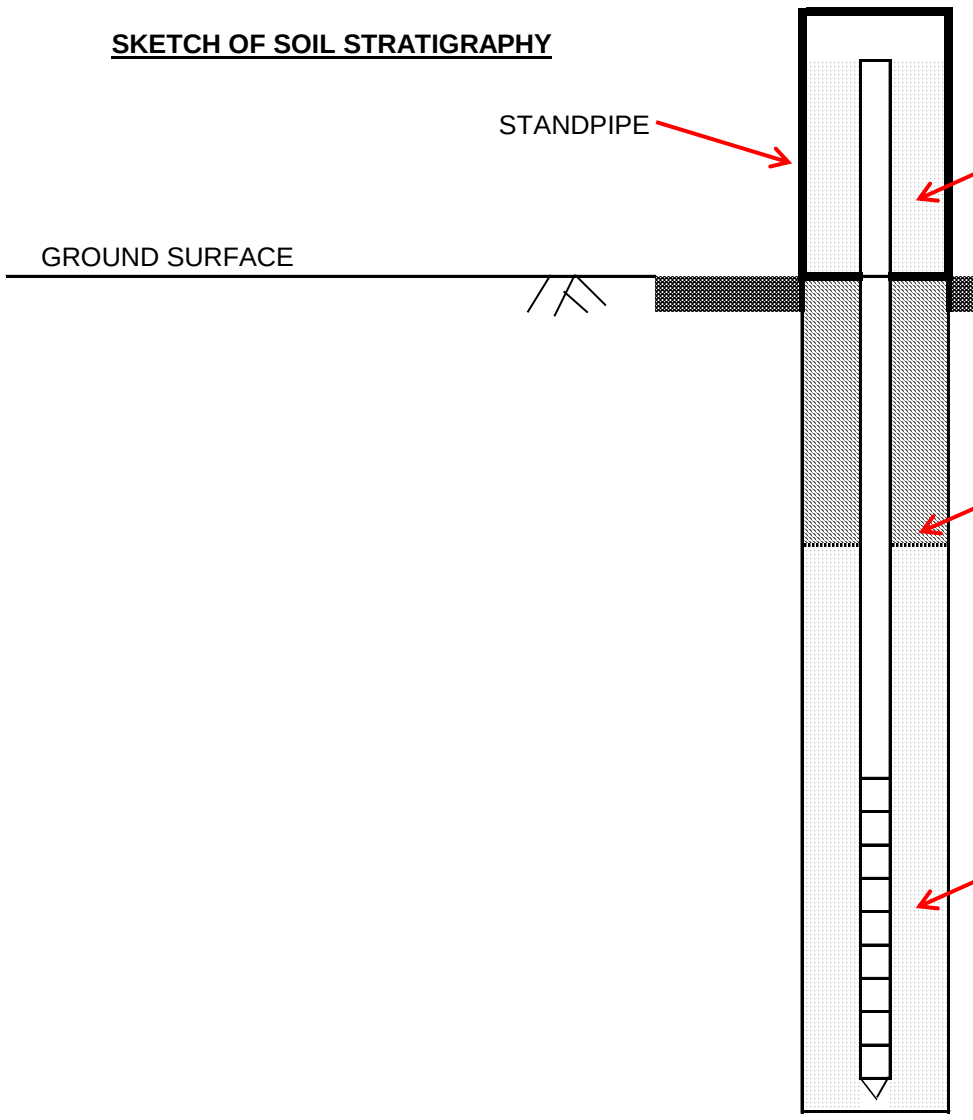
PROJECT NAME: Vtrans Lyndon IM 091-3(53) | PROJECT NO.: 78773

DATE INSTALLED: 9/29/2022 | INSPECTOR: Debojit Sarker | BOREHOLE DEPTH: 30.0 ft

CONTRACTOR: NEBC | DRILLER: Bob Thompson | HELPER: Will S.

LOCATION: Lyndonville, VT | GROUND ELEVATION: 785.5

SKETCH OF SOIL STRATIGRAPHY



Not to Scale

POINTS OF INTEREST

ASTM C-33 SAND

CONCRETE

0.50 FT = CONCRETE DEPTH

BENTONITE SEAL

8.0 FT = BENTONITE SEAL DEPTH

10.2 FT = TOP OF SCREEN DEPTH
(10' Long Screen)

ASTM C-33 SAND

20.2 FT = BOTTOM OF WELL, BOTTOM OF SAND, WELL CASING TIP

WELL READINGS

DATE	TIME	BY	DEPTH(FT)	ELEVATION (FT)
9/30/2022	12:03 PM	MEB	12.03	773.5
10/4/2022	4:00 PM	DS	12.06	773.4
10/5/2022	3:47 PM	MEB	11.9	773.6
11/29/2022	10:38 AM	DS	10.5	775.0
1/23/2023	12:22 PM	MEB	9.7	775.8

Depth recorded is depth below ground surface

WELL DATA

ITEM	DESCRIPTION
PVC Well Casing Inside Diameter	2"
Lock Installed	YES
Standpipe or Flushmount	STANDPIPE
Bags of Sand Used	5
Bags of Bentonite Used	1
Development	YES

NOTES:

1. Distance from top of standpipe to ground surface is 3.0 ft.
2. HOBO Data Logger installed. Serial # 21400085
3. Well cap is locked.
4. Material below monitoring well consists of drilling spoils backfilled prior to installation of monitoring well.

HNTB CORPORATION
Consulting Engineers

Observation Well Installation Log

WELL NO.: B-8C

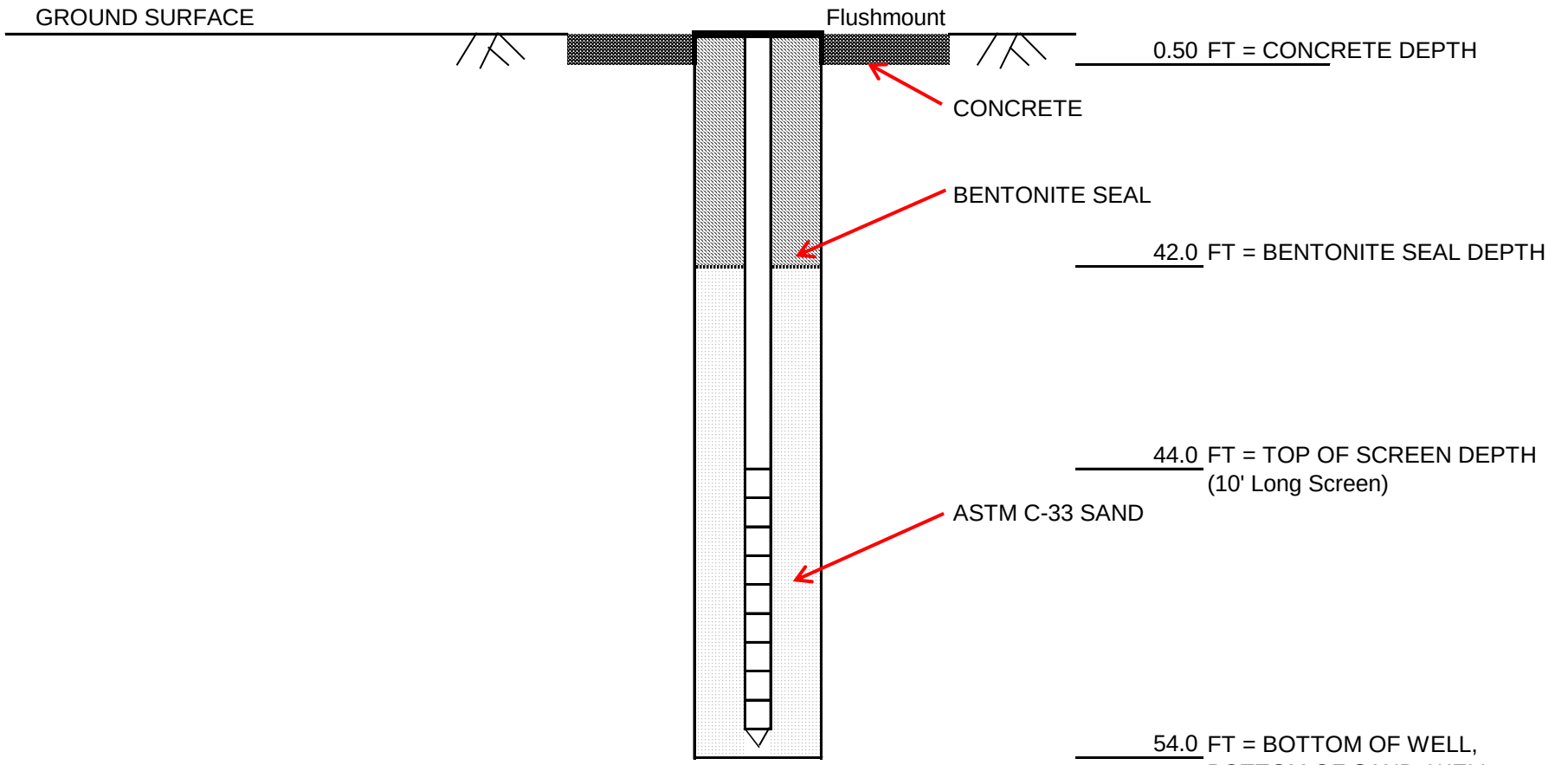
PROJECT NAME: Vtrans Lyndon IM 091-3(53) PROJECT NO.: 78773

DATE INSTALLED: 11/4/2022 INSPECTOR: Debojit Sarker BOREHOLE DEPTH: 64.0 ft

CONTRACTOR: NEBC DRILLER: Kenny Smith HELPER: Phil S.

LOCATION: Lyndonville, VT GROUND ELEVATION: 825.8

SKETCH OF SOIL STRATIGRAPHY



Not to Scale

POINTS OF INTEREST

WELL READINGS

DATE	TIME	BY	DEPTH(FT)	ELEVATION (FT)
11/15/2022	9:00 AM	DS	49	776.8
11/29/2022	8:30 AM	DS	48.7	777.1
12/6/2022	12:20 PM	DS	48.9	776.9
1/23/2023	4:26 PM	MEB	49.2	776.6

Depth recorded is depth below ground surface

WELL DATA

ITEM	DESCRIPTION
PVC Well Casing Inside Diameter	2"
Lock Installed	YES
Standpipe or Flushmount	FLUSHMOUNT
Bags of Sand Used	8
Bags of Bentonite Used	1
Development	YES

NOTES:

1. Distance from top of pvc to ground surface is 3-inches.
2. HOBO Data Logger installed. Serial # 21400073
3. Flushmount installed at ground surface.
4. Material below monitoring well consists of drilling spoils backfilled prior to installation of monitoring well.

HNTB CORPORATION
Consulting Engineers

Observation Well Installation Log

WELL NO.: B-9A

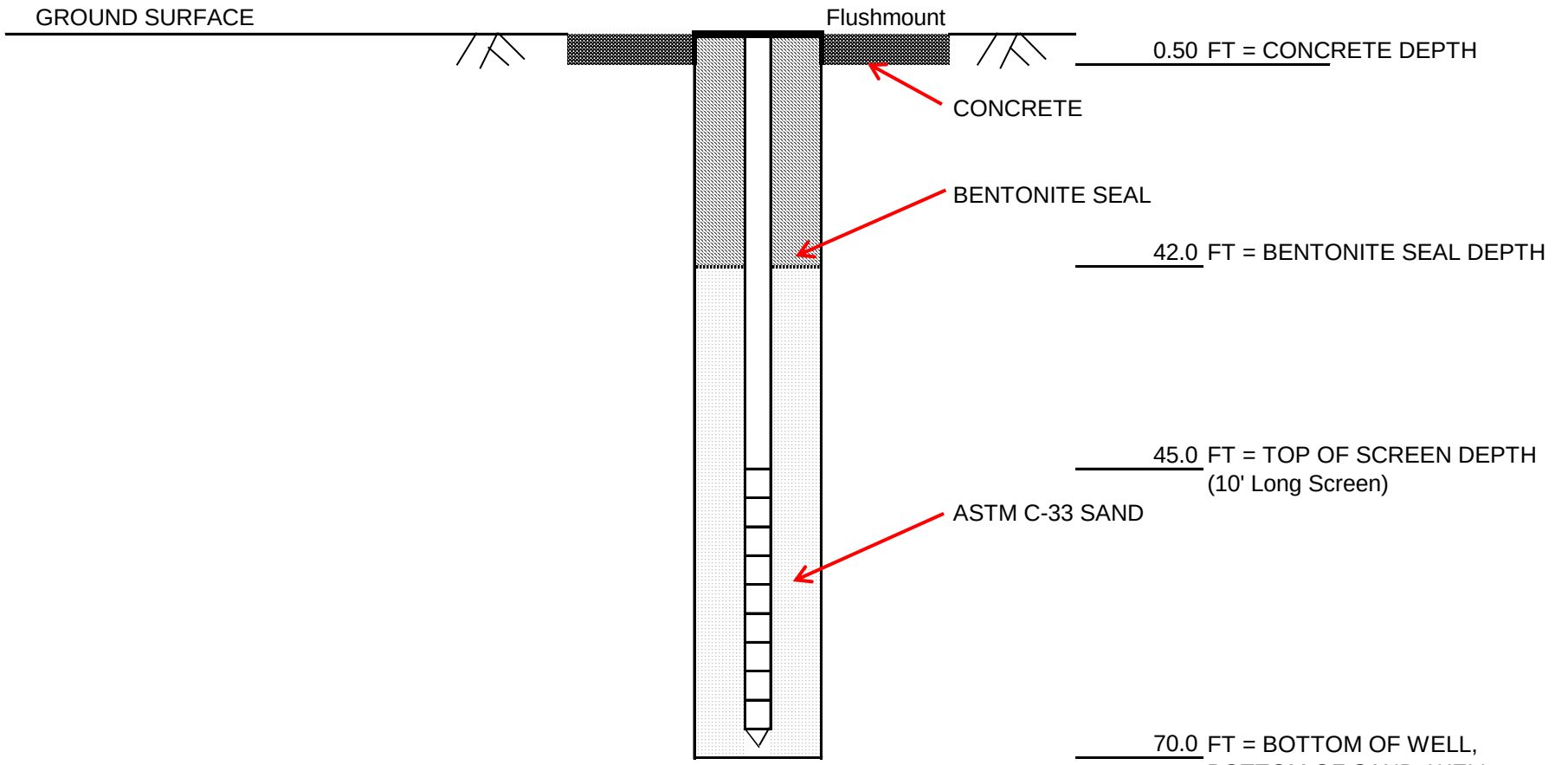
PROJECT NAME: Vtrans Lyndon IM 091-3(53) | PROJECT NO.: 78773

DATE INSTALLED: 12/1/2022 | INSPECTOR: Debojit Sarker | BOREHOLE DEPTH: 93.2 ft

CONTRACTOR: NEBC | DRILLER: Mike M. | HELPER: Will W.

LOCATION: Lyndonville, VT | GROUND ELEVATION: 827.4

SKETCH OF SOIL STRATIGRAPHY



Not to Scale

POINTS OF INTEREST

WELL READINGS

DATE	TIME	BY	DEPTH(FT)	ELEVATION (FT)
12/2/2022	7:33 AM	JZ	53.3	774.1
12/7/2022	9:05 AM	DS	52.8	774.6
1/23/2023	3:38 PM	MEB	53.2	774.2

Depth recorded is depth below ground surface

WELL DATA

ITEM	DESCRIPTION
PVC Well Casing Inside Diameter	2"
Lock Installed	YES
Standpipe or Flushmount	FLUSHMOUNT
Bags of Sand Used	11
Bags of Bentonite Used	2
Development	YES

NOTES:

1. Distance from top of pvc to ground surface is 6-inches.
2. HOBO Data Logger installed. Serial # 21400071
3. Flushmount installed at ground surface.
4. Material below monitoring well consists of drilling spoils backfilled prior to installation of monitoring well.

HNTB CORPORATION
Consulting Engineers

Observation Well Installation Log

WELL NO.: B-10

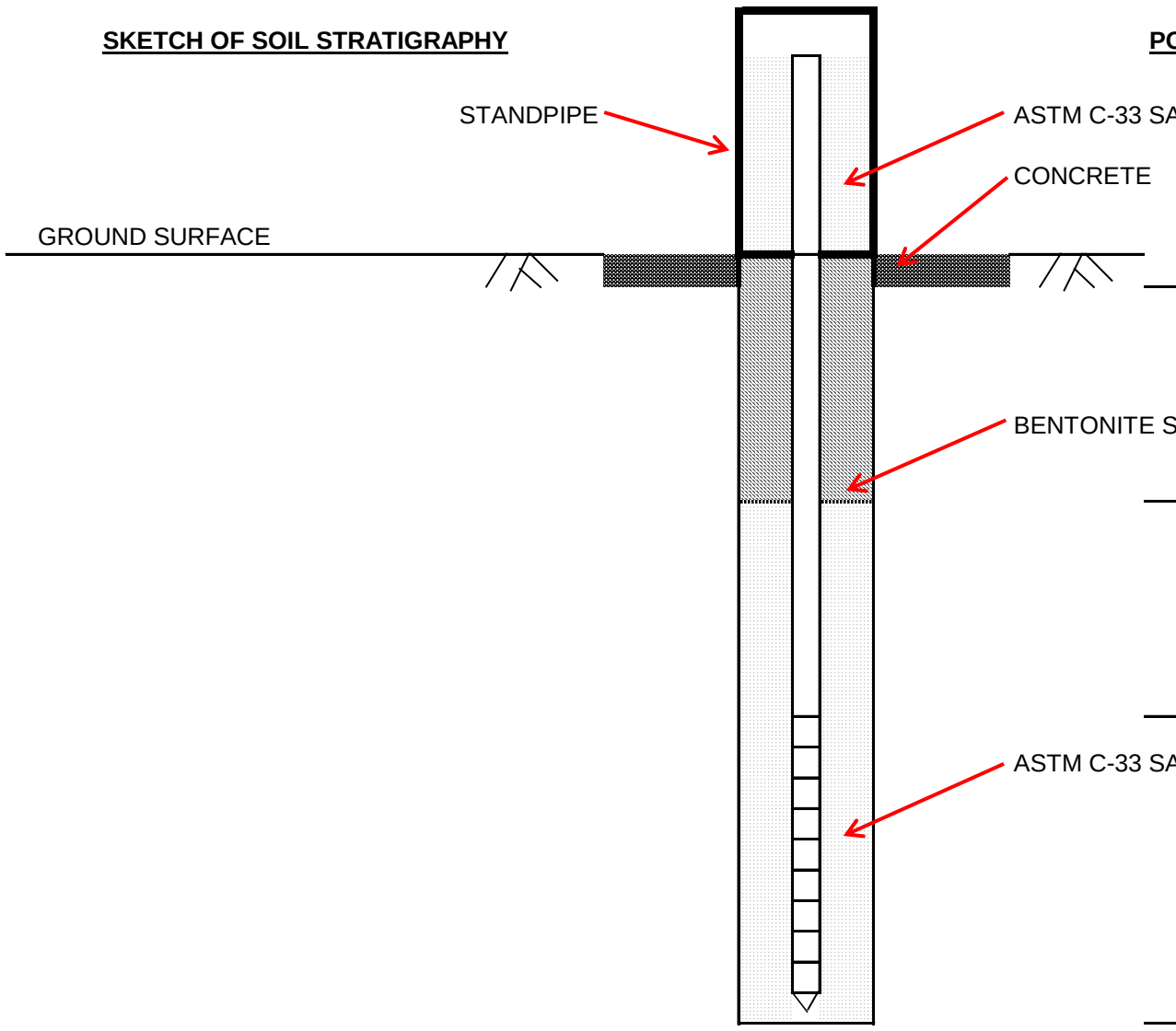
PROJECT NAME: Vtrans Lyndon IM 091-3(53) PROJECT NO.: 78773

DATE INSTALLED: 10/6/2022 INSPECTOR: Debojit Sarker BOREHOLE DEPTH: 50.0 ft

CONTRACTOR: NEBC DRILLER: Bob Thompson HELPER: Will S.

LOCATION: Lyndonville, VT GROUND ELEVATION: 760.5

SKETCH OF SOIL STRATIGRAPHY



Not to Scale

POINTS OF INTEREST

0.50 FT = CONCRETE DEPTH

0.5 FT = BENTONITE SEAL DEPTH

2.0 FT = TOP OF SCREEN DEPTH
(10' Long Screen)

12.0 FT = BOTTOM OF WELL, BOTTOM OF SAND, WELL CASING TIP

WELL READINGS

DATE	TIME	BY	DEPTH(FT)	ELEVATION (FT)
10/7/2022	7:55 AM	DS	7.0	753.5
11/29/2022	9:44 AM	DS	5.5	755.0
1/24/2023	11:03 AM	MEB	4.0	756.5

Depth recorded is depth below ground surface

WELL DATA

ITEM	DESCRIPTION
PVC Well Casing Inside Diameter	2"
Lock Installed	YES
Standpipe or Flushmount	STANDPIPE
Bags of Sand Used	12
Bags of Bentonite Used	1
Development	YES

NOTES:

1. Distance from top of standpipe to ground surface is 3.0 ft.
2. HOBO Data Logger installed. Serial # 21400076
3. Well cap is locked.
4. Material below monitoring well consists of drilling spoils backfilled prior to installation of monitoring well.

HNTB CORPORATION
Consulting Engineers

Observation Well Installation Log

WELL NO.: B-11B

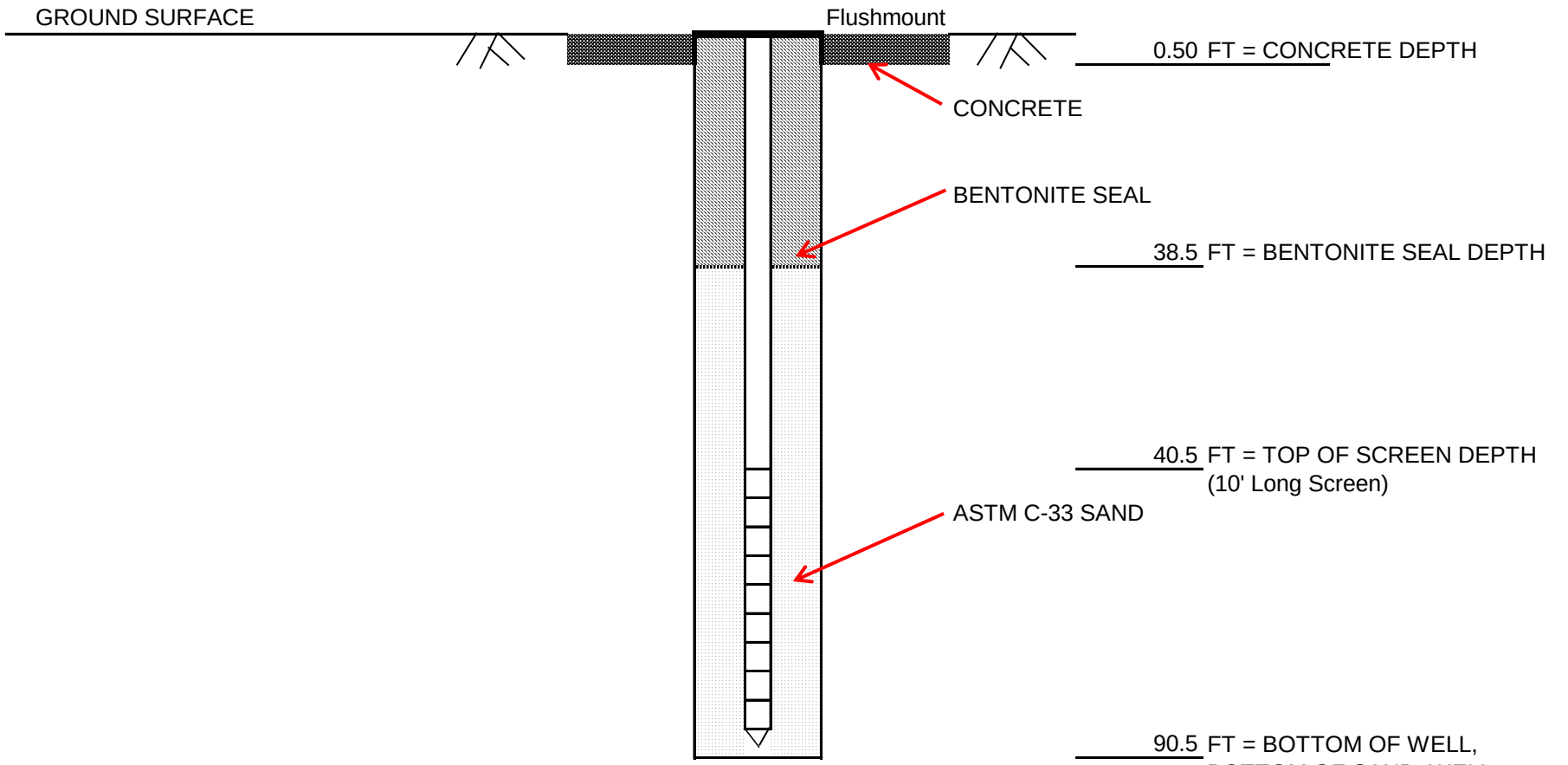
PROJECT NAME: Vtrans Lyndon IM 091-3(53) PROJECT NO.: 78773

DATE INSTALLED: 9/28/2022 INSPECTOR: Mario Barahona BOREHOLE DEPTH: 94.0 ft

CONTRACTOR: NEBC DRILLER: Kenny Smith HELPER: Rick L.

LOCATION: Lyndonville, VT GROUND ELEVATION: 854.8

SKETCH OF SOIL STRATIGRAPHY



Not to Scale

POINTS OF INTEREST

WELL READINGS

DATE	TIME	BY	DEPTH(FT)	ELEVATION (FT)
9/29/2022	7:31 AM	MEB	56.8	798.0
9/29/2022	9:31 AM	MEB	57.1	797.8
9/29/2022	12:48 PM	MEB	57.2	797.7
9/30/2022	10:00 AM	MEB	57.2	797.6
10/3/2022	11:43 AM	MEB	57.1	797.7
10/5/2022	3:07 PM	MEB	57.0	797.8
1/23/2022	2:20 PM	MEB	55.3	799.5

Depth recorded is depth below ground surface

WELL DATA

ITEM	DESCRIPTION
PVC Well Casing Inside Diameter	2"
Lock Installed	YES
Standpipe or Flushmount	FLUSHMOUNT
Bags of Sand Used	11
Bags of Bentonite Used	2
Development	YES

NOTES:

1. Distance from top of pvc to ground surface is 3-inches.
2. HOBO Data Logger installed. Serial # 21400075
3. Flushmount installed at ground surface.
4. Material below monitoring well consists of drilling spoils backfilled prior to installation of monitoring well.

HNTB CORPORATION
Consulting Engineers

Observation Well Installation Log

WELL NO.: B-12A

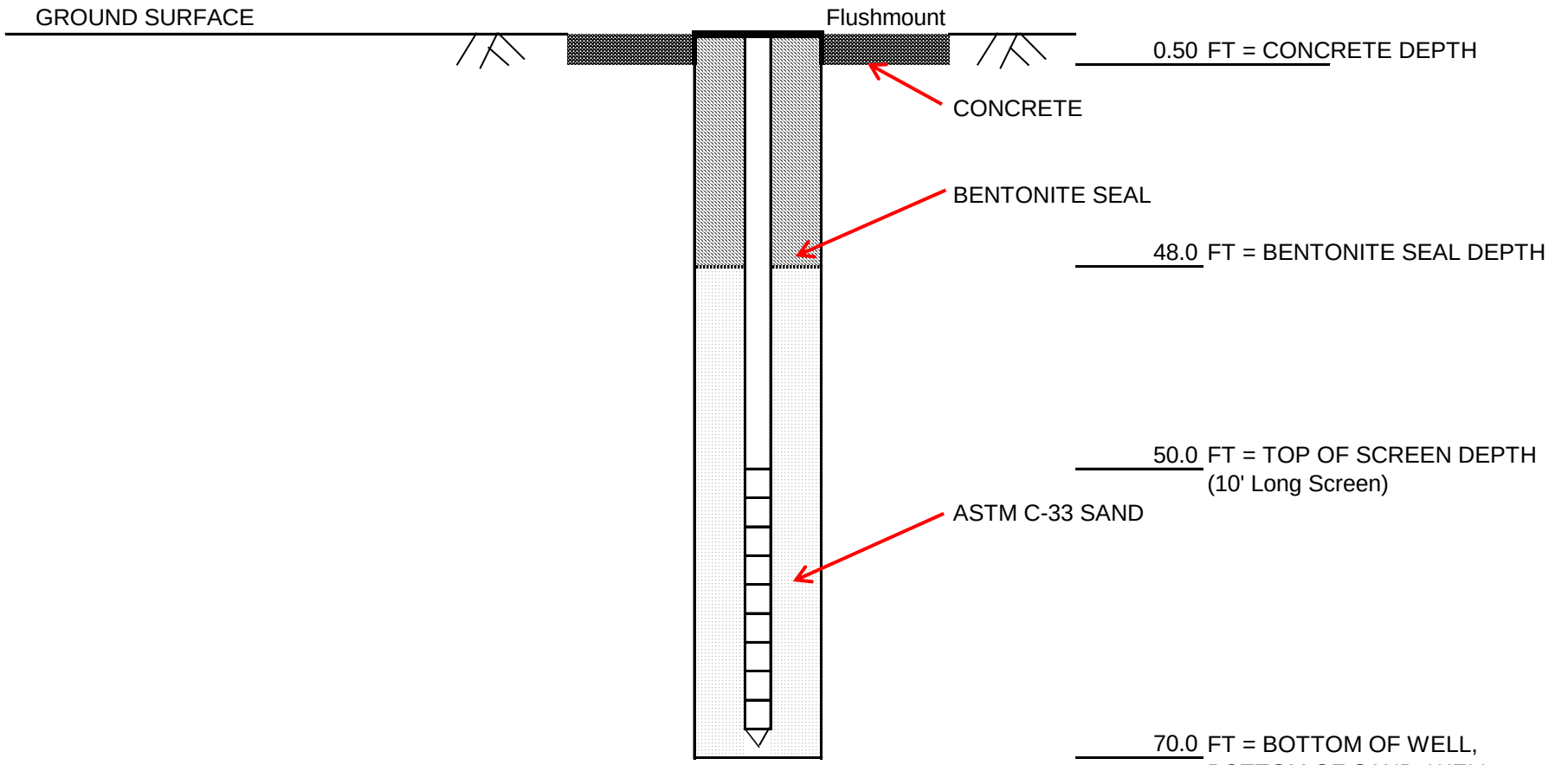
PROJECT NAME: Vtrans Lyndon IM 091-3(53) | PROJECT NO.: 78773

DATE INSTALLED: 12/5/2022 | INSPECTOR: Debojit Sarker | BOREHOLE DEPTH: 87.0 ft

CONTRACTOR: NEBC | DRILLER: Mike M. | HELPER: Jack W.

LOCATION: Lyndonville, VT | GROUND ELEVATION: 823.1

SKETCH OF SOIL STRATIGRAPHY



Not to Scale

POINTS OF INTEREST

WELL READINGS

DATE	TIME	BY	DEPTH(FT)	ELEVATION (FT)
12/6/2022	3:00 PM	DS	55.9	767.2
1/24/2023	10:36 AM	MEB	53.5	769.6

Depth recorded is depth below ground surface

WELL DATA

ITEM	DESCRIPTION
PVC Well Casing Inside Diameter	2"
Lock Installed	YES
Standpipe or Flushmount	FLUSHMOUNT
Bags of Sand Used	11
Bags of Bentonite Used	1
Development	YES

NOTES:

1. Distance from top of pvc to ground surface is 6-inches.
2. HOBO Data Logger installed. Serial # 21400084
3. Flushmount installed at ground surface.
4. Material below monitoring well consists of drilling spoils backfilled prior to installation of monitoring well.

Appendix IV – Automatic HOBO Data Logger Readings

B-1_2022-11-29.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400074
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 09:04:17 AM GMT-04:00
- Calibration Date: 04/25/22 06:40:14 AM GMT-04:00

Deployment Info

- Full Series Name: Water Level, feet
- Launch Name: B-1
- Deployment Number: 7
- Launch Time: 10/19/22 10:29:25 AM GMT-04:00
- Logging Interval: 00 Hr 15 Min 00 Sec
- Launch GMT Offset: -4 Hr 0 Min
- Battery at Launch: 3.37 Volts
- Launching Program: HOBOware Pro-3.7.25_0811_1019_Windows

Series Statistics

- Samples: 3,943
- Max: 836.604
- Min: 836.014
- Avg: 836.400
- Std Dev (σ): 0.171
- First Sample Time: 10/19/22 10:35:00 AM GMT-04:00
- Last Sample Time: 11/29/22 12:05:00 PM GMT-04:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 836.490 feet
- Reference Time: 11/29/22 11:05:00 AM GMT-04:00

1-23-23_B-1.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400074
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:04:17 AM GMT-05:00
- Calibration Date: 04/25/22 05:40:14 AM GMT-05:00

Deployment Info

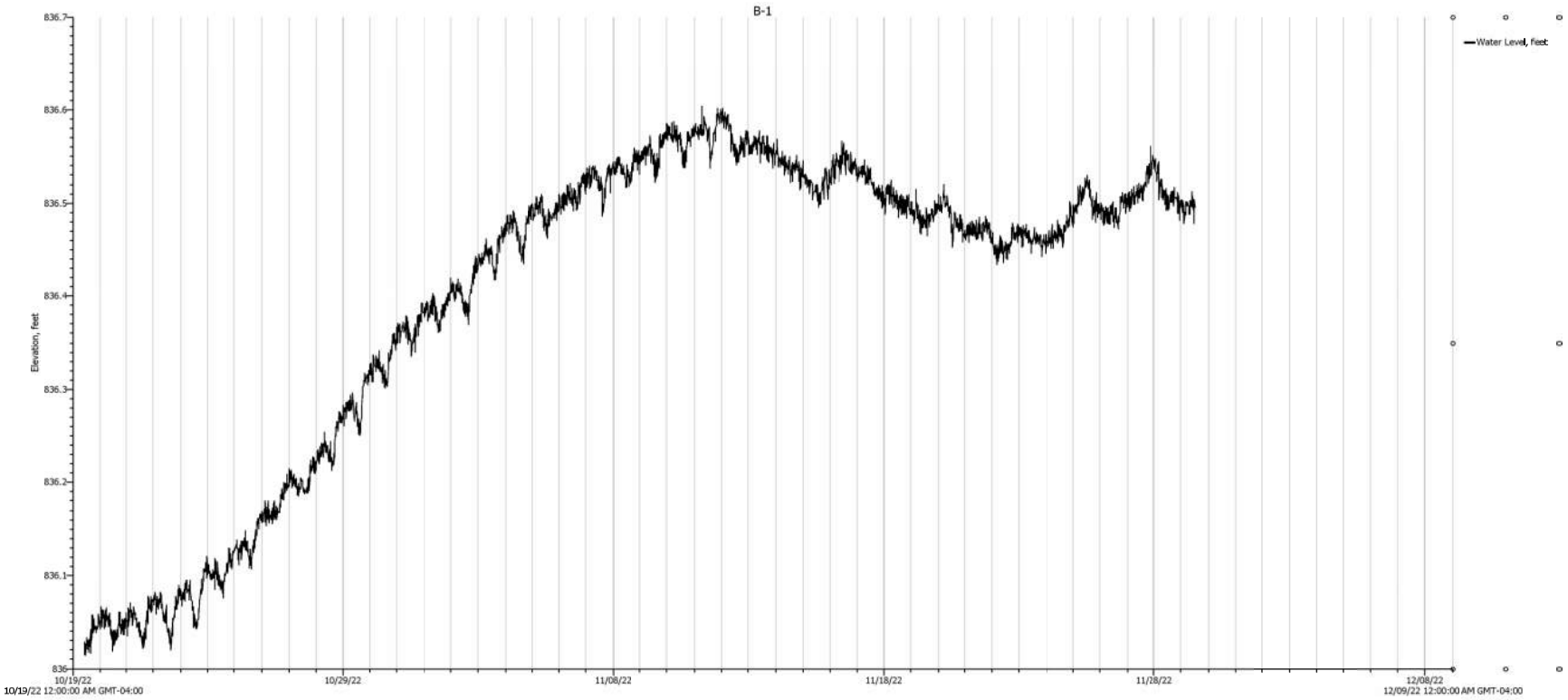
- Deployment info is not available

Series Statistics

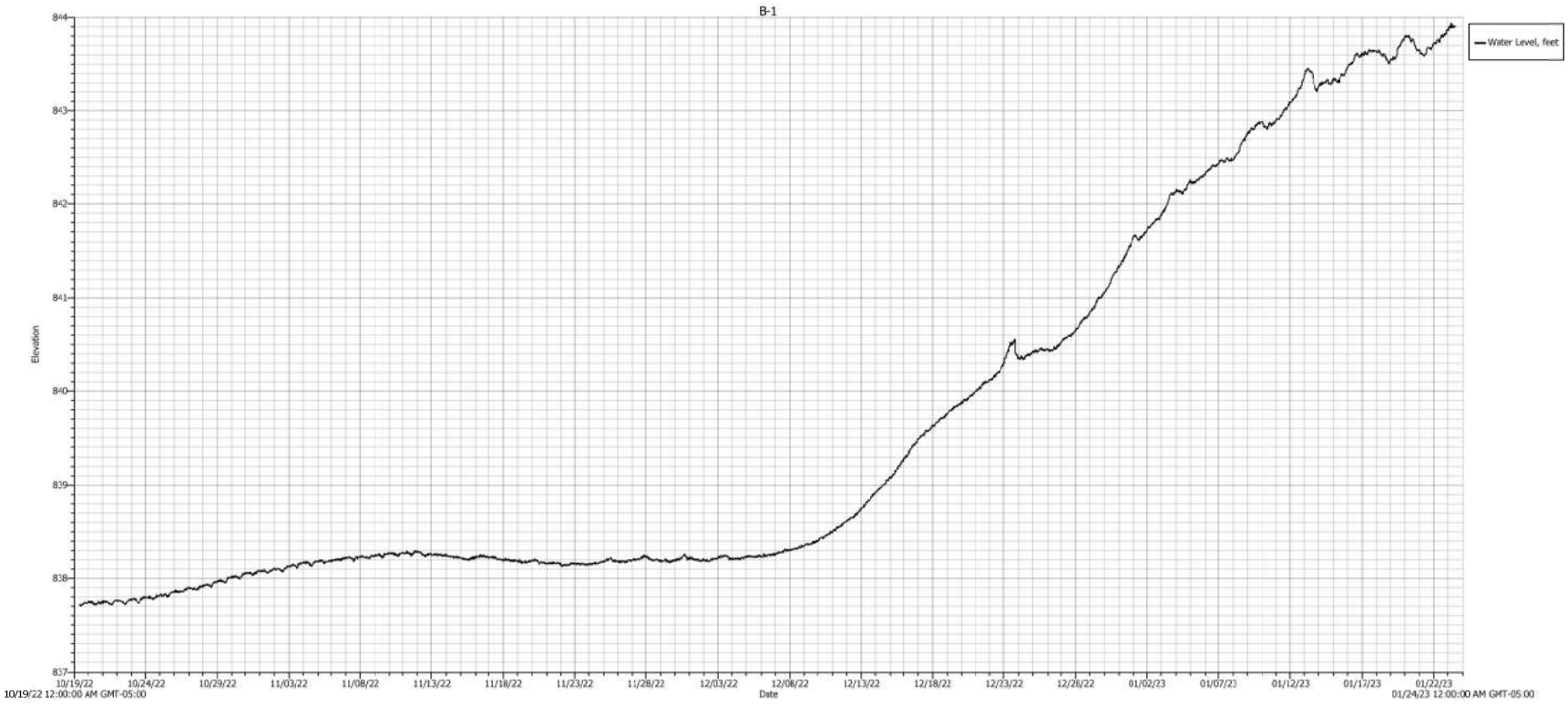
- Samples: 9,230
- Max: 843.936
- Min: 837.707
- Avg: 839.668
- Std Dev (σ): 2.033
- User Adjusted GMT Offset: -5 Hr 0 Min
- First Sample Time: 10/19/22 09:35:00 AM GMT-05:00
- Last Sample Time: 01/23/23 12:50:00 PM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 843.900 feet
- Reference Time: 01/23/23 01:05:00 PM GMT-04:00
- Barometric Datafile:
  C:\Users\mbarahona\Documents\HOBOware\1-23-23\1-23-23_Barometer.hobo



Boring: B-1
Equipment: HOBO U20L-02 Water Level
Serial No.: 21400074



<u>Boring:</u> B-1
<u>Equipment:</u> HOBO U20L-02 Water Level
<u>Serial No.:</u> 21400074

B-3_2022-11-29.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400070
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 09:02:52 AM GMT-04:00
- Calibration Date: 04/25/22 06:39:22 AM GMT-04:00

Deployment Info

- Full Series Name: Water Level, feet
- Launch Name: B-3
- Deployment Number: 3
- Launch Time: 10/06/22 03:00:21 PM GMT-04:00
- Logging Interval: 00 Hr 15 Min 00 Sec
- Launch GMT Offset: -4 Hr 0 Min
- Battery at Launch: 3.48 Volts
- Launching Program: HOBOware -3.7.25_0811_1019_Windows

Series Statistics

- Samples: 5,166
- Max: 790.511
- Min: 790.090
- Avg: 790.271
- Std Dev (σ): 0.116
- First Sample Time: 10/06/22 04:00:00 PM GMT-04:00
- Last Sample Time: 11/29/22 11:15:00 AM GMT-04:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 790.100 feet
- Reference Time: 11/29/22 10:15:00 AM GMT-04:00

1-23-23_B-3.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400070
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:02:52 AM GMT-05:00
- Calibration Date: 04/25/22 05:39:22 AM GMT-05:00

Deployment Info

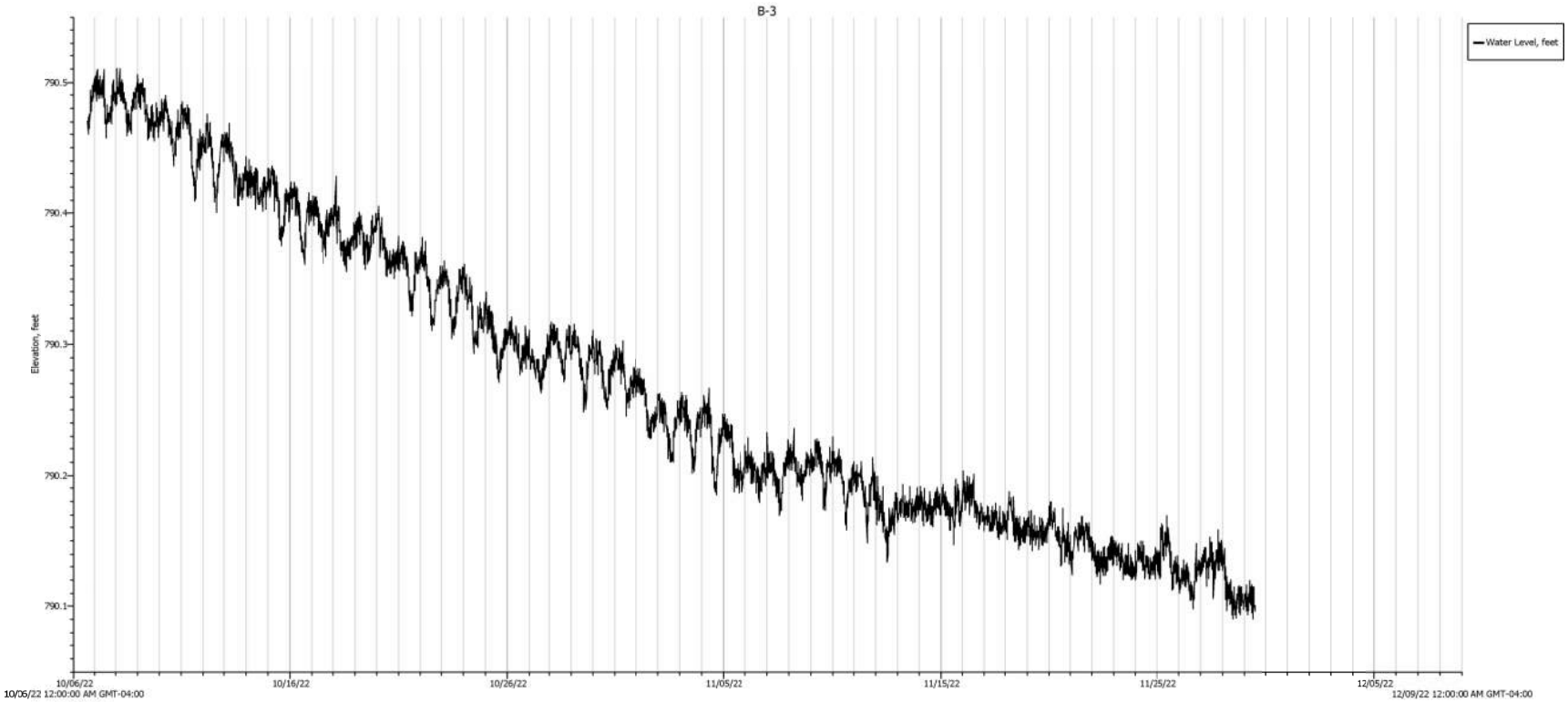
- Deployment info is not available

Series Statistics

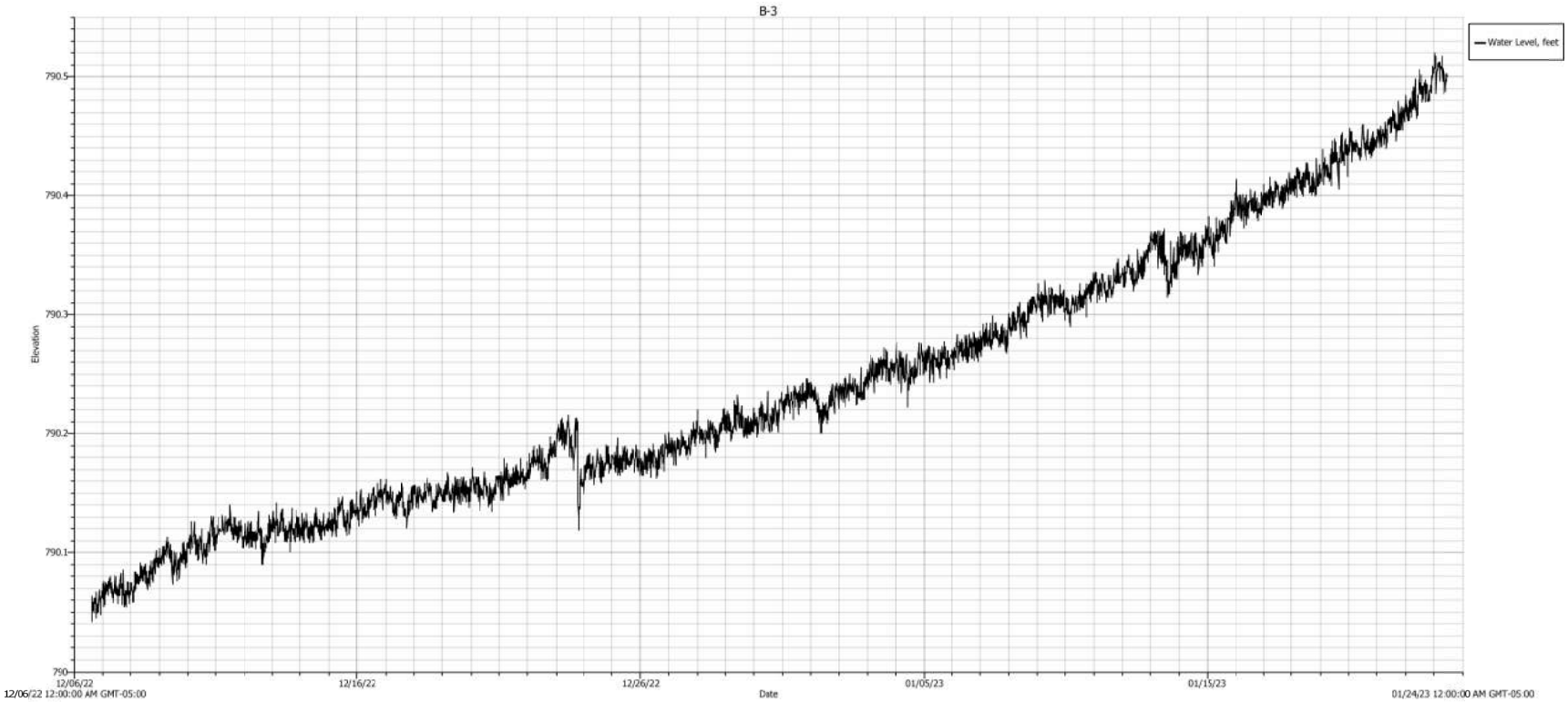
- Samples: 4,596
- Max: 790.520
- Min: 790.042
- Avg: 790.241
- Std Dev (σ): 0.114
- First Sample Time: 12/06/22 03:00:00 PM GMT-05:00
- Last Sample Time: 01/23/23 11:45:00 AM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 790.500 feet
- Reference Time: 01/23/23 11:45:00 AM GMT-05:00
- Barometric Datafile: C:\Users\mbarahona\Documents\HOBOware\1-23-23\1-23-23_Barometer.hobo



<u>Boring:</u> B-3
<u>Equipment:</u> HOBO U20L-02 Water Level
<u>Serial No.:</u> 21400070



<u>Boring:</u> B-3
<u>Equipment:</u> HOBO U20L-02 Water Level
<u>Serial No.:</u> 21400070

B-4A_2022-11-29.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400072
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 09:03:34 AM GMT-04:00
- Calibration Date: 04/25/22 06:39:47 AM GMT-04:00

Deployment Info

- Full Series Name: Water Level, feet
- Launch Name: B-4A
- Deployment Number: 3
- Launch Time: 10/20/22 10:49:16 AM GMT-04:00
- Logging Interval: 00 Hr 15 Min 00 Sec
- Launch GMT Offset: -4 Hr 0 Min
- Battery at Launch: 3.43 Volts
- Launching Program: HOBOware Pro Trial-3.7.25_0811_1019_Windows

Series Statistics

- Samples: 3,828
- Max: 783.458
- Min: 783.042
- Avg: 783.193
- Std Dev (σ): 0.079
- First Sample Time: 10/20/22 04:00:00 PM GMT-04:00
- Last Sample Time: 11/29/22 12:45:00 PM GMT-04:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 783.180 feet
- Reference Time: 11/29/22 11:45:00 AM GMT-04:00

1-23-23_B-4A.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400072
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:03:34 AM GMT-05:00
- Calibration Date: 04/25/22 05:39:47 AM GMT-05:00

Deployment Info

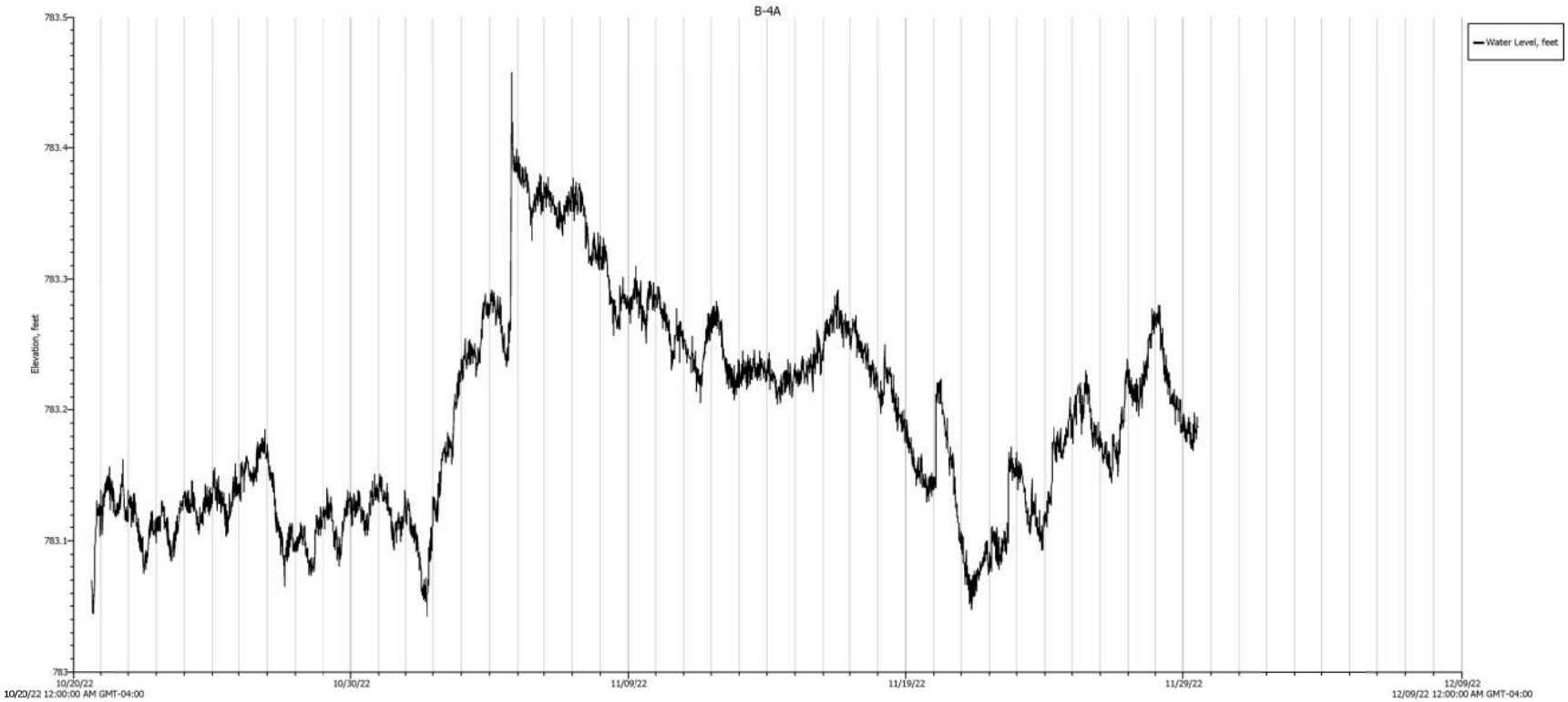
- Deployment info is not available

Series Statistics

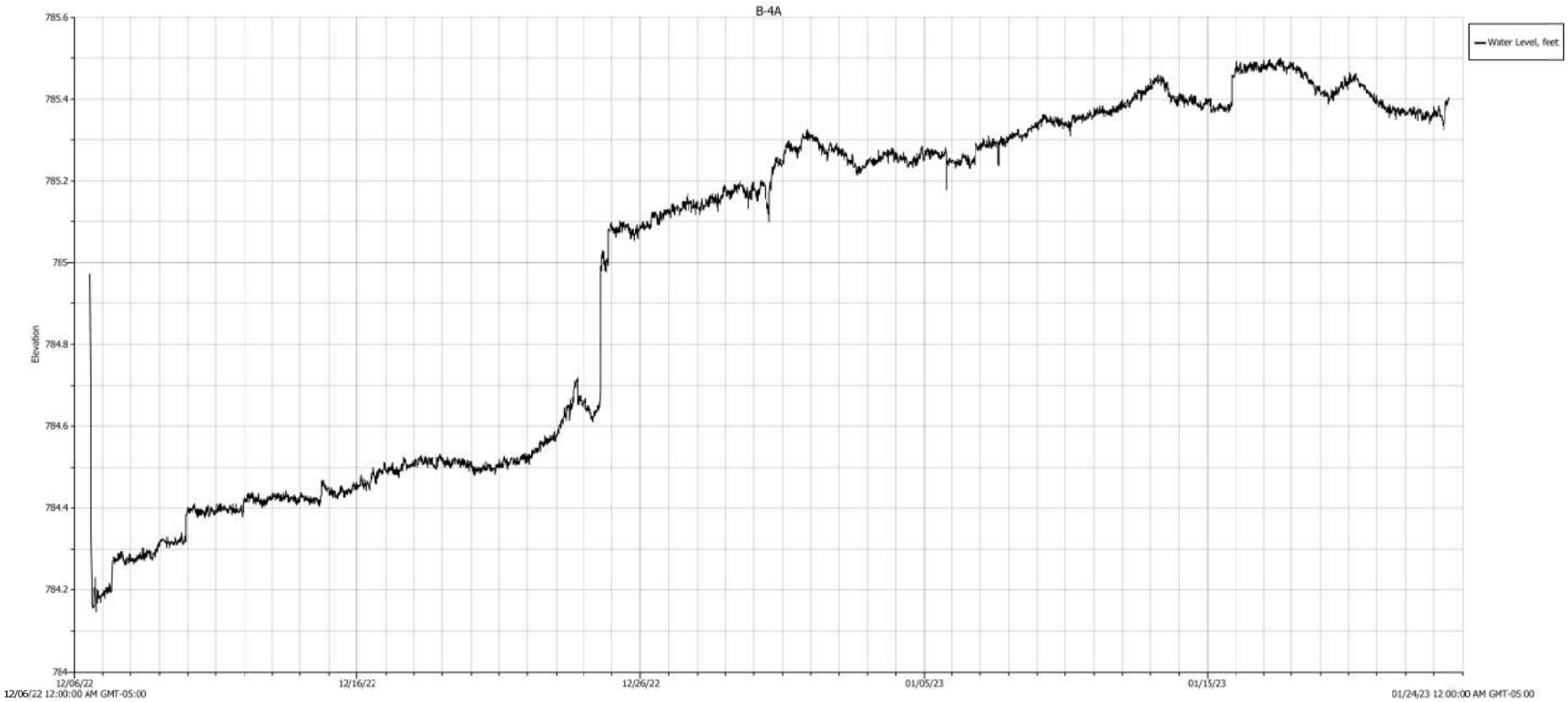
- Samples: 4,606
- Max: 785.499
- Min: 784.146
- Avg: 784.984
- Std Dev (σ): 0.431
- First Sample Time: 12/06/22 02:00:00 PM GMT-05:00
- Last Sample Time: 01/23/23 01:15:00 PM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 785.400 feet
- Reference Time: 01/23/23 01:15:00 PM GMT-05:00
- Barometric Datafile:
  C:\Users\mbarahona\Documents\HOBOware\1-23-23\1-23-23_Barometer.hobo



<u>Boring:</u> B-4A
<u>Equipment:</u> HOBO U20L-02 Water Level
<u>Serial No.:</u> 21400072



Boring: B-4A
Equipment: HOBO U20L-02 Water Level
Serial No.: 21400072

B-5B_2022-11-29.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400069
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 09:02:27 AM GMT-04:00
- Calibration Date: 04/25/22 06:39:08 AM GMT-04:00

Deployment Info

- Full Series Name: Water Level, feet
- Launch Name: B-5B
- Deployment Number: 6
- Launch Time: 10/19/22 11:39:06 AM GMT-04:00
- Logging Interval: 00 Hr 15 Min 00 Sec
- Launch GMT Offset: -4 Hr 0 Min
- Battery at Launch: 3.35 Volts
- Launching Program: HOBOware Pro-3.7.25_0811_1019_Windows

Series Statistics

- Samples: 3,940
- Max: 807.992
- Min: 807.694
- Avg: 807.830
- Std Dev (σ): 0.045
- First Sample Time: 10/19/22 11:45:00 AM GMT-04:00
- Last Sample Time: 11/29/22 12:30:00 PM GMT-04:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 807.850 feet
- Reference Time: 11/29/22 11:30:00 AM GMT-04:00

1-23-23_B-5B.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400069
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:02:27 AM GMT-05:00
- Calibration Date: 04/25/22 05:39:08 AM GMT-05:00

Deployment Info

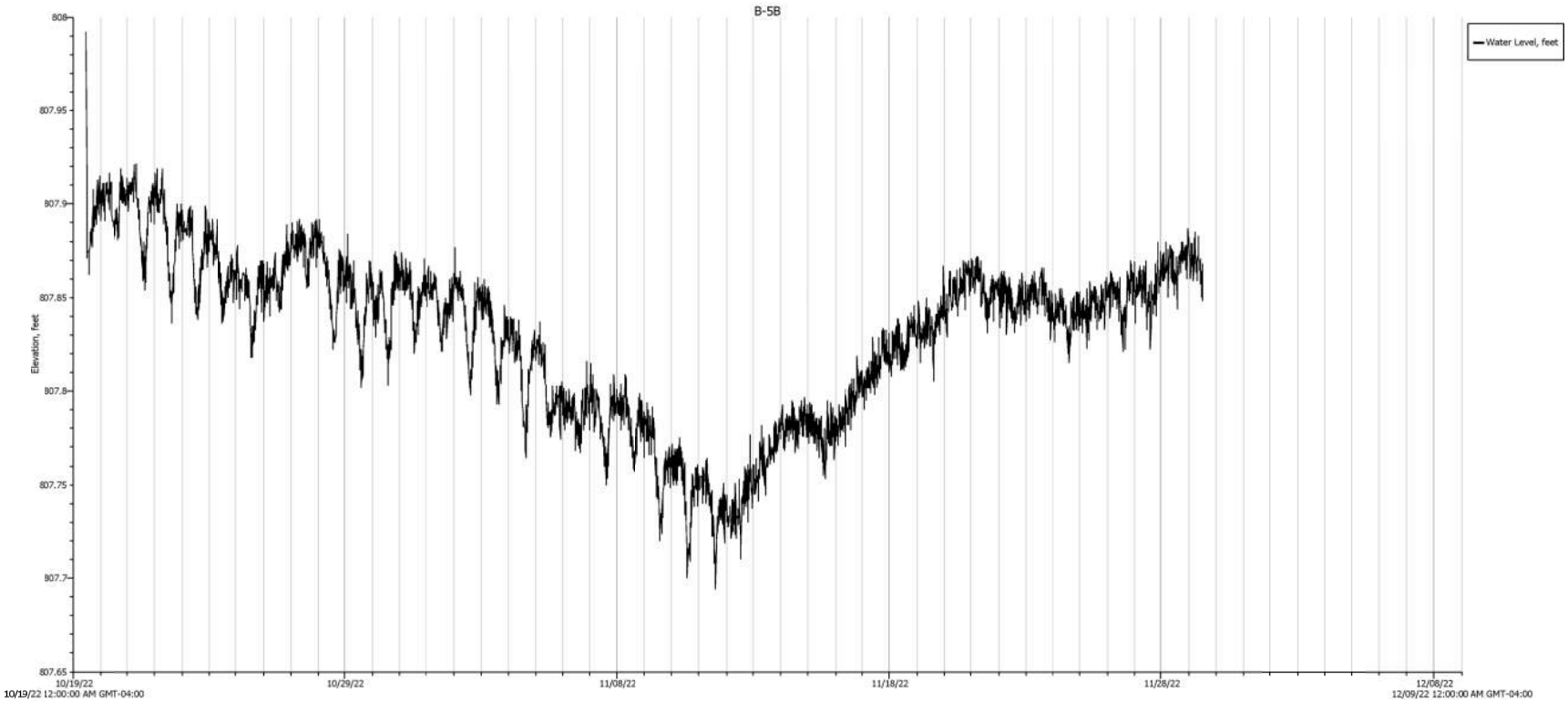
- Deployment info is not available

Series Statistics

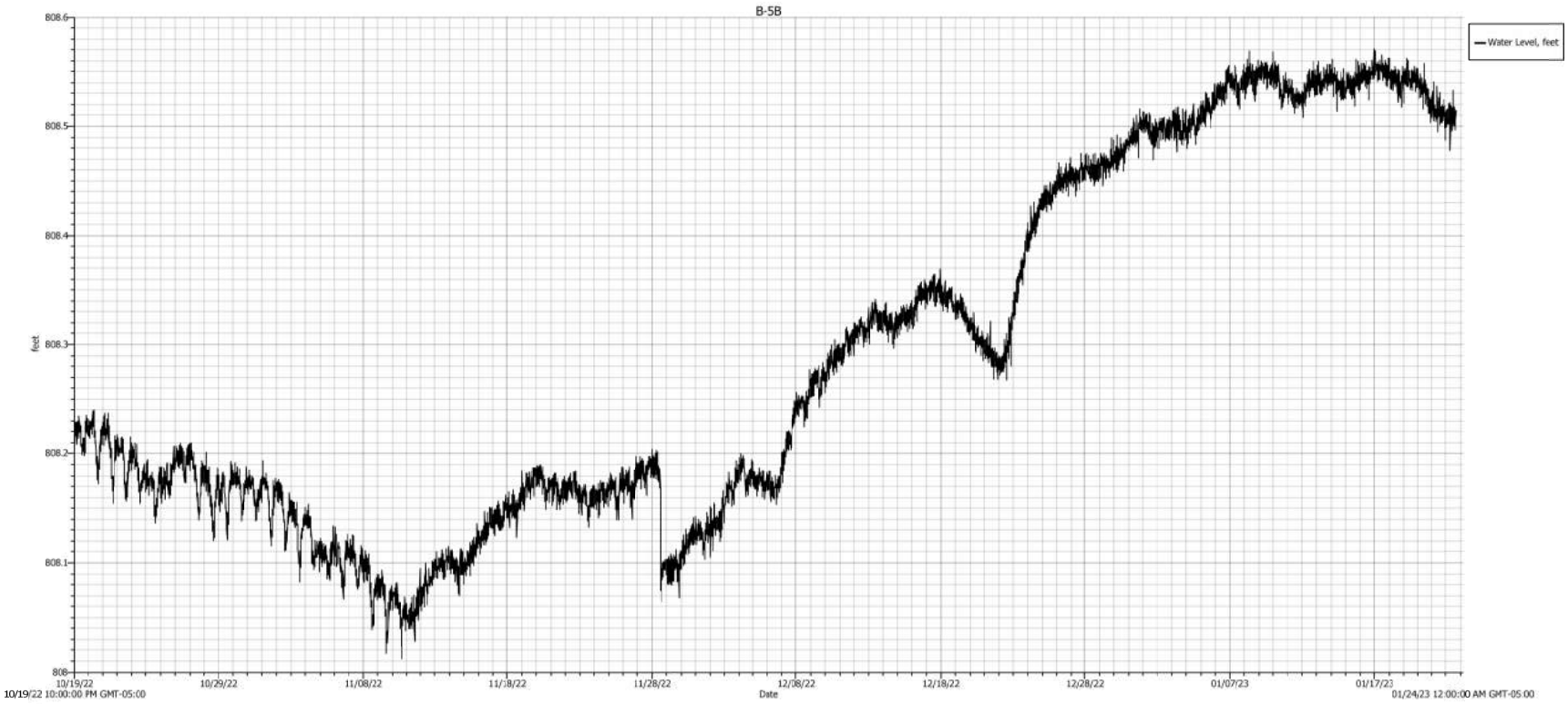
- Samples: 9,181
- Max: 808.571
- Min: 808.012
- Avg: 808.287
- Std Dev (σ): 0.165
- User Adjusted GMT Offset: -5 Hr 0 Min
- First Sample Time: 10/19/22 10:45:00 PM GMT-05:00
- Last Sample Time: 01/23/23 01:45:00 PM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 808.500 feet
- Reference Time: 01/23/23 01:45:00 PM GMT-04:00
- Barometric Datafile:
  C:\Users\mbarahona\Documents\HOBOware\1-23-23\1-23-23_Barometer.hobo



Boring: B-5B
Equipment: HOBO U20L-02 Water Level
Serial No.: 21400069



<u>Boring:</u> B-5B
<u>Equipment:</u> HOBO U20L-02 Water Level
<u>Serial No.:</u> 21400069

B-6_2022-11-29.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400085
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 09:08:02 AM GMT-04:00
- Calibration Date: 04/25/22 06:51:53 AM GMT-04:00

Deployment Info

- Full Series Name: Water Level, feet
- Launch Name: B-6
- Deployment Number: 6
- Launch Time: 10/19/22 02:36:52 PM GMT-04:00
- Logging Interval: 00 Hr 15 Min 00 Sec
- Launch GMT Offset: -4 Hr 0 Min
- Battery at Launch: 3.40 Volts
- Launching Program: HOBOware Pro-3.7.25_0811_1019_Windows

Series Statistics

- Samples: 3,925
- Max: 773.830
- Min: 773.168
- Avg: 773.402
- Std Dev (σ): 0.145
- First Sample Time: 10/19/22 02:40:00 PM GMT-04:00
- Last Sample Time: 11/29/22 11:40:00 AM GMT-04:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 773.610 feet
- Reference Time: 11/29/22 10:40:00 AM GMT-04:00

1-23-23_B-6.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400085
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:08:02 AM GMT-05:00
- Calibration Date: 04/25/22 05:51:53 AM GMT-05:00

Deployment Info

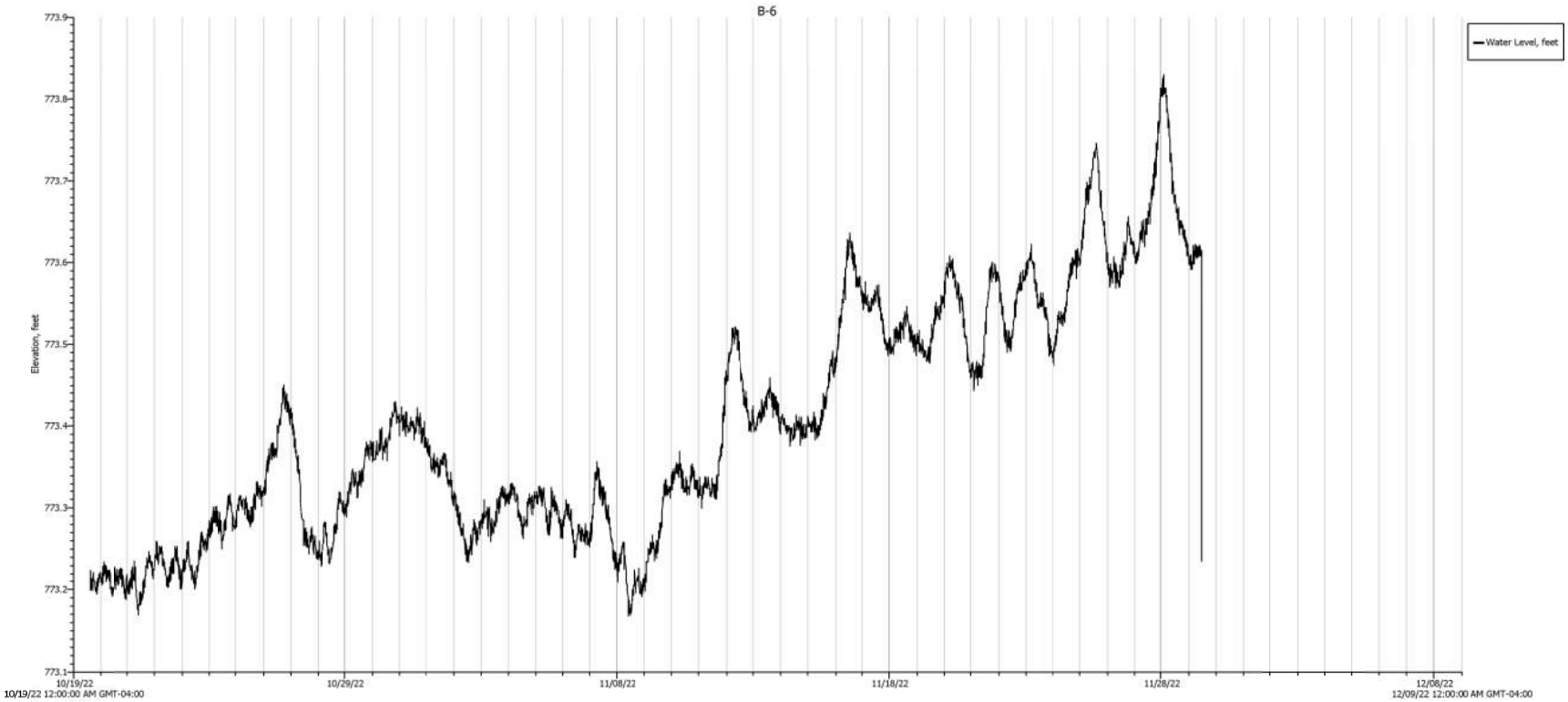
- Deployment info is not available

Series Statistics

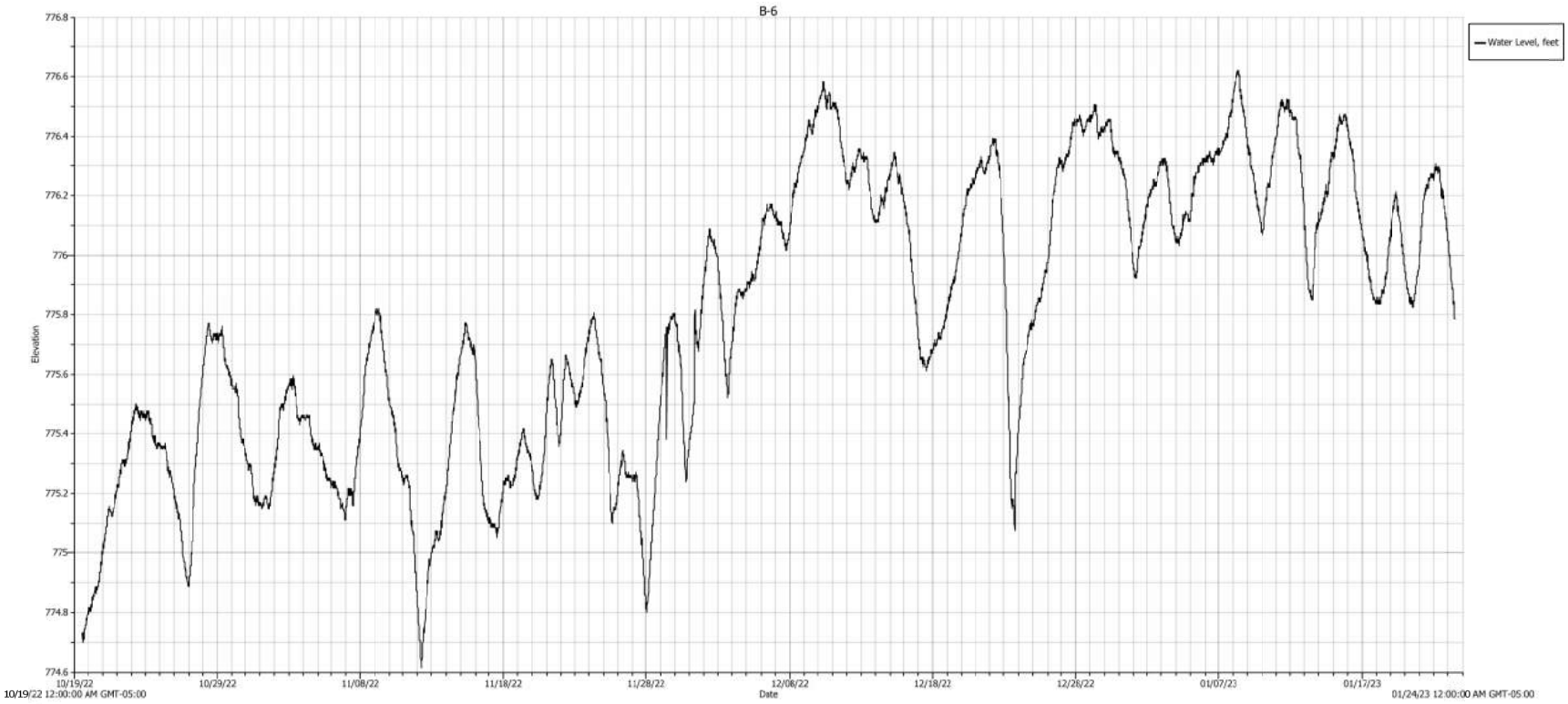
- Samples: 9,210
- Max: 776.620
- Min: 774.612
- Avg: 775.790
- Std Dev (σ): 0.474
- User Adjusted GMT Offset: -5 Hr 0 Min
- First Sample Time: 10/19/22 01:40:00 PM GMT-05:00
- Last Sample Time: 01/23/23 11:55:00 AM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 775.800 feet
- Reference Time: 01/23/23 12:10:00 PM GMT-04:00



Boring: B-6
Equipment: HOBO U20L-02 Water Level
Serial No.: 21400085



<u>Boring:</u> B-6
<u>Equipment:</u> HOBO U20L-02 Water Level
<u>Serial No.:</u> 21400085

B-8C-12-06-22.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400073
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:03:52 AM GMT-05:00
- Calibration Date: 04/25/22 05:40:01 AM GMT-05:00

Deployment Info

- Full Series Name: Water Level, feet
- Launch Name: B-8C
- Deployment Number: 3
- Launch Time: 11/14/22 08:57:12 PM GMT-05:00
- Logging Interval: 00 Hr 15 Min 00 Sec
- Launch GMT Offset: -5 Hr 0 Min
- Battery at Launch: 3.40 Volts
- Launching Program: HOBOware Pro Trial-3.7.25_0811_1019_Windows

Series Statistics

- Samples: 1,608
- Max: 777.640
- Min: 776.333
- Avg: 776.985
- Std Dev (σ): 0.369
- First Sample Time: 11/15/22 04:00:00 PM GMT-05:00
- Last Sample Time: 12/02/22 09:45:00 AM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 776.900 feet
- Reference Time: 11/29/22 08:30:00 AM GMT-05:00

1-23-23_B-8C.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400073
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:03:52 AM GMT-05:00
- Calibration Date: 04/25/22 05:40:01 AM GMT-05:00

Deployment Info

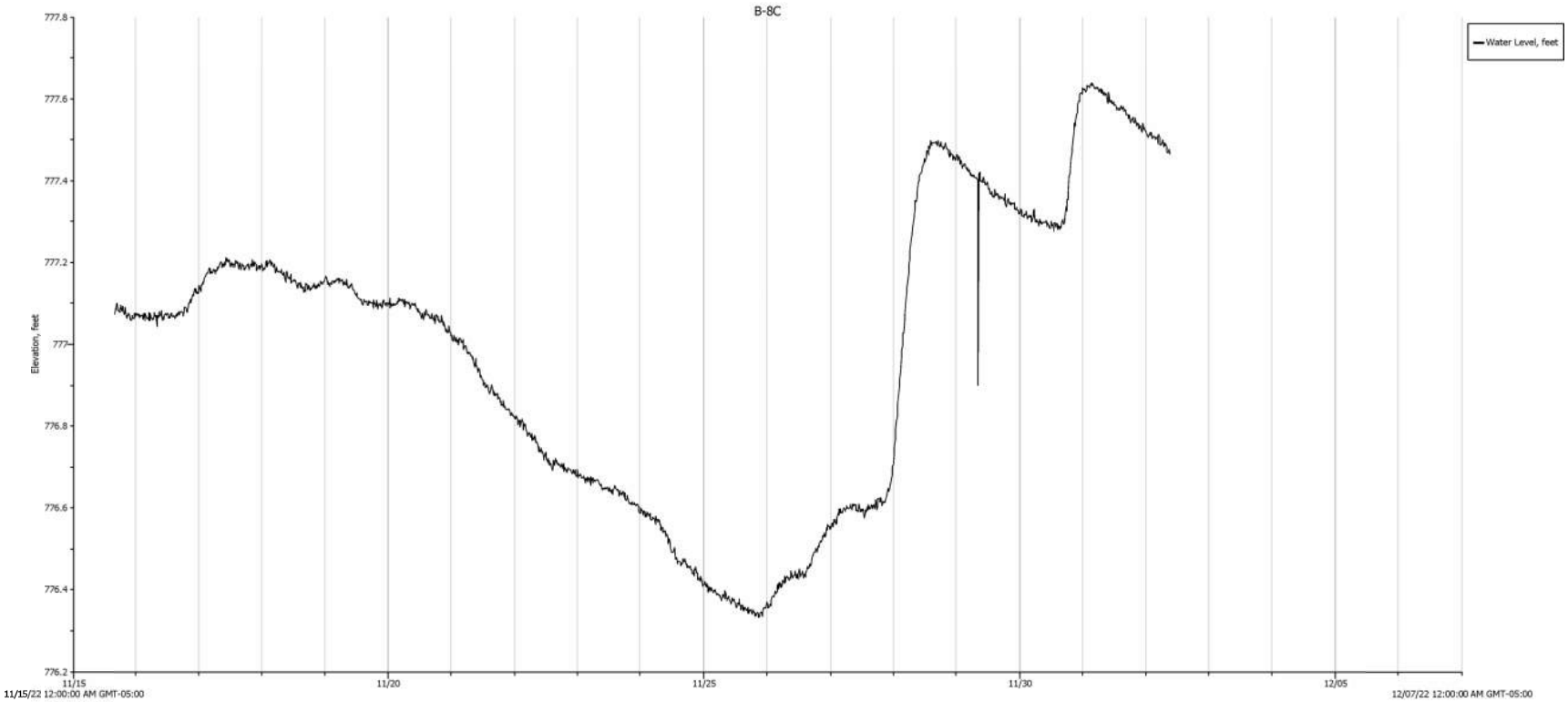
- Full Series Name: Water Level, feet
- Launch Name: B-8C
- Deployment Number: 7
- Launch Time: 12/07/22 11:24:11 AM GMT-05:00
- Logging Interval: 00 Hr 15 Min 00 Sec
- Launch GMT Offset: -5 Hr 0 Min
- Battery at Launch: 3.37 Volts
- Launching Program: HOBOware -3.7.25_0811_1019_Windows

Series Statistics

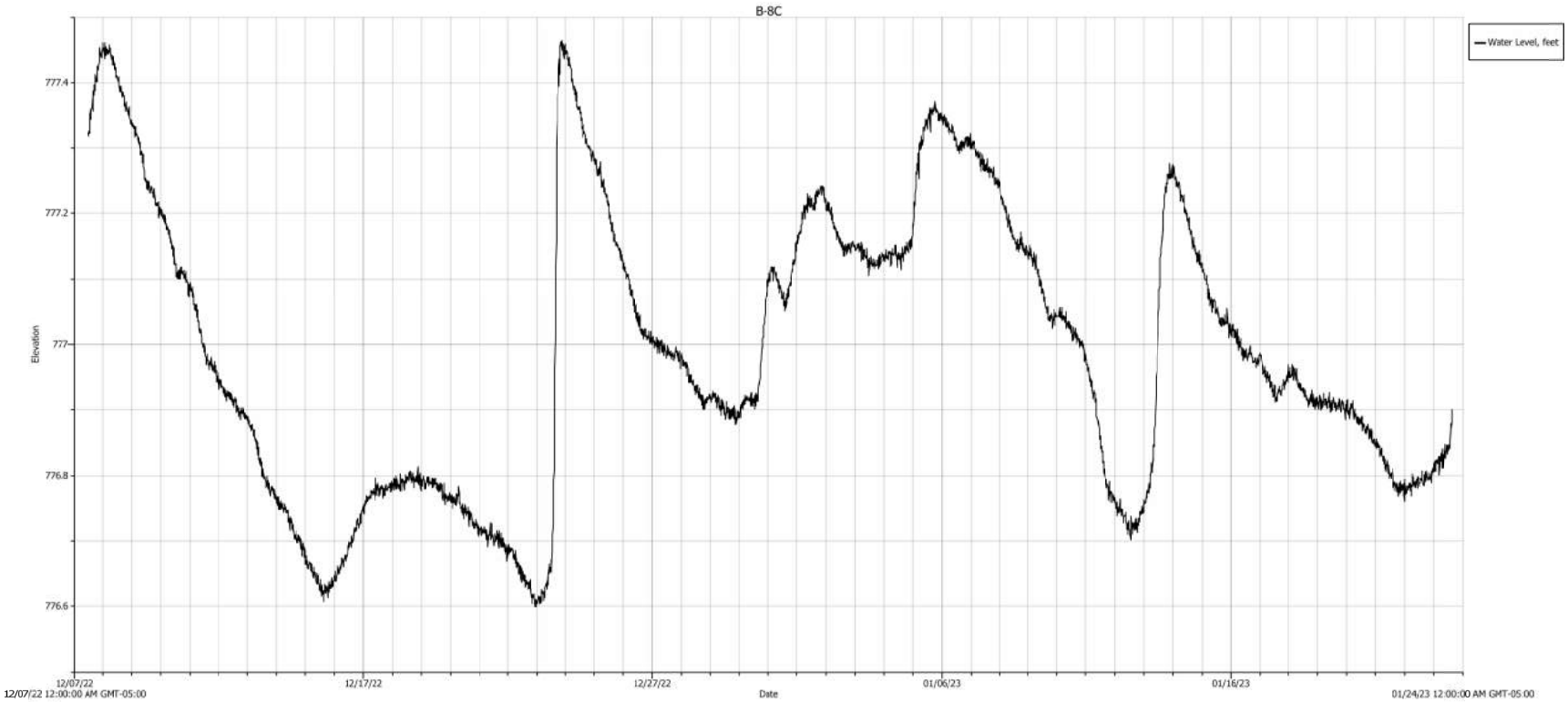
- Samples: 4,530
- Max: 777.464
- Min: 776.598
- Avg: 776.990
- Std Dev (σ): 0.215
- First Sample Time: 12/07/22 12:00:00 PM GMT-05:00
- Last Sample Time: 01/23/23 04:15:00 PM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 776.900 feet
- Reference Time: 01/23/23 04:15:00 PM GMT-05:00
- Barometric Datafile:
  C:\Users\mbarahona\Documents\HOBOware\1-23-23\1-23-23_Barometer.hobo



Boring: B-8C
Equipment: HOBO U20L-02 Water Level
Serial No.: 21400073



<u>Boring:</u> B-8C
<u>Equipment:</u> HOBO U20L-02 Water Level
<u>Serial No.:</u> 21400073

B-10_2022-11-29.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400076
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 09:05:03 AM GMT-04:00
- Calibration Date: 04/25/22 06:40:43 AM GMT-04:00

Deployment Info

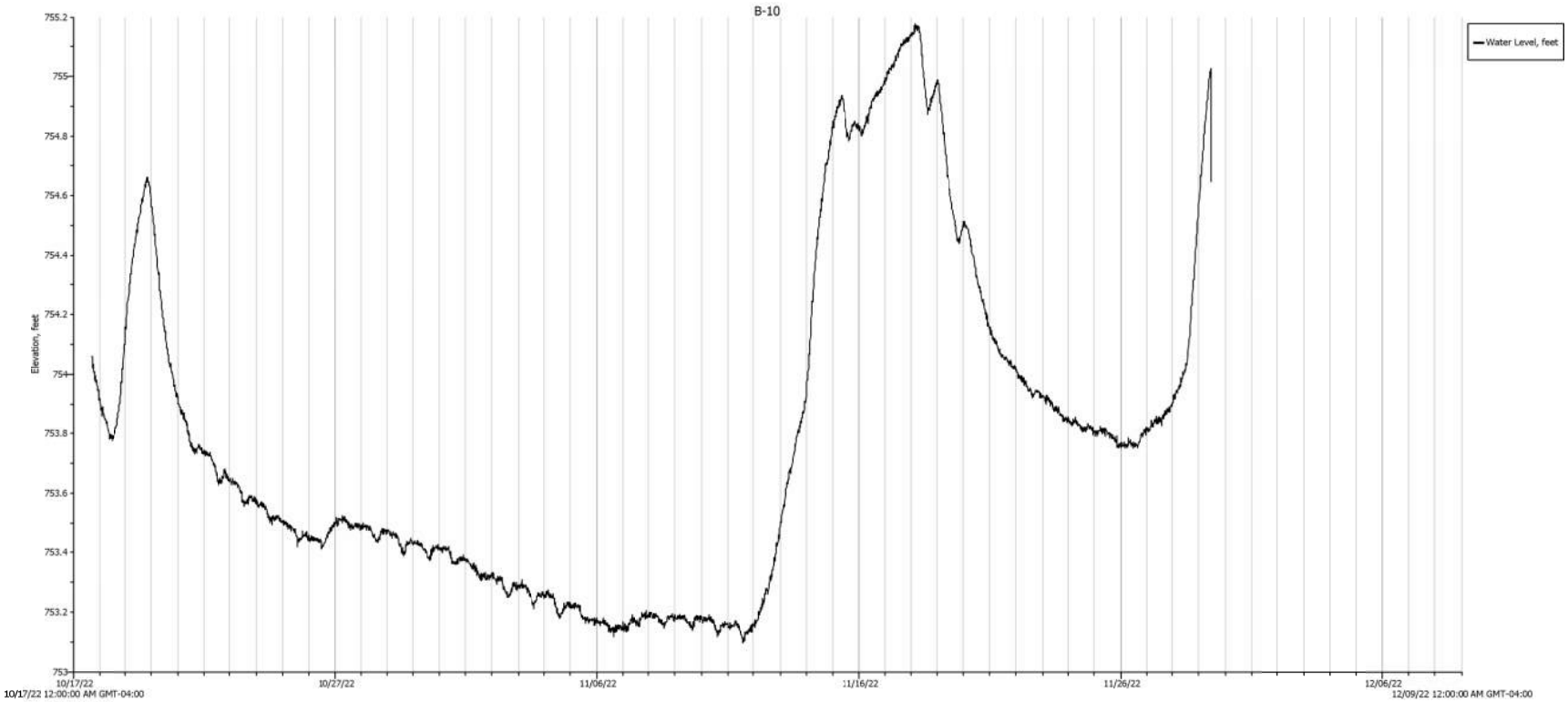
- Full Series Name: Water Level, feet
- Launch Name: B-10
- Deployment Number: 3
- Launch Time: 10/17/22 02:21:33 PM GMT-04:00
- Logging Interval: 00 Hr 15 Min 00 Sec
- Launch GMT Offset: -4 Hr 0 Min
- Battery at Launch: 3.43 Volts
- Launching Program: HOBOware -3.7.25_0811_1019_Windows

Series Statistics

- Samples: 4,104
- Max: 755.178
- Min: 753.094
- Avg: 753.779
- Std Dev (σ): 0.565
- First Sample Time: 10/17/22 05:00:00 PM GMT-04:00
- Last Sample Time: 11/29/22 10:45:00 AM GMT-04:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 755.000 feet
- Reference Time: 11/29/22 09:45:00 AM GMT-04:00



<u>Boring:</u> B-10
<u>Equipment:</u> HOBO U20L-02 Water Level
<u>Serial No.:</u> 21400076

B-11B_2022-12-02.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400075
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 09:04:39 AM GMT-04:00
- Calibration Date: 04/25/22 06:40:27 AM GMT-04:00

Deployment Info

- Deployment info is not available

Series Statistics

- Samples: 4,212
- Max: 798.601
- Min: 797.340
- Avg: 797.797
- Std Dev (σ): 0.241
- First Sample Time: 10/19/22 01:40:00 PM GMT-04:00
- Last Sample Time: 12/02/22 10:25:00 AM GMT-04:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 798.290 feet
- Reference Time: 12/01/22 06:25:00 AM GMT-04:00

1-23-23_B-11B.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400075
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:04:39 AM GMT-05:00
- Calibration Date: 04/25/22 05:40:27 AM GMT-05:00

Deployment Info

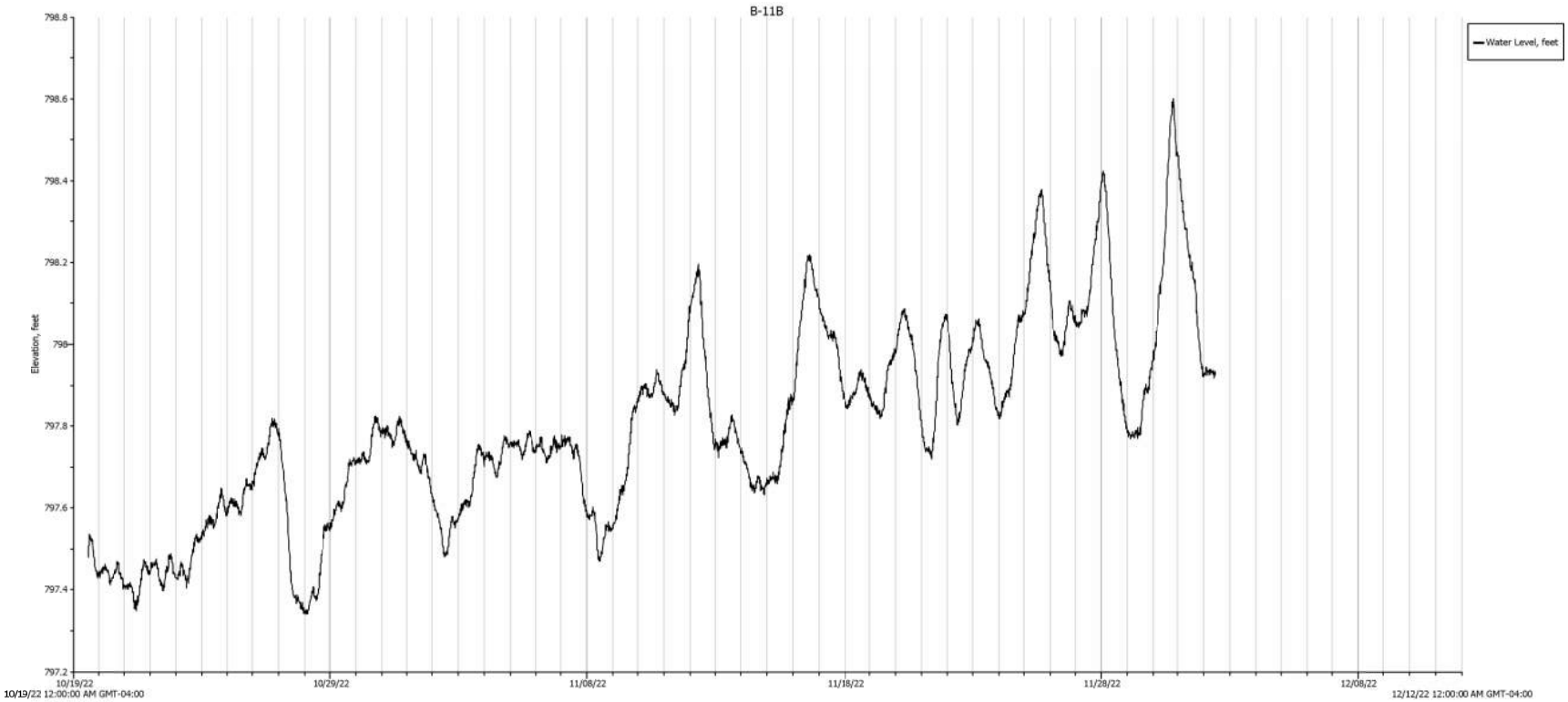
- Full Series Name: Water Level, feet
- Launch Name: B-11B
- Deployment Number: 6
- Adjusted Launch Time: 10/19/22 12:35:10 PM GMT-05:00
- Logging Interval: 00 Hr 15 Min 00 Sec
- Launch GMT Offset: -4 Hr 0 Min
- Battery at Launch: 3.37 Volts
- Launching Program: HOBOware Pro-3.7.25_0811_1019_Windows

Series Statistics

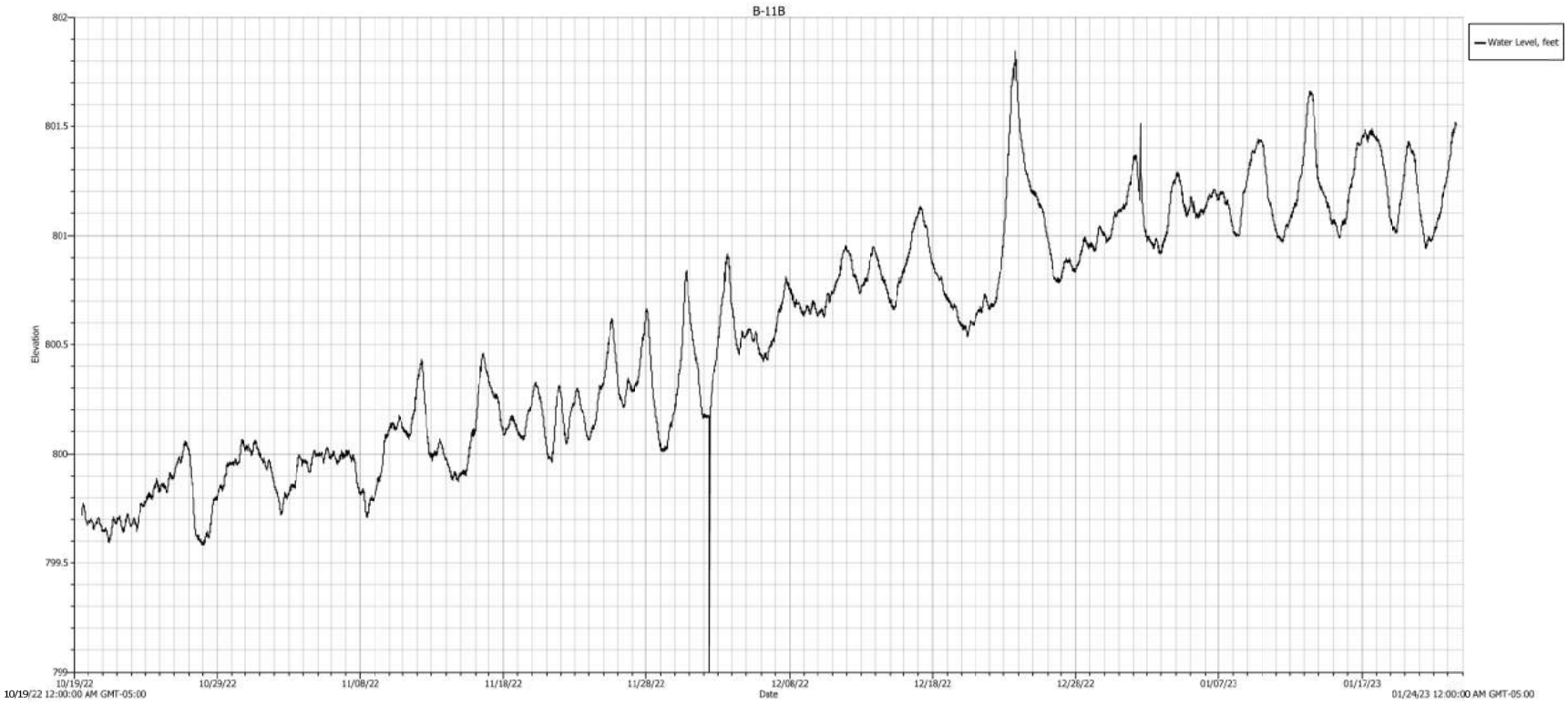
- Samples: 9,223
- Max: 801.848
- Min: 770.040
- Avg: 800.549
- Std Dev (σ): 0.629
- User Adjusted GMT Offset: -5 Hr 0 Min
- First Sample Time: 10/19/22 12:40:00 PM GMT-05:00
- Last Sample Time: 01/23/23 02:10:00 PM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 801.500 feet
- Reference Time: 01/23/23 02:10:00 PM GMT-04:00
- Barometric Datafile:
  C:\Users\mbarahona\Documents\HOBOware\1-23-23\1-23-23_Barometer.hobo



<u>Boring:</u> B-11B
<u>Equipment:</u> HOBO U20L-02 Water Level
<u>Serial No.:</u> 21400075



<u>Boring:</u> B-11B
<u>Equipment:</u> HOBO U20L-02 Water Level
<u>Serial No.:</u> 21400075

1-24-23_B-12.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400084
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:07:44 AM GMT-05:00
- Calibration Date: 04/25/22 05:51:41 AM GMT-05:00

Deployment Info

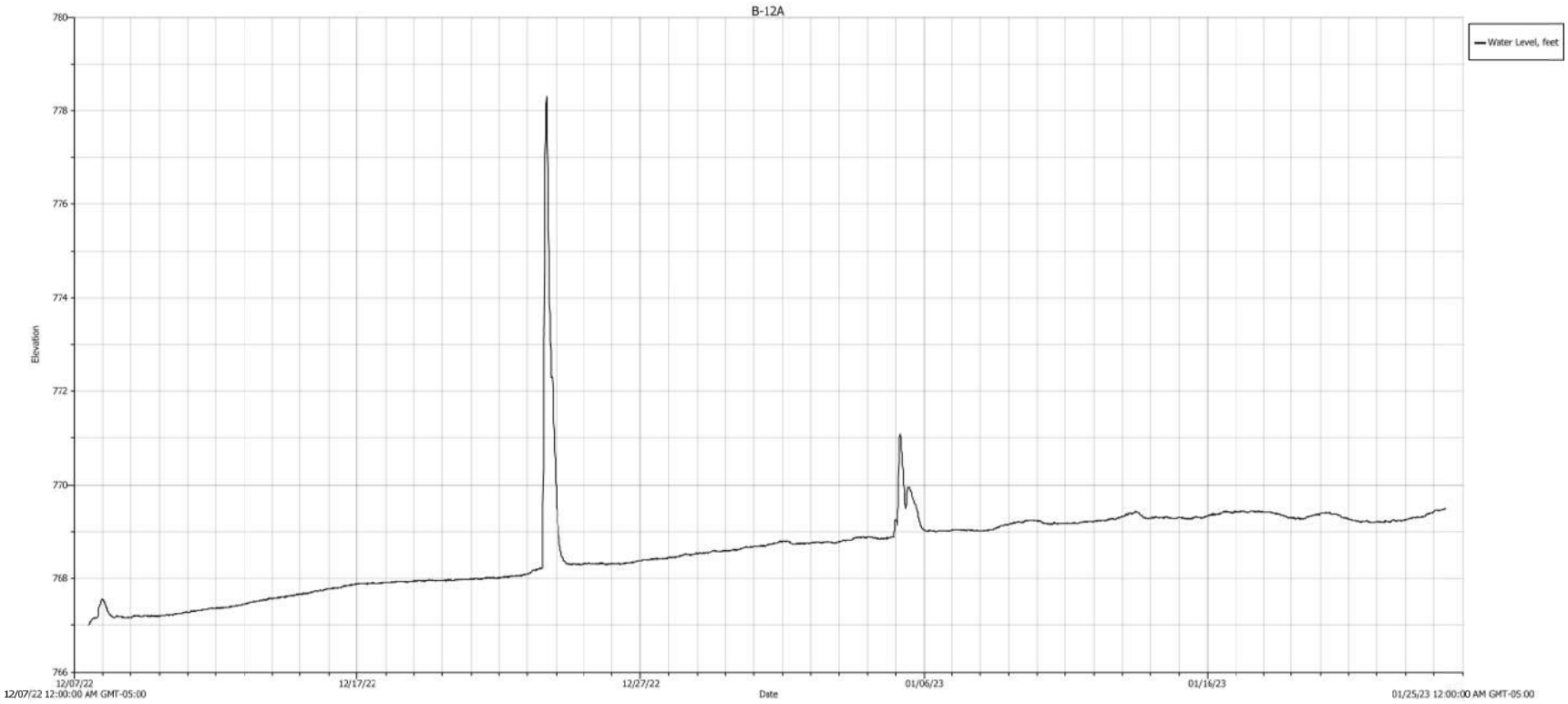
- Full Series Name: Water Level, feet
- Launch Name: B-12
- Deployment Number: 5
- Launch Time: 12/07/22 12:03:48 PM GMT-05:00
- Logging Interval: 00 Hr 15 Min 00 Sec
- Launch GMT Offset: -5 Hr 0 Min
- Battery at Launch: 3.37 Volts
- Launching Program: HOBOware -3.7.25_0811_1019_Windows

Series Statistics

- Samples: 4,599
- Max: 778.315
- Min: 767.011
- Avg: 768.611
- Std Dev (σ): 0.923
- First Sample Time: 12/07/22 01:00:00 PM GMT-05:00
- Last Sample Time: 01/24/23 10:30:00 AM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 769.500 feet
- Reference Time: 01/24/23 10:30:00 AM GMT-05:00
- Barometric Datafile:
  C:\Users\mbarahona\Documents\HOBOware\1-23-23\1-23-23_Barometer.hobo



Boring: B-12A
Equipment: HOBO U20L-02 Water Level
Serial No.: 21400084

Appendix V – Field Recorded Slug Test Results

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-1	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 20-ft**
Well Pipe Stickup (ft above grade): 2.92	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 26.4	**Total Depth (ft btop): 35.35** **soft ☐ hard ☐**
Logger Depth (ft btop): 33.3	**Logger ID: 21400074**
Slug Depth (ft btop): 32.8	**Slug ID: Geoscience**

Logger Drop Time:	**8:30:00 AM**	**Slug Pull Time:**	**9:37:20 AM**
Slug Drop Time:	**8:50:00 AM**	**Logger Pull Time:**	**10:25:30 AM**

FALLING HEAD		**RISING HEAD**	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
8:50:10 AM	27.63	9:37:50 AM	27.14
8:50:20 AM	25.55	9:38:00 AM	27.11
8:50:30 AM	25.75	9:38:10 AM	27.09
8:50:40 AM	25.65	9:38:20 AM	27.07
8:50:50 AM	25.60	9:38:30 AM	27.05
8:51:00 AM	25.60	9:38:40 AM	27.04
8:51:10 AM	25.60	9:38:50 AM	27.04
8:51:20 AM	25.60	9:39:00 AM	27.03
8:51:30 AM	25.62	9:39:10 AM	27.02
8:51:40 AM	25.65	9:39:20 AM	27.00
8:51:50 AM	25.62	9:39:30 AM	26.99
8:52:00 AM	25.62	9:39:40 AM	26.70
8:52:10 AM	25.65	9:39:50 AM	26.98
8:52:20 AM	25.65	9:40:00 AM	26.97
8:52:30 AM	25.65	9:40:10 AM	26.97
8:52:40 AM	25.70	9:40:20 AM	26.96
8:52:50 AM	25.70	9:40:30 AM	26.94
8:53:00 AM	25.70	9:40:40 AM	26.94
8:53:10 AM	25.70	9:40:50 AM	26.93
8:53:20 AM	25.70	9:41:00 AM	26.93
8:53:30 AM	25.71	9:41:10 AM	26.92
8:53:40 AM	25.70	9:41:20 AM	26.91
8:53:50 AM	25.71	9:41:30 AM	26.91
8:54:00 AM	25.71	9:41:40 AM	26.90
8:54:10 AM	25.75	9:41:50 AM	26.89
8:54:20 AM	25.75	9:42:00 AM	26.89
8:54:30 AM	25.75	9:42:10 AM	26.89
8:54:40 AM	25.75	9:42:20 AM	26.88
8:54:50 AM	25.75	9:42:30 AM	26.88
8:55:00 AM	25.75	9:42:40 AM	26.87
8:55:10 AM	25.75	9:42:50 AM	26.86
8:55:20 AM	25.76	9:43:00 AM	26.85
8:55:30 AM	25.76	9:43:10 AM	26.85
8:55:40 AM	25.76	9:43:20 AM	26.85
8:55:50 AM	25.76	9:43:30 AM	26.84
8:56:00 AM	25.77	9:43:40 AM	26.84
8:56:10 AM	25.77	9:43:50 AM	26.83
8:56:20 AM	25.78	9:44:00 AM	26.83
8:56:30 AM	25.78	9:44:10 AM	26.83
8:56:40 AM	25.78	9:44:20 AM	26.83
8:56:50 AM	25.79	9:44:30 AM	26.82
8:57:00 AM	25.79	9:44:40 AM	26.82
8:57:10 AM	25.79	9:44:50 AM	26.81
8:57:20 AM	25.79	9:45:00 AM	26.81
8:57:30 AM	25.80	9:45:10 AM	26.81

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-1	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 20-ft**
Well Pipe Stickup (ft above grade): 2.92	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 26.4	**Total Depth (ft btop): 35.35** **soft ☐ hard ☐**
Logger Depth (ft btop): 33.3	**Logger ID: 21400074**
Slug Depth (ft btop): 32.8	**Slug ID: Geoscience**

Logger Drop Time:	**8:30:00 AM**	**Slug Pull Time:**	**9:37:20 AM**
Slug Drop Time:	**8:50:00 AM**	**Logger Pull Time:**	**10:25:30 AM**

FALLING HEAD		RISING HEAD	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
8:57:40 AM	25.80	9:45:20 AM	26.80
8:57:50 AM	25.81	9:45:30 AM	26.80
8:58:00 AM	25.81	9:45:40 AM	26.79
8:58:10 AM	25.81	9:45:50 AM	26.79
8:58:20 AM	25.82	9:46:00 AM	26.79
8:58:30 AM	25.82	9:46:10 AM	26.79
8:58:40 AM	25.82	9:46:20 AM	26.78
8:58:50 AM	25.83	9:46:30 AM	26.78
8:59:00 AM	25.84	9:46:40 AM	26.78
8:59:10 AM	25.84	9:46:50 AM	26.77
8:59:20 AM	25.84	9:47:00 AM	26.77
8:59:30 AM	25.84	9:47:10 AM	26.77
8:59:40 AM	25.84	9:47:20 AM	26.77
8:59:50 AM	25.85	9:47:30 AM	26.77
9:00:00 AM	25.85	9:47:40 AM	26.76
9:00:10 AM	25.86	9:47:50 AM	26.76
9:00:20 AM	25.86	9:48:00 AM	26.76
9:00:30 AM	25.87	9:48:10 AM	26.75
9:00:40 AM	25.87	9:48:20 AM	26.75
9:00:50 AM	25.87	9:48:30 AM	26.75
9:01:00 AM	25.87	9:48:40 AM	26.75
9:01:10 AM	25.88	9:48:50 AM	26.75
9:01:20 AM	25.88	9:49:00 AM	26.75
9:01:30 AM	25.88	9:49:10 AM	26.74
9:01:40 AM	25.89	9:49:20 AM	26.74
9:01:50 AM	25.89	9:49:30 AM	26.74
9:02:00 AM	25.89	9:49:40 AM	26.74
9:02:10 AM	25.90	9:49:50 AM	26.73
9:02:20 AM	25.90	9:50:00 AM	26.73
9:02:30 AM	25.90	9:50:10 AM	26.73
9:02:40 AM	25.90	9:50:20 AM	26.73
9:02:50 AM	25.91	9:50:30 AM	26.73
9:03:00 AM	25.91	9:50:40 AM	26.72
9:03:10 AM	25.91	9:50:50 AM	26.72
9:03:20 AM	25.91	9:51:00 AM	26.72
9:03:30 AM	25.91	9:51:10 AM	26.72
9:03:40 AM	25.92	9:51:20 AM	26.72
9:03:50 AM	25.92	9:51:30 AM	26.71
9:04:00 AM	25.93	9:51:40 AM	26.71
9:04:10 AM	25.93	9:51:50 AM	26.71
9:04:20 AM	25.93	9:52:00 AM	26.71
9:04:30 AM	25.94	9:52:10 AM	26.71
9:04:40 AM	25.94	9:52:20 AM	26.71
9:04:50 AM	25.94	9:52:30 AM	26.71
9:05:00 AM	25.95	9:52:40 AM	26.70

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-1	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 20-ft**
Well Pipe Stickup (ft above grade): 2.92	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 26.4	**Total Depth (ft btop): 35.35** **soft ☐ hard ☐**
Logger Depth (ft btop): 33.3	**Logger ID: 21400074**
Slug Depth (ft btop): 32.8	**Slug ID: Geoscience**

Logger Drop Time:	**8:30:00 AM**	**Slug Pull Time:**	**9:37:20 AM**
Slug Drop Time:	**8:50:00 AM**	**Logger Pull Time:**	**10:25:30 AM**

FALLING HEAD		RISING HEAD	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
9:05:10 AM	25.95	9:52:50 AM	26.70
9:05:20 AM	25.95	9:53:00 AM	26.70
9:05:30 AM	25.96	9:53:10 AM	26.69
9:05:40 AM	25.96	9:53:20 AM	26.69
9:05:50 AM	25.96	9:53:30 AM	26.69
9:06:00 AM	25.96	9:53:40 AM	26.69
9:06:10 AM	25.97	9:53:50 AM	26.69
9:06:20 AM	25.97	9:54:00 AM	26.69
9:06:30 AM	25.97	9:54:10 AM	26.69
9:06:40 AM	25.97	9:54:20 AM	26.68
9:06:50 AM	25.97	9:54:30 AM	26.68
9:07:00 AM	25.98	9:54:40 AM	26.68
9:07:10 AM	25.98	9:54:50 AM	26.68
9:07:20 AM	25.98	9:55:00 AM	26.68
9:07:30 AM	25.98	9:55:10 AM	26.68
9:07:40 AM	25.99	9:55:20 AM	26.67
9:07:50 AM	25.99	9:55:30 AM	26.67
9:08:00 AM	25.99	9:55:40 AM	26.67
9:08:10 AM	25.99	9:55:50 AM	26.67
9:08:20 AM	25.99	9:56:00 AM	26.66
9:08:30 AM	25.99	9:56:10 AM	26.66
9:08:40 AM	25.99	9:56:20 AM	26.66
9:08:50 AM	26.00	9:56:30 AM	26.66
9:09:00 AM	26.00	9:56:40 AM	26.66
9:09:10 AM	26.01	9:56:50 AM	26.66
9:09:20 AM	26.01	9:57:00 AM	26.65
9:09:30 AM	26.01	9:57:10 AM	26.65
9:09:40 AM	26.01	9:57:20 AM	26.65
9:09:50 AM	26.02	9:57:30 AM	26.65
9:10:00 AM	26.02	9:57:40 AM	26.65
9:10:10 AM	26.02	9:57:50 AM	26.65
9:10:20 AM	26.03	9:58:00 AM	26.65
9:10:30 AM	26.03	9:58:10 AM	26.65
9:10:40 AM	26.03	9:58:20 AM	26.64
9:10:50 AM	26.03	9:58:30 AM	26.64
9:11:00 AM	26.04	9:58:40 AM	26.64
9:11:10 AM	26.04	9:58:50 AM	26.64
9:11:20 AM	26.04	9:59:00 AM	26.64
9:11:30 AM	26.05	9:59:10 AM	26.64
9:11:40 AM	26.05	9:59:20 AM	26.63
9:11:50 AM	26.05	9:59:30 AM	26.63
9:12:00 AM	26.05	9:59:40 AM	26.63
9:12:10 AM	26.05	9:59:50 AM	26.63
9:12:20 AM	26.05	10:00:00 AM	26.63
9:12:30 AM	26.05	10:00:10 AM	26.63

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-1	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 20-ft**
Well Pipe Stickup (ft above grade): 2.92	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 26.4	**Total Depth (ft btop): 35.35** **soft ☐ hard ☐**
Logger Depth (ft btop): 33.3	**Logger ID: 21400074**
Slug Depth (ft btop): 32.8	**Slug ID: Geoscience**

Logger Drop Time:	**8:30:00 AM**	**Slug Pull Time:**	**9:37:20 AM**
Slug Drop Time:	**8:50:00 AM**	**Logger Pull Time:**	**10:25:30 AM**

FALLING HEAD		RISING HEAD	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
9:12:40 AM	26.05	10:00:20 AM	26.63
9:12:50 AM	26.05	10:00:30 AM	26.63
9:13:00 AM	26.05	10:00:40 AM	26.62
9:13:10 AM	26.06	10:00:50 AM	26.62
9:13:20 AM	26.06	10:01:00 AM	26.62
9:13:30 AM	26.06	10:01:10 AM	26.62
9:13:40 AM	26.06	10:01:20 AM	26.62
9:13:50 AM	26.06	10:01:30 AM	26.62
9:14:00 AM	26.06	10:01:40 AM	26.61
9:14:10 AM	26.07	10:01:50 AM	26.61
9:14:20 AM	26.07	10:02:00 AM	26.61
9:14:30 AM	26.08	10:02:10 AM	26.61
9:14:40 AM	26.08	10:02:20 AM	26.61
9:14:50 AM	26.08	10:02:30 AM	26.61
9:15:00 AM	26.08	10:02:40 AM	26.61
9:15:10 AM	26.08	10:02:50 AM	26.61
9:15:20 AM	26.08	10:03:00 AM	26.61
9:15:30 AM	26.08	10:03:10 AM	26.61
9:15:40 AM	26.08	10:03:20 AM	26.61
9:15:50 AM	26.08	10:03:30 AM	26.61
9:16:00 AM	26.09	10:03:40 AM	26.60
9:16:10 AM	26.09	10:03:50 AM	26.60
9:16:20 AM	26.09	10:04:00 AM	26.60
9:16:30 AM	26.09	10:04:10 AM	26.60
9:16:40 AM	26.09	10:04:20 AM	26.60
9:16:50 AM	26.09	10:04:30 AM	26.60
9:17:00 AM	26.10	10:04:40 AM	26.60
9:17:10 AM	26.10	10:04:50 AM	26.59
9:17:20 AM	26.10	10:05:00 AM	26.59
9:17:30 AM	26.10	10:05:10 AM	26.59
9:17:40 AM	26.11	10:05:20 AM	26.59
9:17:50 AM	26.11	10:05:30 AM	26.59
9:18:00 AM	26.11	10:05:40 AM	26.59
9:18:10 AM	26.11	10:05:50 AM	26.59
9:18:20 AM	26.11	10:06:00 AM	26.59
9:18:30 AM	26.11	10:06:10 AM	26.59
9:18:40 AM	26.11	10:06:20 AM	26.58
9:18:50 AM	26.11	10:06:30 AM	26.58
9:19:00 AM	26.12	10:06:40 AM	26.58
9:19:10 AM	26.12	10:06:50 AM	26.58
9:19:20 AM	26.12	10:07:00 AM	26.58
9:19:30 AM	26.12	10:07:10 AM	26.58
9:19:40 AM	26.13	10:07:20 AM	26.58
9:19:50 AM	26.13	10:07:30 AM	26.58
9:20:00 AM	26.13	10:07:40 AM	26.57

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-1	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 20-ft**
Well Pipe Stickup (ft above grade): 2.92	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 26.4	**Total Depth (ft btop): 35.35** **soft ☐ hard ☐**
Logger Depth (ft btop): 33.3	**Logger ID: 21400074**
Slug Depth (ft btop): 32.8	**Slug ID: Geoscience**

Logger Drop Time:	**8:30:00 AM**	**Slug Pull Time:**	**9:37:20 AM**
Slug Drop Time:	**8:50:00 AM**	**Logger Pull Time:**	**10:25:30 AM**

FALLING HEAD		RISING HEAD	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
9:20:10 AM	26.13	10:07:50 AM	26.57
9:20:20 AM	26.13	10:08:00 AM	26.57
9:20:30 AM	26.13	10:08:10 AM	26.57
9:20:40 AM	26.13	10:08:20 AM	26.57
9:20:50 AM	26.13	10:08:30 AM	26.57
9:21:00 AM	26.14	10:08:40 AM	26.57
9:21:10 AM	26.14	10:08:50 AM	26.57
9:21:20 AM	26.14	10:09:00 AM	26.57
9:21:30 AM	26.15	10:09:10 AM	26.57
9:21:40 AM	26.15	10:09:20 AM	26.57
9:21:50 AM	26.15	10:09:30 AM	26.56
9:22:00 AM	26.15	10:09:40 AM	26.56
9:22:10 AM	26.15	10:09:50 AM	26.56
9:22:20 AM	26.15	10:10:00 AM	26.56
9:22:30 AM	26.16	10:10:10 AM	26.56
9:22:40 AM	26.16	10:10:20 AM	26.56
9:22:50 AM	26.16	10:10:30 AM	26.56
9:23:00 AM	26.16	10:10:40 AM	26.56
9:23:10 AM	26.16	10:10:50 AM	26.56
9:23:20 AM	26.17	10:11:00 AM	26.56
9:23:30 AM	26.17	10:11:10 AM	26.56
9:23:40 AM	26.17	10:11:20 AM	26.56
9:23:50 AM	26.17	10:11:30 AM	26.56
9:24:00 AM	26.17	10:11:40 AM	26.55
9:24:10 AM	26.17	10:11:50 AM	26.55
9:24:20 AM	26.17	10:12:00 AM	26.55
9:24:30 AM	26.17	10:12:10 AM	26.55
9:24:40 AM	26.18	10:12:20 AM	26.55
9:24:50 AM	26.18	10:12:30 AM	26.55
9:25:00 AM	26.18	10:12:40 AM	26.55
9:25:10 AM	26.18	10:12:50 AM	26.55
9:25:20 AM	26.18	10:13:00 AM	26.54
9:25:30 AM	26.18	10:13:10 AM	26.54
9:25:40 AM	26.18	10:13:20 AM	26.54
9:25:50 AM	26.18	10:13:30 AM	26.54
9:26:00 AM	26.18	10:13:40 AM	26.54
9:26:10 AM	26.18	10:13:50 AM	26.54
9:26:20 AM	26.18	10:14:00 AM	26.54
9:26:30 AM	26.18	10:14:10 AM	26.54
9:26:40 AM	26.19	10:14:20 AM	26.54
9:26:50 AM	26.19	10:14:30 AM	26.54
9:27:00 AM	26.19	10:14:40 AM	26.54
9:27:10 AM	26.19	10:14:50 AM	26.53
9:27:20 AM	26.19	10:15:00 AM	26.53
9:27:30 AM	26.19	10:15:10 AM	26.53

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-1	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 20-ft**
Well Pipe Stickup (ft above grade): 2.92	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 26.4	**Total Depth (ft btop): 35.35** **soft ☐ hard ☐**
Logger Depth (ft btop): 33.3	**Logger ID: 21400074**
Slug Depth (ft btop): 32.8	**Slug ID: Geoscience**

Logger Drop Time:	**8:30:00 AM**	**Slug Pull Time:**	**9:37:20 AM**
Slug Drop Time:	**8:50:00 AM**	**Logger Pull Time:**	**10:25:30 AM**

FALLING HEAD		**RISING HEAD**	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
9:27:40 AM	26.19	10:15:20 AM	26.53
9:27:50 AM	26.19	10:15:30 AM	26.53
9:28:00 AM	26.19	10:15:40 AM	26.53
9:28:10 AM	26.19	10:15:50 AM	26.53
9:28:20 AM	26.19	10:16:00 AM	26.53
9:28:30 AM	26.20	10:16:10 AM	26.53
9:28:40 AM	26.20	10:16:20 AM	26.53
9:28:50 AM	26.20	10:16:30 AM	26.53
9:29:00 AM	26.21	10:16:40 AM	26.52
9:29:10 AM	26.21	10:16:50 AM	26.52
9:29:20 AM	26.21	10:17:00 AM	26.52
9:29:30 AM	26.21	10:17:10 AM	26.52
9:29:40 AM	26.21	10:17:20 AM	26.52
9:29:50 AM	26.21	10:17:30 AM	26.52
9:30:00 AM	26.21	10:17:40 AM	26.52
9:30:10 AM	26.21	10:17:50 AM	26.52
9:30:20 AM	26.22	10:18:00 AM	26.52
9:30:30 AM	26.22	10:18:10 AM	26.52
9:30:40 AM	26.22	10:18:20 AM	26.52
9:30:50 AM	26.22	10:18:30 AM	26.52
9:31:00 AM	26.22	10:18:40 AM	26.52
9:31:10 AM	26.22	10:18:50 AM	26.52
9:31:20 AM	26.22		
9:31:30 AM	26.22		
9:31:40 AM	26.22		
9:31:50 AM	26.22		
9:32:00 AM	26.22		
9:32:10 AM	26.22		
9:32:20 AM	26.22		
9:32:30 AM	26.22		
9:32:40 AM	26.22		
9:32:50 AM	26.22		
9:33:00 AM	26.22		
9:33:10 AM	26.22		
9:33:20 AM	26.23		
9:33:30 AM	26.23		
9:33:40 AM	26.23		
9:33:50 AM	26.23		
9:34:00 AM	26.23		
9:34:10 AM	26.23		
9:34:20 AM	26.24		
9:34:30 AM	26.24		
9:34:40 AM	26.24		
9:34:50 AM	26.24		
9:35:00 AM	26.24		

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-1	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 20-ft**
Well Pipe Stickup (ft above grade): 2.92	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 26.4	**Total Depth (ft btop): 35.35** **soft ☐ hard ☐**
Logger Depth (ft btop): 33.3	**Logger ID: 21400074**
Slug Depth (ft btop): 32.8	**Slug ID: Geoscience**

Logger Drop Time:	**8:30:00 AM**	**Slug Pull Time:**	**9:37:20 AM**
Slug Drop Time:	**8:50:00 AM**	**Logger Pull Time:**	**10:25:30 AM**

FALLING HEAD	
Time	**Water Level (ft btop)**
9:35:10 AM	26.24
9:35:20 AM	26.24
9:35:30 AM	26.24
9:35:40 AM	26.24
9:35:50 AM	26.24
9:36:00 AM	26.24
9:36:10 AM	26.24
9:36:20 AM	26.24

RISING HEAD	
Time	**Water Level (ft btop)**

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Debojit Sarkar (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-3	**Date: 12/6/2022**
Well Diameter: 2-inch	**Screen Interval: 25-ft**
Well Pipe Stickup (ft above grade): 2.86	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 46.45	**Total Depth (ft btop): 66.86** **soft ☐ hard ☐**
Logger Depth (ft btop): 64.0	**Logger ID: 21400070**
Slug Depth (ft btop): 52.0	**Slug ID: Geoscience**

Logger Drop Time:	**10:40:00 AM**	**Slug Pull Time:**	**11:40:50 AM**
Slug Drop Time:	**10:41:20 AM**	**Logger Pull Time:**	**2:09:00 PM**

FALLING HEAD		RISING HEAD	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
10:41:20 AM	45.60	11:40:50 AM	47.38
10:41:30 AM	45.65	11:41:00 AM	47.35
10:41:40 AM	45.68	11:41:10 AM	47.33
10:41:50 AM	45.69	11:41:20 AM	47.31
10:42:00 AM	45.69	11:41:30 AM	47.31
10:42:10 AM	45.70	11:41:40 AM	47.30
10:42:20 AM	45.71	11:41:50 AM	47.29
10:42:30 AM	45.71	11:42:00 AM	47.29
10:42:40 AM	45.72	11:42:10 AM	47.29
10:42:50 AM	45.75	11:42:20 AM	47.28
10:43:00 AM	45.76	11:42:30 AM	47.28
10:43:10 AM	45.77	11:42:40 AM	47.27
10:43:20 AM	45.76	11:42:50 AM	47.27
10:43:30 AM	45.79	11:43:00 AM	47.26
10:43:40 AM	45.80	11:43:10 AM	47.26
10:43:50 AM	45.76	11:43:20 AM	47.25
10:44:00 AM	45.78	11:43:30 AM	47.25
10:44:10 AM	45.78	11:43:40 AM	47.25
10:44:20 AM	45.79	11:43:50 AM	47.24
10:44:30 AM	45.79	11:44:00 AM	47.24
10:44:40 AM	45.79	11:44:10 AM	47.24
10:44:50 AM	45.79	11:44:20 AM	47.24
10:45:00 AM	45.80	11:44:30 AM	47.24
10:45:10 AM	45.81	11:44:40 AM	47.24
10:45:20 AM	45.82	11:44:50 AM	47.23
10:45:30 AM	45.82	11:46:10 AM	47.22
10:45:40 AM	45.84	11:47:10 AM	47.20
10:45:50 AM	45.85	11:48:10 AM	47.18
10:46:00 AM	45.86	11:49:10 AM	47.15
10:46:10 AM	45.86	11:50:10 AM	47.12
10:46:20 AM	45.86	11:52:10 AM	47.12
10:46:30 AM	45.87	11:54:10 AM	47.09
10:46:40 AM	45.87	11:56:10 AM	47.06
10:46:50 AM	45.87	12:01:10 PM	47.03
10:47:00 AM	45.87	12:58:30 PM	46.75
10:47:10 AM	45.87	2:01:30 PM	46.70
10:47:20 AM	45.87		
10:48:20 AM	45.89		
10:49:20 AM	45.90		
10:50:20 AM	45.91		
10:51:20 AM	45.92		
10:52:20 AM	45.95		
10:55:20 AM	45.99		
10:57:20 AM	46.01		
10:59:20 AM	46.02		

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Debojit Sarkar (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-3	**Date: 12/6/2022**
Well Diameter: 2-inch	**Screen Interval: 25-ft**
Well Pipe Stickup (ft above grade): 2.86	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 46.45	**Total Depth (ft btop): 66.86** **soft ☐ hard ☐**
Logger Depth (ft btop): 64.0	**Logger ID: 21400070**
Slug Depth (ft btop): 52.0	**Slug ID: Geoscience**

Logger Drop Time:	**10:40:00 AM**	**Slug Pull Time:**	**11:40:50 AM**
Slug Drop Time:	**10:41:20 AM**	**Logger Pull Time:**	**2:09:00 PM**

FALLING HEAD	
Time	**Water Level (ft btop)**
11:04:20 AM	46.07
11:09:20 AM	46.15
11:14:20 AM	46.19
11:41:10 AM	46.36

RISING HEAD	
Time	**Water Level (ft btop)**

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Debojit Sarkar (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-4A	**Date: 12/6/2022**
Well Diameter: 2-inch	**Screen Interval: 30-ft**
Well Pipe Stickup (ft above grade): 0	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 72.0	**Total Depth (ft btop): 85.0** **soft ☐ hard ☐**
Logger Depth (ft btop): 83.0	**Logger ID: 21400072**
Slug Depth (ft btop): 80.0	**Slug ID: Geoscience**

Logger Drop Time:	**1:25:00 PM**	**Slug Pull Time:**	**1:37:40 PM**
Slug Drop Time:	**1:30:10 PM**	**Logger Pull Time:**	**13:46:10 pm**

FALLING HEAD		**RISING HEAD**	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
1:30:10 PM	71.80	1:38:30 PM	72.30
1:30:20 PM	71.82	1:38:40 PM	72.22
1:30:30 PM	71.84	1:38:50 PM	72.21
1:30:40 PM	71.85	1:39:00 PM	72.21
1:30:50 PM	71.87	1:39:10 PM	72.18
1:31:00 PM	71.90	1:39:20 PM	72.15
1:31:10 PM	71.91	1:39:30 PM	72.16
1:31:20 PM	71.91	1:39:40 PM	72.15
1:31:30 PM	71.92	1:39:50 PM	72.15
1:31:40 PM	71.92	1:40:00 PM	72.14
1:31:50 PM	71.93	1:40:10 PM	72.11
1:32:00 PM	71.94	1:40:20 PM	72.10
1:32:10 PM	71.94	1:40:30 PM	72.09
1:32:20 PM	71.95	1:40:40 PM	72.07
1:32:30 PM	71.95	1:40:50 PM	72.05
1:32:40 PM	71.95	1:41:00 PM	72.05
1:32:50 PM	71.96	1:41:10 PM	72.05
1:33:00 PM	71.96	1:41:20 PM	72.04
1:33:10 PM	71.96	1:41:30 PM	72.04
1:33:20 PM	71.97	1:41:40 PM	72.03
1:33:30 PM	71.97	1:41:50 PM	72.03
1:33:40 PM	71.97	1:42:00 PM	72.03
1:33:50 PM	71.97	1:42:10 PM	72.03
1:34:00 PM	71.97	1:42:20 PM	72.03
1:34:10 PM	71.98	1:42:30 PM	72.03
1:34:20 PM	71.98	1:42:40 PM	72.02
1:34:30 PM	71.99	1:42:50 PM	72.02
1:34:40 PM	71.99	1:43:00 PM	72.02
1:34:50 PM	71.99	1:43:10 PM	72.02
1:35:00 PM	71.99	1:43:20 PM	72.02
1:35:10 PM	71.99	1:43:30 PM	72.02
1:35:20 PM	71.99	1:43:40 PM	72.02
1:35:30 PM	72.00	1:43:50 PM	72.02
		1:44:00 PM	72.02
		1:45:00 PM	72.00

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-5B	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 40-ft**
Well Pipe Stickup (ft above grade): 0	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 49.64	**Total Depth (ft btop): 78.80** **soft ☐ hard ☐**
Logger Depth (ft btop): 75.0	**Logger ID: 21400069**
Slug Depth (ft btop): 58.25	**Slug ID: Geoscience**

Logger Drop Time:	**10:55:00 AM**	**Slug Pull Time:**	**11:12:00 AM**
Slug Drop Time:	**11:08:00 AM**	**Logger Pull Time:**	**11:33:00 AM**

FALLING HEAD		**RISING HEAD**	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
11:08:00 AM	49.66	11:30:00 AM	49.64
11:08:10 AM	49.64	11:30:10 AM	49.64
11:08:20 AM	49.64	11:30:20 AM	49.64
11:08:30 AM	49.64	11:30:30 AM	49.64
11:08:40 AM	49.65	11:30:40 AM	49.64
11:08:50 AM	49.65	11:30:50 AM	49.64
11:09:00 AM	49.66	11:31:00 AM	49.64
11:09:10 AM	49.66	11:31:10 AM	49.64
Redeployed Slug at 11:25:00 AM		11:31:20 AM	49.64
11:25:00 AM	49.66	11:31:30 AM	49.64
11:25:10 AM	49.65	11:31:40 AM	49.64
11:25:20 AM	49.65	11:31:50 AM	49.64
11:25:30 AM	49.65	11:32:00 AM	49.64
11:25:40 AM	49.64		
11:25:50 AM	49.64		
11:26:00 AM	49.64		
11:26:10 AM	49.64		
11:26:20 AM	49.64		
11:26:30 AM	49.64		
11:26:40 AM	49.64		
11:26:50 AM	49.64		
11:27:00 AM	49.64		
11:27:10 AM	49.64		
11:27:20 AM	49.64		
11:27:30 AM	49.64		
11:27:40 AM	49.64		
11:27:50 AM	49.64		
11:28:00 AM	49.64		

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-6	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 50-ft**
Well Pipe Stickup (ft above grade): 2.9	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 13.93	**Total Depth (ft btop): 23.12** **soft ☐ hard ☐**
Logger Depth (ft btop): 22.5	**Logger ID: 21400085**
Slug Depth (ft btop): 20.35	**Slug ID: Geoscience**

Logger Drop Time:	**2:00:00 PM**	**Slug Pull Time:**	**2:18:00 PM**
Slug Drop Time:	**2:00:20 PM**	**Logger Pull Time:**	**2:33:30 PM**

FALLING HEAD		**RISING HEAD**	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
2:00:50 PM	13.56	2:18:40 PM	14.20
2:01:00 PM	13.67	2:18:50 PM	14.16
2:01:10 PM	13.68	2:19:00 PM	14.12
2:01:20 PM	13.70	2:19:10 PM	14.10
2:01:30 PM	13.75	2:19:20 PM	14.08
2:01:40 PM	13.77	2:19:30 PM	14.07
2:01:50 PM	13.81	2:19:40 PM	14.05
2:02:00 PM	13.82	2:19:50 PM	14.04
2:02:10 PM	13.83	2:20:00 PM	14.04
2:02:20 PM	13.85	2:20:10 PM	14.04
2:02:30 PM	13.86	2:20:20 PM	14.02
2:02:40 PM	13.87	2:20:30 PM	14.01
2:02:50 PM	13.87	2:20:40 PM	14.01
2:03:00 PM	13.88	2:20:50 PM	14.00
2:03:10 PM	13.88	2:21:00 PM	14.00
2:03:20 PM	13.88	2:21:10 PM	13.99
2:03:30 PM	13.88	2:21:20 PM	13.99
2:03:40 PM	13.89	2:21:30 PM	13.99
2:03:50 PM	13.89	2:21:40 PM	13.99
2:04:00 PM	13.89	2:21:50 PM	13.98
2:04:10 PM	13.89	2:22:00 PM	13.98
2:04:20 PM	13.89	2:22:10 PM	13.98
2:04:30 PM	13.90	2:22:20 PM	13.97
2:04:40 PM	13.90	2:22:30 PM	13.97
2:04:50 PM	13.90	2:22:40 PM	13.96
2:05:00 PM	13.91	2:22:50 PM	13.96
2:05:10 PM	13.91	2:23:00 PM	13.96
2:05:20 PM	13.91	2:23:10 PM	13.96
2:05:30 PM	13.91	2:23:20 PM	13.96
2:05:40 PM	13.91	2:23:30 PM	13.96
2:05:50 PM	13.91	2:23:40 PM	13.96
2:06:00 PM	13.91	2:23:50 PM	13.96
2:06:10 PM	13.91	2:24:00 PM	13.96
2:06:20 PM	13.91	2:24:10 PM	13.96
2:06:30 PM	13.91	2:24:20 PM	13.96
2:06:40 PM	13.91	2:24:30 PM	13.96
2:06:50 PM	13.91	2:24:40 PM	13.96
2:07:00 PM	13.91	2:24:50 PM	13.96
2:07:10 PM	13.91	2:25:00 PM	13.96
2:07:20 PM	13.91	2:25:10 PM	13.96
2:07:30 PM	13.91	2:25:20 PM	13.96
2:07:40 PM	13.92	2:25:30 PM	13.96
2:07:50 PM	13.92	2:25:40 PM	13.96
2:08:00 PM	13.92	2:25:50 PM	13.96
2:08:10 PM	13.92	2:26:00 PM	13.96

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-6	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 50-ft**
Well Pipe Stickup (ft above grade): 2.9	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 13.93	**Total Depth (ft btop): 23.12** **soft ☐ hard ☐**
Logger Depth (ft btop): 22.5	**Logger ID: 21400085**
Slug Depth (ft btop): 20.35	**Slug ID: Geoscience**

Logger Drop Time:	**2:00:00 PM**	**Slug Pull Time:**	**2:18:00 PM**
Slug Drop Time:	**2:00:20 PM**	**Logger Pull Time:**	**2:33:30 PM**

FALLING HEAD		**RISING HEAD**	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
2:08:20 PM	13.92		
2:08:30 PM	13.92		
2:08:40 PM	13.92		
2:08:50 PM	13.92		
2:09:00 PM	13.92		
2:09:10 PM	13.92		
2:09:20 PM	13.92		
2:09:30 PM	13.92		
2:09:40 PM	13.92		
2:09:50 PM	13.92		
2:10:00 PM	13.92		
2:10:10 PM	13.92		
2:10:20 PM	13.92		
2:10:30 PM	13.92		
2:10:40 PM	13.92		

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Debojit Sarkar (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-8C	**Date: 12/7/2022**
Well Diameter: 2-inch	**Screen Interval: 10-ft**
Well Pipe Stickup (ft above grade): 0	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 48.51	**Total Depth (ft btop): 53.65** **soft ☐ hard ☐**
Logger Depth (ft btop): 53.65	**Logger ID: 21400073**
Slug Depth (ft btop): 52.5	**Slug ID: VHB Solid Pipe**

Logger Drop Time:	**11:10:00 AM**	**Slug Pull Time:**	**11:15:20 AM**
Slug Drop Time:	**11:11:20 AM**	**Logger Pull Time:**	**11:19:55 AM**

FALLING HEAD	
Time	**Water Level (ft btop)**
11:11:40 AM	48.52
11:11:50 AM	48.54
11:12:00 AM	48.52
11:12:10 AM	48.51
11:12:20 AM	48.51
11:12:30 AM	48.51
11:14:40 AM	48.51

RISING HEAD	
Time	**Water Level (ft btop)**
11:16:00 AM	48.52
11:16:10 AM	48.52
11:16:20 AM	48.52
11:16:30 AM	48.51
11:16:40 AM	48.51
11:16:50 AM	48.51
11:19:00 AM	48.51

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Debojit Sarkar (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-10	**Date: 12/6/2022**
Well Diameter: 2-inch	**Screen Interval: 10-ft**
Well Pipe Stickup (ft above grade): 3.0	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 7.05	**Total Depth (ft btop): 15.00** **soft ☐ hard ☐**
Logger Depth (ft btop): 14.0	**Logger ID: 21400076**
Slug Depth (ft btop): 12.0	**Slug ID: Geoscience**

Logger Drop Time:	**8:05:00 AM**	**Slug Pull Time:**	**9:02:00 AM**
Slug Drop Time:	**8:06:00 AM**	**Logger Pull Time:**	**11:22:00 AM**

FALLING HEAD		RISING HEAD	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
8:06:00 AM	2.82	11:16:00 AM	7.98
8:06:10 AM	2.50	11:16:10 AM	7.94
8:06:20 AM	6.30	11:16:20 AM	7.91
8:06:30 AM	6.30	11:16:30 AM	7.91
8:06:40 AM	6.30	11:16:40 AM	7.90
8:06:50 AM	6.32	11:16:50 AM	7.88
8:07:00 AM	6.32	11:17:00 AM	7.87
8:07:10 AM	6.27	11:17:10 AM	7.87
8:07:20 AM	6.29	11:17:20 AM	7.86
8:07:30 AM	6.30	11:17:30 AM	7.85
8:07:40 AM	6.30	11:17:40 AM	7.84
8:07:50 AM	6.32	11:17:50 AM	7.83
8:08:00 AM	6.32	11:18:00 AM	7.82
8:08:10 AM	6.33	11:18:10 AM	7.82
8:08:20 AM	6.34	11:18:20 AM	7.82
8:08:30 AM	6.34	11:18:30 AM	7.82
8:08:40 AM	6.35	11:18:40 AM	7.81
8:08:50 AM	6.35	11:18:50 AM	7.81
8:09:00 AM	6.36	11:19:00 AM	7.81
8:09:10 AM	6.37	11:19:10 AM	7.80
8:09:20 AM	6.38	11:19:20 AM	7.80
8:09:30 AM	6.38	11:19:30 AM	7.79
8:09:40 AM	6.39	11:19:40 AM	7.79
8:09:50 AM	6.40	11:19:50 AM	7.79
8:10:00 AM	6.41	11:20:00 AM	7.78
8:10:10 AM	6.41	11:20:10 AM	7.77
8:10:20 AM	6.42	11:20:20 AM	7.77
8:10:30 AM	6.42	11:20:30 AM	7.76
8:10:40 AM	6.43	11:20:40 AM	7.76
8:10:50 AM	6.44	11:20:50 AM	7.76
8:11:00 AM	6.44	11:21:00 AM	7.75
8:11:10 AM	6.45	11:21:10 AM	7.75
8:11:20 AM	6.46	11:21:20 AM	7.75
8:11:30 AM	6.47	11:21:30 AM	7.74
8:11:40 AM	6.47	11:23:30 AM	7.72
8:11:50 AM	6.47	11:24:30 AM	7.71
8:12:00 AM	6.48	11:25:30 AM	7.69
8:12:10 AM	6.48	11:26:30 AM	7.67
8:12:20 AM	6.49	11:27:30 AM	7.65
8:12:30 AM	6.50	11:28:30 AM	7.63
8:12:40 AM	6.51	11:29:30 AM	7.61
8:12:50 AM	6.51	11:30:30 AM	7.59
8:13:00 AM	6.51	11:32:30 AM	7.57
8:13:10 AM	6.52	11:34:30 AM	7.54
8:13:20 AM	6.52	11:36:30 AM	7.51

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Debojit Sarkar (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-10	**Date: 12/6/2022**
Well Diameter: 2-inch	**Screen Interval: 10-ft**
Well Pipe Stickup (ft above grade): 3.0	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 7.05	**Total Depth (ft btop): 15.00** **soft ☐ hard ☐**
Logger Depth (ft btop): 14.0	**Logger ID: 21400076**
Slug Depth (ft btop): 12.0	**Slug ID: Geoscience**

Logger Drop Time:	**8:05:00 AM**	**Slug Pull Time:**	**9:02:00 AM**
Slug Drop Time:	**8:06:00 AM**	**Logger Pull Time:**	**11:22:00 AM**

FALLING HEAD		**RISING HEAD**	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
8:13:30 AM	6.53	11:38:30 AM	7.50
8:13:40 AM	6.53	11:40:30 AM	7.48
8:13:50 AM	6.54	11:43:30 AM	7.45
8:14:00 AM	6.54	11:48:30 AM	7.41
8:14:10 AM	6.55	11:53:30 AM	7.37
8:15:10 AM	6.60	11:58:30 AM	7.34
8:16:10 AM	6.61	12:03:30 PM	7.31
8:17:10 AM	6.63	12:07:30 PM	7.30
8:18:10 AM	6.66		
8:19:10 AM	6.68		
8:20:10 AM	6.71		
8:21:10 AM	6.73		
8:22:10 AM	6.75		
8:23:10 AM	6.77		
8:47:10 AM	6.78		
8:51:10 AM	6.80		
8:53:10 AM	6.82		
8:58:10 AM	6.83		
9:03:10 AM	6.87		
9:08:10 AM	6.89		
9:13:10 AM	6.91		
9:18:10 AM	6.92		
9:26:10 AM	6.93		

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-11B	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 50-ft**
Well Pipe Stickup (ft above grade): 0	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 57.18	**Total Depth (ft btop): 90.50** **soft ☐ hard ☐**
Logger Depth (ft btop): 86.9	**Logger ID: 21400075**
Slug Depth (ft btop): 65.0	**Slug ID: Geoscience**

Logger Drop Time:	**12:00:00 PM**	**Slug Pull Time:**	**12:37:00 PM**
Slug Drop Time:	**12:05:00 PM**	**Logger Pull Time:**	

FALLING HEAD		RISING HEAD	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
12:00:00 PM	55.85	12:37:00 PM	57.32
12:00:10 PM	55.86	12:37:10 PM	57.31
12:00:20 PM	55.86	12:37:20 PM	57.30
12:00:30 PM	55.86	12:37:30 PM	57.29
12:00:40 PM	55.86	12:37:40 PM	57.28
12:00:50 PM	55.86	12:37:50 PM	57.28
12:01:00 PM	55.86	12:38:00 PM	57.28
12:01:10 PM	55.87	12:38:10 PM	57.28
12:01:20 PM	55.87	12:38:20 PM	57.28
12:01:30 PM	55.87	12:38:30 PM	57.27
12:01:40 PM	55.87	12:38:40 PM	57.27
12:01:50 PM	55.87	12:38:50 PM	57.27
12:02:00 PM	55.87	12:39:00 PM	57.27
12:02:10 PM	55.88	12:39:10 PM	57.27
12:02:20 PM	55.88	12:39:20 PM	57.27
12:02:30 PM	55.88	12:39:30 PM	57.27
12:02:40 PM	55.88	12:39:40 PM	57.27
12:02:50 PM	55.89	12:39:50 PM	57.27
12:03:00 PM	55.89	12:40:00 PM	57.27
12:03:10 PM	55.89	12:40:10 PM	57.27
12:03:20 PM	55.89	12:40:20 PM	57.27
12:03:30 PM	55.90	12:40:30 PM	57.27
12:03:40 PM	55.90	12:40:40 PM	57.27
12:03:50 PM	55.90	12:40:50 PM	57.27
12:04:00 PM	55.90	12:41:00 PM	57.27
12:04:10 PM	55.90	12:41:10 PM	57.27
12:04:20 PM	55.91	12:41:20 PM	57.27
12:04:30 PM	55.91	12:41:30 PM	57.26
12:04:40 PM	55.91	12:41:40 PM	57.26
12:04:50 PM	55.91	12:41:50 PM	57.26
12:05:00 PM	55.91	12:42:00 PM	57.26
12:05:10 PM	55.92	12:42:10 PM	57.26
12:05:20 PM	55.92	12:42:20 PM	57.26
12:05:30 PM	55.92	12:42:30 PM	57.26
12:05:40 PM	55.92	12:42:40 PM	57.26
12:05:50 PM	55.93	12:42:50 PM	57.26
12:06:00 PM	55.93	12:43:00 PM	57.26
12:06:10 PM	55.93	12:43:10 PM	57.26
12:06:20 PM	55.94	12:43:20 PM	57.26
12:06:30 PM	55.94	12:43:30 PM	57.26
12:06:40 PM	55.94	12:43:40 PM	57.26
12:06:50 PM	55.94	12:43:50 PM	57.26
12:07:00 PM	55.94	12:44:00 PM	57.26
12:07:10 PM	55.94	12:44:10 PM	57.26
12:07:20 PM	55.95	12:44:20 PM	57.26

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-11B	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 50-ft**
Well Pipe Stickup (ft above grade): 0	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 57.18	**Total Depth (ft btop): 90.50** **soft ☐ hard ☐**
Logger Depth (ft btop): 86.9	**Logger ID: 21400075**
Slug Depth (ft btop): 65.0	**Slug ID: Geoscience**

Logger Drop Time:	**12:00:00 PM**	**Slug Pull Time:**	**12:37:00 PM**
Slug Drop Time:	**12:05:00 PM**	**Logger Pull Time:**	

FALLING HEAD		RISING HEAD	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
12:07:30 PM	55.95	12:44:30 PM	57.26
12:07:40 PM	55.95		
12:07:50 PM	55.95		
12:08:00 PM	55.95		
12:08:10 PM	55.96		
12:08:20 PM	55.96		
12:08:30 PM	55.96		
12:08:40 PM	55.96		
12:08:50 PM	55.96		
12:09:00 PM	55.97		
12:09:10 PM	55.97		
12:09:20 PM	55.97		
12:09:30 PM	55.97		
12:09:40 PM	55.97		
12:09:50 PM	55.97		
12:10:00 PM	55.97		
12:10:10 PM	55.98		
12:10:20 PM	55.98		
12:10:30 PM	55.98		
12:10:40 PM	55.98		
12:10:50 PM	55.98		
12:11:00 PM	55.99		
12:11:10 PM	55.99		
12:11:20 PM	55.99		
12:11:30 PM	55.99		
12:11:40 PM	55.99		
12:11:50 PM	55.99		
12:12:00 PM	56.00		
12:12:10 PM	56.00		
12:12:20 PM	56.00		
12:12:30 PM	56.00		
12:12:40 PM	56.00		
12:12:50 PM	56.00		
12:13:00 PM	56.00		
12:13:10 PM	56.01		
12:13:20 PM	56.01		
12:13:30 PM	56.01		
12:13:40 PM	56.01		
12:13:50 PM	56.01		
12:14:00 PM	56.01		
12:14:10 PM	56.02		
12:14:20 PM	56.02		
12:14:30 PM	56.02		
12:14:40 PM	56.02		
12:14:50 PM	56.02		

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-11B	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 50-ft**
Well Pipe Stickup (ft above grade): 0	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 57.18	**Total Depth (ft btop): 90.50** **soft ☐ hard ☐**
Logger Depth (ft btop): 86.9	**Logger ID: 21400075**
Slug Depth (ft btop): 65.0	**Slug ID: Geoscience**

Logger Drop Time:	**12:00:00 PM**	**Slug Pull Time:**	**12:37:00 PM**
Slug Drop Time:	**12:05:00 PM**	**Logger Pull Time:**	

FALLING HEAD		RISING HEAD	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
12:15:00 PM	56.02		
12:15:10 PM	56.02		
12:15:20 PM	56.02		
12:15:30 PM	56.03		
12:15:40 PM	56.03		
12:15:50 PM	56.03		
12:16:00 PM	56.03		
12:16:10 PM	56.03		
12:16:20 PM	56.03		
12:16:30 PM	56.04		
12:16:40 PM	56.04		
12:16:50 PM	56.04		
12:17:00 PM	56.04		
12:17:10 PM	56.04		
12:17:20 PM	56.04		
12:17:30 PM	56.04		
12:17:40 PM	56.05		
12:17:50 PM	56.05		
12:18:00 PM	56.05		
12:18:10 PM	56.05		
12:18:20 PM	56.05		
12:18:30 PM	56.05		
12:18:40 PM	56.05		
12:18:50 PM	56.05		
12:19:00 PM	56.06		
12:19:10 PM	56.06		
12:19:20 PM	56.06		
12:19:30 PM	56.06		
12:19:40 PM	56.06		
12:19:50 PM	56.07		
12:20:00 PM	56.07		
12:20:10 PM	56.07		
12:20:20 PM	56.07		
12:20:30 PM	56.07		
12:20:40 PM	56.07		
12:20:50 PM	56.07		
12:21:00 PM	56.08		
12:21:10 PM	56.08		
12:21:20 PM	56.08		
12:21:30 PM	56.08		
12:21:40 PM	56.08		
12:21:50 PM	56.08		
12:22:00 PM	56.08		
12:22:10 PM	56.08		
12:22:20 PM	56.09		

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-11B	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 50-ft**
Well Pipe Stickup (ft above grade): 0	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 57.18	**Total Depth (ft btop): 90.50** **soft ☐ hard ☐**
Logger Depth (ft btop): 86.9	**Logger ID: 21400075**
Slug Depth (ft btop): 65.0	**Slug ID: Geoscience**

Logger Drop Time:	**12:00:00 PM**	**Slug Pull Time:**	**12:37:00 PM**
Slug Drop Time:	**12:05:00 PM**	**Logger Pull Time:**	

FALLING HEAD		RISING HEAD	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
12:22:30 PM	56.09		
12:22:40 PM	56.09		
12:22:50 PM	56.09		
12:23:00 PM	56.09		
12:23:10 PM	56.10		
12:23:20 PM	56.10		
12:23:30 PM	56.10		
12:23:40 PM	56.10		
12:23:50 PM	56.10		
12:24:00 PM	56.10		
12:24:10 PM	56.10		
12:24:20 PM	56.10		
12:24:30 PM	56.10		
12:24:40 PM	56.11		
12:24:50 PM	56.11		
12:25:00 PM	56.11		
12:25:10 PM	56.11		
12:25:20 PM	56.11		
12:25:30 PM	56.11		
12:25:40 PM	56.12		
12:25:50 PM	56.12		
12:26:00 PM	56.12		
12:26:10 PM	56.12		
12:26:20 PM	56.12		
12:26:30 PM	56.12		
12:26:40 PM	56.12		
12:26:50 PM	56.12		
12:27:00 PM	56.12		
12:27:10 PM	56.12		
12:27:20 PM	56.13		
12:27:30 PM	56.13		
12:27:40 PM	56.13		
12:27:50 PM	56.13		
12:28:00 PM	56.13		
12:28:10 PM	56.13		
12:28:20 PM	56.13		
12:28:30 PM	56.13		
12:28:40 PM	56.13		
12:28:50 PM	56.14		
12:29:00 PM	56.14		
12:29:10 PM	56.14		
12:29:20 PM	56.14		
12:29:30 PM	56.14		
12:29:40 PM	56.14		
12:29:50 PM	56.14		

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Mario Barahona (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-11B	**Date: 10/19/2022**
Well Diameter: 2-inch	**Screen Interval: 50-ft**
Well Pipe Stickup (ft above grade): 0	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 57.18	**Total Depth (ft btop): 90.50** **soft ☐ hard ☐**
Logger Depth (ft btop): 86.9	**Logger ID: 21400075**
Slug Depth (ft btop): 65.0	**Slug ID: Geoscience**

Logger Drop Time:	**12:00:00 PM**	**Slug Pull Time:**	**12:37:00 PM**
Slug Drop Time:	**12:05:00 PM**	**Logger Pull Time:**	

FALLING HEAD		**RISING HEAD**	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
12:30:00 PM	56.14		

Hydraulic Conductivity Testing Data Sheet

Site ID: VTrans Lyndon - IM 091-3(53)	**Personnel: Debojit Sarkar (HNTB) / Ryan Colarusso (VHB)**
Monitor Well ID: B-12A	**Date: 12/6/2022**
Well Diameter: 2-inch	**Screen Interval: 20-ft**
Well Pipe Stickup (ft above grade): 0.0	**Well Guard Stickup (ft above grade):**
Depth to Water (ft btop): 55.90	**Total Depth (ft btop): 70.00** **soft ☐ hard ☐**
Logger Depth (ft btop): 69.0	**Logger ID: 21400084**
Slug Depth (ft btop): 60.0	**Slug ID: Geoscience**

Logger Drop Time:	**3:05:00 PM**	**Slug Pull Time:**	**9:36:40 AM on 12/17/2022**
Slug Drop Time:	**3:06:05 AM**	**Logger Pull Time:**	**Logger Died at 8:00 PM 12/16**

FALLING HEAD		RISING HEAD	
Time	**Water Level (ft btop)**	**Time**	**Water Level (ft btop)**
3:06:05 AM	54.03	11:16:00 AM	55.73
3:06:15 AM	54.06	11:16:10 AM	55.74
3:06:25 AM	54.05	11:16:20 AM	55.75
3:06:35 AM	54.06	11:16:30 AM	55.76
3:06:45 AM	54.06	11:16:40 AM	55.74
3:06:55 AM	54.06	11:16:50 AM	55.73
3:07:05 AM	54.06	11:17:00 AM	55.71
3:07:15 AM	54.07	11:17:10 AM	55.70
3:07:25 AM	54.07	11:17:20 AM	55.71
3:07:35 AM	54.07	11:17:30 AM	55.71
3:07:45 AM	54.07	11:17:40 AM	55.71
3:07:55 AM	54.07	11:17:50 AM	55.71
3:08:05 AM	54.07	11:18:00 AM	55.71
3:08:15 AM	54.07	11:18:10 AM	55.71
3:08:25 AM	54.07	11:18:20 AM	55.70
3:08:35 AM	54.07	11:18:30 AM	55.70
3:08:45 AM	54.08	11:18:40 AM	55.69
3:08:55 AM	54.08	11:18:50 AM	55.69
3:09:05 AM	54.08	11:19:00 AM	55.68
3:09:15 AM	54.08	11:19:10 AM	55.68
3:09:25 AM	54.09	11:19:20 AM	55.68
3:09:35 AM	54.09	11:19:30 AM	55.68
3:09:45 AM	54.09	11:19:40 AM	55.68
3:09:55 AM	54.09	11:19:50 AM	55.67
3:10:05 AM	54.09	11:20:00 AM	55.66
3:10:15 AM	54.09	11:20:10 AM	55.66
3:10:25 AM	54.09	11:20:20 AM	55.66
3:11:25 AM	54.10	11:20:30 AM	55.66
3:12:25 AM	54.11	11:20:40 AM	55.66
3:13:25 AM	54.11	11:20:50 AM	55.66
3:14:25 AM	54.12	11:21:00 AM	55.66
3:15:25 AM	54.15	11:22:00 AM	55.65
3:16:25 AM	54.15	11:23:00 AM	55.65
3:17:25 AM	54.15	11:24:00 AM	55.65
3:18:25 AM	54.15	11:26:00 AM	55.64
3:23:25 AM	54.17	11:28:00 AM	55.63
3:28:25 AM	54.20	11:29:00 AM	55.61
3:33:25 AM	54.23	11:34:00 AM	55.59
3:38:25 AM	54.23	11:39:00 AM	55.56
3:43:25 AM	54.25	11:44:00 AM	55.55
3:48:25 AM	54.30	11:49:00 AM	55.52
3:53:25 AM	54.30	11:54:00 AM	55.49
3:58:25 AM	54.32	11:59:00 AM	55.47
4:03:25 AM	54.35	1:08:55 PM	55.27
		1:31:10 PM	55.24

Appendix VI – Automatic Slug Test Results from Data Logger

B-1_SlugTest_2022-10-19.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400074
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 09:04:17 AM GMT-04:00
- Calibration Date: 04/25/22 06:40:14 AM GMT-04:00

Deployment Info

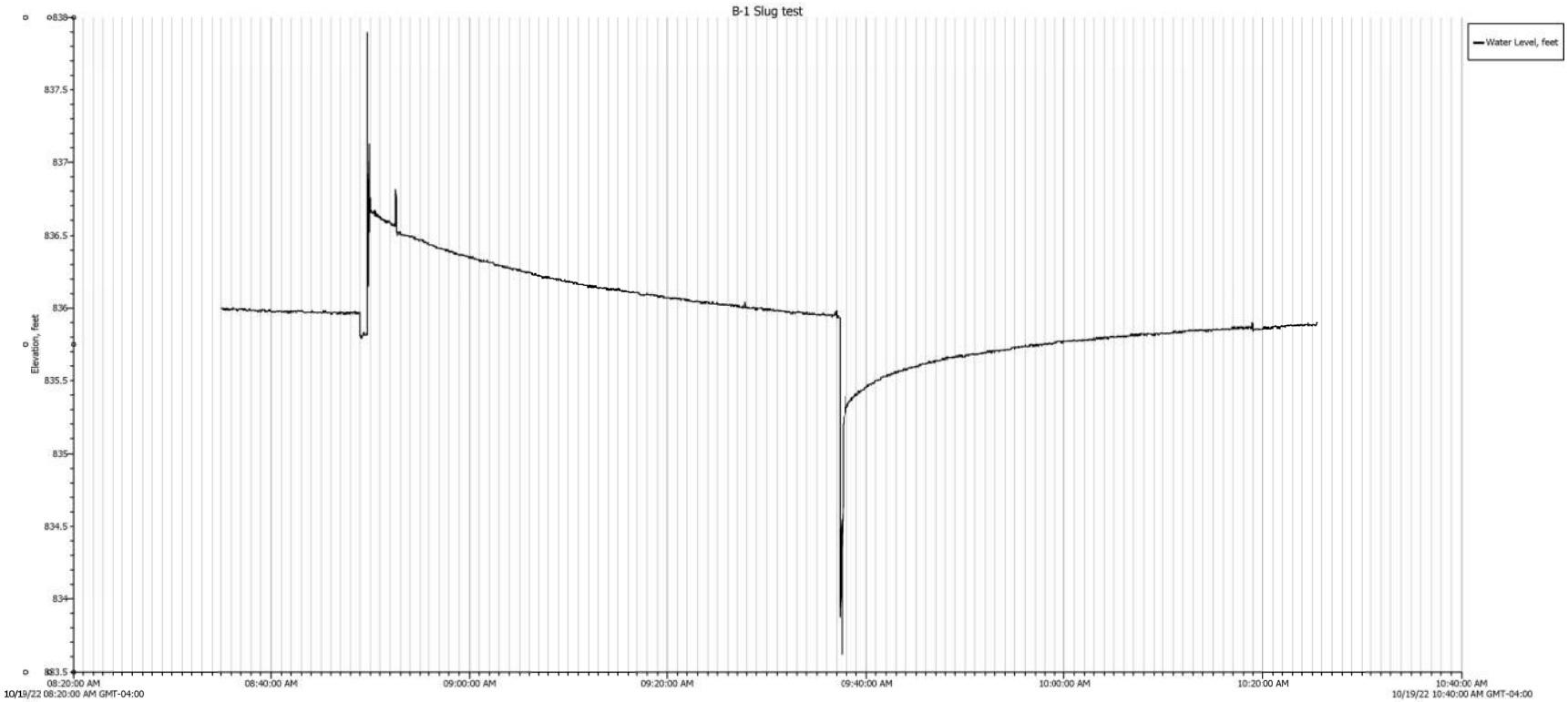
- Deployment info is not available

Series Statistics

- Samples: 6,631
- Max: 837.896
- Min: 833.616
- Avg: 835.958
- Std Dev (σ): 0.277
- First Sample Time: 10/19/22 08:35:00 AM GMT-04:00
- Last Sample Time: 10/19/22 10:25:30 AM GMT-04:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 836.000 feet
- Reference Time: 10/19/22 08:35:00 AM GMT-04:00



Boring: B-1 Slug Test
Equipment: HOBO U20L-02 Water Level
Serial No.: 21400074

B-3-12-06-22-slugtest.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400070
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:02:52 AM GMT-05:00
- Calibration Date: 04/25/22 05:39:22 AM GMT-05:00

Deployment Info

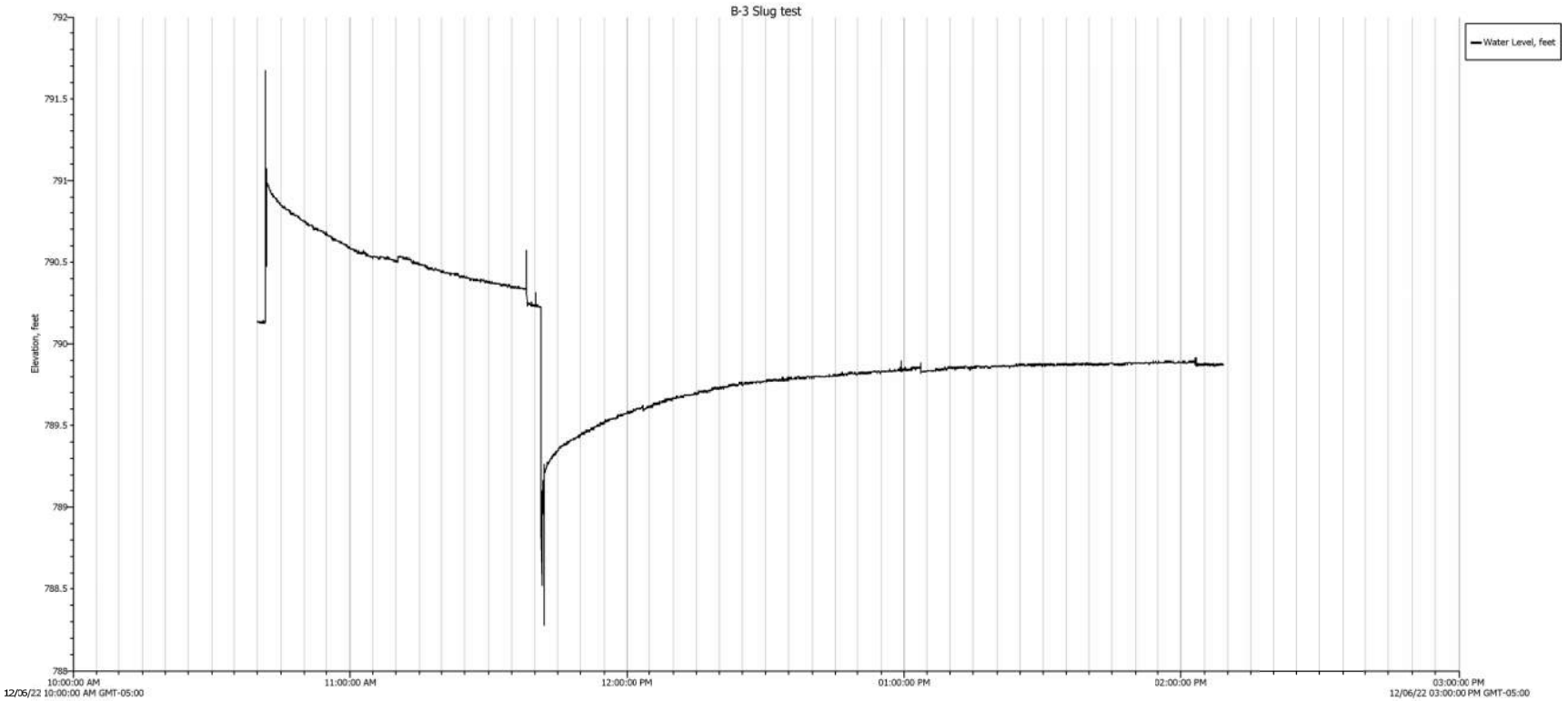
- Deployment info is not available

Series Statistics

- Samples: 12,541
- Max: 791.677
- Min: 788.276
- Avg: 789.987
- Std Dev (σ): 0.380
- First Sample Time: 12/06/22 10:40:00 AM GMT-05:00
- Last Sample Time: 12/06/22 02:09:00 PM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 790.140 feet
- Reference Time: 12/06/22 10:40:00 AM GMT-05:00



Boring: B-3 Slug Test
Equipment: HOBO U20L-02 Water Level
Serial No.: 21400070

B-4A-12-06-22-slugtest.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400072
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:03:34 AM GMT-05:00
- Calibration Date: 04/25/22 05:39:47 AM GMT-05:00

Deployment Info

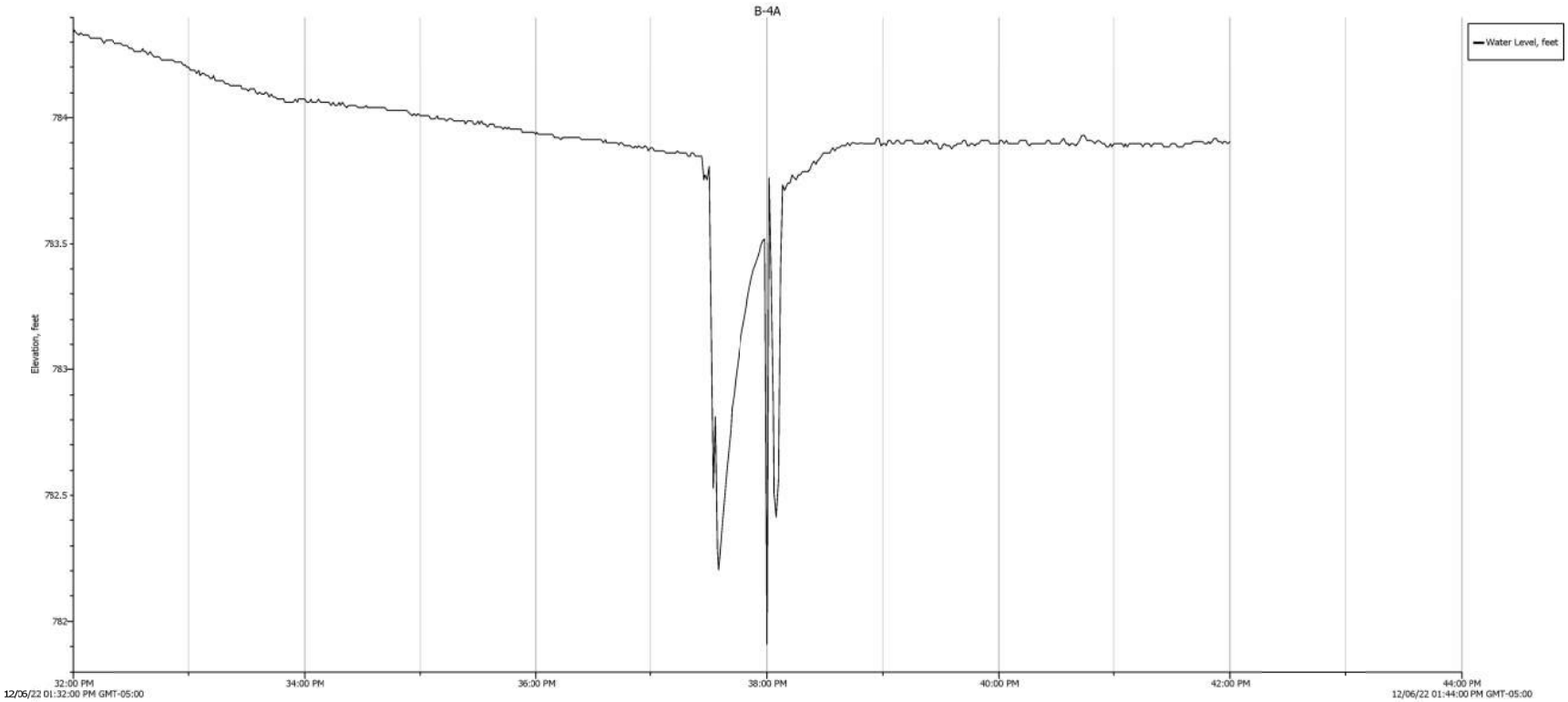
- Deployment info is not available

Series Statistics

- Samples: 601
- Max: 784.349
- Min: 781.907
- Avg: 783.917
- Std Dev (σ): 0.299
- First Sample Time: 12/06/22 01:32:00 PM GMT-05:00
- Last Sample Time: 12/06/22 01:42:00 PM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 783.920 feet
- Reference Time: 12/06/22 01:25:00 PM GMT-05:00



Boring: B-4A Slug Test
Equipment: HOBO U20L-02 Water Level
Serial No.: 21400072

B-5B_SlugTest_2022-10-19.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400069
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 09:02:27 AM GMT-04:00
- Calibration Date: 04/25/22 06:39:08 AM GMT-04:00

Deployment Info

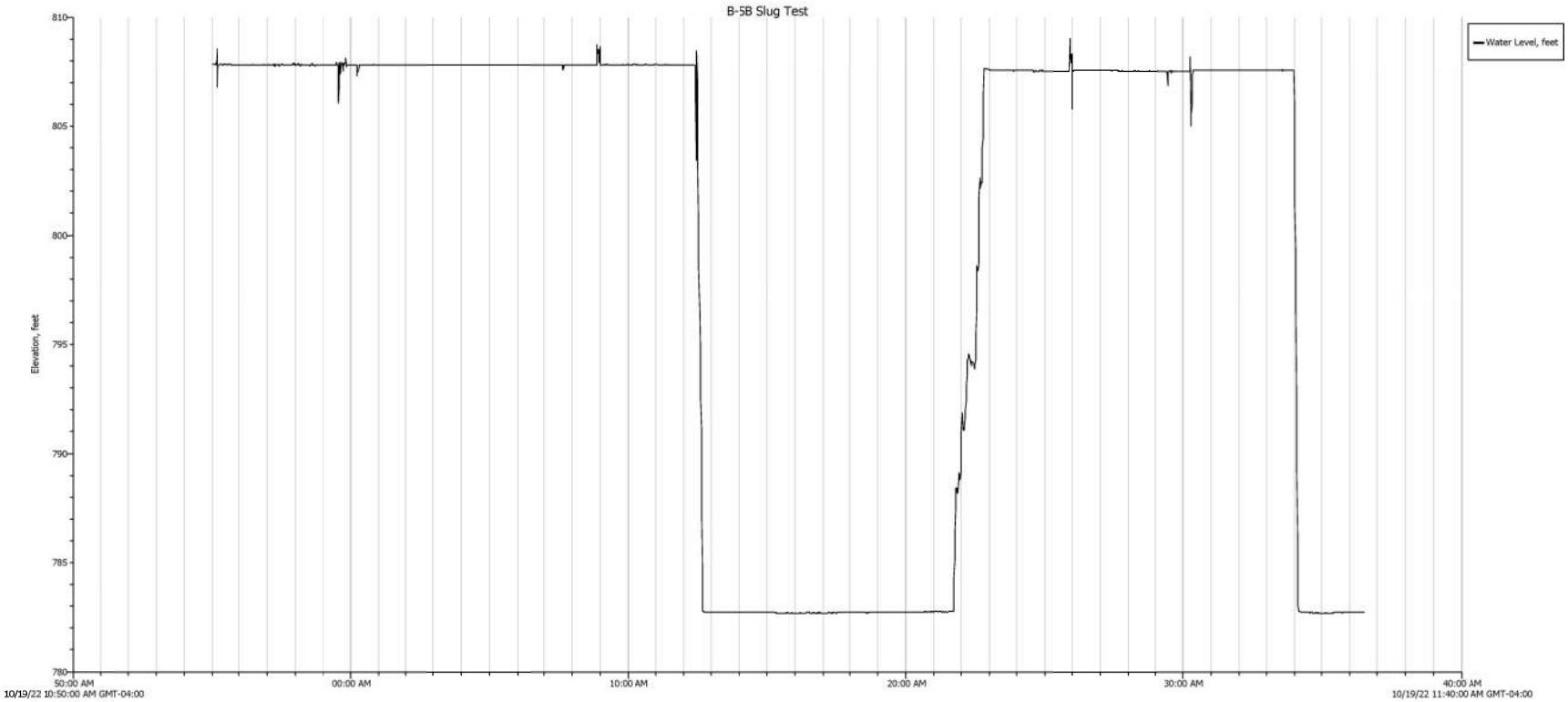
- Full Series Name: Water Level, feet
- Launch Name: B-5B
- Deployment Number: 5
- Launch Time: 10/19/22 10:46:04 AM GMT-04:00
- Logging Interval: 00 Hr 00 Min 01 Sec
- Launch GMT Offset: -4 Hr 0 Min
- Battery at Launch: 3.40 Volts
- Launching Program: HOBOware Pro-3.7.25_0811_1019_Windows

Series Statistics

- Samples: 2,491
- Max: 809.052
- Min: 782.683
- Avg: 800.365
- Std Dev (σ): 11.195
- First Sample Time: 10/19/22 10:55:00 AM GMT-04:00
- Last Sample Time: 10/19/22 11:36:30 AM GMT-04:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 807.830 feet
- Reference Time: 10/19/22 10:55:00 AM GMT-04:00



<u>Boring:</u> B-5B Slug Test
<u>Equipment:</u> HOBO U20L-02 Water Level
<u>Serial No.:</u> 21400069

B-6_SlugTest_2022-10-19.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400085
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 09:08:02 AM GMT-04:00
- Calibration Date: 04/25/22 06:51:53 AM GMT-04:00

Deployment Info

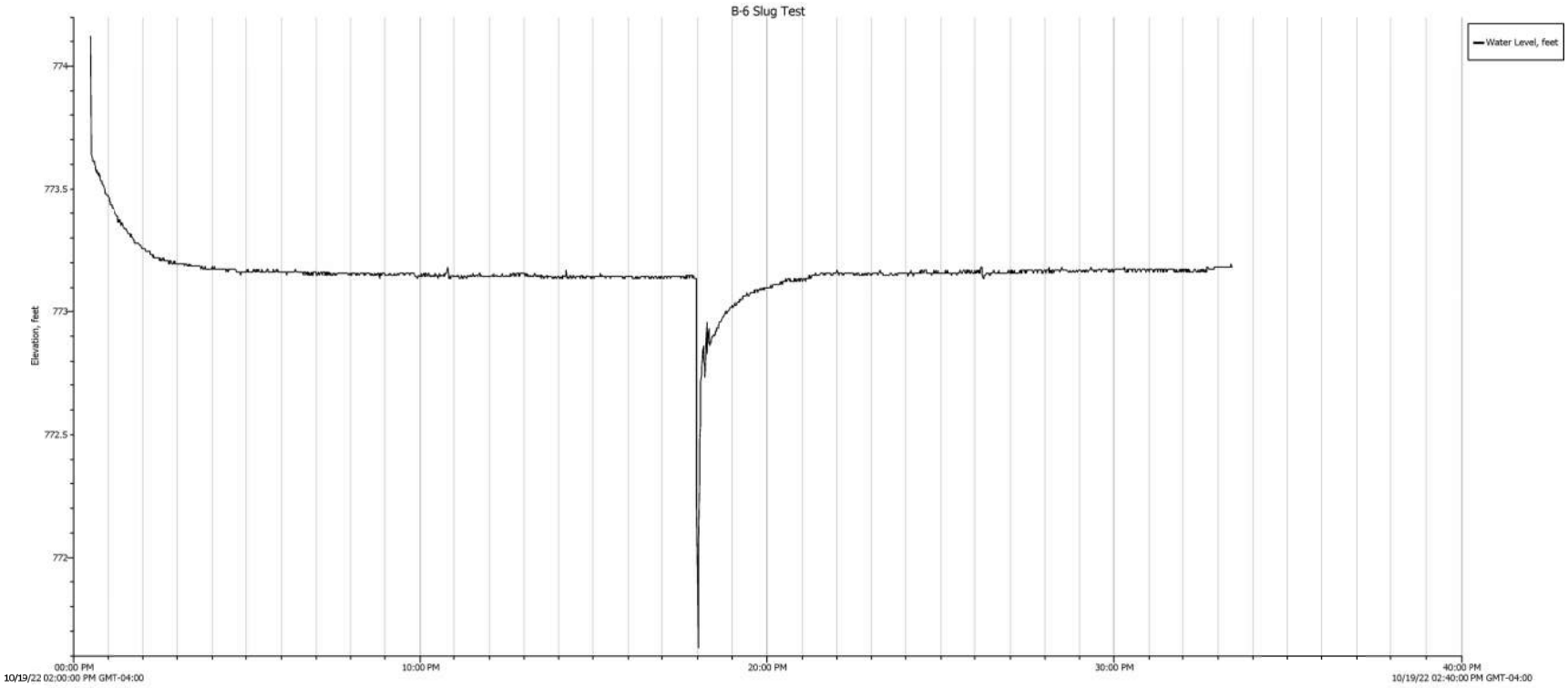
- Deployment info is not available

Series Statistics

- Samples: 1,975
- Max: 774.123
- Min: 771.631
- Avg: 773.158
- Std Dev (σ): 0.100
- First Sample Time: 10/19/22 02:00:30 PM GMT-04:00
- Last Sample Time: 10/19/22 02:33:24 PM GMT-04:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 773.140 feet
- Reference Time: 10/19/22 02:00:00 PM GMT-04:00



Boring: B-6 Slug Test
Equipment: HOBO U20L-02 Water Level
Serial No.: 21400085

B-8C-12-07-22-slugtest.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400073
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:03:52 AM GMT-05:00
- Calibration Date: 04/25/22 05:40:01 AM GMT-05:00

Deployment Info

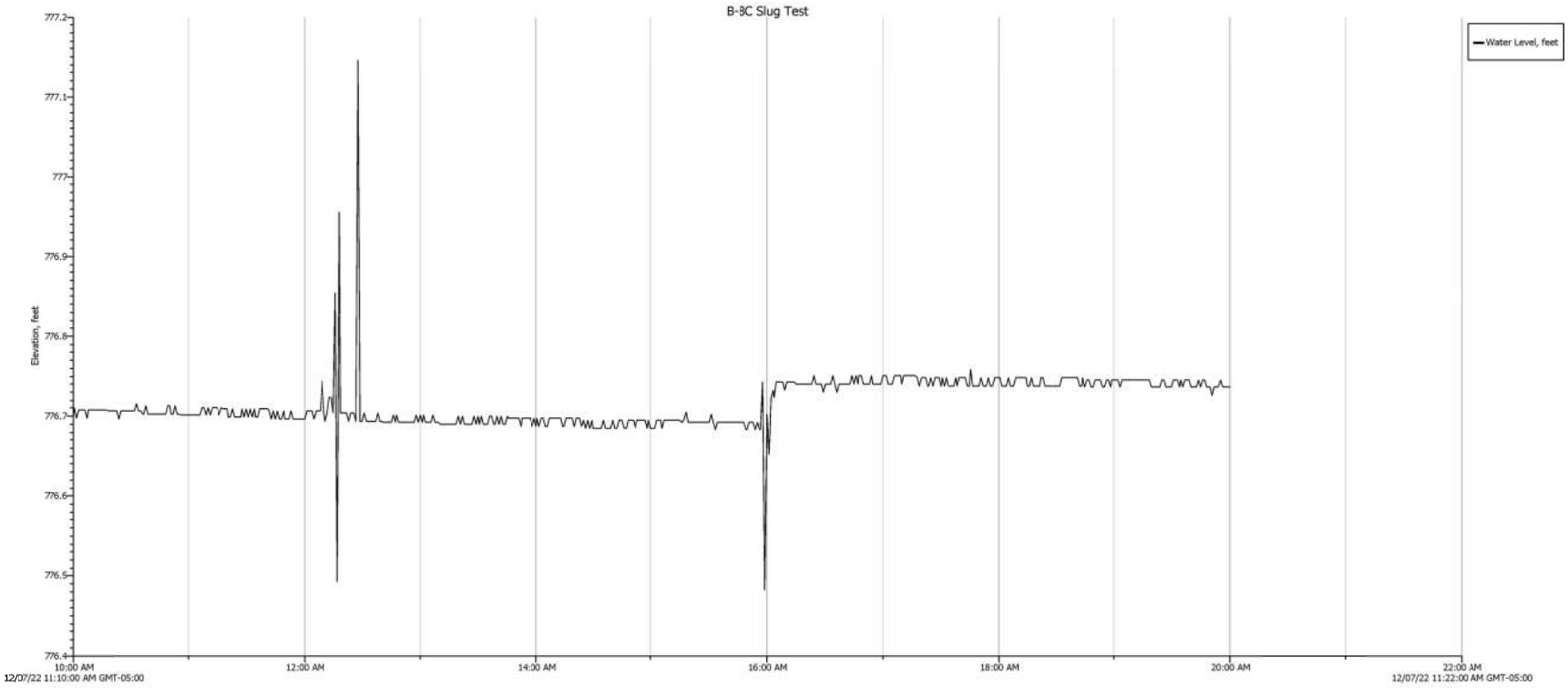
- Deployment info is not available

Series Statistics

- Samples: 601
- Max: 777.146
- Min: 776.482
- Avg: 776.716
- Std Dev (σ): 0.034
- First Sample Time: 12/07/22 11:10:00 AM GMT-05:00
- Last Sample Time: 12/07/22 11:20:00 AM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 776.700 feet
- Reference Time: 12/07/22 11:10:00 AM GMT-05:00



Boring: B-8C Slug Test
Equipment: HOBO U20L-02 Water Level
Serial No.: 21400073

B-10-12-06-22-slugtest.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400076
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 08:05:03 AM GMT-05:00
- Calibration Date: 04/25/22 05:40:43 AM GMT-05:00

Deployment Info

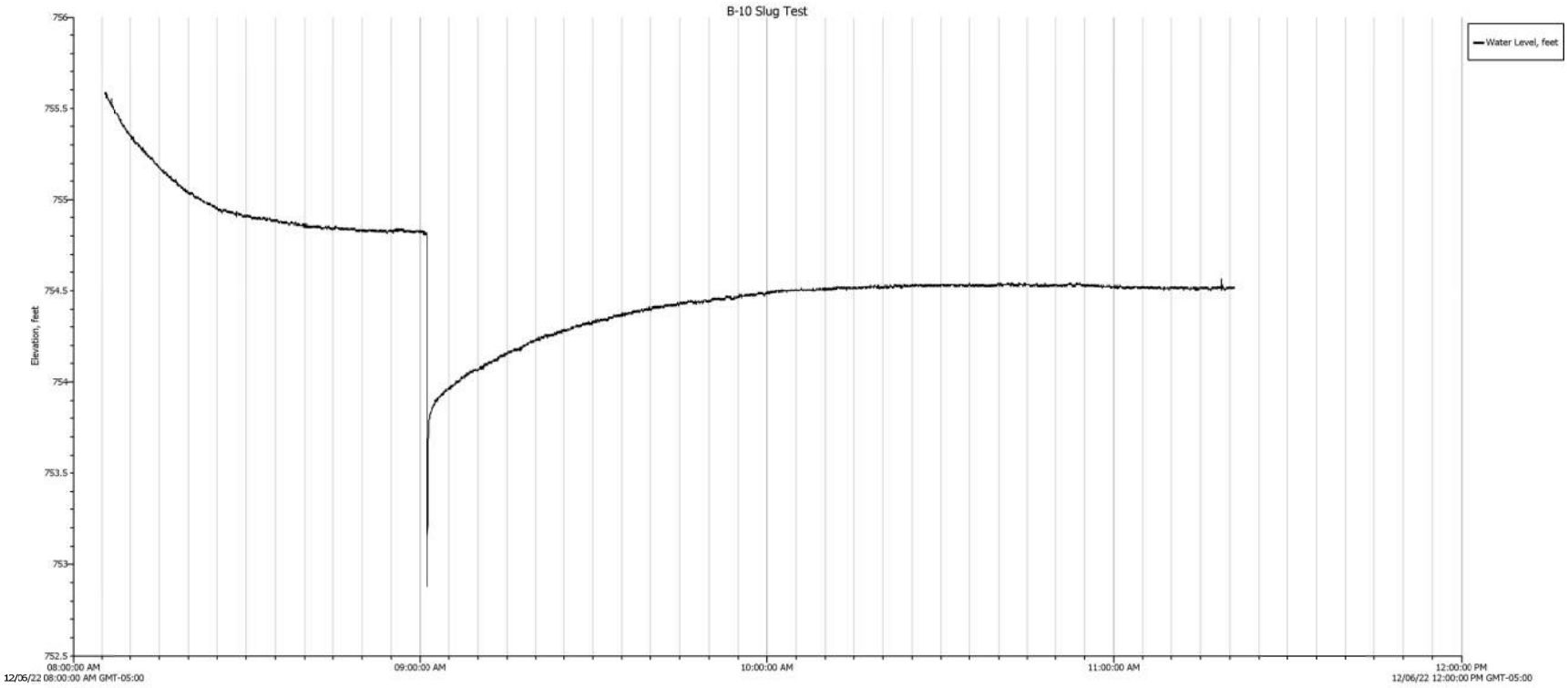
- Deployment info is not available

Series Statistics

- Samples: 11,712
- Max: 755.591
- Min: 752.877
- Avg: 754.579
- Std Dev (σ): 0.307
- First Sample Time: 12/06/22 08:05:30 AM GMT-05:00
- Last Sample Time: 12/06/22 11:20:41 AM GMT-05:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 754.780 feet
- Reference Time: 12/06/22 08:05:00 AM GMT-05:00



<u>Boring:</u> B-10 Slug Test
<u>Equipment:</u> HOBO U20L-02 Water Level
<u>Serial No.:</u> 21400076

B-11B_SlugTest_2022-10-19.hobo

Details

Series: Water Level, feet

Devices

Device Info

- Product: HOBO U20L-02 Water Level
- Serial Number: 21400075
- Version Number: 1.14
- Manufacturer: Onset Computer Corporation
- Device Memory: 65536
- Header Created: 04/22/22 09:04:39 AM GMT-04:00
- Calibration Date: 04/25/22 06:40:27 AM GMT-04:00

Deployment Info

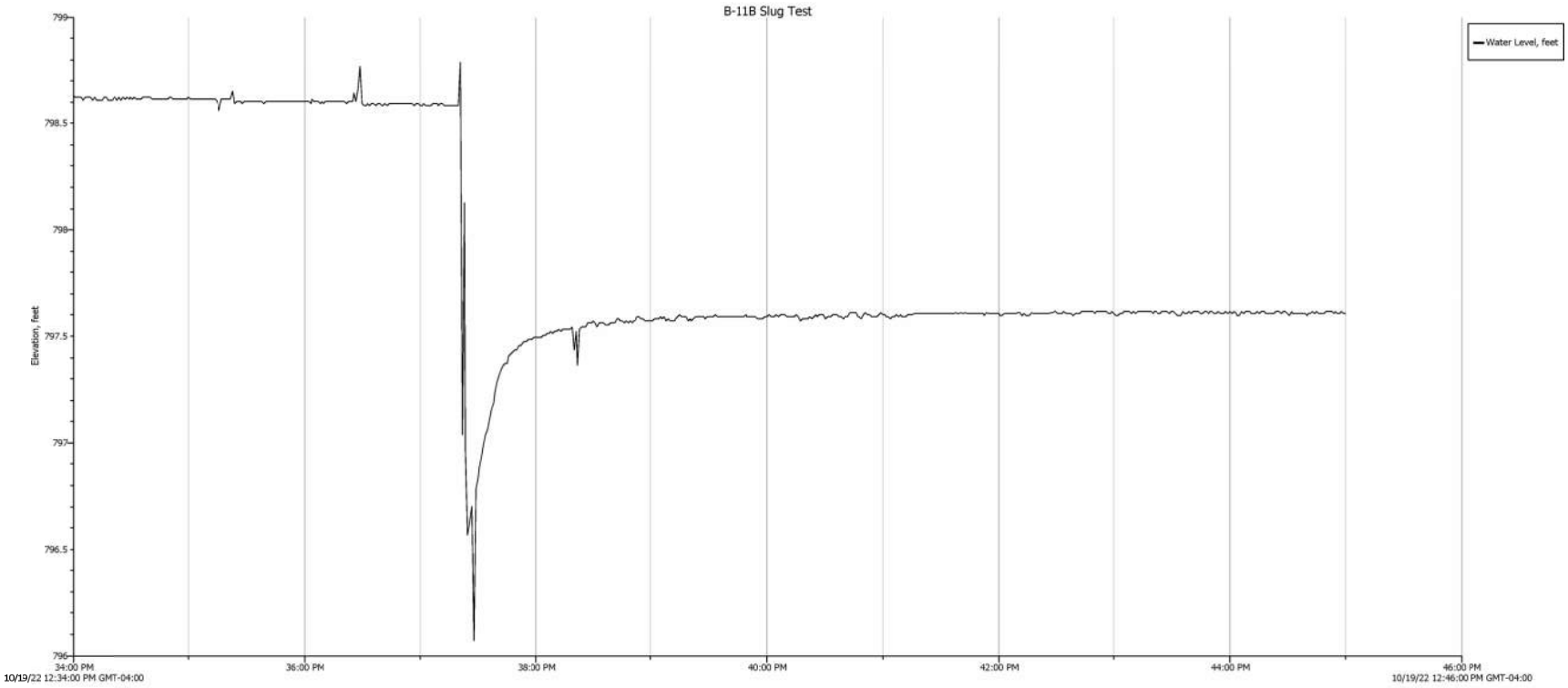
- Deployment info is not available

Series Statistics

- Samples: 661
- Max: 798.790
- Min: 796.070
- Avg: 797.881
- Std Dev (σ): 0.497
- First Sample Time: 10/19/22 12:34:00 PM GMT-04:00
- Last Sample Time: 10/19/22 12:45:00 PM GMT-04:00

Barometric Compensation Parameters

- Fluid Density: 62.428 lb/ft³
- Reference Depth: 797.720 feet
- Reference Time: 10/19/22 12:00:00 PM GMT-04:00



Boring: B-11B Slug Test
Equipment: HOBO U20L-02 Water Level
Serial No.: 21400075

Appendix VII – Laboratory Test Results

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	---	Sample Type:	---	Tested By:	ckg
Sample ID:	---	Test Date:	12/07/22	Checked By:	ank
Depth :	---	Test Id:	696403		

Moisture Content of Soil and Rock - ASTM D2216

Boring ID	Sample ID	Depth	Description	Moisture Content,%
B-01	S- 7	14.0-16.0	Moist, olive brown sandy silt with gravel	10.8
B-03	S- 15	54.0-56.0	Moist, gray silt with sand	13.5
B-04	S- 11	41.0-43.0	Moist, grayish brown silty sand	11.8
B-04	S- 14	49.0-51.0	Moist, dark grayish brown sandy silt	18.1
B-4A	S- 2	64.0-66.0	Moist, olive brown silty sand with gravel	11.1
B-4A	S- 6	74.0-76.0	Moist, light olive brown sand with silt	15.4
B-05B	S- 5	54.0-56.0	Moist, dark olive gray silty sand	11.3
B-06	S- 7	12.0-14.0	Moist, olive gray silty sand with gravel	9.2
B-10	S- 5	8.0-10.0	Moist, dark olive brown silty sand with gravel	13.8
B-10	S- 19	36.0-38.0	Moist, gray sandy silt	10.8

Notes: Temperature of Drying : 110º Celsius

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-11B	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-1	Test Date:	12/07/22	Checked By:	ank
Depth :	29.0-31.0	Test Id:	696404		
Test Comment:	---				
Visual Description:	Moist, gray silty sand				
Sample Comment:	---				

Moisture Content of Soil and Rock - ASTM D2216

Boring ID	Sample ID	Depth	Description	Moisture Content,%
B-11B	S- 1	29.0-31.0	Moist, gray silty sand	8.4

Notes: Temperature of Drying : 110º Celsius

Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	12/12/22
Tested By:	jpb
Checked By:	ank

pH by AASHTO T 289

Boring ID	Sample ID	Depth, ft	Description	pH
B-11B	S-5	49.0-51.0	Moist, gray silty sand	8.13

Client:	HNTB Corporation
Project:	VTrans Lyndon
Location:	Lyndon, VT
GTX#:	316415
Test Date:	12/08/22
Tested By:	nlb
Checked By:	ank

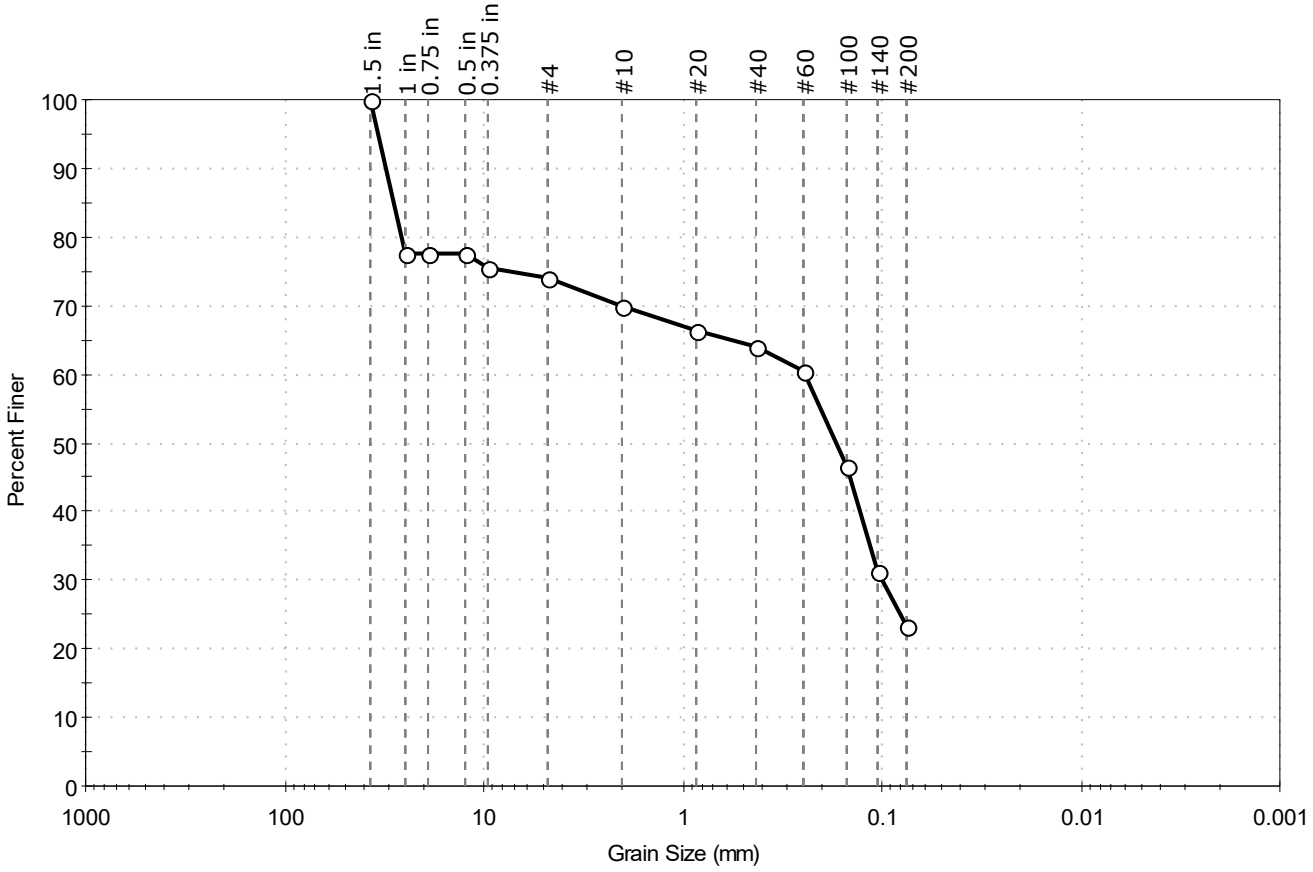
Laboratory Measurement of Soil Resistivity Using the Wenner Four-Electrode Method by ASTM G57 (Laboratory Measurement)

Boring ID	Sample ID	Depth, ft.	Sample Description	Electrical Resistivity, ohm-cm	Electrical Conductivity, $(ohm\text{-}cm)^{-1}$
B-05B	S-3, S-4	44.0-46.0, 49.0-51.0	Moist, olive gray silty sand with gravel	2,273	4.40E-04
B-06	S-5 to S-6	8.0-12.0	Moist, olive brown sandy silt	4,959	2.02E-04

Notes: Test Equipment: Nilsson Model 400 Soil Resistance Meter, MC Miller Soil Box
Water added to sample to create a thick slurry prior to testing (saturated condition).
Electrical Conductivity is calculated as inverse of Electrical Resistivity (per ASTM G57)
Test conducted in standard laboratory atmosphere: 68-73 F

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-05	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-3	Test Date:	12/08/22	Checked By:	ank
Depth :	4.0-6.0	Test Id:	696428		
Test Comment:	---				
Visual Description:	Moist, light olive brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	26.1	50.6	23.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	78		
0.75 in	19.00	78		
0.5 in	12.50	78		
0.375 in	9.50	76		
#4	4.75	74		
#10	2.00	70		
#20	0.85	67		
#40	0.42	64		
#60	0.25	60		
#100	0.15	47		
#140	0.11	31		
#200	0.075	23		

Coefficients

D_{85} = 28.6124 mm D_{30} = 0.1000 mm

D_{60} = 0.2456 mm D_{15} = N/A

D_{50} = 0.1694 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

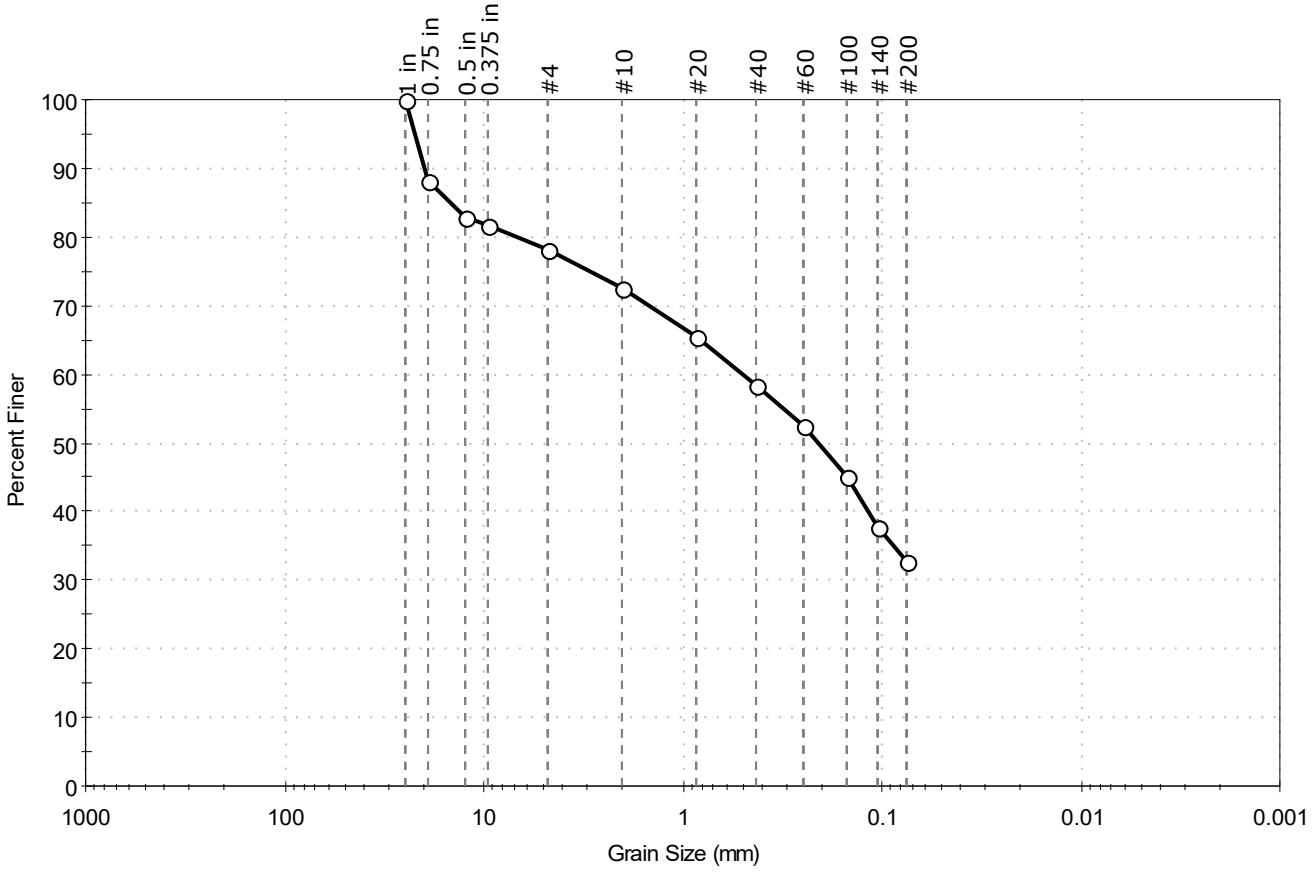
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-4A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-2	Test Date:	12/08/22	Checked By:	ank
Depth :	64.0-66.0	Test Id:	696423		
Test Comment:	---				
Visual Description:	Moist, olive brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	21.8	45.5	32.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	88		
0.5 in	12.50	83		
0.375 in	9.50	82		
#4	4.75	78		
#10	2.00	73		
#20	0.85	66		
#40	0.42	59		
#60	0.25	52		
#100	0.15	45		
#140	0.11	38		
#200	0.075	33		

Coefficients

D_{85} = 14.7170 mm D_{30} = N/A
D_{60} = 0.4919 mm D_{15} = N/A
D_{50} = 0.2101 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

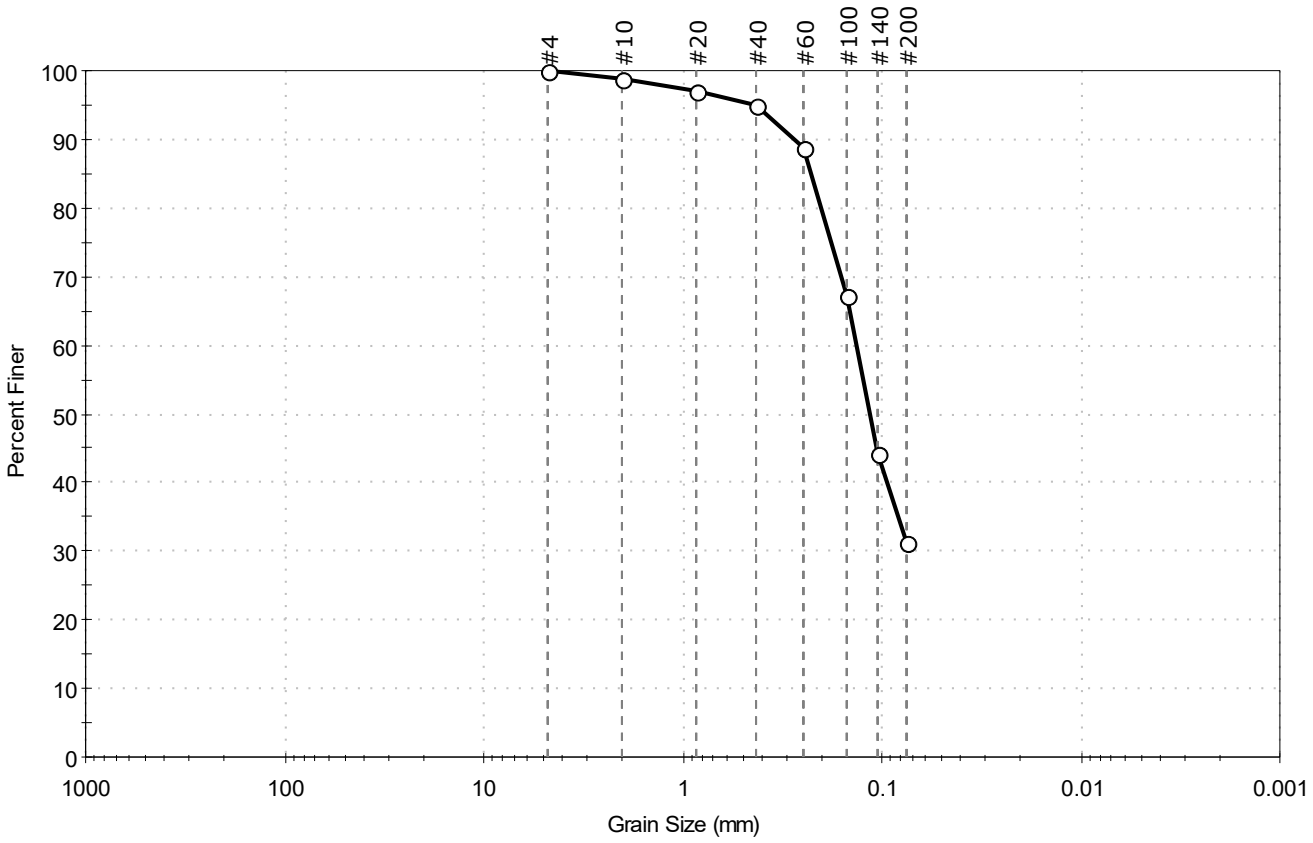
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-4A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-4	Test Date:	12/08/22	Checked By:	ank
Depth :	69.0-71.0	Test Id:	696424		
Test Comment:	---				
Visual Description:	Moist, light olive brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	68.8	31.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.85	97		
#40	0.42	95		
#60	0.25	89		
#100	0.15	67		
#140	0.11	44		
#200	0.075	31		

Coefficients

D_{85} = 0.2281 mm D_{30} = N/A

D_{60} = 0.1344 mm D_{15} = N/A

D_{50} = 0.1157 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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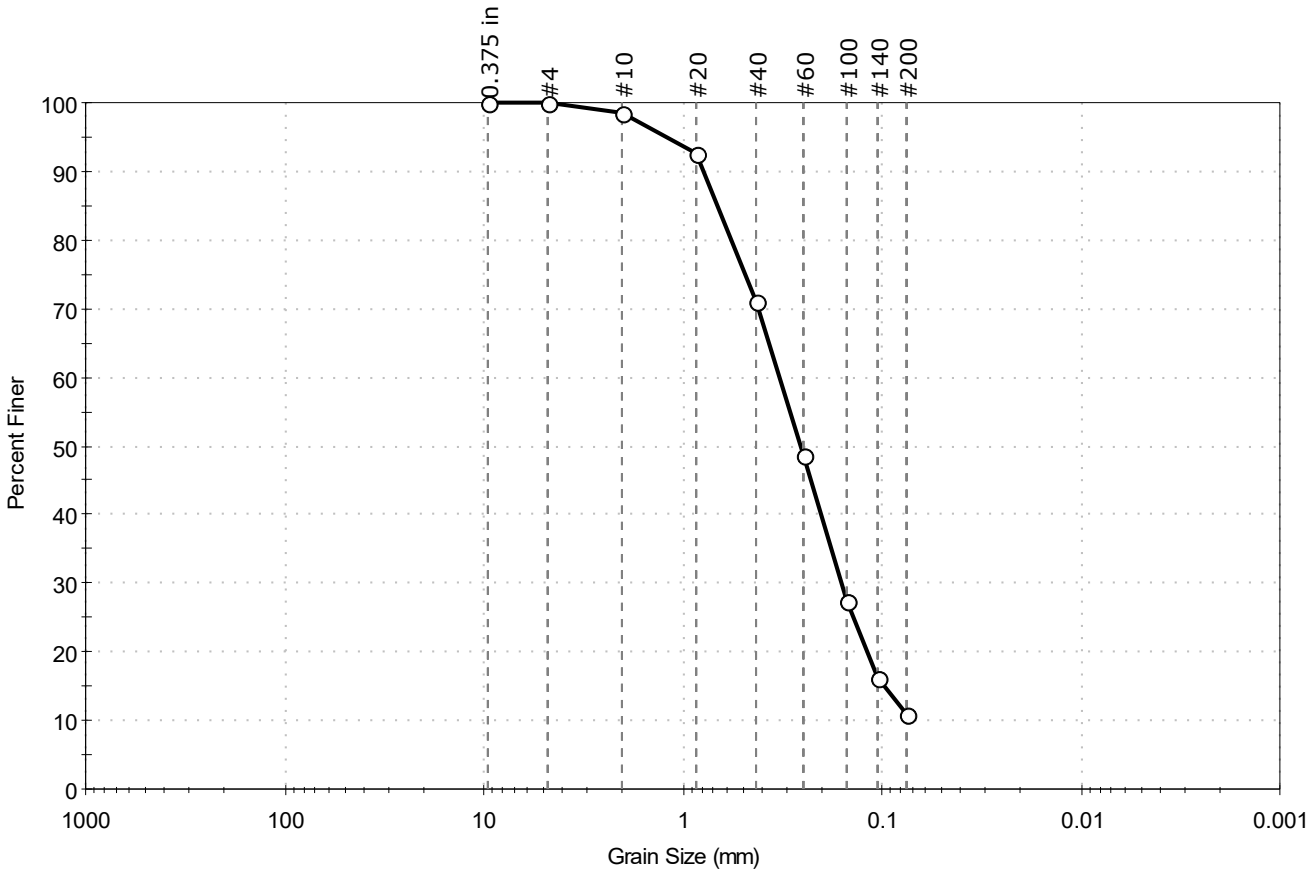
Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-4A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-6	Test Date:	12/08/22	Checked By:	ank
Depth :	74.0-76.0	Test Id:	696425		
Test Comment:	---				
Visual Description:	Moist, light olive brown sand with silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.1	89.1	10.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	100		
#10	2.00	98		
#20	0.85	93		
#40	0.42	71		
#60	0.25	49		
#100	0.15	27		
#140	0.11	16		
#200	0.075	11		

Coefficients

D_{85} = 0.6645 mm
D_{30} = 0.1596 mm
D_{60} = 0.3272 mm
D_{15} = 0.0986 mm
D_{50} = 0.2585 mm
D_{10} = N/A
C_u = N/A
C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

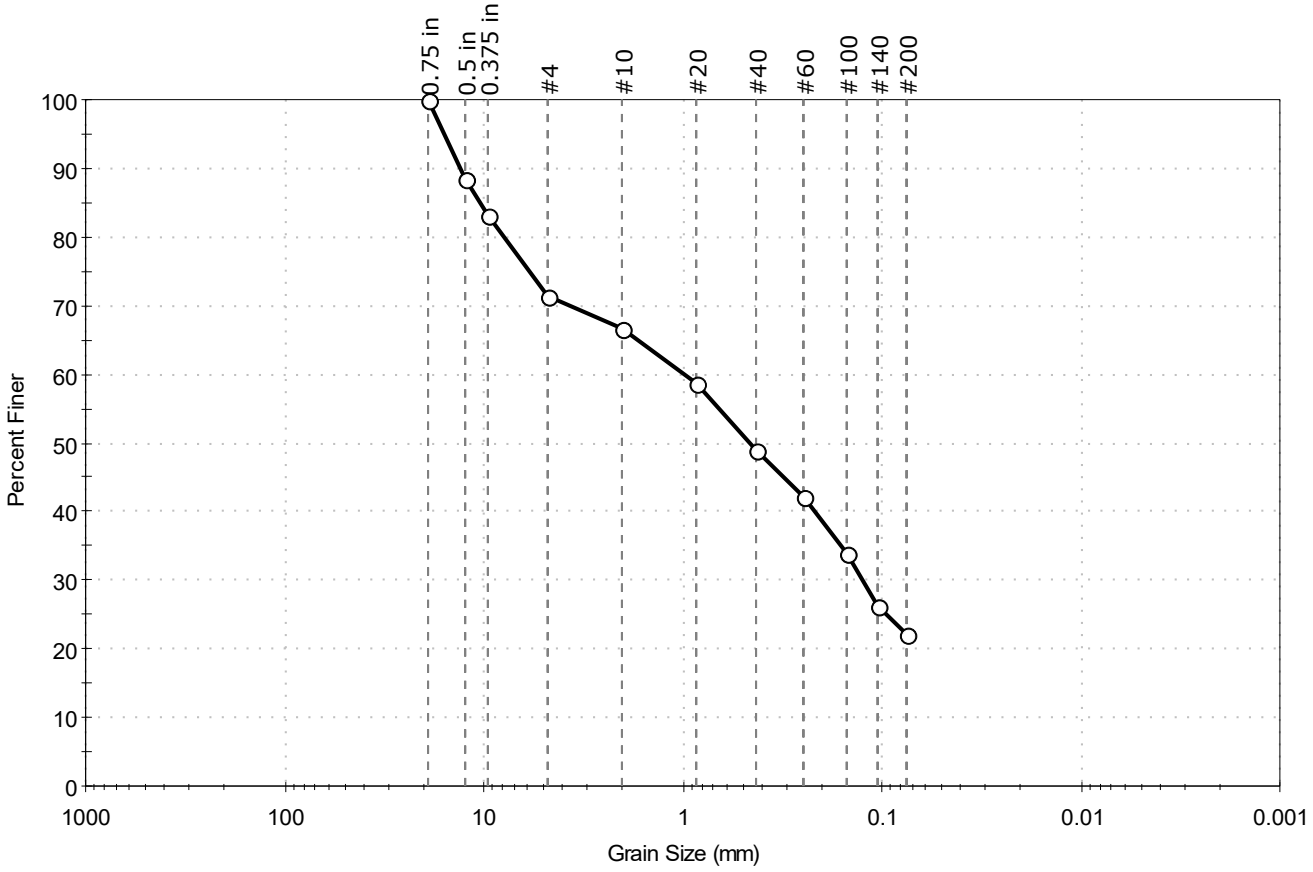
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-01	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-3	Test Date:	12/06/22	Checked By:	ank
Depth :	4.0-6.0	Test Id:	696407		
Test Comment:	---				
Visual Description:	Moist, dark brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	28.6	49.3	22.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	88		
0.375 in	9.50	83		
#4	4.75	71		
#10	2.00	67		
#20	0.85	59		
#40	0.42	49		
#60	0.25	42		
#100	0.15	34		
#140	0.11	26		
#200	0.075	22		

Coefficients

D_{85} = 10.4525 mm
D_{30} = 0.1254 mm
D_{60} = 0.9781 mm
D_{15} = N/A
D_{50} = 0.4594 mm
D_{10} = N/A
C_u = N/A
C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

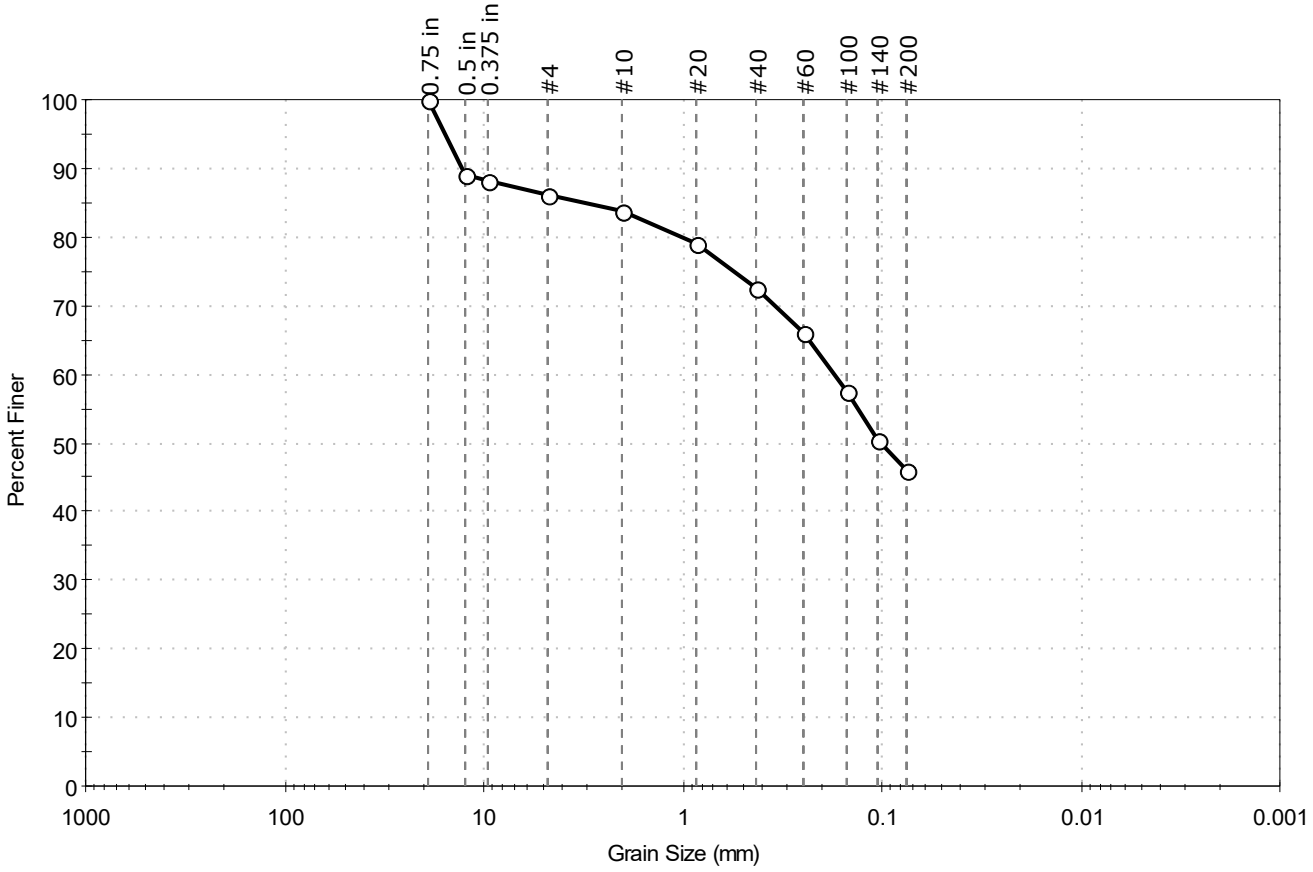
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-01	Sample Type:	jar	Tested By:	ckg
Sample ID:	S5	Test Date:	12/06/22	Checked By:	ank
Depth :	8.0-10.0	Test Id:	696408		

Test Comment: ---
Visual Description: Moist, dark olive brown silty sand
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	13.8	40.1	46.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	89		
0.375 in	9.50	88		
#4	4.75	86		
#10	2.00	84		
#20	0.85	79		
#40	0.42	73		
#60	0.25	66		
#100	0.15	58		
#140	0.11	50		
#200	0.075	46		

Coefficients

D_{85} = 3.1204 mm D_{30} = N/A
D_{60} = 0.1739 mm D_{15} = N/A
D_{50} = 0.1034 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

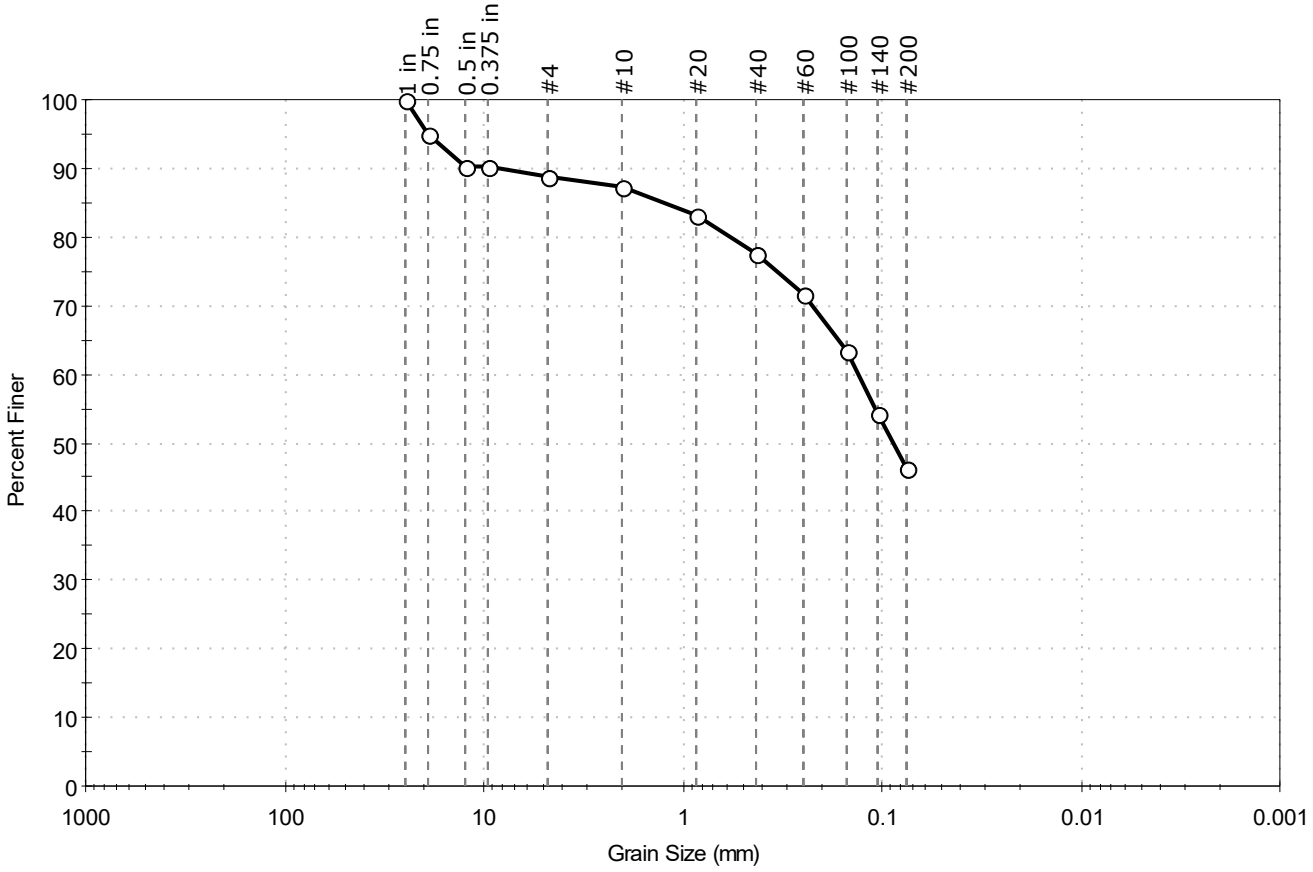
Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-01	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-9	Test Date:	12/08/22	Checked By:	ank
Depth :	24.0-26.0	Test Id:	696409		

Test Comment: ---
Visual Description: Moist, light olive brown silty sand
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	11.3	42.5	46.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	95		
0.5 in	12.50	90		
0.375 in	9.50	90		
#4	4.75	89		
#10	2.00	87		
#20	0.85	83		
#40	0.42	78		
#60	0.25	72		
#100	0.15	63		
#140	0.11	54		
#200	0.075	46		

Coefficients

D_{85} = 1.2159 mm D_{30} = N/A
D_{60} = 0.1321 mm D_{15} = N/A
D_{50} = 0.0882 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

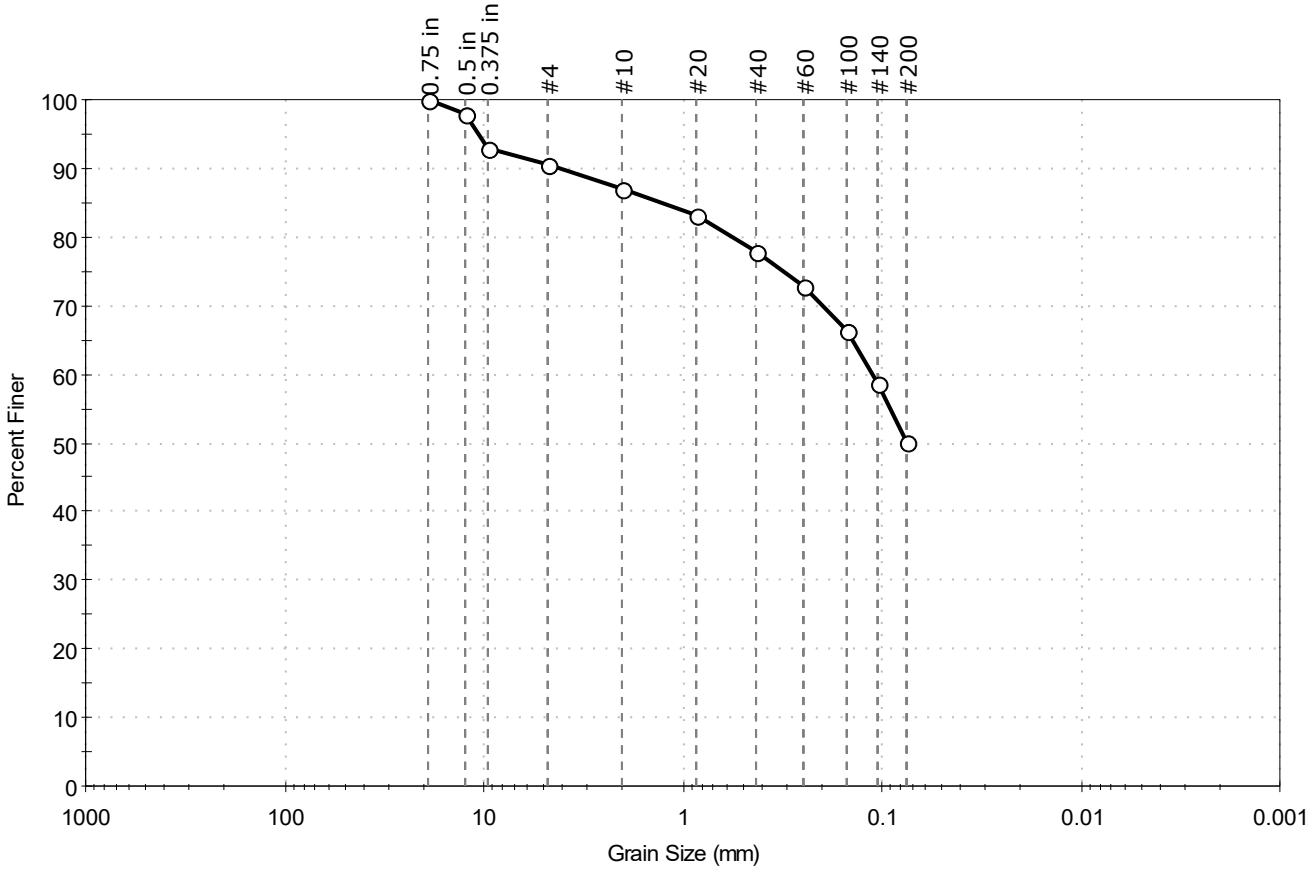
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-01	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-10	Test Date:	12/06/22	Checked By:	ank
Depth :	29.0-31.0	Test Id:	696410		
Test Comment:	---				
Visual Description:	Moist, olive brown sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	9.5	40.2	50.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	98		
0.375 in	9.50	93		
#4	4.75	90		
#10	2.00	87		
#20	0.85	83		
#40	0.42	78		
#60	0.25	73		
#100	0.15	66		
#140	0.11	59		
#200	0.075	50		

Coefficients

D_{85} = 1.2593 mm	D_{30} = N/A
D_{60} = 0.1121 mm	D_{15} = N/A
D_{50} = N/A	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

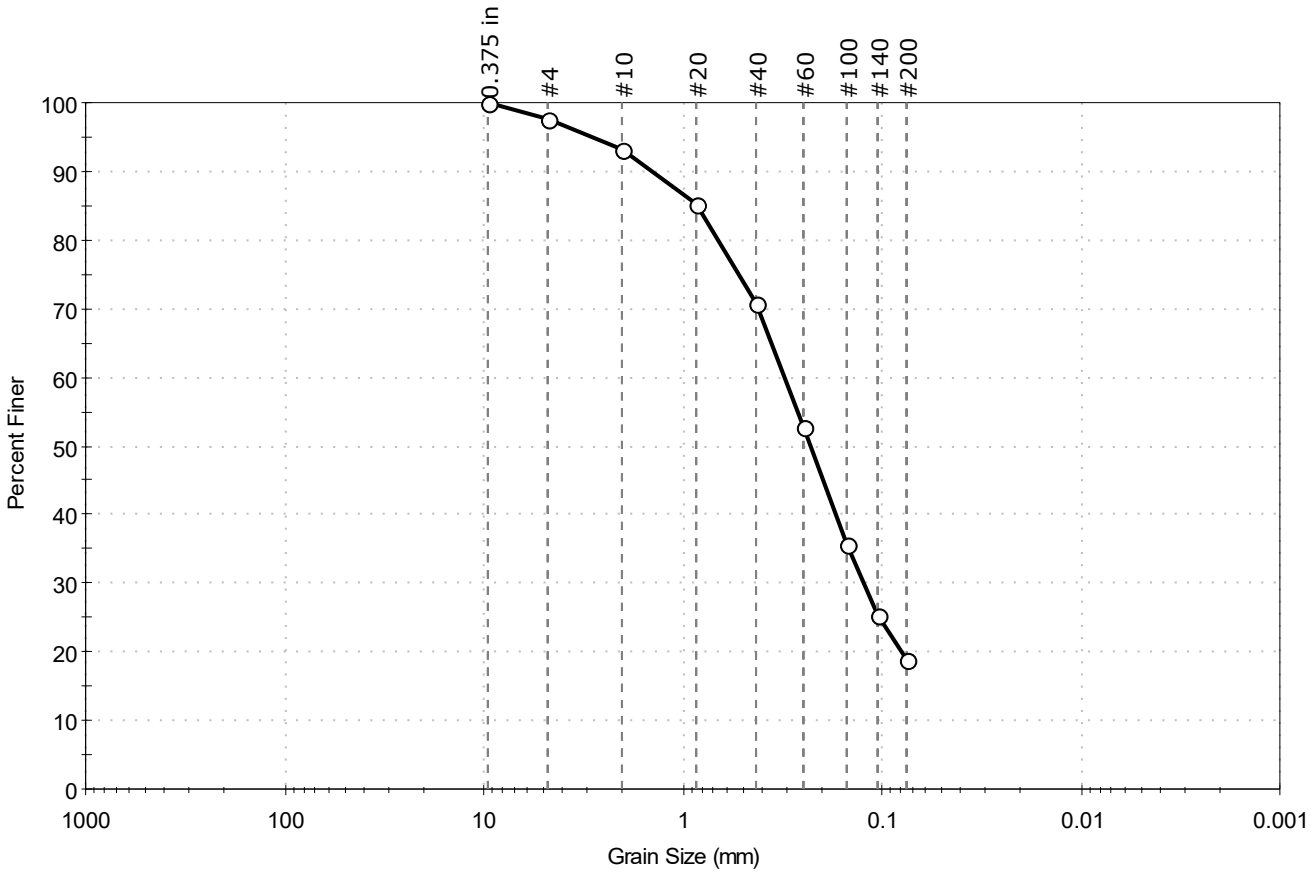
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-03	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-3	Test Date:	12/08/22	Checked By:	ank
Depth :	4.0-6.0	Test Id:	696411		
Test Comment:	---				
Visual Description:	Moist, olive brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	2.3	78.9	18.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	98		
#10	2.00	93		
#20	0.85	85		
#40	0.42	71		
#60	0.25	53		
#100	0.15	36		
#140	0.11	26		
#200	0.075	19		

Coefficients

D_{85} = 0.8376 mm	D_{30} = 0.1234 mm
D_{60} = 0.3095 mm	D_{15} = N/A
D_{50} = 0.2303 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

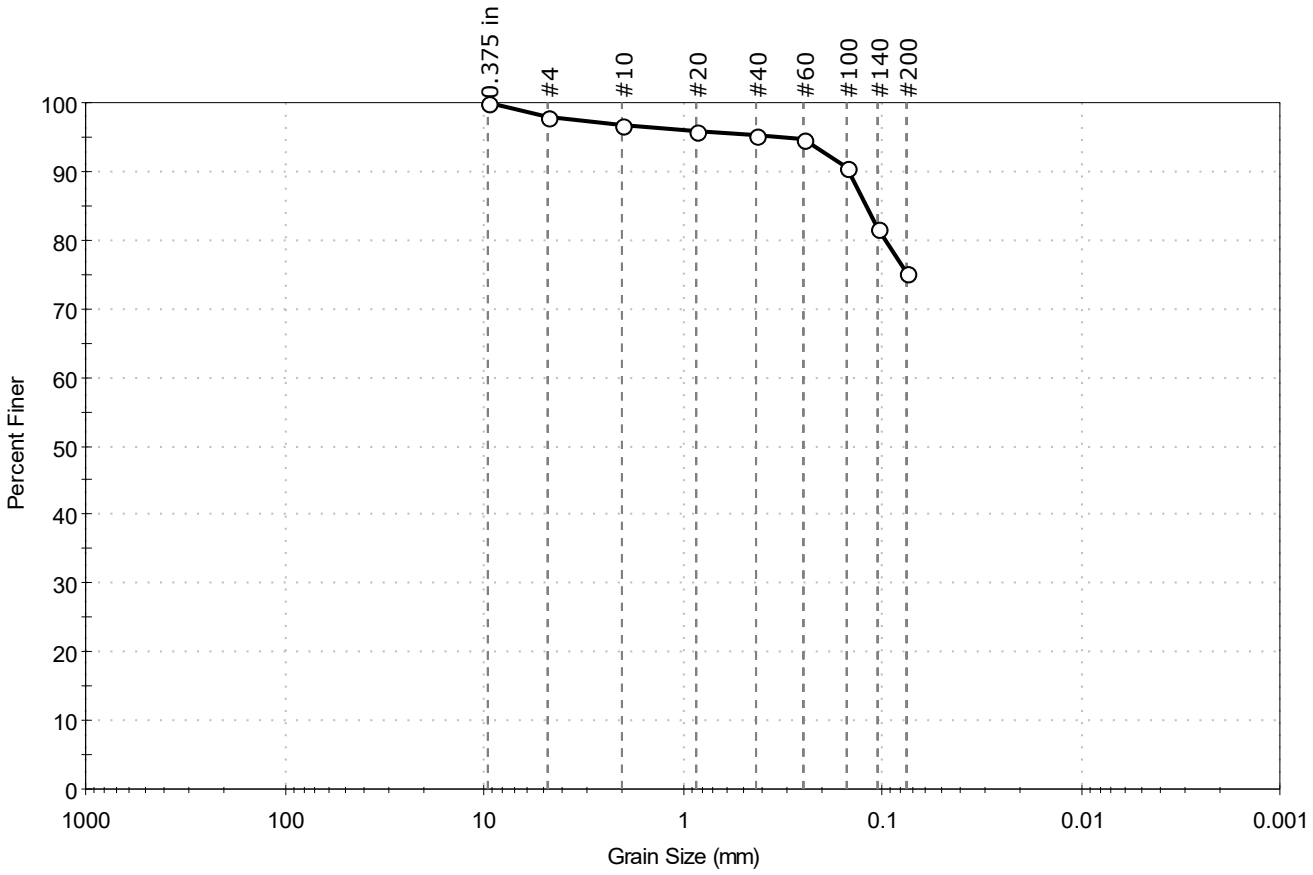
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-03	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-7	Test Date:	12/08/22	Checked By:	ank
Depth :	14.0-16.0	Test Id:	696412		
Test Comment:	---				
Visual Description:	Moist, light olive brown silt with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	2.1	22.8	75.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	98		
#10	2.00	97		
#20	0.85	96		
#40	0.42	95		
#60	0.25	95		
#100	0.15	91		
#140	0.11	82		
#200	0.075	75		

Coefficients

D_{85} = 0.1201 mm	D_{30} = N/A
D_{60} = N/A	D_{15} = N/A
D_{50} = N/A	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

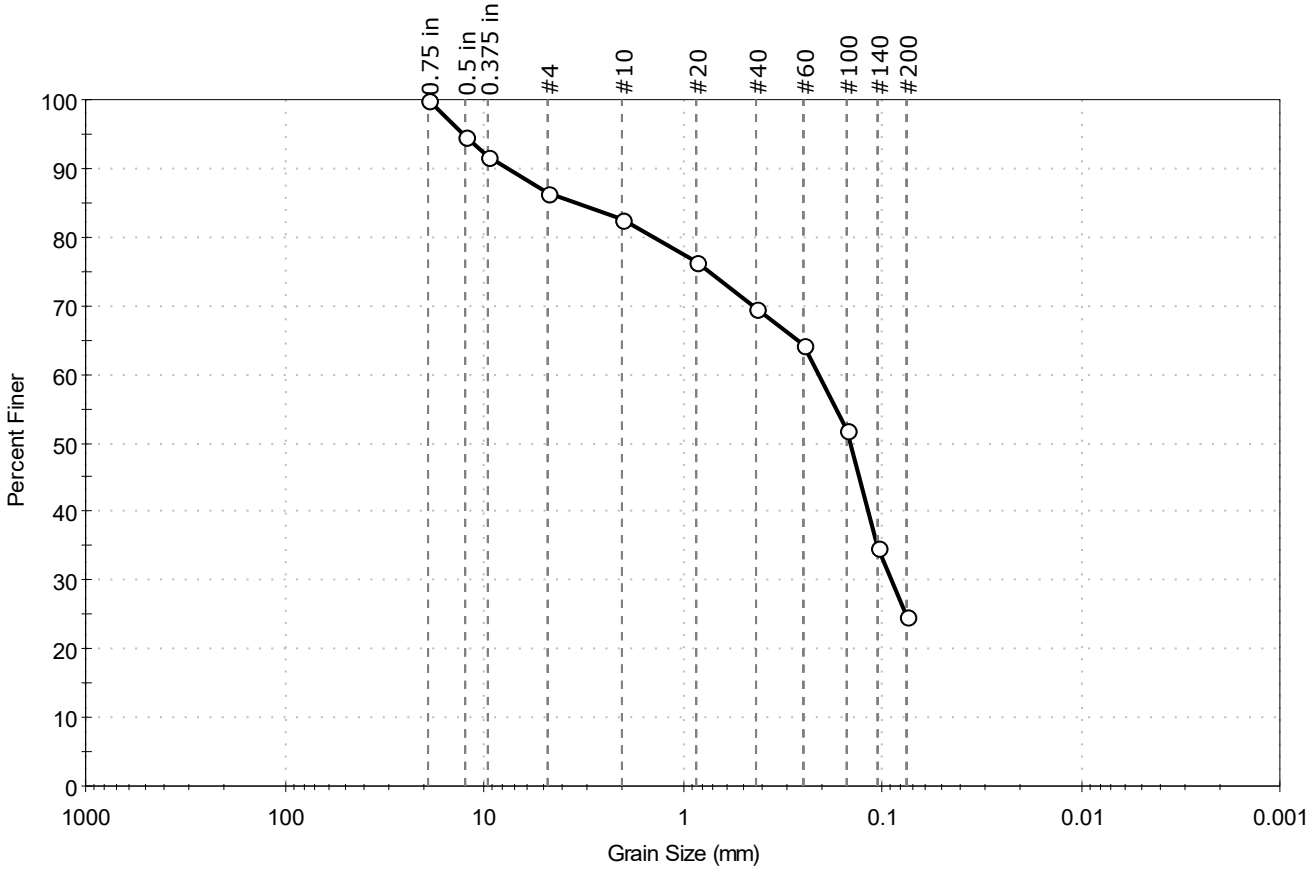
Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-03	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-9	Test Date:	12/06/22	Checked By:	ank
Depth :	24.0-26.0	Test Id:	696413		
Test Comment:	---				
Visual Description:	Moist, brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	13.4	61.8	24.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	95		
0.375 in	9.50	92		
#4	4.75	87		
#10	2.00	82		
#20	0.85	76		
#40	0.42	70		
#60	0.25	64		
#100	0.15	52		
#140	0.11	35		
#200	0.075	25		

Coefficients

D_{85} = 3.4209 mm D_{30} = 0.0898 mm

D_{60} = 0.2104 mm D_{15} = N/A

D_{50} = 0.1446 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

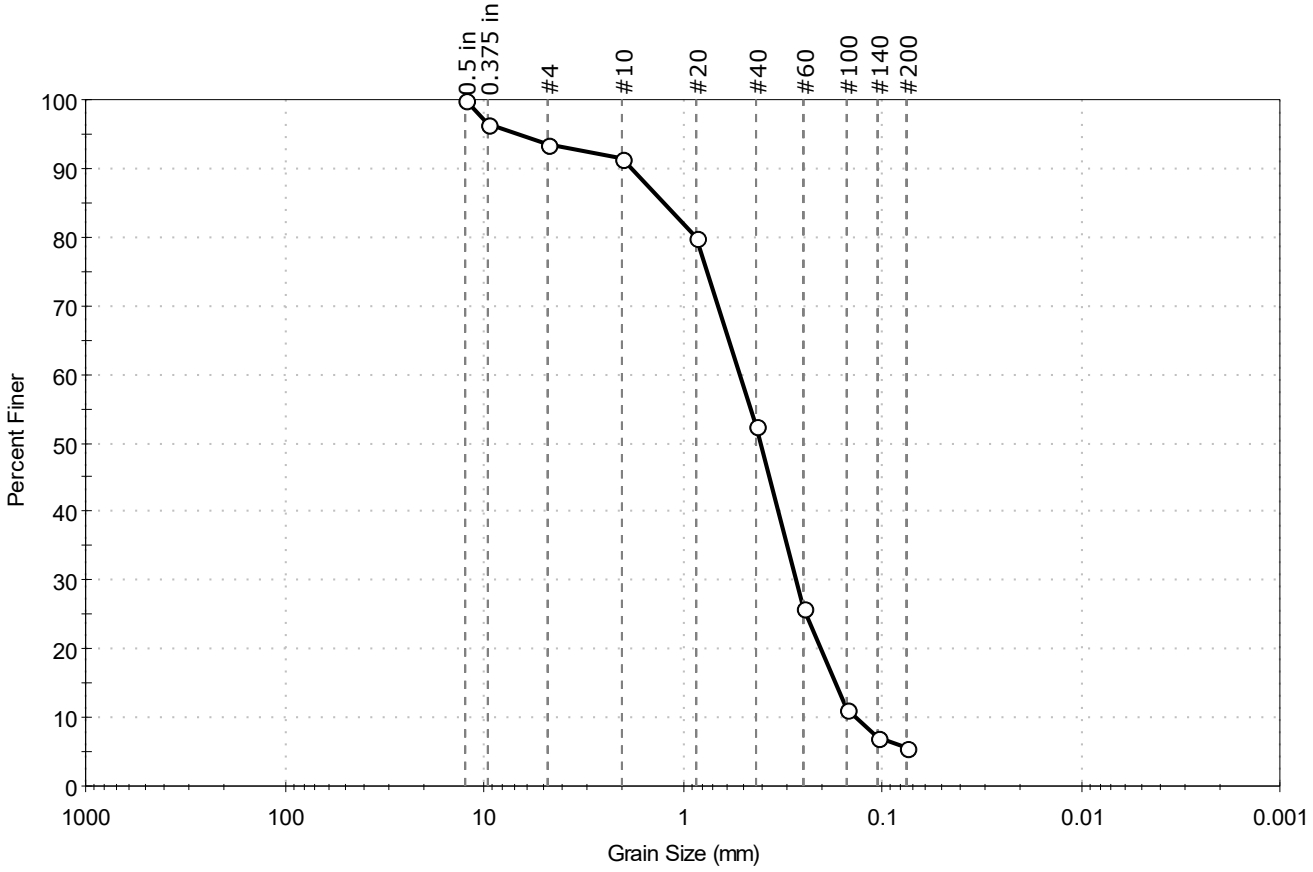
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-03	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-11	Test Date:	12/06/22	Checked By:	ank
Depth :	34.0-36.0	Test Id:	696414		
Test Comment:	---				
Visual Description:	Moist, brown sand with silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	6.4	88.1	5.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	96		
#4	4.75	94		
#10	2.00	91		
#20	0.85	80		
#40	0.42	52		
#60	0.25	26		
#100	0.15	11		
#140	0.11	7		
#200	0.075	5.5		

Coefficients

D_{85} = 1.2378 mm
D_{30} = 0.2716 mm
D_{60} = 0.5144 mm
D_{15} = 0.1715 mm
D_{50} = 0.4051 mm
D_{10} = 0.1361 mm
C_u = 3.780
C_c = 1.054

Classification

ASTM N/A

AASHTO Fine Sand (A-3 (1))

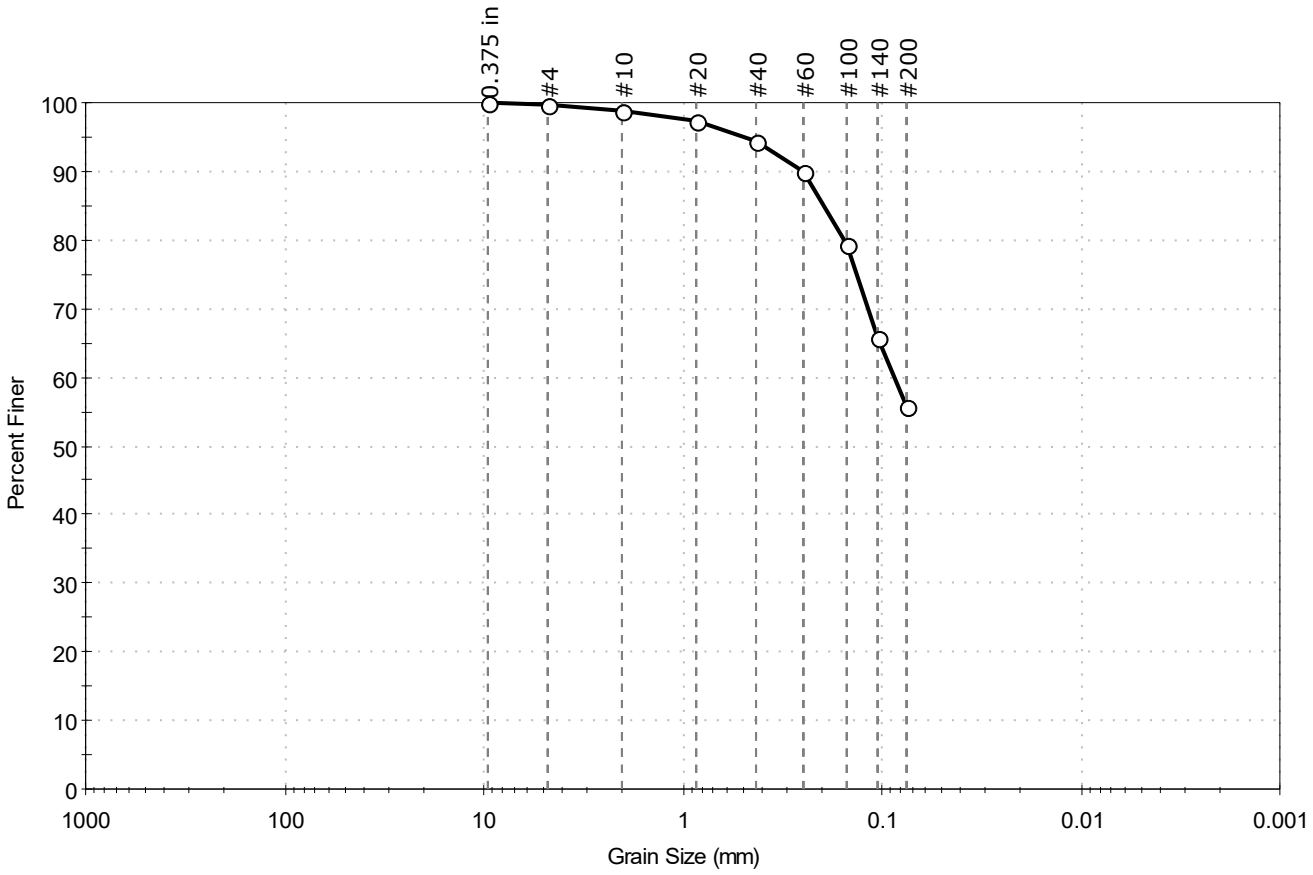
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-03	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-13	Test Date:	12/05/22	Checked By:	ank
Depth :	44.0-46.0	Test Id:	696415		
Test Comment:	---				
Visual Description:	Moist, olive gray sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.3	44.1	55.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	100		
#10	2.00	99		
#20	0.85	97		
#40	0.42	95		
#60	0.25	90		
#100	0.15	79		
#140	0.11	66		
#200	0.075	56		

Coefficients

D_{85} = 0.1966 mm D_{30} = N/A

D_{60} = 0.0870 mm D_{15} = N/A

D_{50} = N/A D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

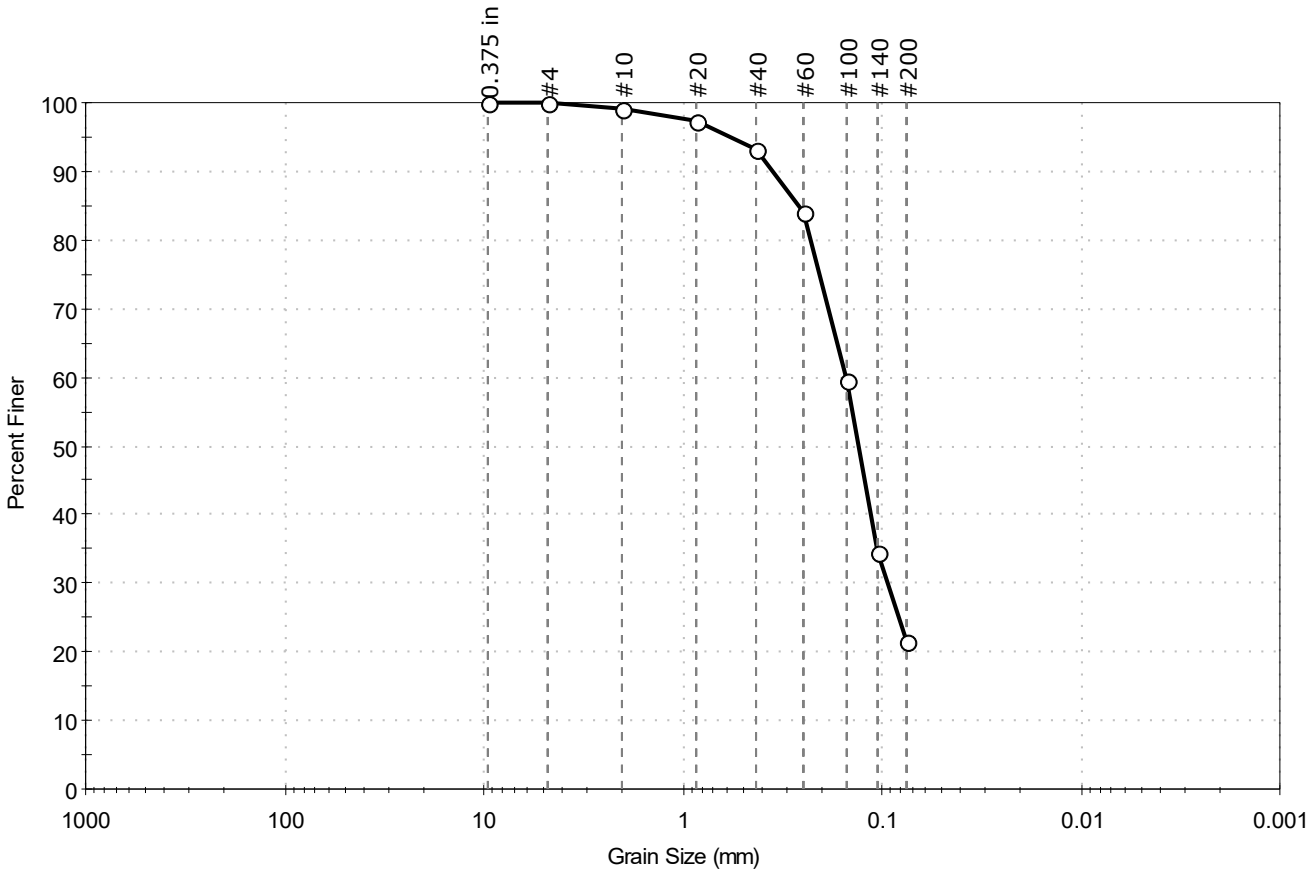
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-04	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-2	Test Date:	12/08/22	Checked By:	ank
Depth :	2.0-4.0	Test Id:	696416		
Test Comment:	---				
Visual Description:	Moist, light olive brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.1	78.3	21.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	100		
#10	2.00	99		
#20	0.85	97		
#40	0.42	93		
#60	0.25	84		
#100	0.15	59		
#140	0.11	34		
#200	0.075	22		

Coefficients

D_{85} = 0.2654 mm	D_{30} = 0.0941 mm
D_{60} = 0.1517 mm	D_{15} = N/A
D_{50} = 0.1315 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

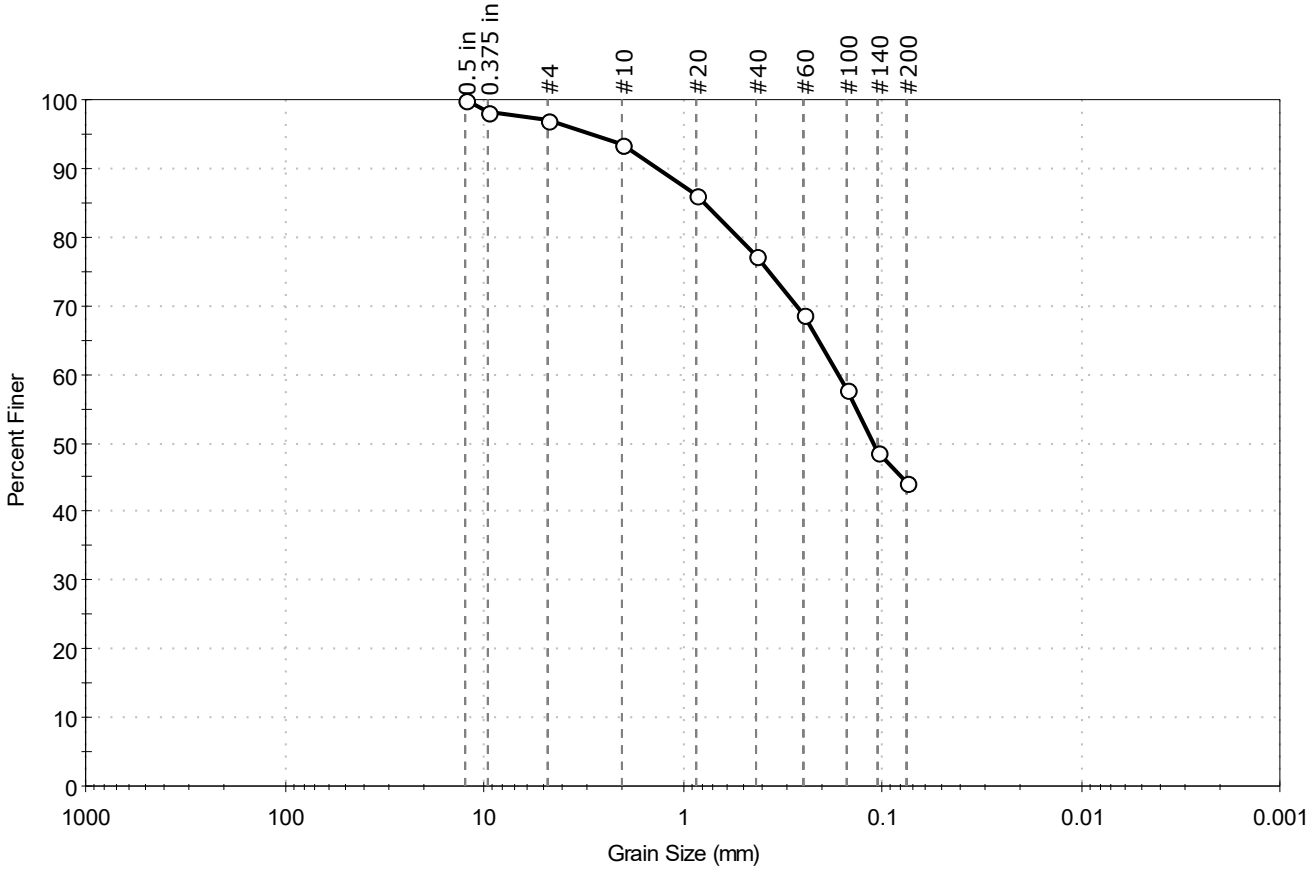
Sand/Gravel Hardness : ---

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-04	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-8	Test Date:	12/06/22	Checked By:	ank
Depth :	29.0-31.0	Test Id:	696417		

Test Comment: ---
Visual Description: Moist, dark yellowish brown silty sand
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	3.0	52.7	44.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	98		
#4	4.75	97		
#10	2.00	93		
#20	0.85	86		
#40	0.42	77		
#60	0.25	69		
#100	0.15	58		
#140	0.11	49		
#200	0.075	44		

Coefficients

D_{85} = 0.7749 mm D_{30} = N/A
D_{60} = 0.1662 mm D_{15} = N/A
D_{50} = 0.1112 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

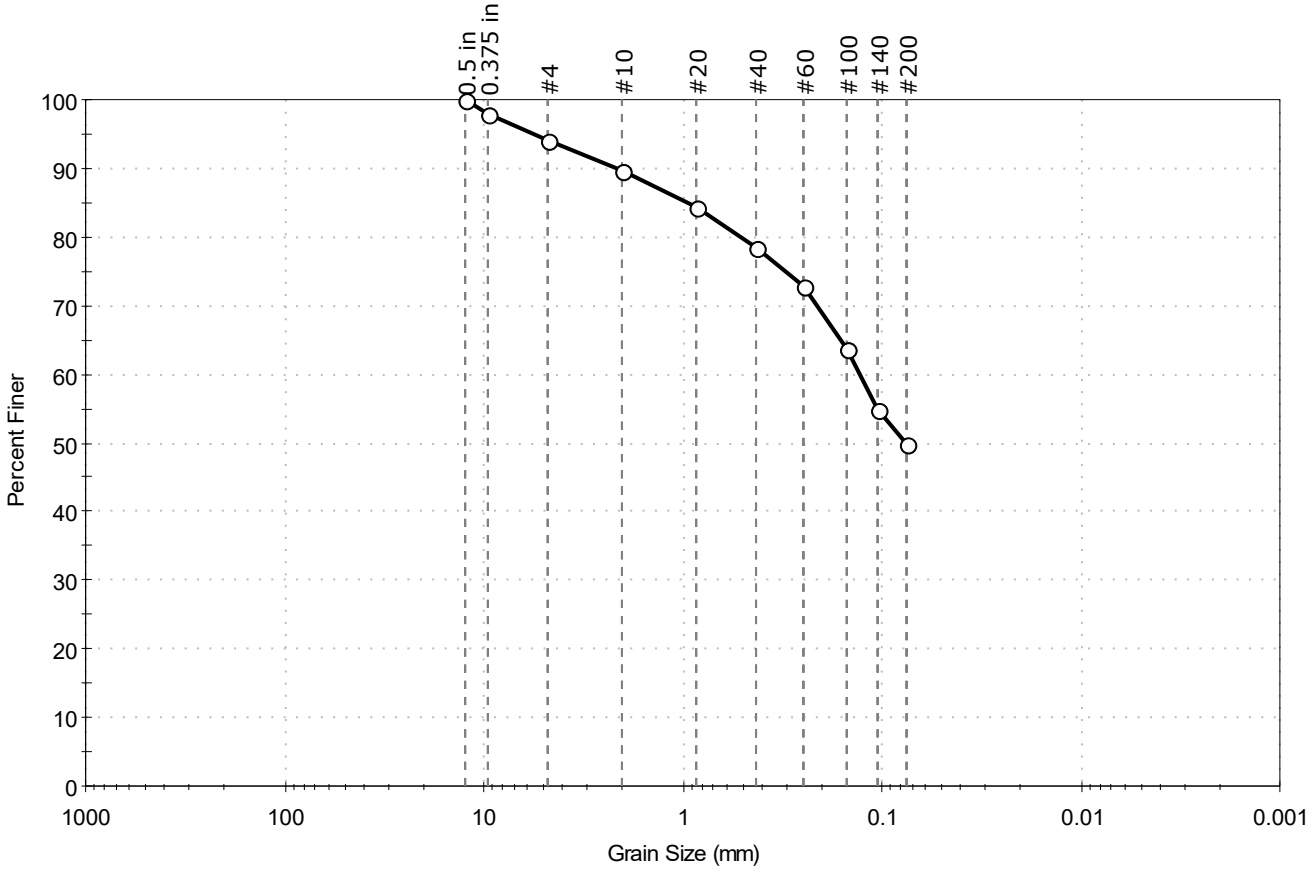
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-04	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-11	Test Date:	12/05/22	Checked By:	ank
Depth :	41.0-43.0	Test Id:	696418		
Test Comment:	---				
Visual Description:	Moist, grayish brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	5.8	44.5	49.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	98		
#4	4.75	94		
#10	2.00	90		
#20	0.85	84		
#40	0.42	79		
#60	0.25	73		
#100	0.15	64		
#140	0.11	55		
#200	0.075	50		

Coefficients

D_{85} = 0.9437 mm D_{30} = N/A
D_{60} = 0.1297 mm D_{15} = N/A
D_{50} = 0.0764 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

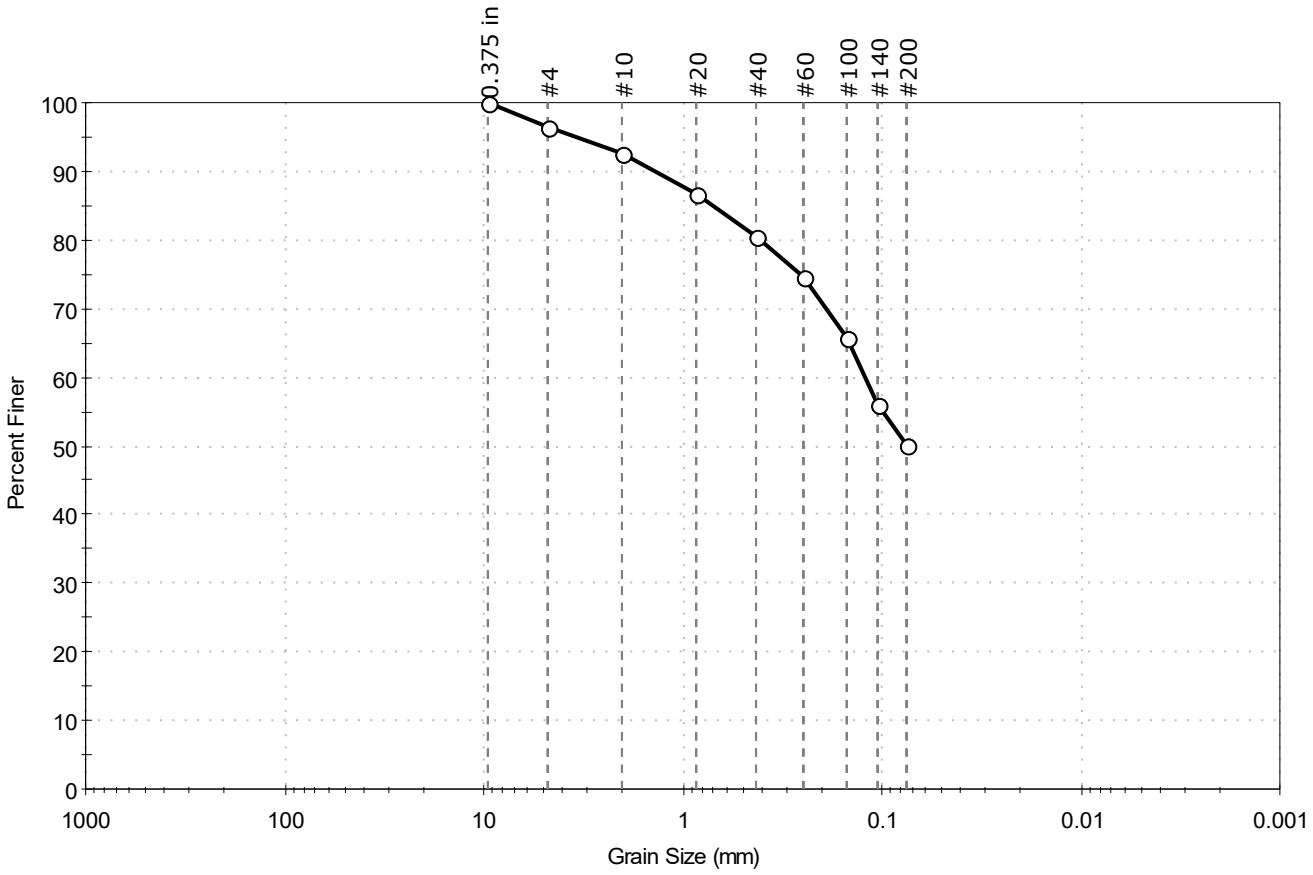
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-04	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-14	Test Date:	12/05/22	Checked By:	ank
Depth :	49.0-51.0	Test Id:	696419		
Test Comment:	---				
Visual Description:	Moist, dark grayish brown sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	3.5	46.3	50.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	97		
#10	2.00	92		
#20	0.85	87		
#40	0.42	80		
#60	0.25	75		
#100	0.15	66		
#140	0.11	56		
#200	0.075	50		

Coefficients

D_{85} = 0.7013 mm	D_{30} = N/A
D_{60} = 0.1221 mm	D_{15} = N/A
D_{50} = N/A	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

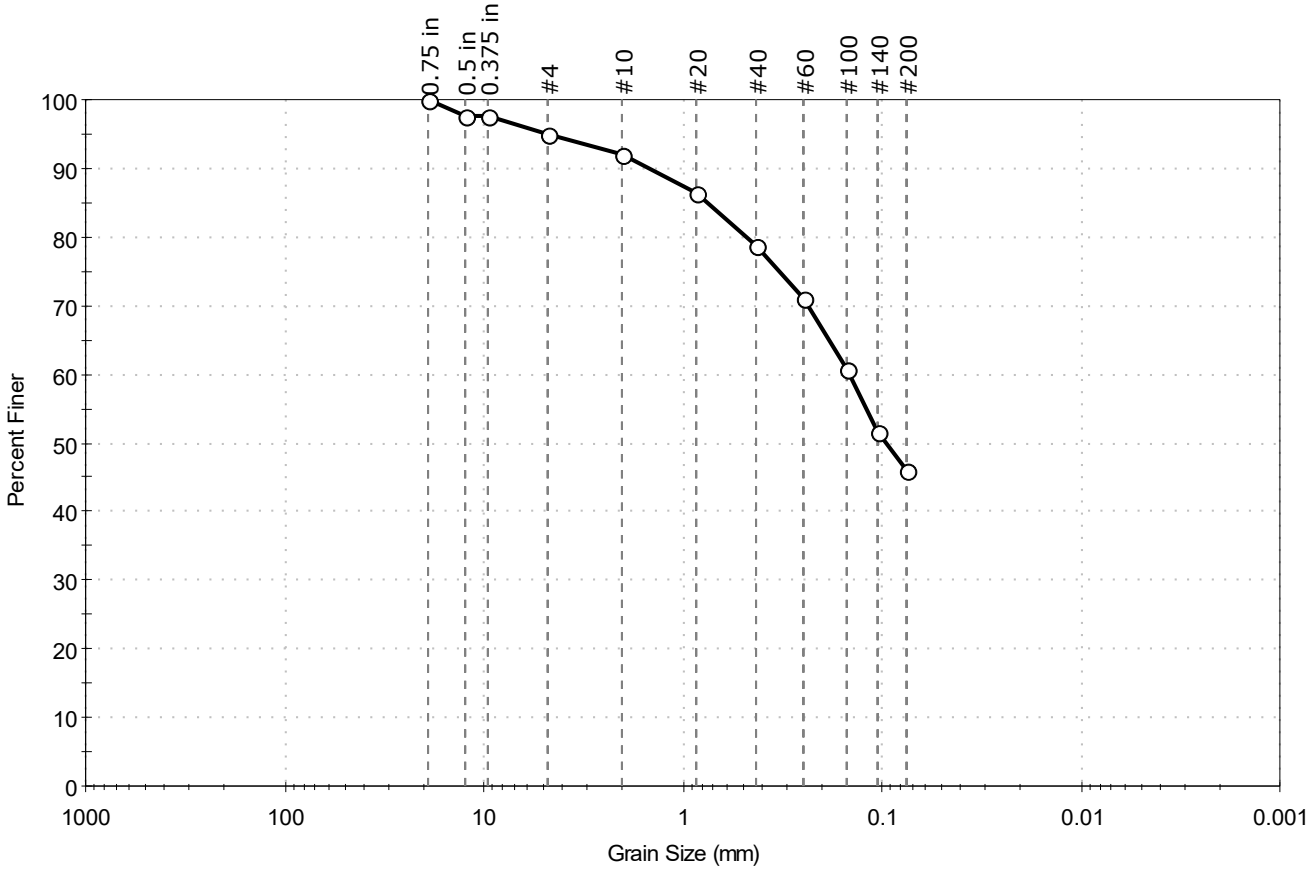
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-04	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-15	Test Date:	12/08/22	Checked By:	ank
Depth :	51.0-53.0	Test Id:	696420		
Test Comment:	---				
Visual Description:	Moist, olive silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	5.0	49.0	46.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	98		
0.375 in	9.50	98		
#4	4.75	95		
#10	2.00	92		
#20	0.85	86		
#40	0.42	79		
#60	0.25	71		
#100	0.15	61		
#140	0.11	52		
#200	0.075	46		

Coefficients

D_{85} = 0.7475 mm	D_{30} = N/A
D_{60} = 0.1451 mm	D_{15} = N/A
D_{50} = 0.0961 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

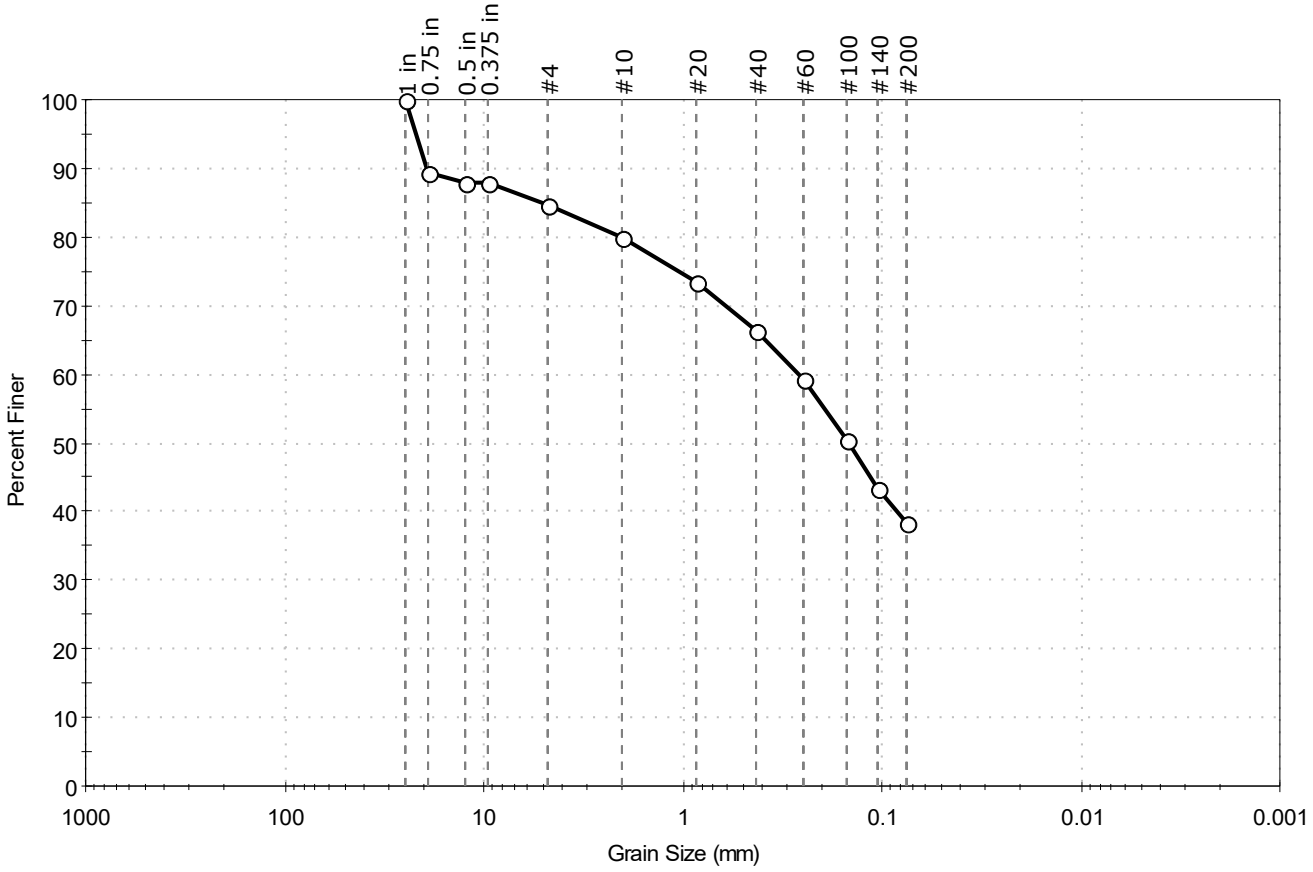
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-04	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-16	Test Date:	12/08/22	Checked By:	ank
Depth :	54.0-56.0	Test Id:	696421		
Test Comment:	---				
Visual Description:	Moist, olive silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	15.5	46.2	38.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	89		
0.5 in	12.50	88		
0.375 in	9.50	88		
#4	4.75	85		
#10	2.00	80		
#20	0.85	74		
#40	0.42	66		
#60	0.25	59		
#100	0.15	51		
#140	0.11	43		
#200	0.075	38		

Coefficients

D_{85} = 5.2119 mm	D_{30} = N/A
D_{60} = 0.2649 mm	D_{15} = N/A
D_{50} = 0.1462 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

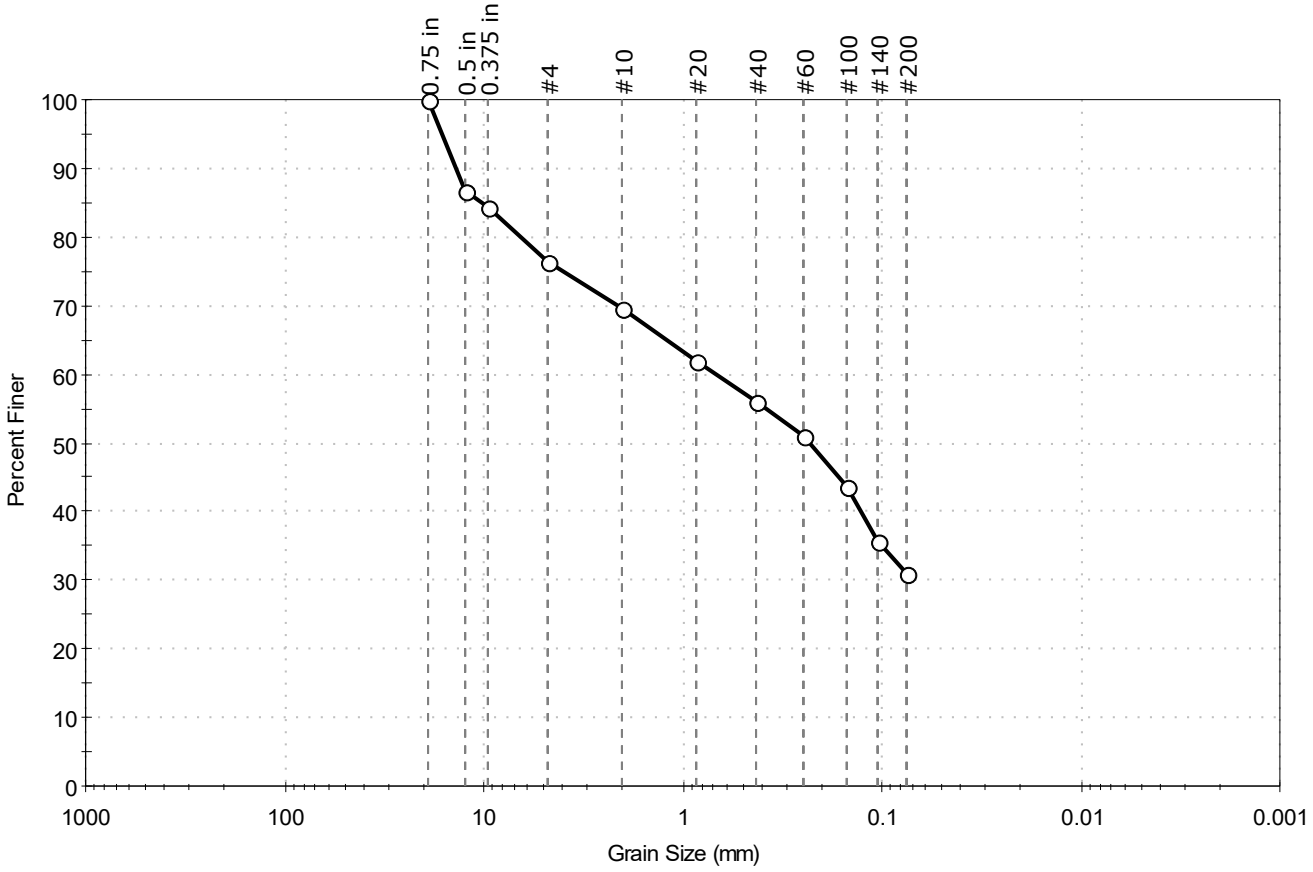
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-05B	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-2	Test Date:	12/08/22	Checked By:	ank
Depth :	39.0-41.0	Test Id:	696430		

Test Comment: ---
Visual Description: Moist, olive brown silty sand with gravel
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	23.5	45.4	31.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	87		
0.375 in	9.50	84		
#4	4.75	77		
#10	2.00	70		
#20	0.85	62		
#40	0.42	56		
#60	0.25	51		
#100	0.15	44		
#140	0.11	36		
#200	0.075	31		

Coefficients

D_{85} = 10.3089 mm D_{30} = N/A
D_{60} = 0.6721 mm D_{15} = N/A
D_{50} = 0.2345 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

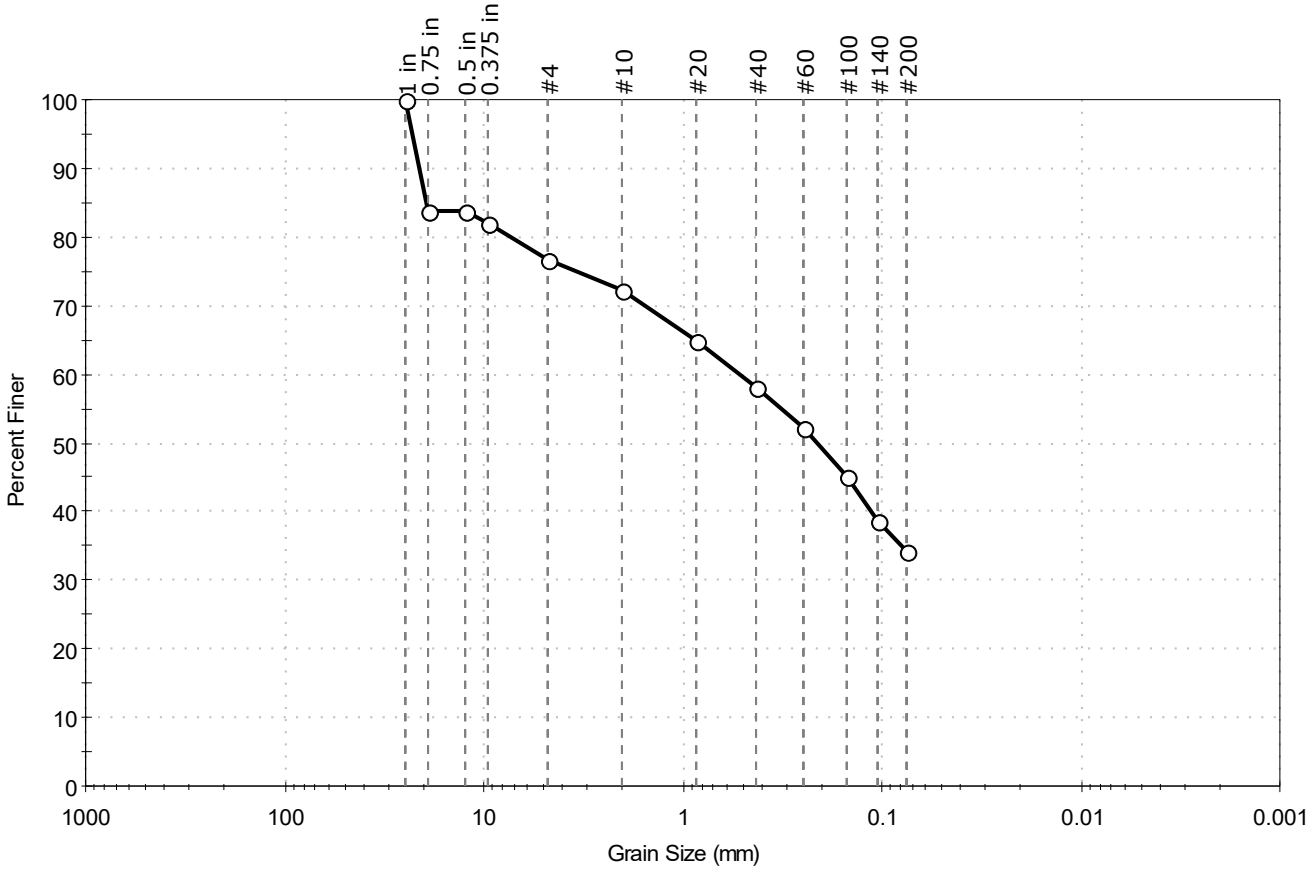
Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-05B	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-3	Test Date:	12/05/22	Checked By:	ank
Depth :	44.0-46.0	Test Id:	696431		

Test Comment: ---
Visual Description: Moist, dark gray, silty sand with gravel
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	23.3	42.6	34.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	84		
0.5 in	12.50	84		
0.375 in	9.50	82		
#4	4.75	77		
#10	2.00	72		
#20	0.85	65		
#40	0.42	58		
#60	0.25	52		
#100	0.15	45		
#140	0.11	39		
#200	0.075	34		

Coefficients

D_{85} = 19.3876 mm D_{30} = N/A
D_{60} = 0.5166 mm D_{15} = N/A
D_{50} = 0.2118 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

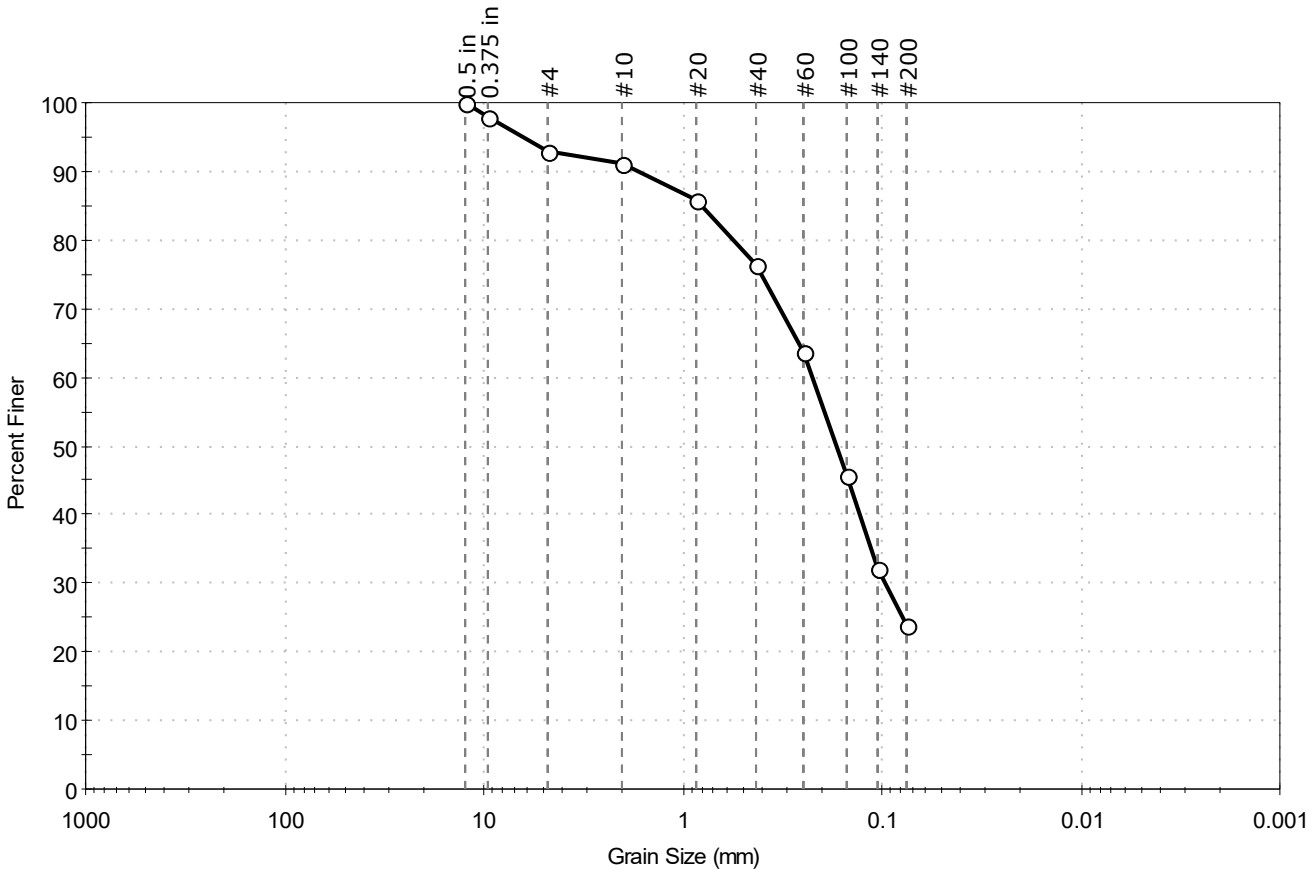
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-05B	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-8	Test Date:	12/08/22	Checked By:	ank
Depth :	74.0-76.0	Test Id:	696433		
Test Comment:	---				
Visual Description:	Moist, olive brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	7.0	69.1	23.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	98		
#4	4.75	93		
#10	2.00	91		
#20	0.85	86		
#40	0.42	76		
#60	0.25	64		
#100	0.15	46		
#140	0.11	32		
#200	0.075	24		

Coefficients

D_{85} = 0.8071 mm	D_{30} = 0.0968 mm
D_{60} = 0.2247 mm	D_{15} = N/A
D_{50} = 0.1692 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

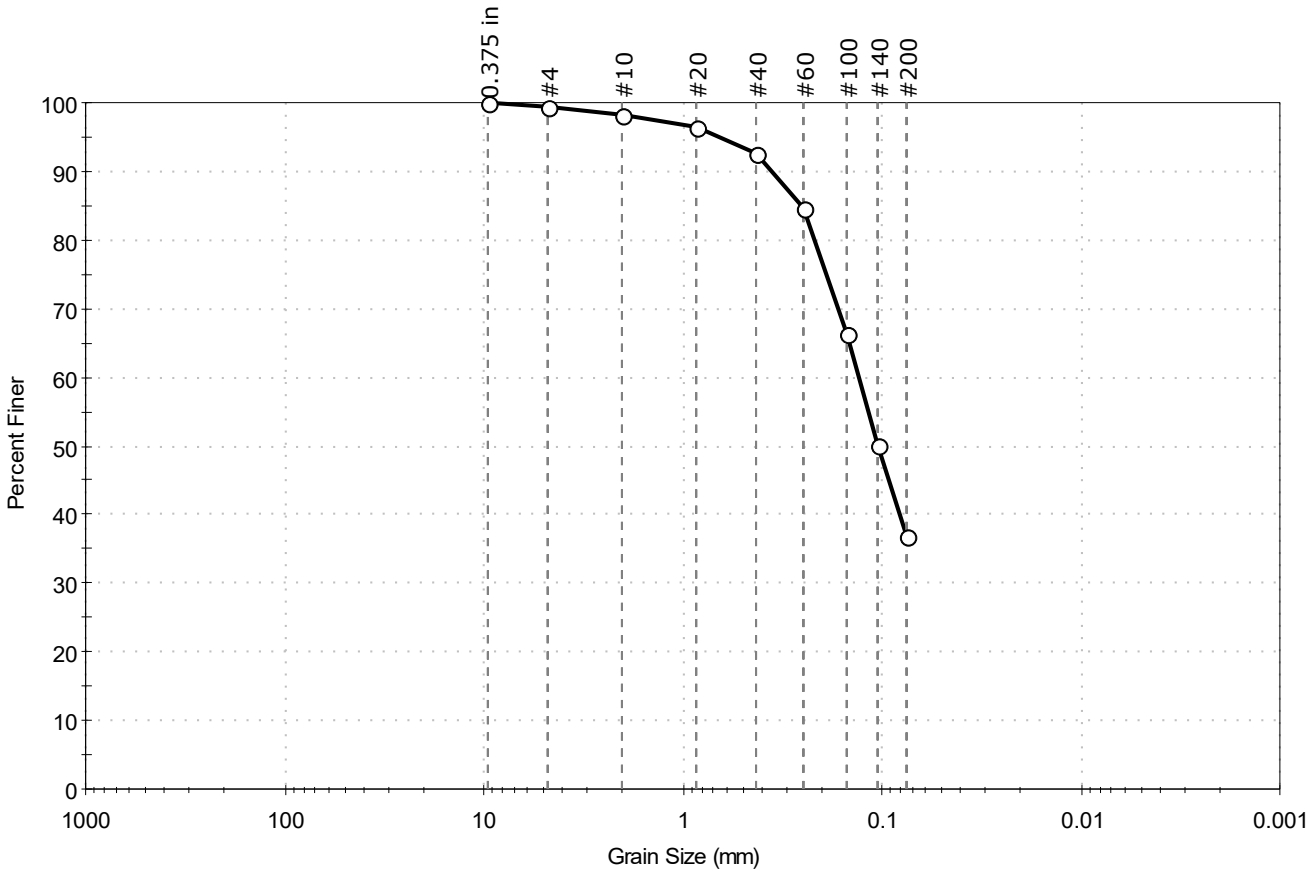
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-05B	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-7	Test Date:	12/08/22	Checked By:	ank
Depth :	69.0-71.0	Test Id:	696432		
Test Comment:	---				
Visual Description:	Moist, light olive brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.7	62.3	37.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	99		
#10	2.00	98		
#20	0.85	96		
#40	0.42	93		
#60	0.25	85		
#100	0.15	66		
#140	0.11	50		
#200	0.075	37		

Coefficients

D_{85} = 0.2571 mm D_{30} = N/A

D_{60} = 0.1311 mm D_{15} = N/A

D_{50} = 0.1059 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

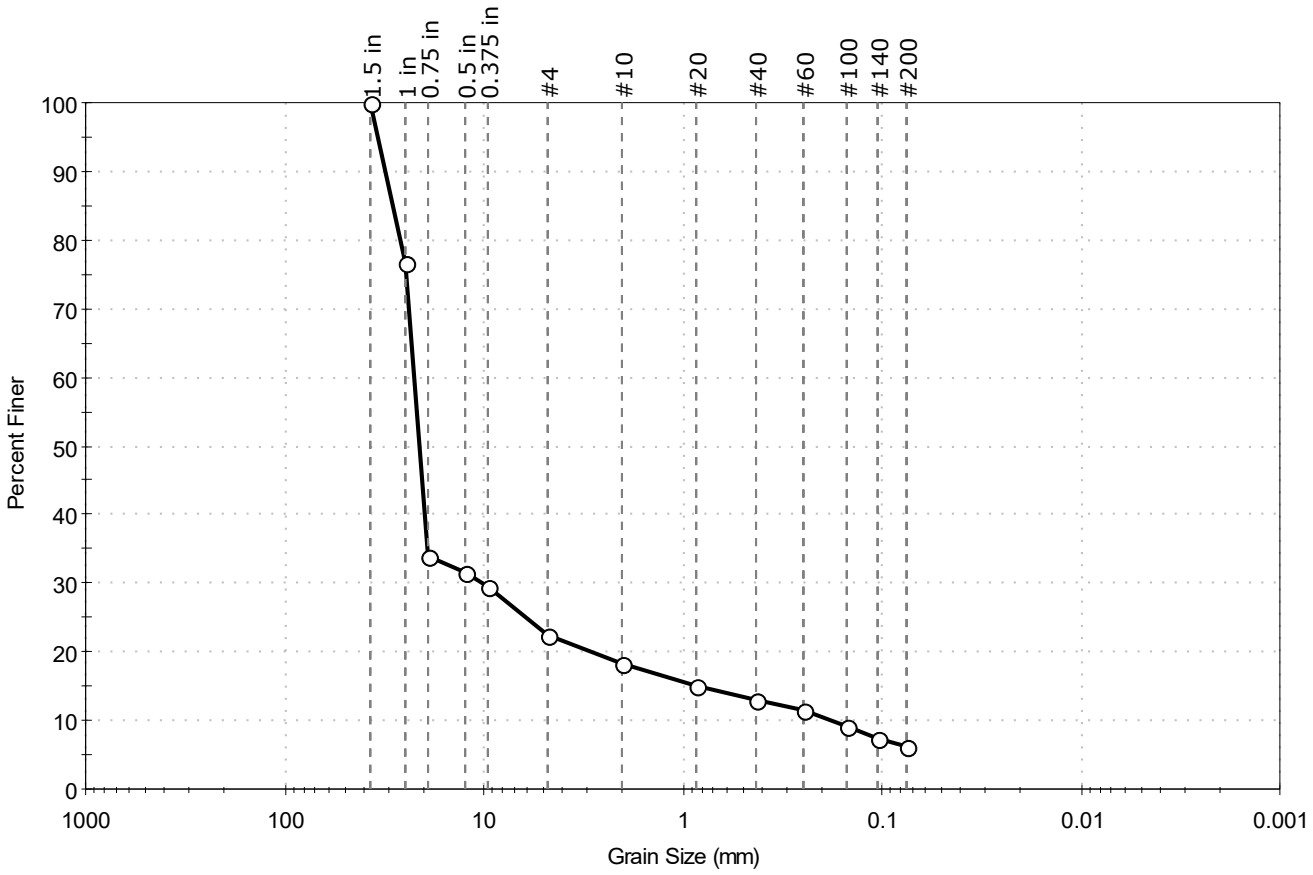
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-06	Sample Type:	jar	Tested By:	ckg
Sample ID:	S2	Test Date:	12/08/22	Checked By:	ank
Depth :	2.0-4.0	Test Id:	696434		
Test Comment:	---				
Visual Description:	Moist, dark gray gravel with silt and sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	77.6	16.3	6.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	77		
0.75 in	19.00	34		
0.5 in	12.50	32		
0.375 in	9.50	29		
#4	4.75	22		
#10	2.00	18		
#20	0.85	15		
#40	0.42	13		
#60	0.25	11		
#100	0.15	9		
#140	0.11	8		
#200	0.075	6.1		

Coefficients

D_{85} = 28.9119 mm D_{30} = 10.1589 mm

D_{60} = 22.4644 mm D_{15} = 0.8151 mm

D_{50} = 21.0641 mm D_{10} = 0.1809 mm

C_u = 124.181 C_c = 25.396

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-a (1))

Sample/Test Description

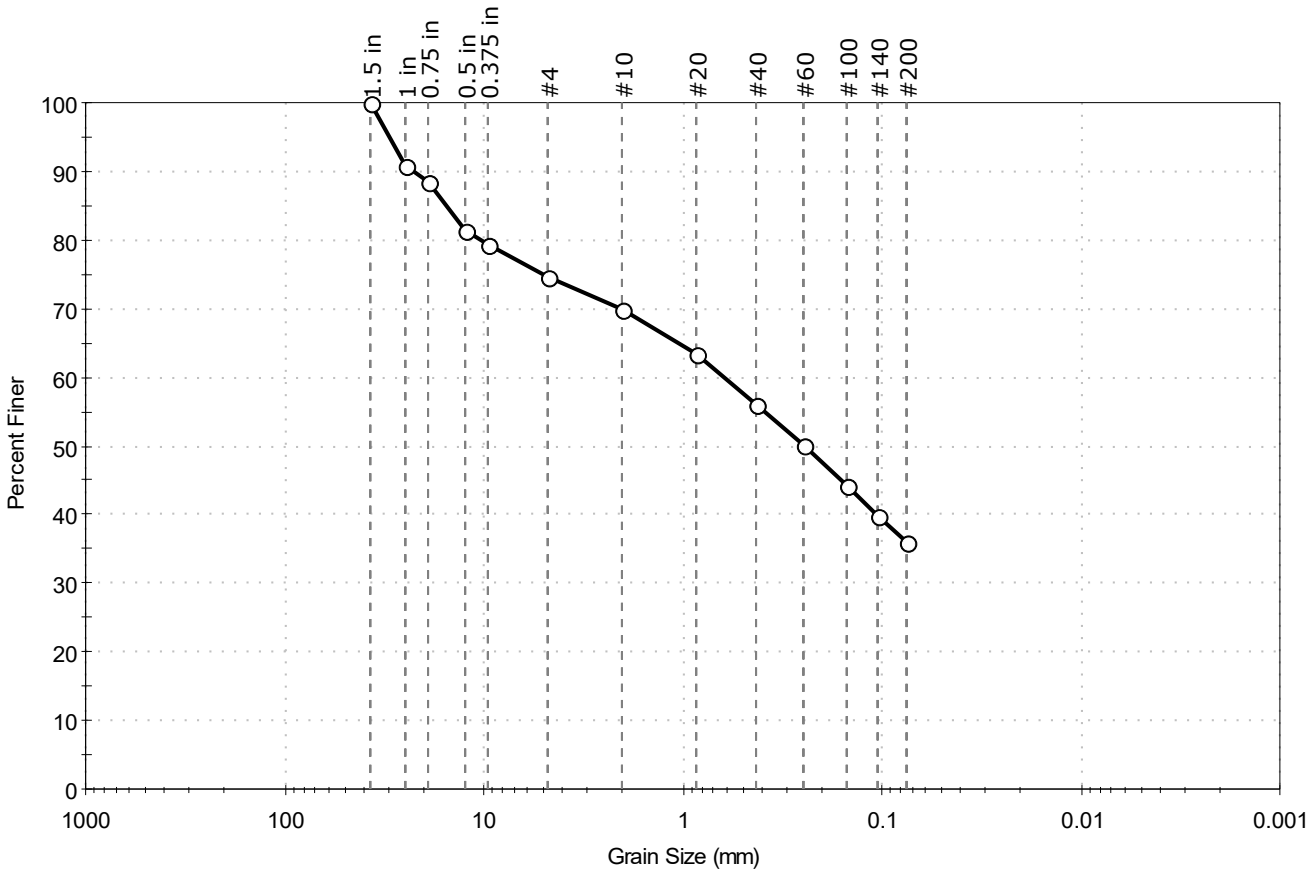
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-06	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-7	Test Date:	12/08/22	Checked By:	ank
Depth :	12.0-14.0	Test Id:	696435		
Test Comment:	---				
Visual Description:	Moist, olive gray silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	25.5	38.6	35.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	91		
0.75 in	19.00	89		
0.5 in	12.50	81		
0.375 in	9.50	79		
#4	4.75	75		
#10	2.00	70		
#20	0.85	64		
#40	0.42	56		
#60	0.25	50		
#100	0.15	44		
#140	0.11	40		
#200	0.075	36		

Coefficients

D_{85} = 15.4019 mm D_{30} = N/A

D_{60} = 0.6089 mm D_{15} = N/A

D_{50} = 0.2448 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

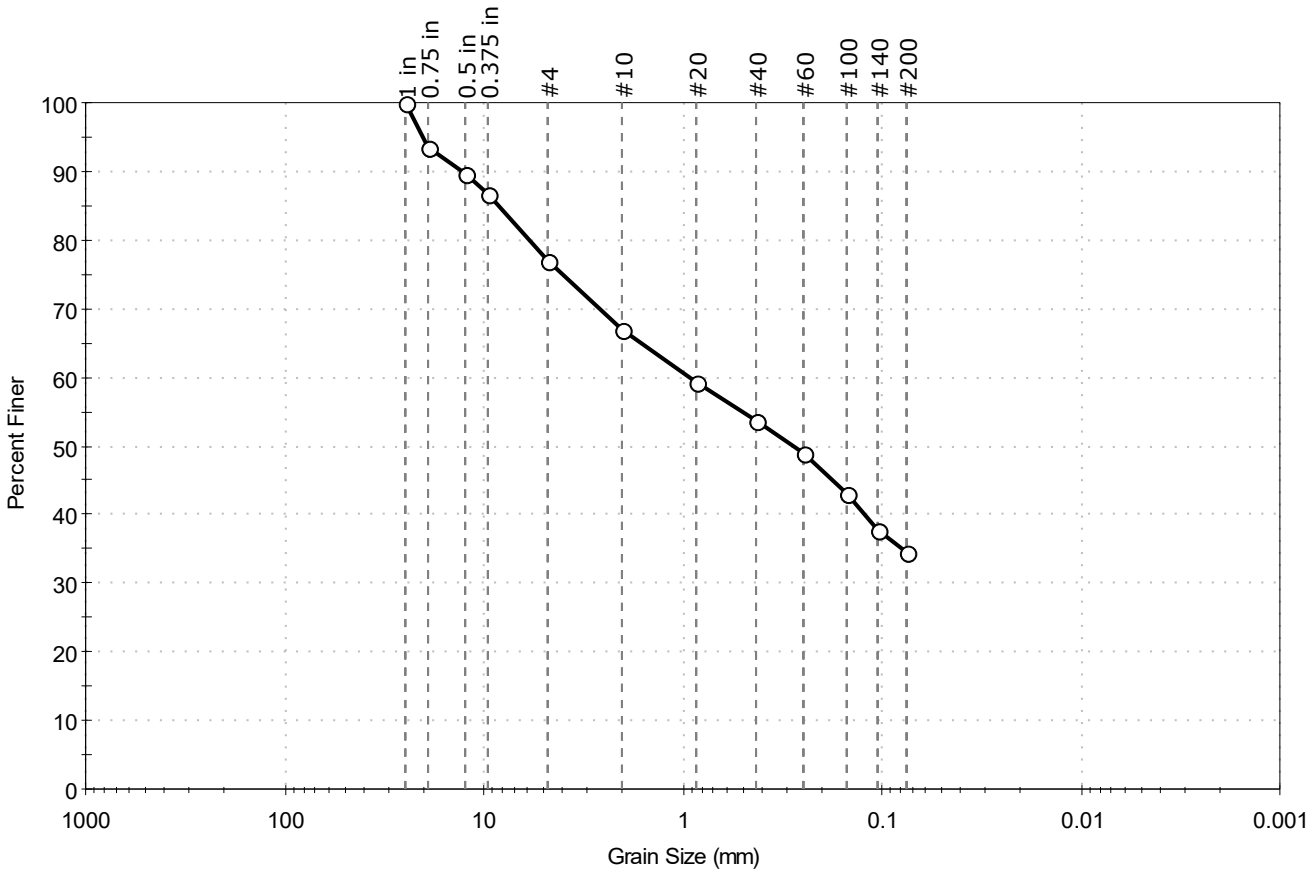
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-06	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-9	Test Date:	12/08/22	Checked By:	ank
Depth :	16.0-18.0	Test Id:	696436		
Test Comment:	---				
Visual Description:	Moist, gray silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	23.1	42.4	34.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	94		
0.5 in	12.50	90		
0.375 in	9.50	87		
#4	4.75	77		
#10	2.00	67		
#20	0.85	59		
#40	0.42	54		
#60	0.25	49		
#100	0.15	43		
#140	0.11	38		
#200	0.075	35		

Coefficients

D_{85} = 8.4698 mm D_{30} = N/A

D_{60} = 0.9159 mm D_{15} = N/A

D_{50} = 0.2826 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

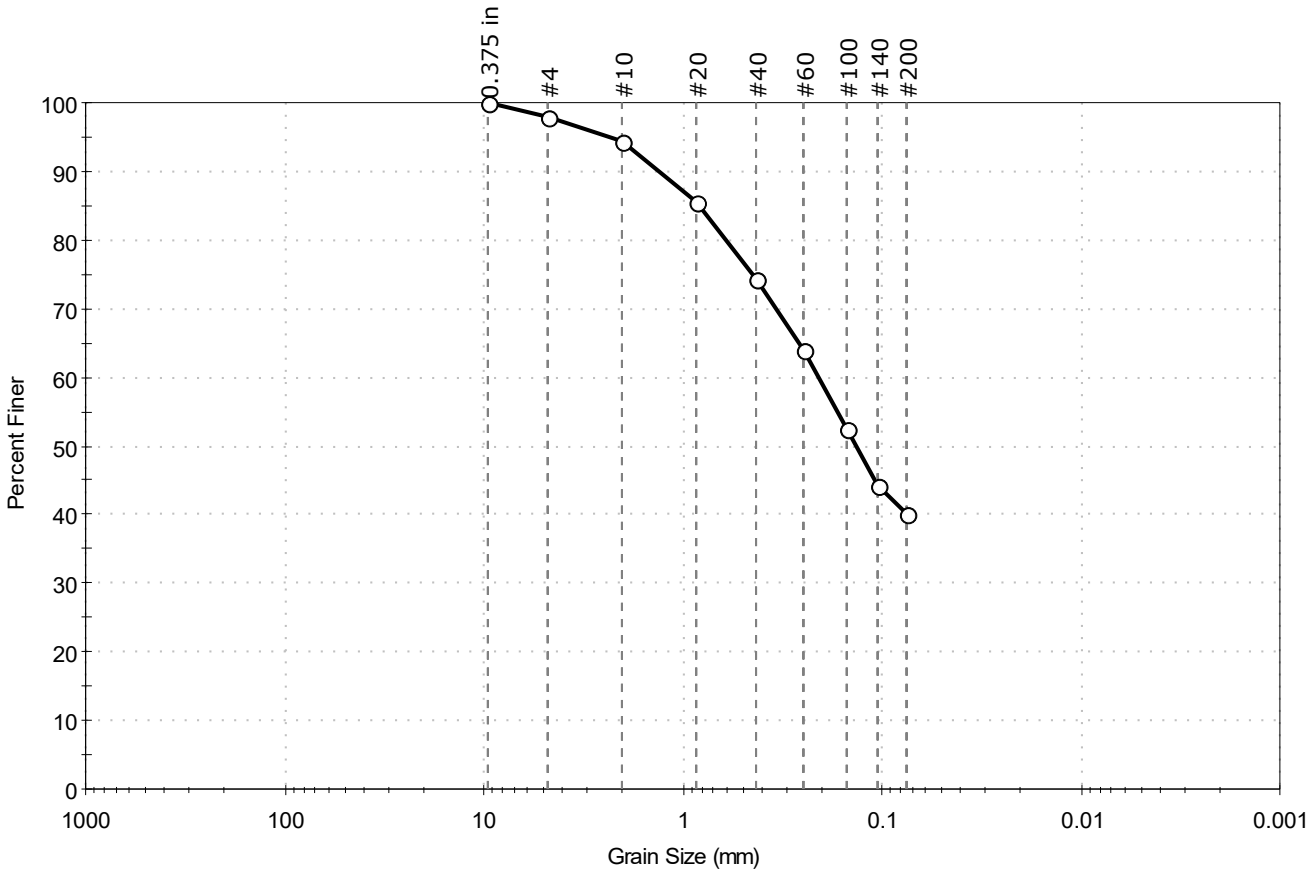
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-10	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-3	Test Date:	12/08/22	Checked By:	ank
Depth :	4.0-6.0	Test Id:	696437		
Test Comment:	---				
Visual Description:	Moist, olive brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.9	58.1	40.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	98		
#10	2.00	94		
#20	0.85	86		
#40	0.42	74		
#60	0.25	64		
#100	0.15	52		
#140	0.11	44		
#200	0.075	40		

Coefficients

D_{85} = 0.8181 mm D_{30} = N/A

D_{60} = 0.2090 mm D_{15} = N/A

D_{50} = 0.1355 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

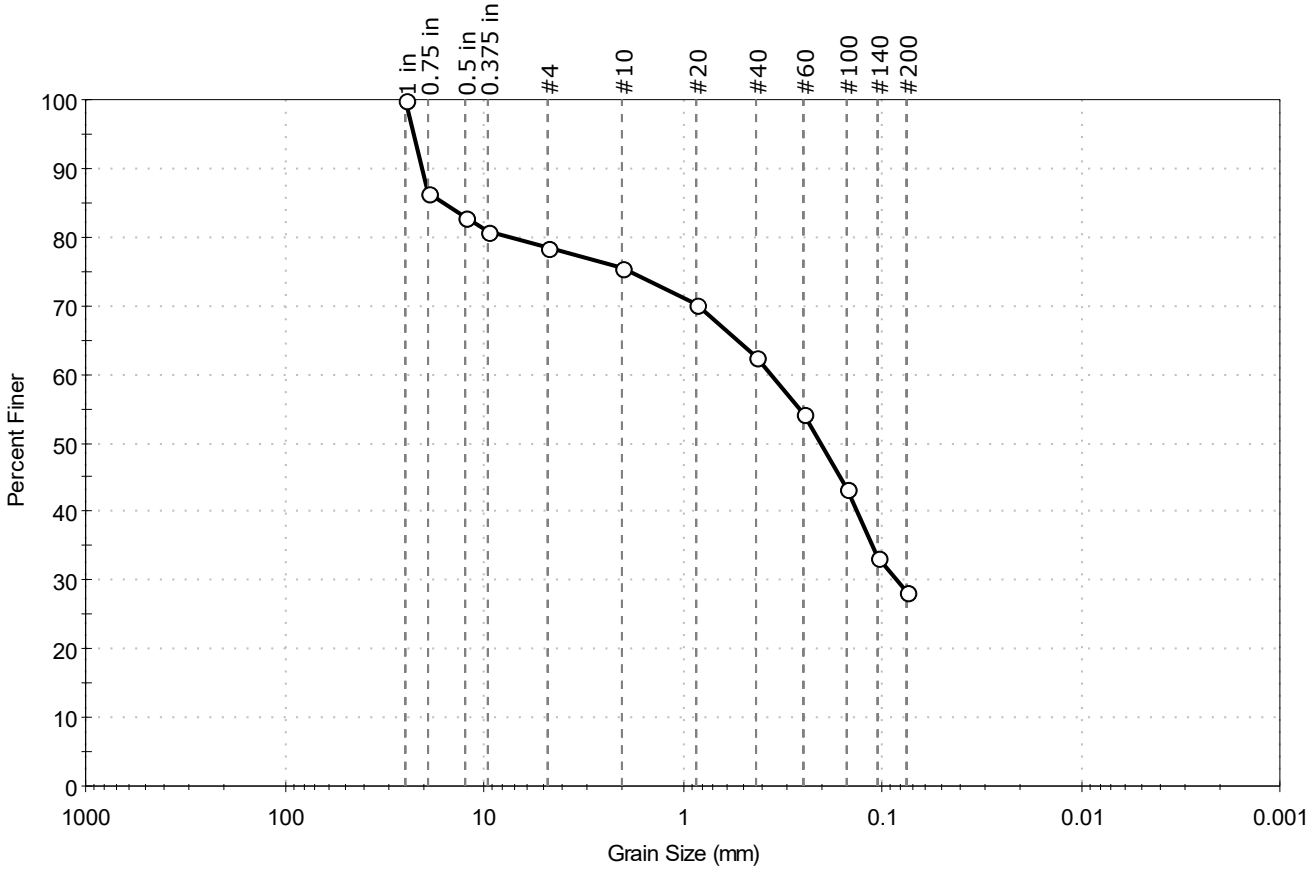
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-10	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-5	Test Date:	12/08/22	Checked By:	ank
Depth :	8.0-10.0	Test Id:	696438		

Test Comment: ---
Visual Description: Moist, dark olive brown silty sand with gravel
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	21.6	50.2	28.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	86		
0.5 in	12.50	83		
0.375 in	9.50	81		
#4	4.75	78		
#10	2.00	76		
#20	0.85	70		
#40	0.42	63		
#60	0.25	54		
#100	0.15	43		
#140	0.11	33		
#200	0.075	28		

Coefficients

D_{85} = 16.1024 mm D_{30} = 0.0845 mm
D_{60} = 0.3606 mm D_{15} = N/A
D_{50} = 0.2039 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

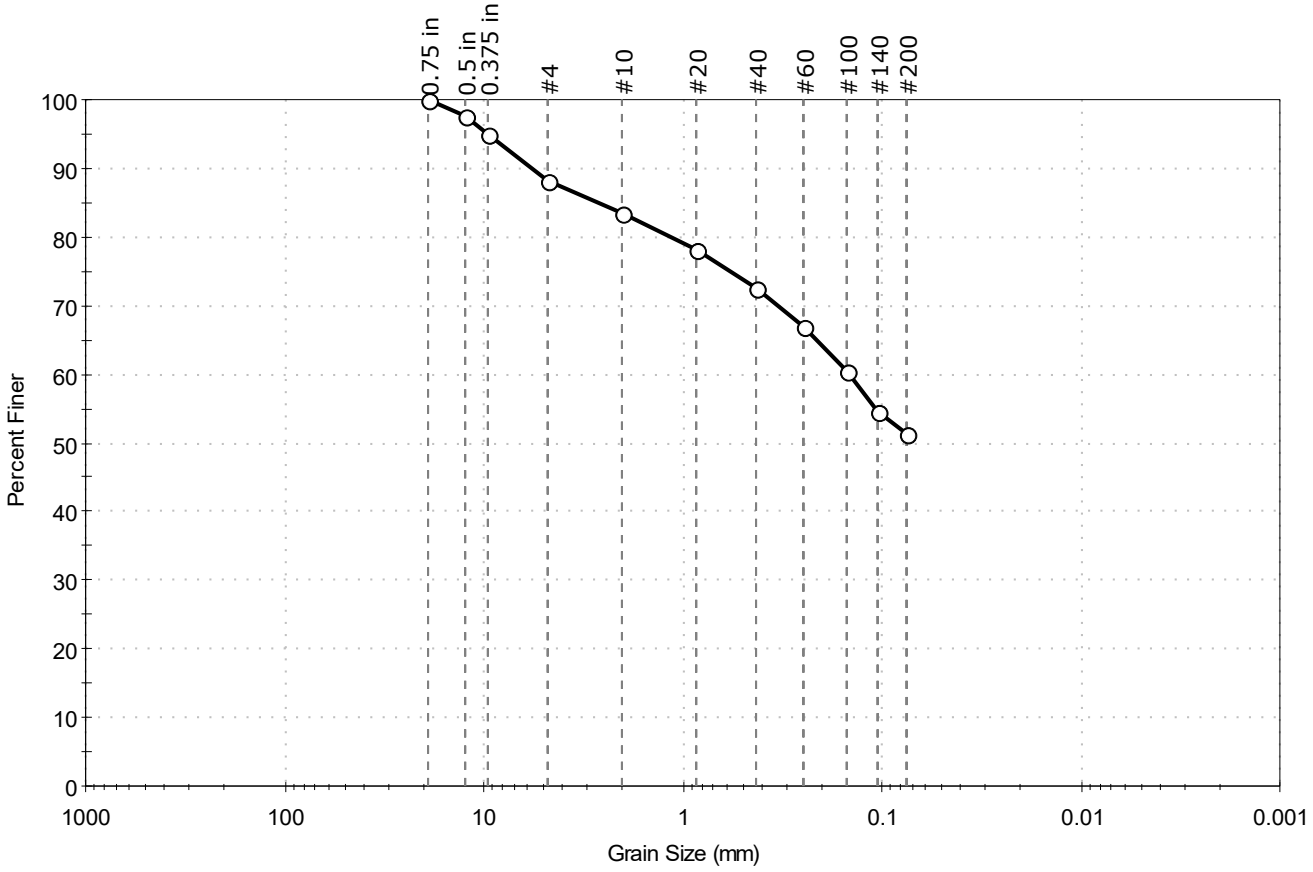
Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-10	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-9	Test Date:	12/08/22	Checked By:	ank
Depth :	16.0-18.0	Test Id:	696439		

Test Comment: ---
Visual Description: Moist, dark gray sandy silt
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	11.7	37.1	51.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	98		
0.375 in	9.50	95		
#4	4.75	88		
#10	2.00	83		
#20	0.85	78		
#40	0.42	72		
#60	0.25	67		
#100	0.15	61		
#140	0.11	55		
#200	0.075	51		

Coefficients

D_{85} = 2.6476 mm D_{30} = N/A
D_{60} = 0.1449 mm D_{15} = N/A
D_{50} = N/A D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

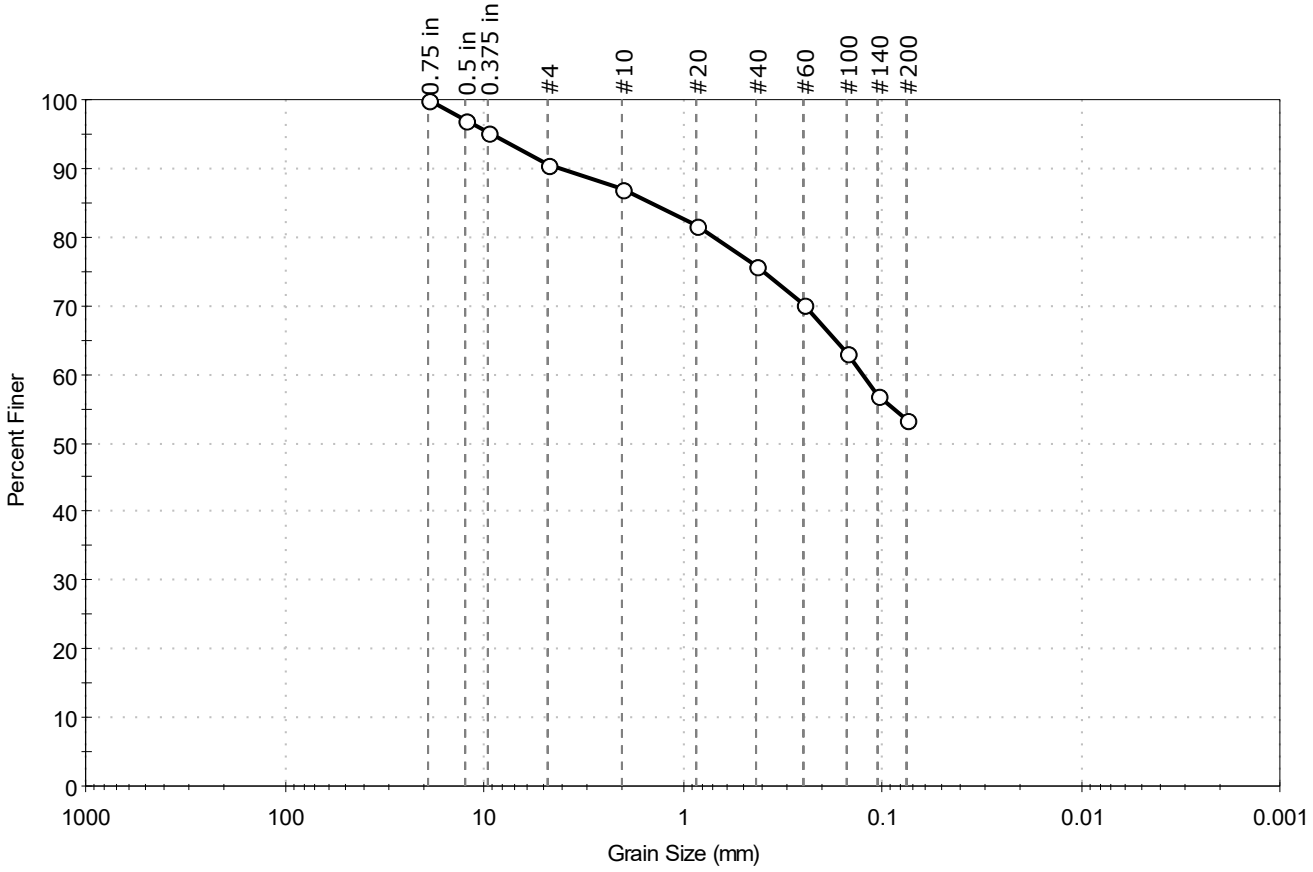
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-10	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-11	Test Date:	12/08/22	Checked By:	ank
Depth :	20.0-22.0	Test Id:	696440		
Test Comment:	---				
Visual Description:	Moist, gray sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	9.4	37.3	53.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	97		
0.375 in	9.50	95		
#4	4.75	91		
#10	2.00	87		
#20	0.85	82		
#40	0.42	76		
#60	0.25	70		
#100	0.15	63		
#140	0.11	57		
#200	0.075	53		

Coefficients

D_{85} = 1.4564 mm D_{30} = N/A

D_{60} = 0.1263 mm D_{15} = N/A

D_{50} = N/A D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

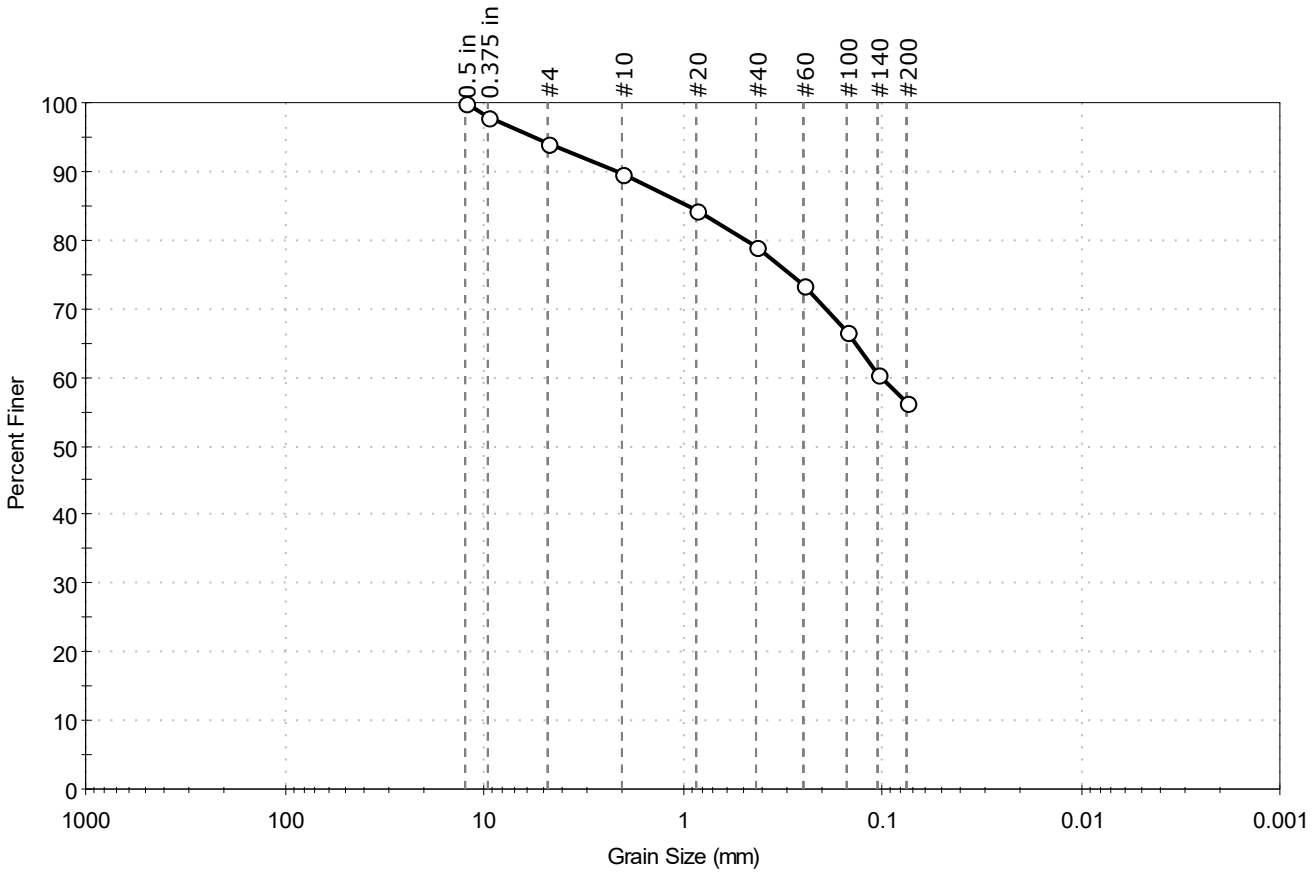
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-10	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-14	Test Date:	12/08/22	Checked By:	ank
Depth :	26.0-28.0	Test Id:	696441		
Test Comment:	---				
Visual Description:	Moist, gray sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	5.8	37.8	56.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	98		
#4	4.75	94		
#10	2.00	90		
#20	0.85	84		
#40	0.42	79		
#60	0.25	74		
#100	0.15	67		
#140	0.11	60		
#200	0.075	56		

Coefficients

D_{85} = 0.9357 mm	D_{30} = N/A
D_{60} = 0.1024 mm	D_{15} = N/A
D_{50} = N/A	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

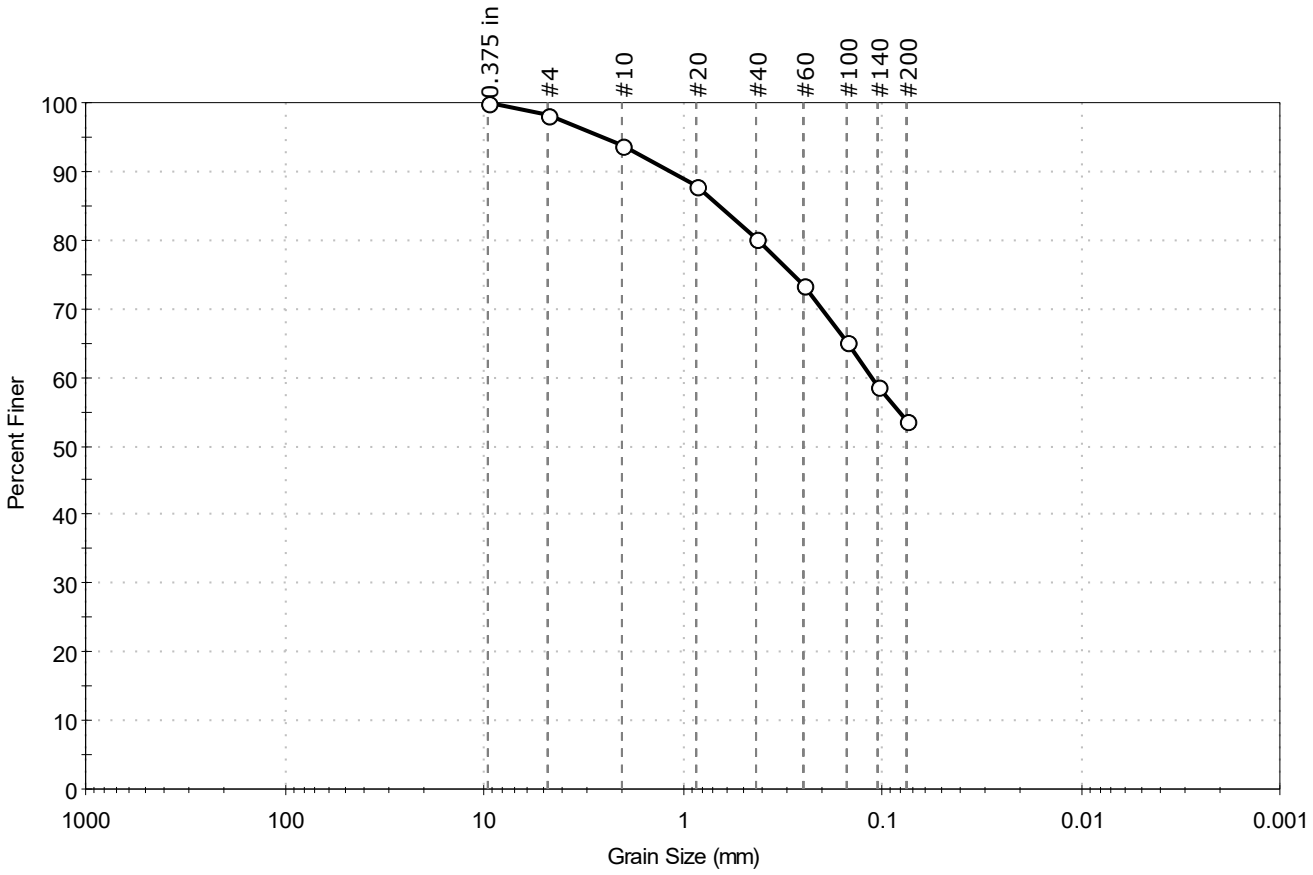
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-10	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-17	Test Date:	12/06/22	Checked By:	ank
Depth :	32.0-34.0	Test Id:	696442		
Test Comment:	---				
Visual Description:	Moist, gray sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.9	44.6	53.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	98		
#10	2.00	94		
#20	0.85	88		
#40	0.42	80		
#60	0.25	74		
#100	0.15	65		
#140	0.11	59		
#200	0.075	54		

Coefficients

D_{85} = 0.6576 mm	D_{30} = N/A
D_{60} = 0.1139 mm	D_{15} = N/A
D_{50} = N/A	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

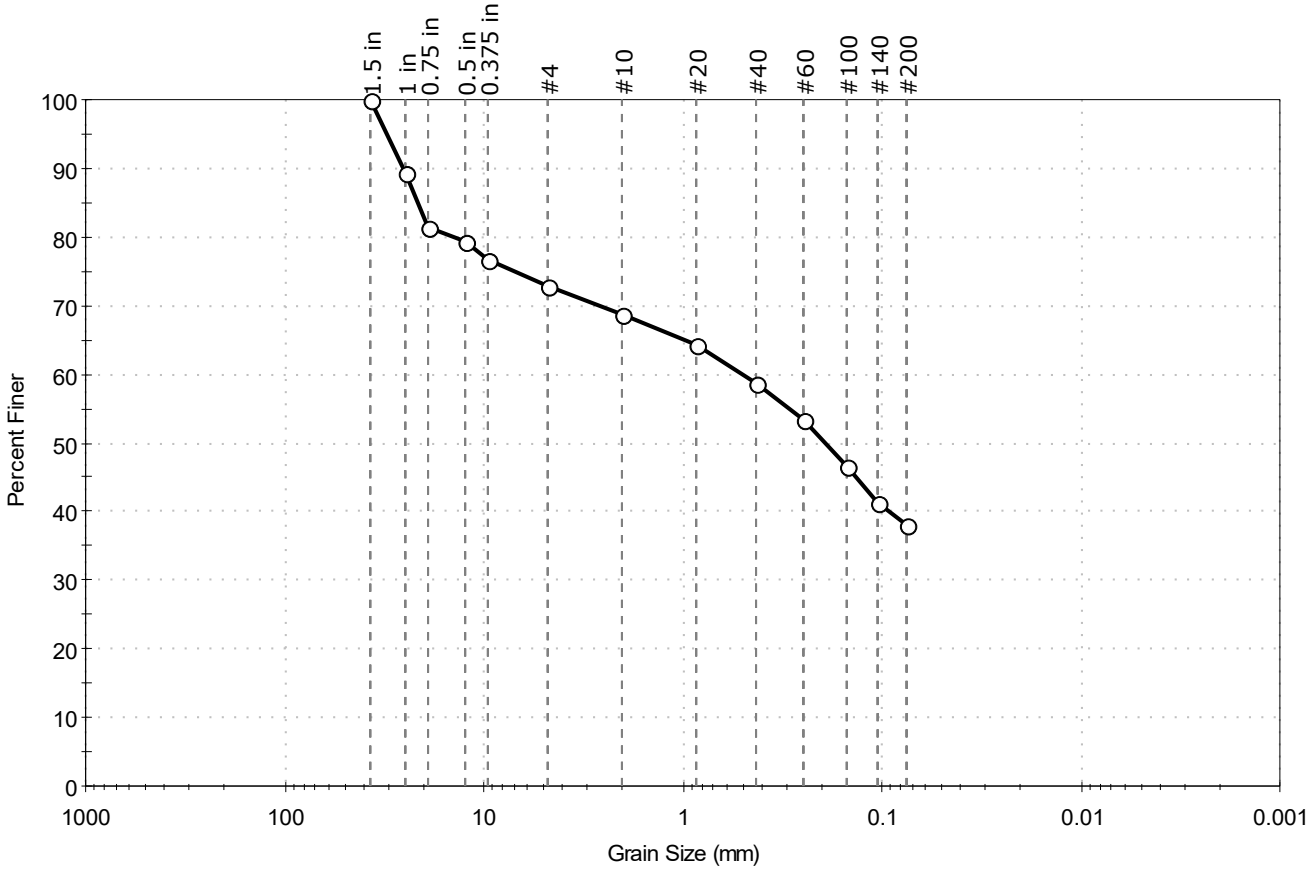
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-10	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-24	Test Date:	12/08/22	Checked By:	ank
Depth :	46.0-48.0	Test Id:	696444		

Test Comment: ---
Visual Description: Moist, gray silty sand with gravel
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	27.1	34.8	38.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	89		
0.75 in	19.00	81		
0.5 in	12.50	79		
0.375 in	9.50	77		
#4	4.75	73		
#10	2.00	69		
#20	0.85	64		
#40	0.42	59		
#60	0.25	53		
#100	0.15	47		
#140	0.11	41		
#200	0.075	38		

Coefficients

D_{85} = 21.5345 mm D_{30} = N/A
D_{60} = 0.4956 mm D_{15} = N/A
D_{50} = 0.1928 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

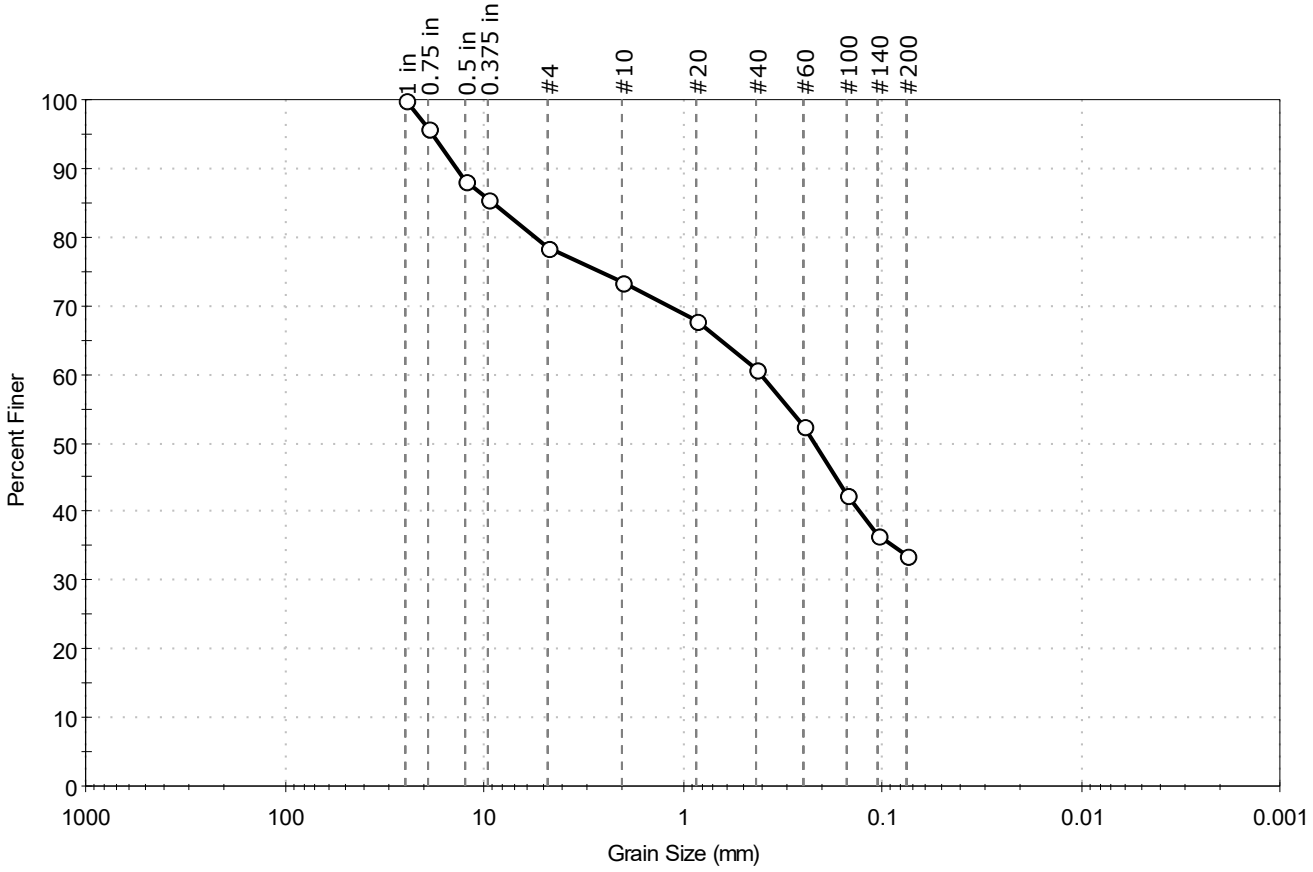
Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-10	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-21	Test Date:	12/08/22	Checked By:	ank
Depth :	40.0-42.0	Test Id:	696443		

Test Comment: ---
Visual Description: Moist, gray silty sand with gravel
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	21.4	44.8	33.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	96		
0.5 in	12.50	88		
0.375 in	9.50	85		
#4	4.75	79		
#10	2.00	74		
#20	0.85	68		
#40	0.42	61		
#60	0.25	52		
#100	0.15	42		
#140	0.11	37		
#200	0.075	34		

Coefficients

D_{85} = 9.1087 mm D_{30} = N/A
D_{60} = 0.4070 mm D_{15} = N/A
D_{50} = 0.2216 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

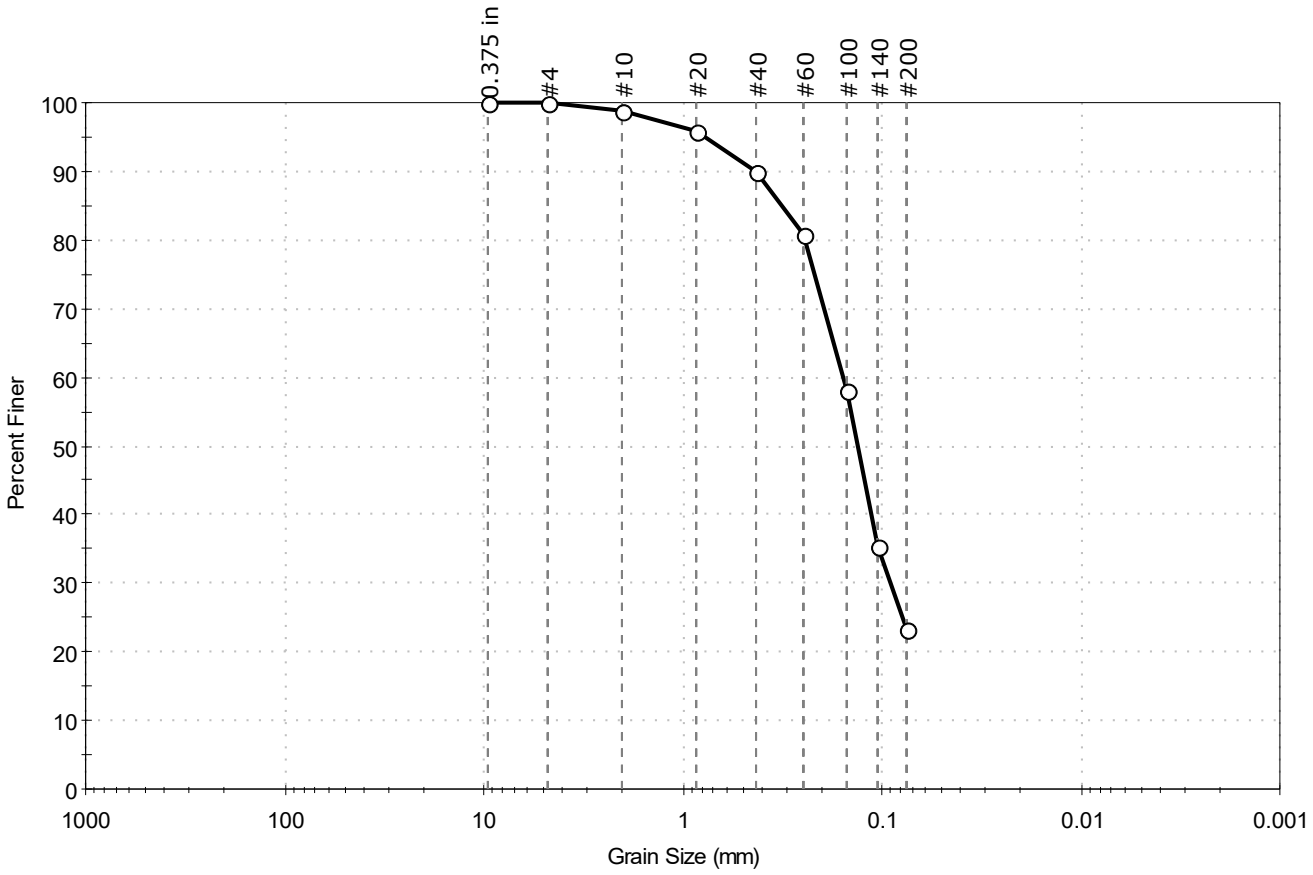
AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-11	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-2	Test Date:	12/08/22	Checked By:	ank
Depth :	3.0-5.0	Test Id:	696445		
Test Comment:	---				
Visual Description:	Moist, light olive brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.1	76.7	23.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	100		
#10	2.00	99		
#20	0.85	96		
#40	0.42	90		
#60	0.25	81		
#100	0.15	58		
#140	0.11	35		
#200	0.075	23		

Coefficients

D_{85} = 0.3174 mm D_{30} = 0.0911 mm

D_{60} = 0.1567 mm D_{15} = N/A

D_{50} = 0.1327 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

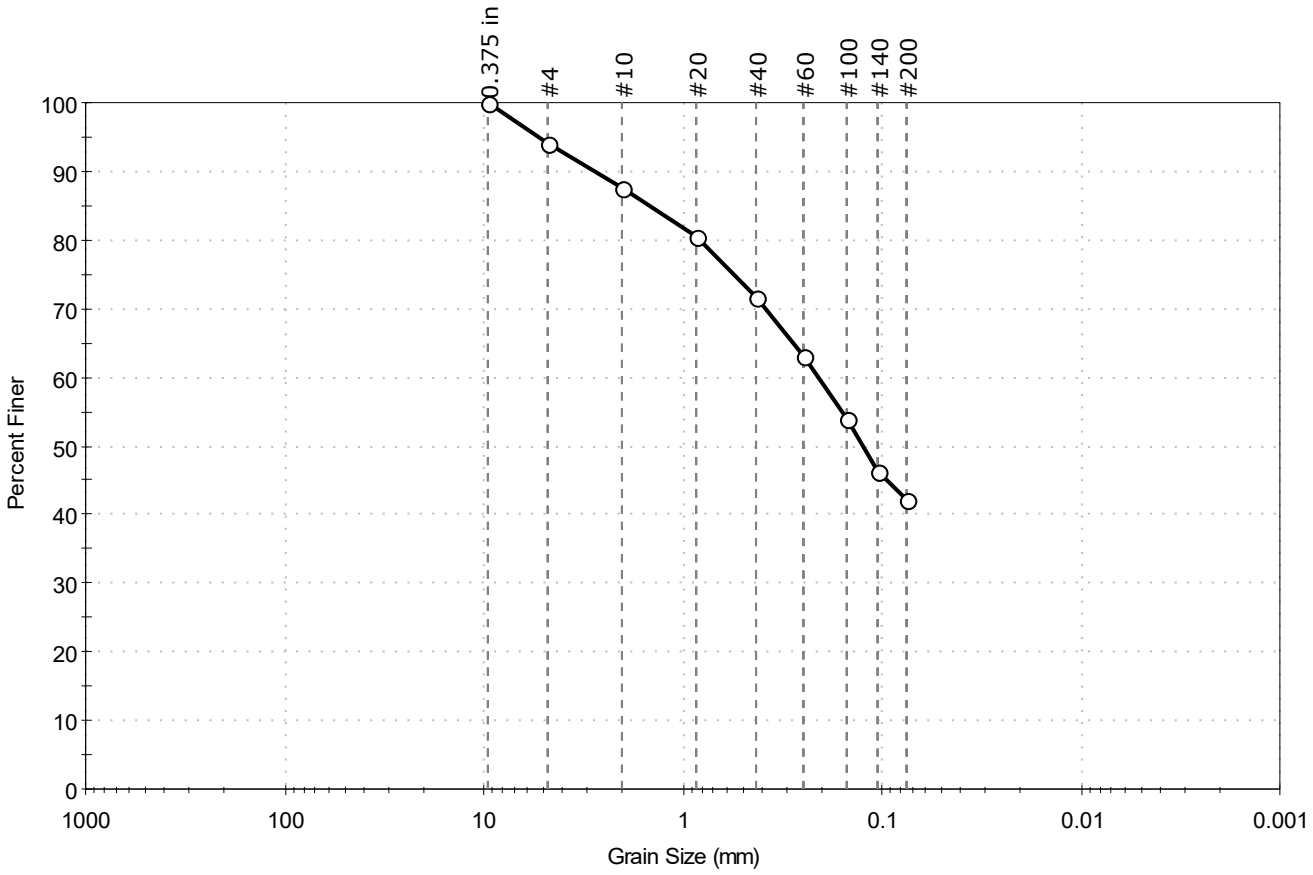
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-11B	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-4	Test Date:	12/06/22	Checked By:	ank
Depth :	44.0-46.0	Test Id:	696446		
Test Comment:	---				
Visual Description:	Moist, gray silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	5.9	52.0	42.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	94		
#10	2.00	88		
#20	0.85	80		
#40	0.42	72		
#60	0.25	63		
#100	0.15	54		
#140	0.11	46		
#200	0.075	42		

Coefficients

D_{85} = 1.4580 mm D_{30} = N/A

D_{60} = 0.2107 mm D_{15} = N/A

D_{50} = 0.1251 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

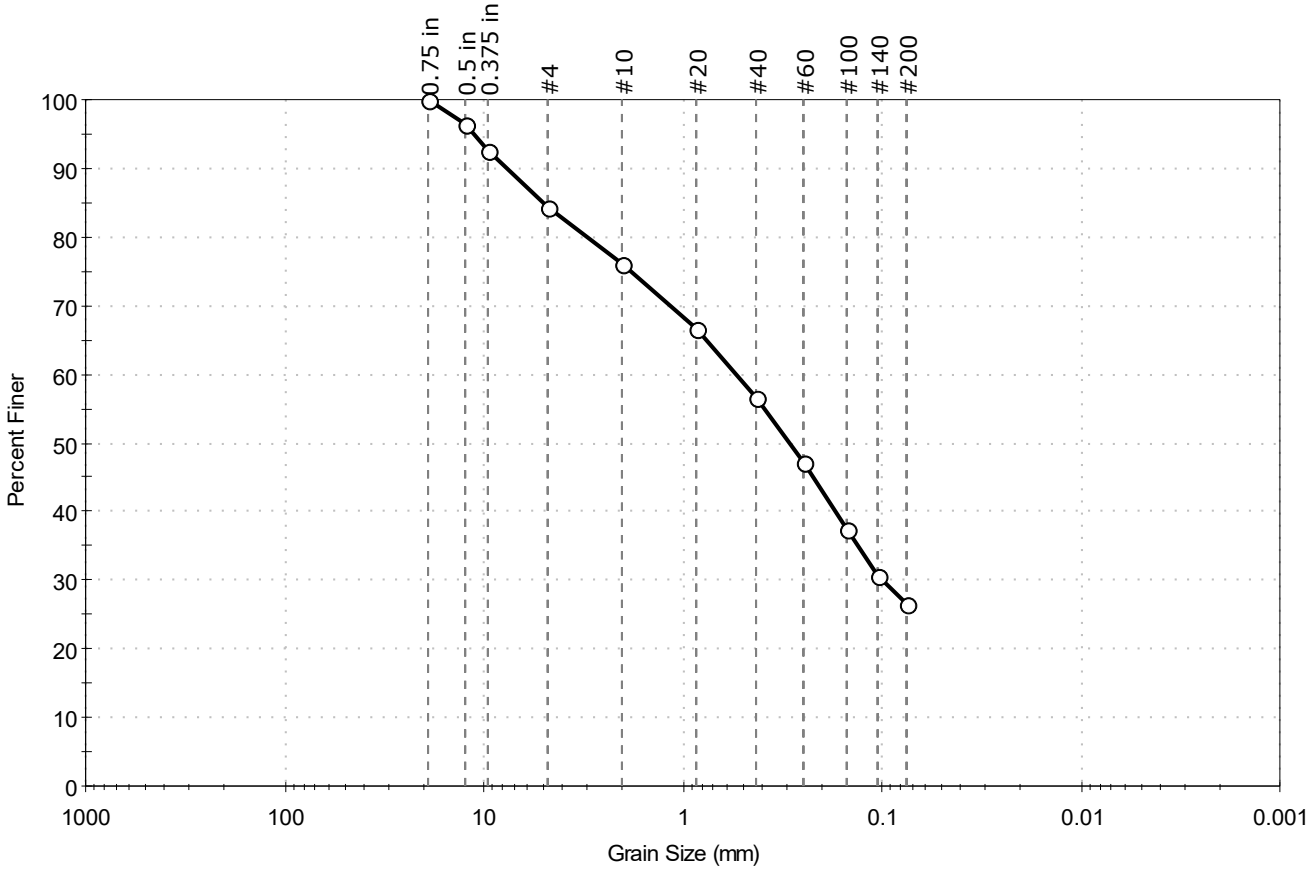
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-11B	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-8	Test Date:	12/08/22	Checked By:	ank
Depth :	64.0-66.0	Test Id:	696448		

Test Comment: ---
Visual Description: Moist, gray silty sand with gravel
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	15.6	58.0	26.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	97		
0.375 in	9.50	93		
#4	4.75	84		
#10	2.00	76		
#20	0.85	67		
#40	0.42	57		
#60	0.25	47		
#100	0.15	37		
#140	0.11	31		
#200	0.075	26		

Coefficients

D_{85} = 5.0089 mm D_{30} = 0.0998 mm
D_{60} = 0.5373 mm D_{15} = N/A
D_{50} = 0.2942 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

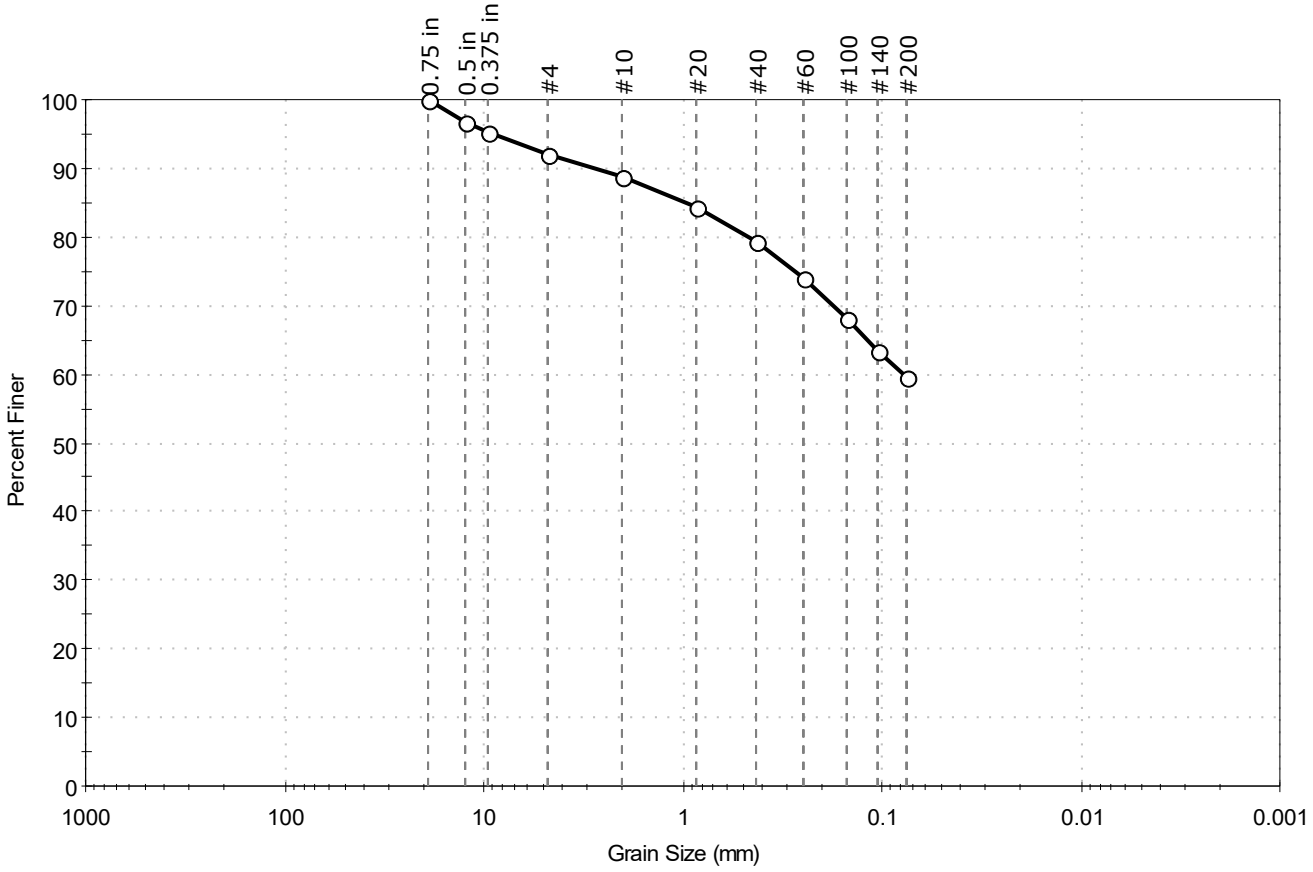
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-11B	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-12	Test Date:	12/08/22	Checked By:	ank
Depth :	84.0-86.0	Test Id:	696449		
Test Comment:	---				
Visual Description:	Moist, dark gray sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	7.9	32.5	59.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	97		
0.375 in	9.50	95		
#4	4.75	92		
#10	2.00	89		
#20	0.85	84		
#40	0.42	79		
#60	0.25	74		
#100	0.15	68		
#140	0.11	63		
#200	0.075	60		

Coefficients

D_{85} = 0.9743 mm D_{30} = N/A
D_{60} = 0.0780 mm D_{15} = N/A
D_{50} = N/A D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

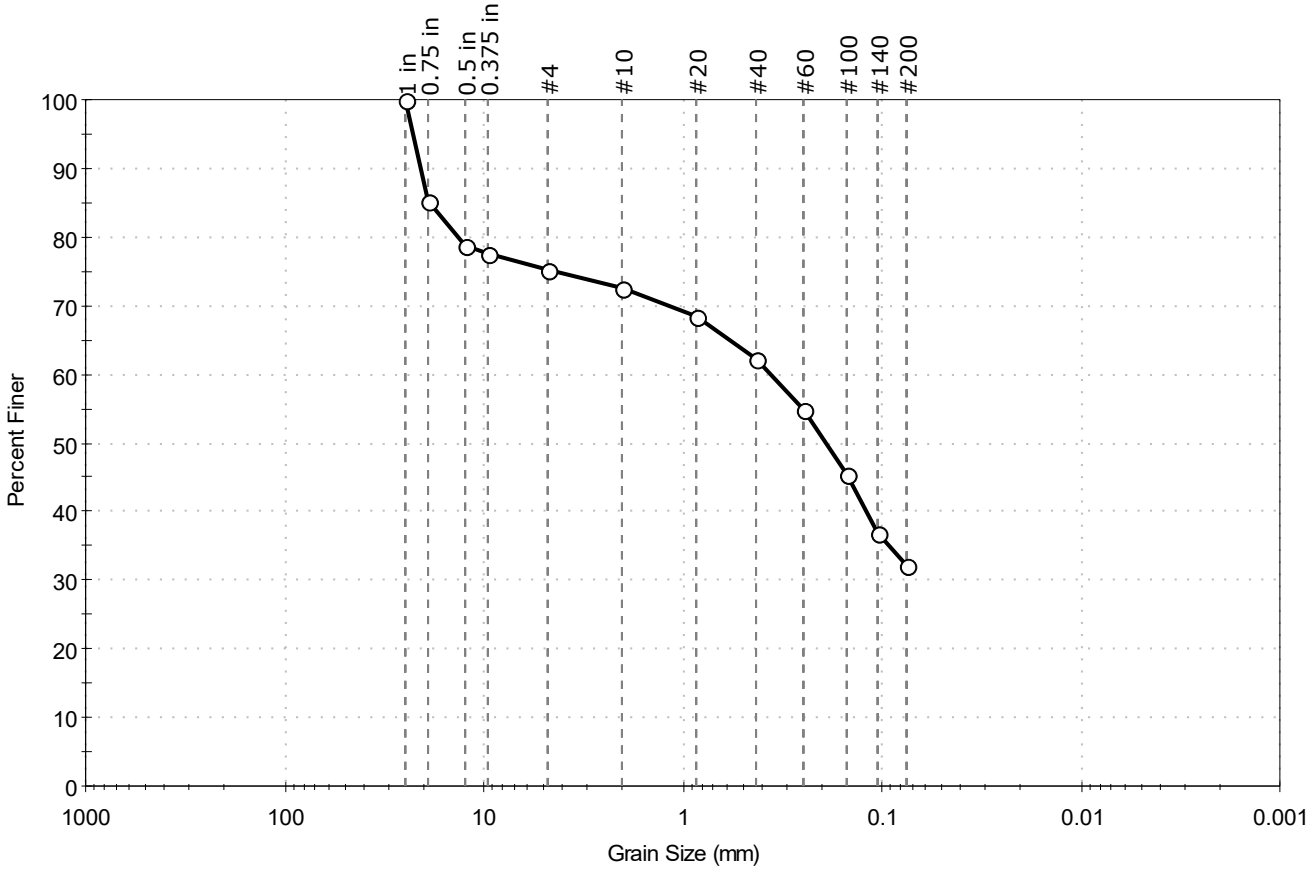
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-06	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-4	Test Date:	12/08/22	Checked By:	ank
Depth :	6.0-8.0	Test Id:	696450		
Test Comment:	---				
Visual Description:	Moist, olive brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	24.8	43.1	32.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	85		
0.5 in	12.50	79		
0.375 in	9.50	78		
#4	4.75	75		
#10	2.00	72		
#20	0.85	69		
#40	0.42	62		
#60	0.25	55		
#100	0.15	46		
#140	0.11	37		
#200	0.075	32		

Coefficients

D_{85} = 18.6948 mm D_{30} = N/A

D_{60} = 0.3640 mm D_{15} = N/A

D_{50} = 0.1915 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

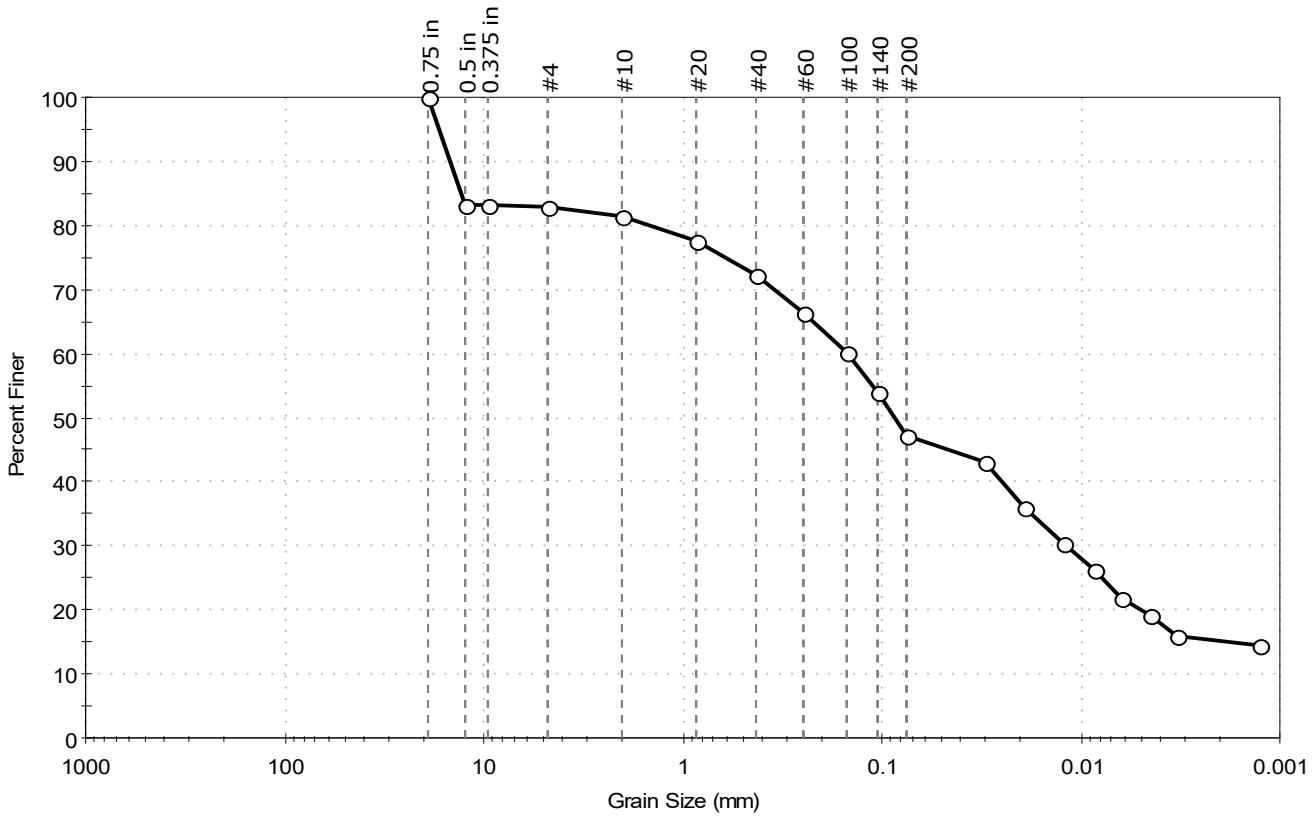
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-01	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-7	Test Date:	12/09/22	Checked By:	ank
Depth :	14.0-16.0	Test Id:	696451		
Test Comment:	---				
Visual Description:	Moist, olive brown sandy silt with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
–	17.0	35.9	47.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	83		
0.375 in	9.50	83		
#4	4.75	83		
#10	2.00	81		
#20	0.85	78		
#40	0.42	72		
#60	0.25	66		
#100	0.15	60		
#140	0.11	54		
#200	0.075	47		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0301	43		
---	0.0191	36		
---	0.0121	30		
---	0.0086	26		
---	0.0063	22		
---	0.0045	19		
---	0.0033	16		
---	0.0013	14		

Coefficients

D_{85} = 13.0546 mm D_{30} = 0.0117 mm
D_{60} = 0.1491 mm D_{15} = 0.0018 mm
D_{50} = 0.0865 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

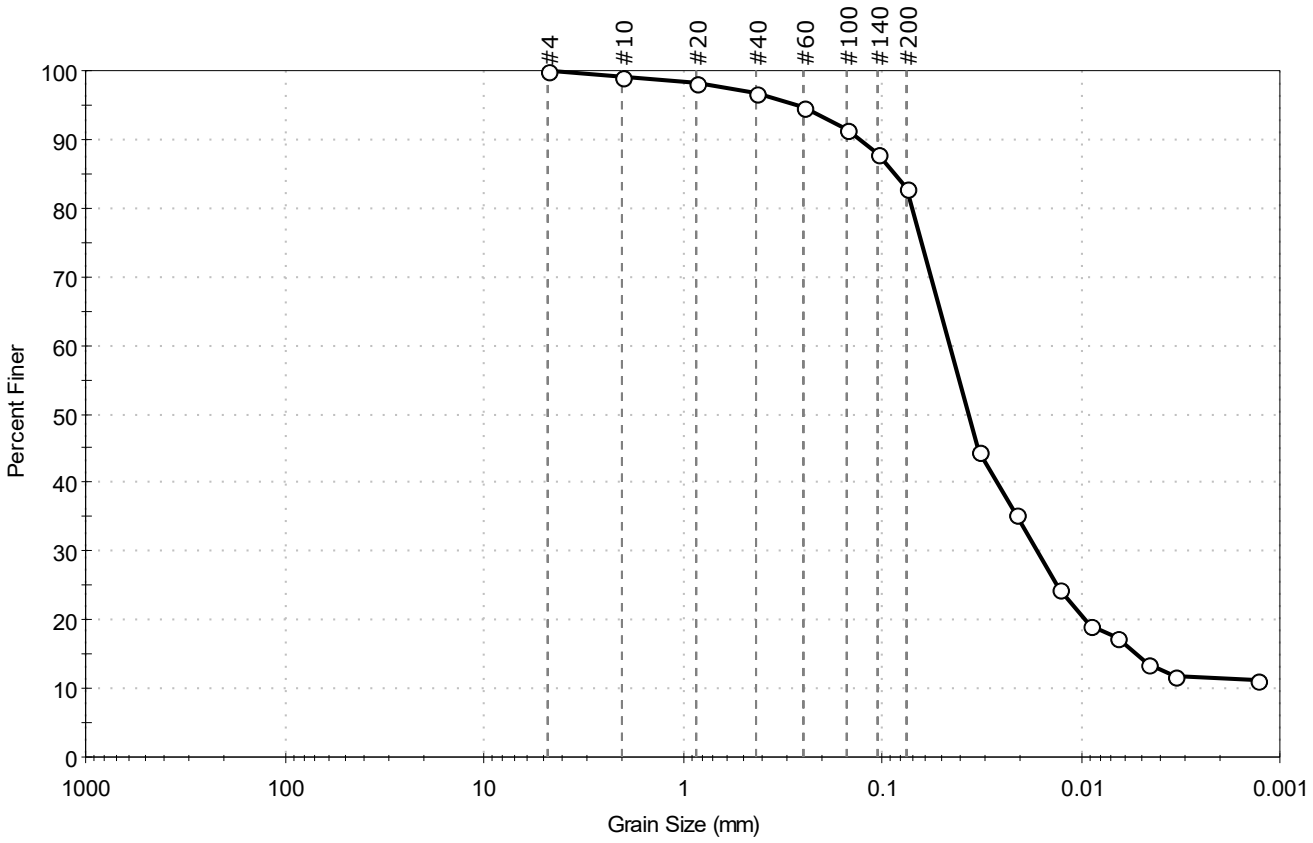
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-03	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-15	Test Date:	12/08/22	Checked By:	ank
Depth :	54.0-56.0	Test Id:	696452		
Test Comment:	---				
Visual Description:	Moist, gray silt with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	17.1	82.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.85	98		
#40	0.42	97		
#60	0.25	95		
#100	0.15	91		
#140	0.11	88		
#200	0.075	83		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0328	45		
---	0.0211	35		
---	0.0127	25		
---	0.0089	19		
---	0.0066	17		
---	0.0047	14		
---	0.0033	12		
---	0.0013	11		

Coefficients

D_{85} = 0.0867 mm	D_{30} = 0.0163 mm
D_{60} = 0.0458 mm	D_{15} = 0.0053 mm
D_{50} = 0.0369 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

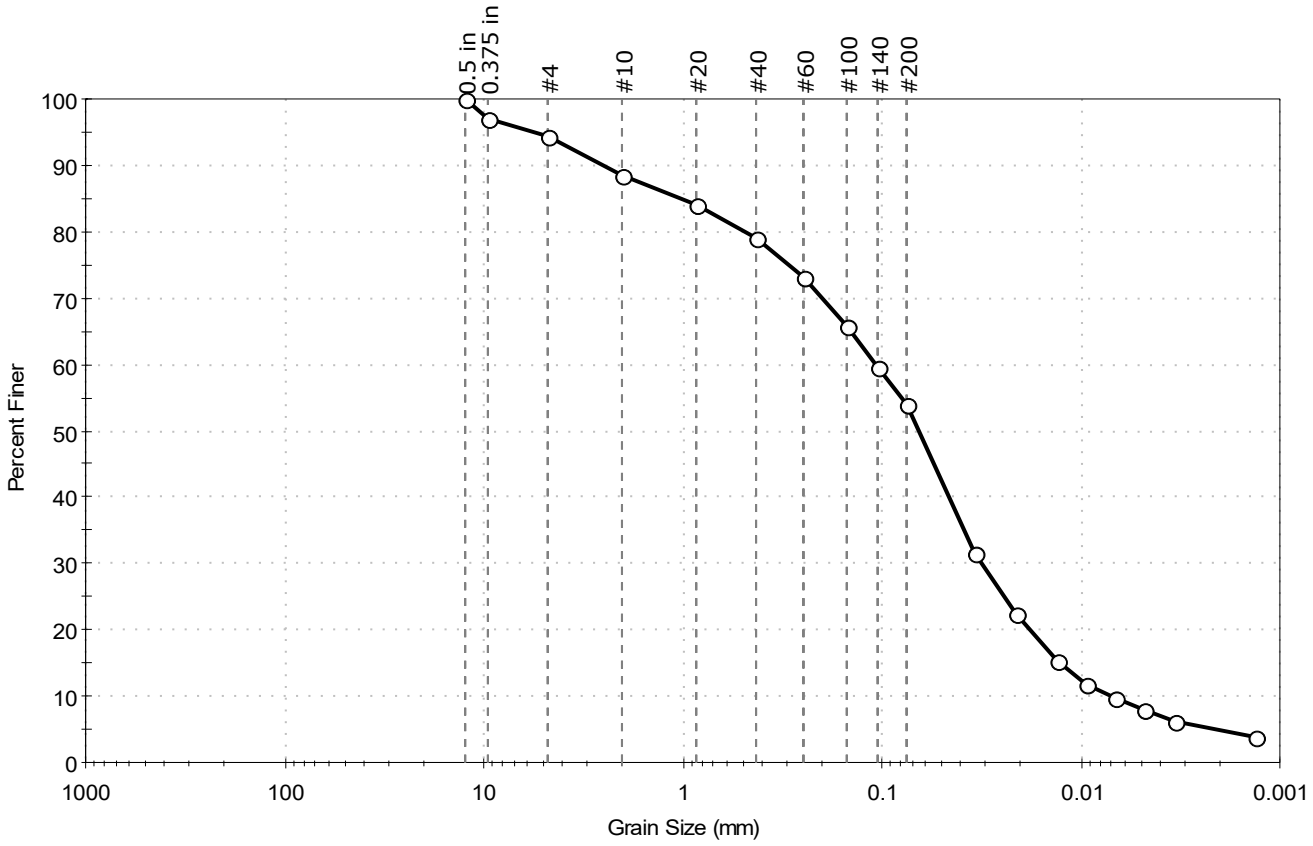
Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-10	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-19	Test Date:	12/08/22	Checked By:	ank
Depth :	36.0-38.0	Test Id:	696454		
Test Comment:	---				
Visual Description:	Moist, gray sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	5.6	40.3	54.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	97		
#4	4.75	94		
#10	2.00	88		
#20	0.85	84		
#40	0.42	79		
#60	0.25	73		
#100	0.15	66		
#140	0.11	60		
#200	0.075	54		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0345	31		
---	0.0214	22		
---	0.0132	15		
---	0.0094	12		
---	0.0067	10		
---	0.0048	8		
---	0.0034	6		
---	0.0013	4		

Coefficients

D_{85} = 1.0187 mm	D_{30} = 0.0320 mm
D_{60} = 0.1084 mm	D_{15} = 0.0128 mm
D_{50} = 0.0653 mm	D_{10} = 0.0069 mm
C_u = 15.710	C_c = 1.369

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

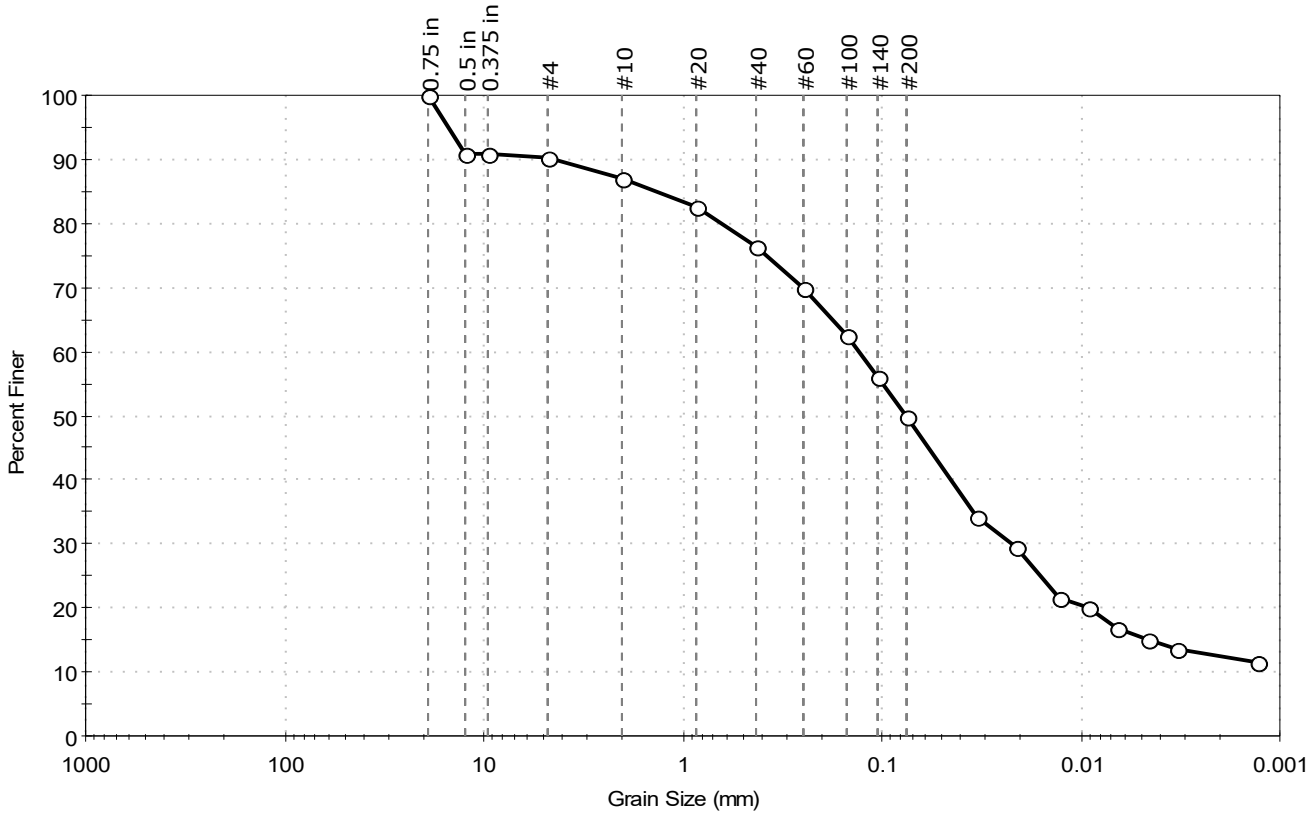
Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-11B	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-1	Test Date:	12/08/22	Checked By:	ank
Depth :	29.0-31.0	Test Id:	696455		
Test Comment:	---				
Visual Description:	Moist, gray silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
–	9.6	40.5	49.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	91		
0.375 in	9.50	91		
#4	4.75	90		
#10	2.00	87		
#20	0.85	83		
#40	0.42	76		
#60	0.25	70		
#100	0.15	63		
#140	0.11	56		
#200	0.075	50		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0332	34		
---	0.0211	30		
---	0.0128	22		
---	0.0091	20		
---	0.0065	17		
---	0.0046	15		
---	0.0033	14		
---	0.0013	11		

Coefficients

D_{85} = 1.3425 mm	D_{30} = 0.0220 mm
D_{60} = 0.1310 mm	D_{15} = 0.0045 mm
D_{50} = 0.0754 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

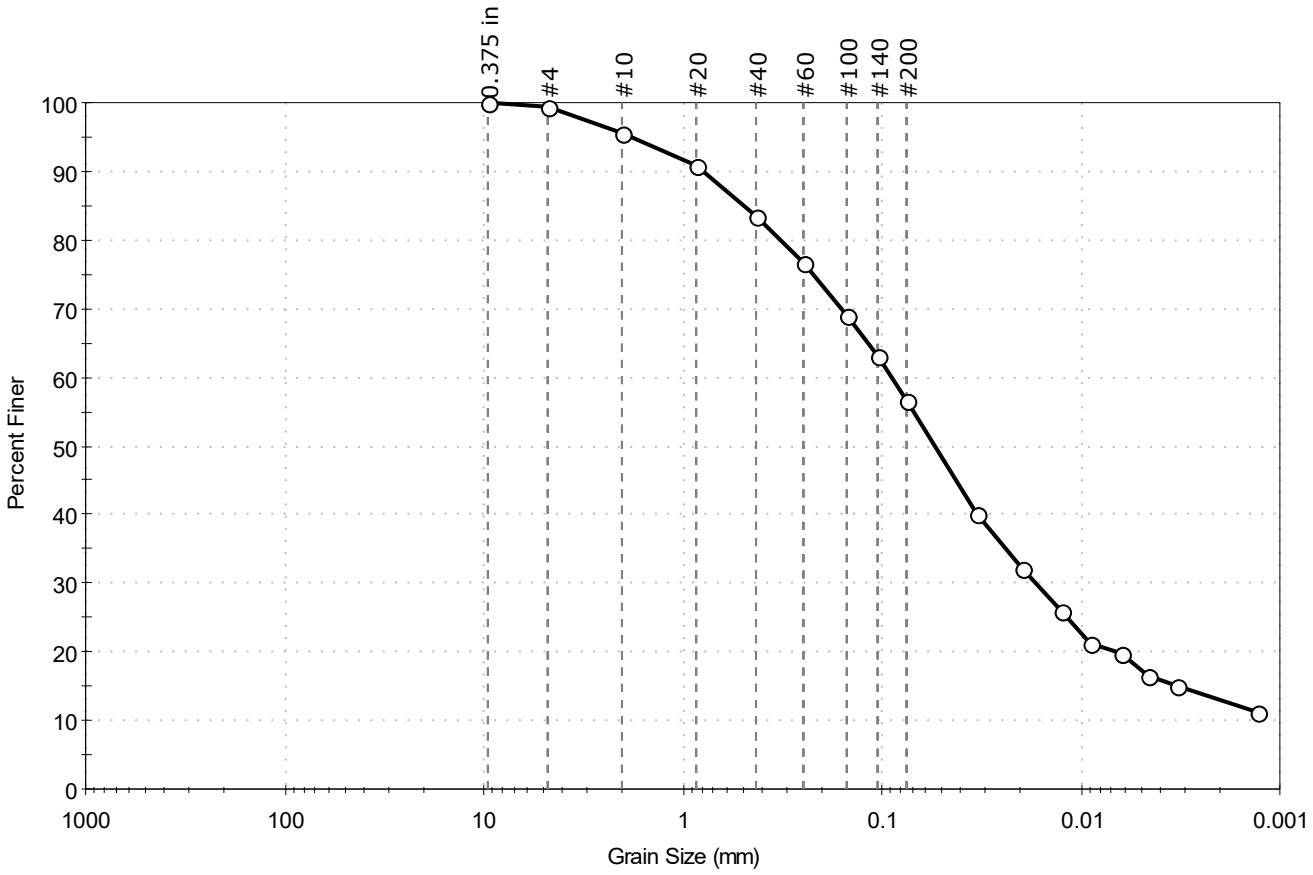
Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-11B	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-10	Test Date:	12/08/22	Checked By:	ank
Depth :	74.0-76.0	Test Id:	696456		
Test Comment:	---				
Visual Description:	Moist, gray sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.6	42.7	56.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	99		
#10	2.00	96		
#20	0.85	91		
#40	0.42	84		
#60	0.25	77		
#100	0.15	69		
#140	0.11	63		
#200	0.075	57		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0330	40		
---	0.0196	32		
---	0.0125	26		
---	0.0090	21		
---	0.0063	20		
---	0.0046	17		
---	0.0033	15		
---	0.0013	11		

Coefficients

D_{85} =0.4860 mm	D_{30} =0.0167 mm
D_{60} =0.0900 mm	D_{15} =0.0033 mm
D_{50} =0.0539 mm	D_{10} =N/A
C_u =N/A	C_c =N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

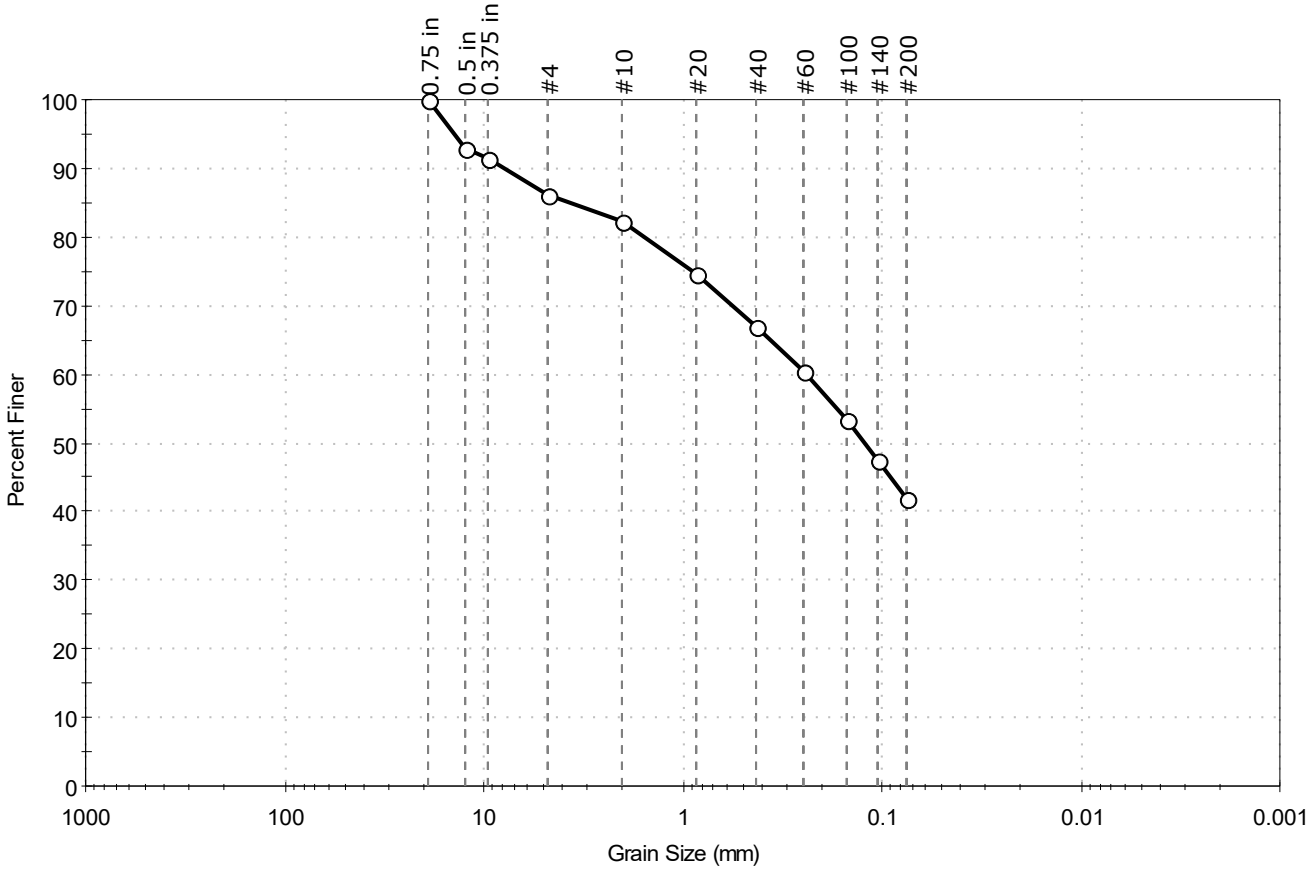
Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-11B	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-5	Test Date:	12/13/22	Checked By:	ank
Depth :	49.0-51.0	Test Id:	697727		
Test Comment:	---				
Visual Description:	Moist, gray silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	13.8	44.3	41.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	93		
0.375 in	9.50	92		
#4	4.75	86		
#10	2.00	82		
#20	0.85	75		
#40	0.42	67		
#60	0.25	61		
#100	0.15	53		
#140	0.11	47		
#200	0.075	42		

Coefficients

D_{85} = 3.6011 mm D_{30} = N/A

D_{60} = 0.2394 mm D_{15} = N/A

D_{50} = 0.1233 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

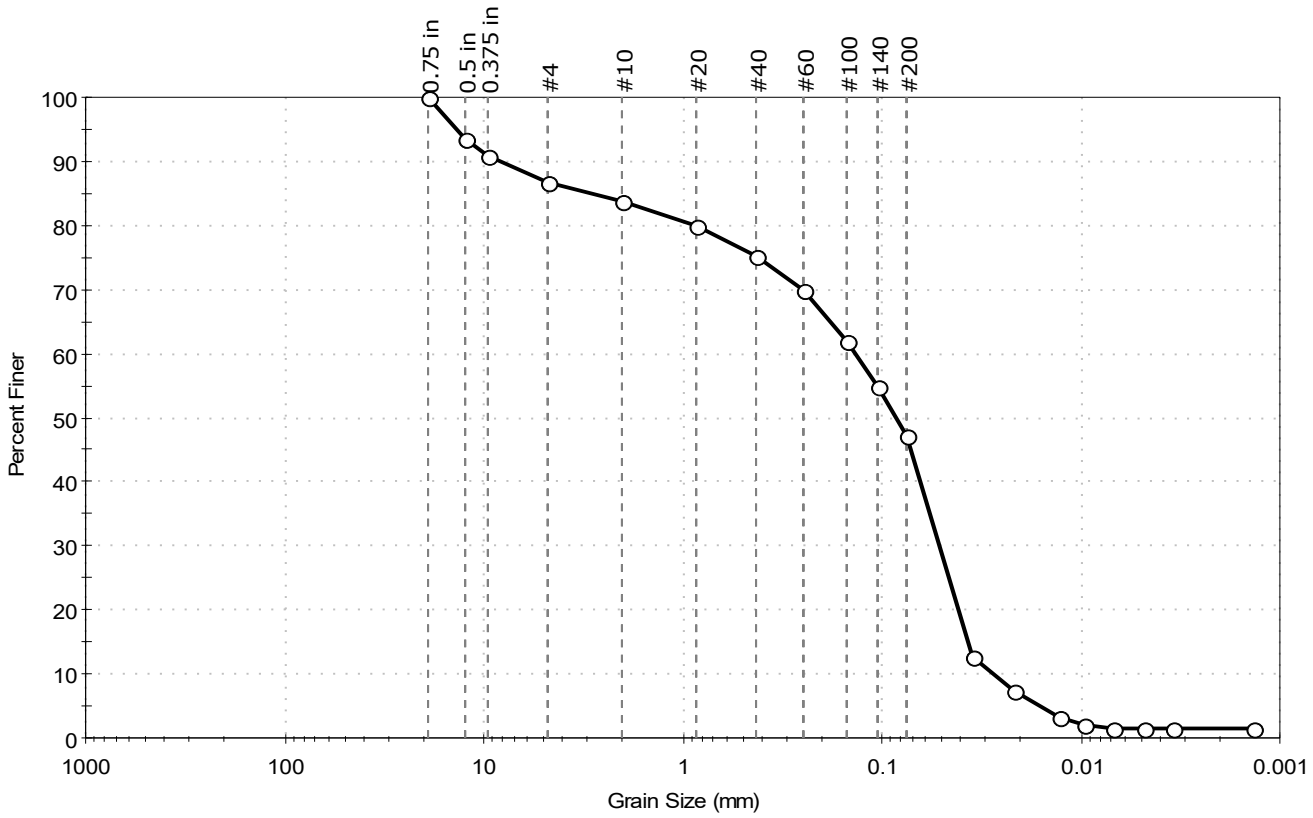
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-05B	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-5	Test Date:	12/08/22	Checked By:	ank
Depth :	54.0-56.0	Test Id:	696453		
Test Comment:	---				
Visual Description:	Moist, dark olive gray silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
–	13.1	39.6	47.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	94		
0.375 in	9.50	91		
#4	4.75	87		
#10	2.00	84		
#20	0.85	80		
#40	0.42	75		
#60	0.25	70		
#100	0.15	62		
#140	0.11	55		
#200	0.075	47		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0353	13		
---	0.0218	7		
---	0.0130	3		
---	0.0096	2		
---	0.0068	1		
---	0.0049	1		
---	0.0034	1		
---	0.0014	1		

Coefficients

D_{85} = 2.8436 mm	D_{30} = 0.0514 mm
D_{60} = 0.1359 mm	D_{15} = 0.0370 mm
D_{50} = 0.0848 mm	D_{10} = 0.0275 mm
C_u = 4.942	C_c = 0.707

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

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GEOTESTING EPXRESS INCORPORATED
125 NAGOG PARK
ACTON MA 01720-3451
USA

Analysis No.	TS-A2210775
Report Date	16 December 2022
Date Sampled	08 December 2022
Date Received	14 December 2022
Where Sampled	Acton, MA USA
Sampled By	Client

This is to attest that we have examined: Soil: Project: VTrans Lyndon; Site Location: Lyndon, VT; Job Number: GTX-316415

When examined to the applicable requirements of:

AASHTO T-291-18	"Standard Method of Test for Determining Water-Soluble Chloride Ion Content in Soil" Method B
AASHTO T 290-20	"Standard Method of Test for Determining Water-Soluble Sulfate Ion Content in Soil"

Results:

AASHTO T 291 - Chloride Method B

Sample		Results		Detection Limit
		ppm (mg/kg)	%[1]	
B-06		35.	0.0035	10.
S-5 to S-6	8 – 12'			
B-11B		65.	0.0065	
S-5	49 – 51'			

NOTE: [1]Percent by weight after drying and prepared as per the Standard.

AASHTO T 290 – Sulfates (Soluble)

Sample		Results		Detection Limit
		ppm (mg/kg)	%[1]	
B-06		22.	0.0022	10.
S-5 to S-6	8 – 12'			
B-11B		16.	0.0016	
S-5	49 – 51'			

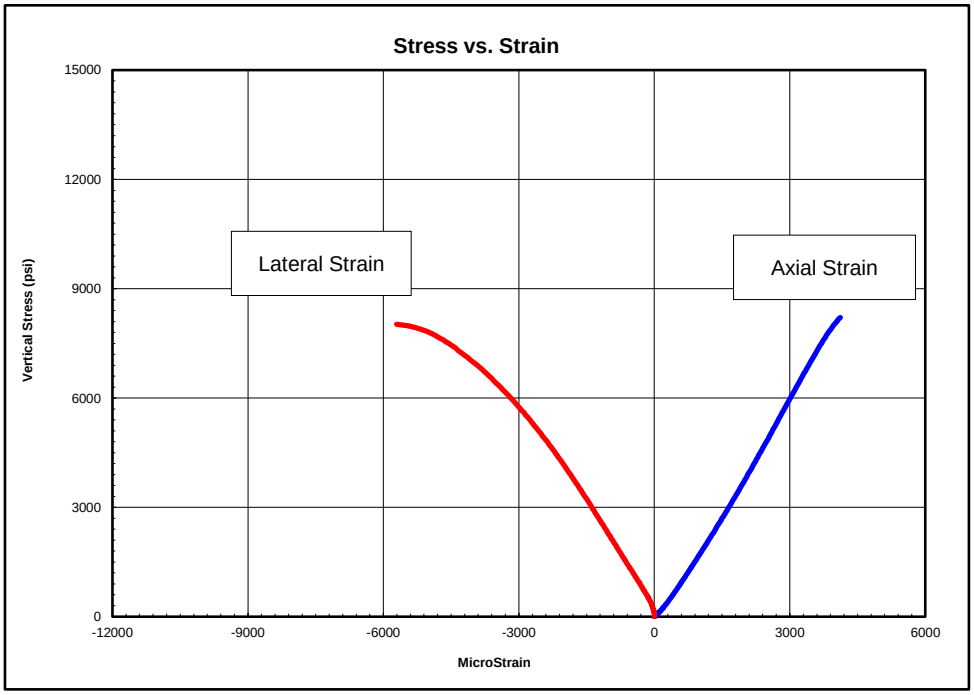
NOTE: [1]Percent by weight after drying and prepared as per the Standard.

END OF ANALYSIS

Merrill Gee P.E. – Engineer in Charge

Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	12/15/2022
Tested By:	bp
Checked By:	jsc
Boring ID:	B-01
Sample ID:	C-1
Depth, ft:	39-44
Sample Type:	rock core
Sample Description:	See photographs Intact material failure

Compressive Strength and Elastic Moduli of Rock by ASTM D7012 - Method D



Peak Compressive Stress: 8,209 psi

The strain values recorded for this test produce values of Poisson's Ratio that exceed maximum values found in rocks.

Stress Range, psi	Young's Modulus, psi	Poisson's Ratio
800-3000	1,950,000	---
3000-5200	2,180,000	---
5200-7400	2,220,000	---

Notes:
Test specimen tested at the approximate as-received moisture content and at standard laboratory temperature.
The axial load was applied continuously at a stress rate that produced failure in a test time between 2 and 15 minutes.
Young's Modulus and Poisson's Ratio calculated using the tangent to the line in the stress range listed.
Calculations assume samples are isotropic, which is not necessarily the case.

Client:	HNTB Corporation	Test Date:	12/14/2022
Project Name:	Vtrans Lyndon	Tested By:	jab
Project Location:	Lyndon, VT	Checked By:	smd
GTX #:	316415		
Boring ID:	B-01		
Sample ID:	C-1		
Depth:	39-44 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.10	4.10	4.10
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	561.69		
Bulk Density, lb/ft^3	167	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.1	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? YES

END FLATNESS AND PARALLELISM (Procedure FP1)

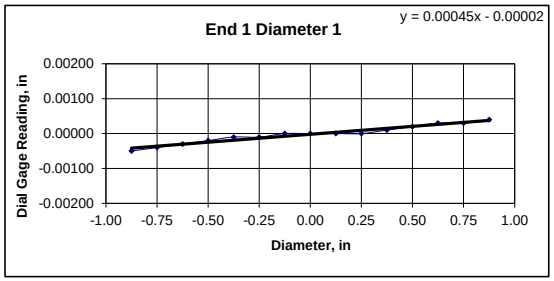
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00050	-0.00040	-0.00030	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00010	0.00020	0.00030	0.00030	0.00040
Diameter 2, in (rotated 90°)	0.00030	0.00020	0.00020	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00020	-0.00030	-0.00030	-0.00030

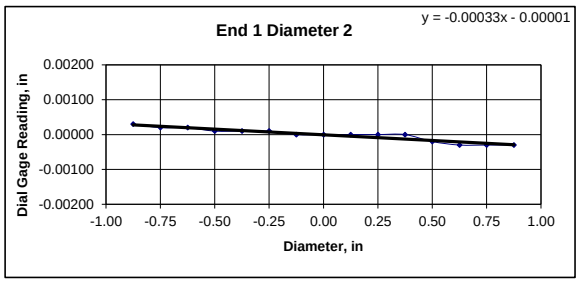
Difference between max and min readings, in:
0° = 0.00090 90° = 0.00060

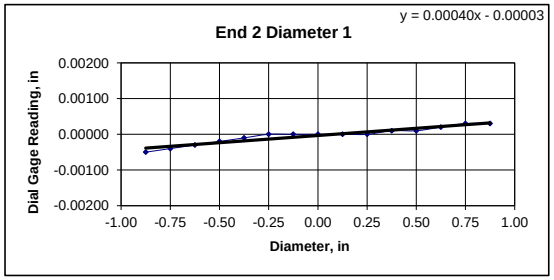
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00050	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00020	0.00030	0.00030
Diameter 2, in (rotated 90°)	-0.00050	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00020	0.00030	0.00030

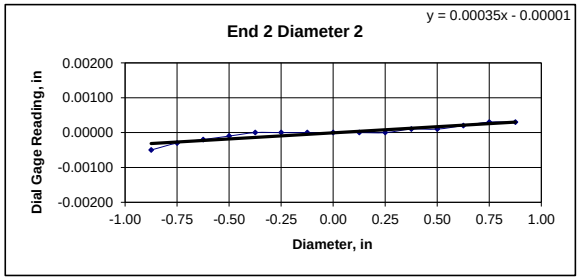
Difference between max and min readings, in:
0° = 0.0008 90° = 0.0008

Maximum difference must be < 0.0020 in. Difference = ± 0.00045
Flatness Tolerance Met? YES









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00045
Angle of Best Fit Line: 0.02603

End 2:
Slope of Best Fit Line 0.00040
Angle of Best Fit Line: 0.02308

Maximum Angular Difference: 0.00295

Parallelism Tolerance Met? YES
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00033
Angle of Best Fit Line: 0.01866

End 2:
Slope of Best Fit Line 0.00035
Angle of Best Fit Line: 0.02014

Maximum Angular Difference: 0.00147

Parallelism Tolerance Met? YES
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00090	1.990	0.00045	0.026	YES
Diameter 2, in (rotated 90°)	0.00060	1.990	0.00030	0.017	YES
END 2					
Diameter 1, in	0.00080	1.990	0.00040	0.023	YES
Diameter 2, in (rotated 90°)	0.00080	1.990	0.00040	0.023	YES

Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? YES

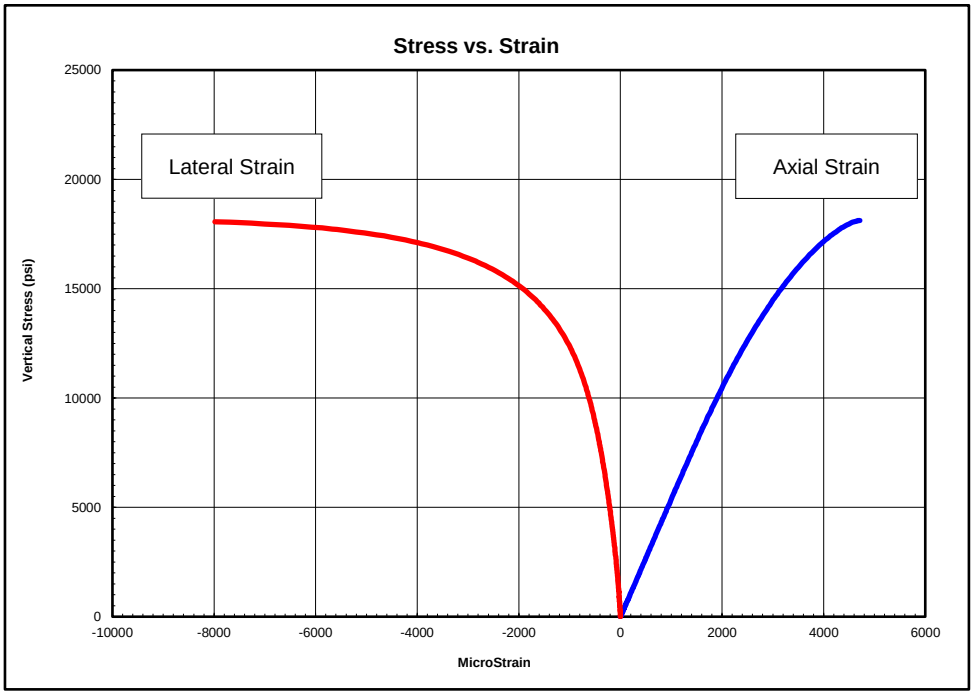
Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	12/15/2022
Tested By:	bp
Checked By:	smd
Boring ID:	B-01
Sample ID:	C-1
Depth, ft:	39-44

After cutting and grinding

After break

Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	12/15/2022
Tested By:	bp
Checked By:	jsc
Boring ID:	B-01
Sample ID:	C-2
Depth, ft:	44-49
Sample Type:	rock core
Sample Description:	See photographs Intact material failure

Compressive Strength and Elastic Moduli of Rock by ASTM D7012 - Method D



Peak Compressive Stress: 18,120 psi

The strain values recorded for this test produce values of Poisson's Ratio that exceed maximum values found in rocks.

Stress Range, psi	Young's Modulus, psi	Poisson's Ratio
1800-6600	5,390,000	0.29
6600-11500	4,940,000	---
11500-16300	3,460,000	---

Notes:
Test specimen tested at the approximate as-received moisture content and at standard laboratory temperature.
The axial load was applied continuously at a stress rate that produced failure in a test time between 2 and 15 minutes.
Young's Modulus and Poisson's Ratio calculated using the tangent to the line in the stress range listed.
Calculations assume samples are isotropic, which is not necessarily the case.

Client:	HNTB Corporation	Test Date:	12/14/2022
Project Name:	Vtrans Lyndon	Tested By:	jab
Project Location:	Lyndon, VT	Checked By:	smd
GTX #:	316415		
Boring ID:	B-01		
Sample ID:	C-2		
Depth:	44-49 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.42	4.43	4.43
Specimen Diameter, in:	1.98	1.99	1.99
Specimen Mass, g:	604.83		
Bulk Density, lb/ft^3	168	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:

Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.

Straightness Tolerance Met? NO

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Difference between max and min readings, in:

0° = 0.00010 90° = 0.00000

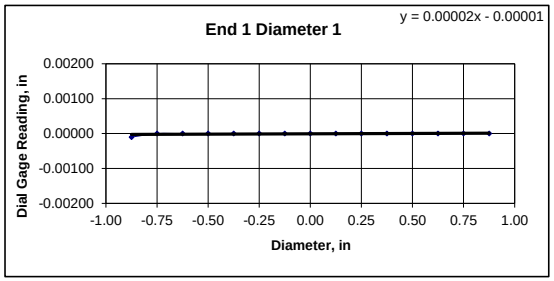
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010

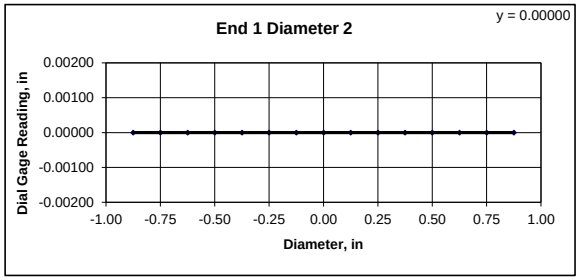
Difference between max and min readings, in:

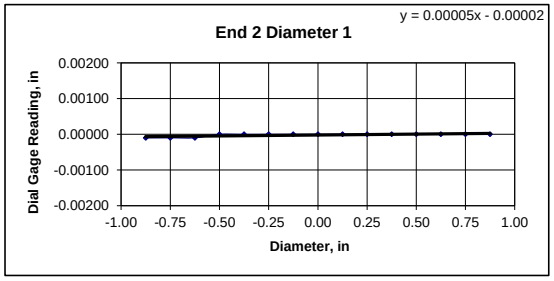
0° = 0.0001 90° = 0.0001

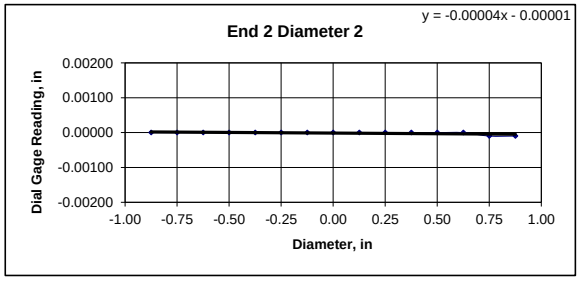
Maximum difference must be < 0.0020 in. Difference = ± 0.00005

Flatness Tolerance Met? YES









DIAMETER 1

End 1:
- Slope of Best Fit Line: 0.00002
- Angle of Best Fit Line: 0.00115

End 2:
- Slope of Best Fit Line: 0.00005
- Angle of Best Fit Line: 0.00295

Maximum Angular Difference: 0.00180

Parallelism Tolerance Met? YES

Spherically Seated

DIAMETER 2

End 1:
- Slope of Best Fit Line: 0.00000
- Angle of Best Fit Line: 0.00000

End 2:
- Slope of Best Fit Line: 0.00004
- Angle of Best Fit Line: 0.00213

Maximum Angular Difference: 0.00213

Parallelism Tolerance Met? YES

Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00010	1.985	0.00005	0.003	YES
Diameter 2, in (rotated 90°)	0.00000	1.985	0.00000	0.000	YES
END 2					
Diameter 1, in	0.00010	1.985	0.00005	0.003	YES
Diameter 2, in (rotated 90°)	0.00010	1.985	0.00005	0.003	YES

Maximum angle of departure must be ≤ 0.25°

Perpendicularity Tolerance Met? YES

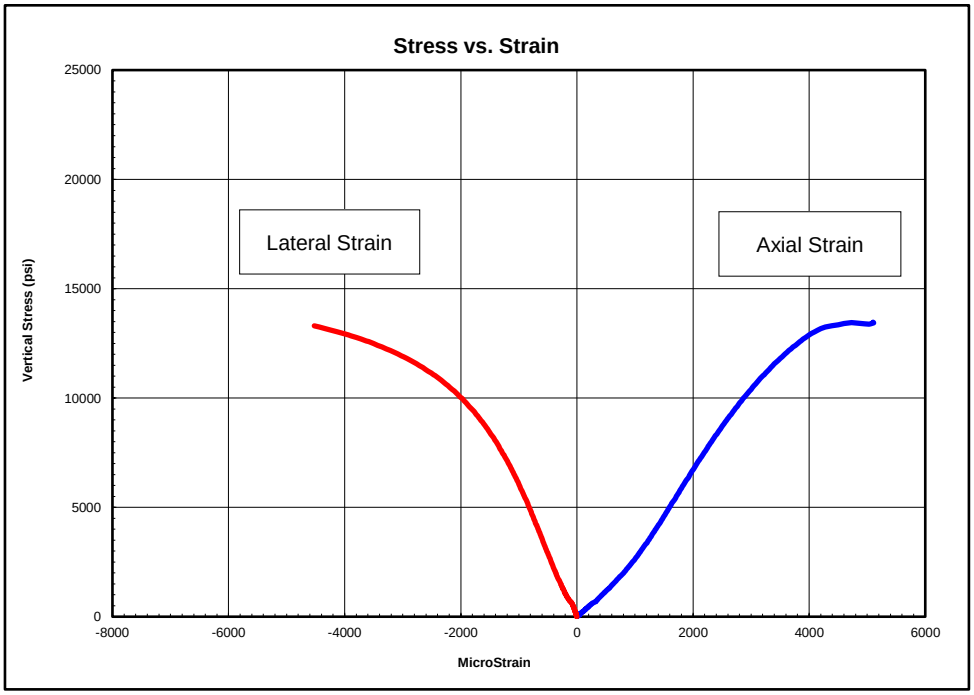
Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	12/15/2022
Tested By:	bp
Checked By:	smd
Boring ID:	B-01
Sample ID:	C-2
Depth, ft:	44-49

After cutting and grinding

After break

Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	12/15/2022
Tested By:	bp
Checked By:	jsc
Boring ID:	B-4A
Sample ID:	C-2
Depth, ft:	89-94
Sample Type:	rock core
Sample Description:	See photographs Intact material failure

Compressive Strength and Elastic Moduli of Rock by ASTM D7012 - Method D



Peak Compressive Stress: 13,469 psi

The strain values recorded for this test produce values of Poisson's Ratio that exceed maximum values found in rocks.

Stress Range, psi	Young's Modulus, psi	Poisson's Ratio
1300-4900	3,490,000	---
4900-8500	4,140,000	---
8500-12100	3,110,000	---

Notes:
Test specimen tested at the approximate as-received moisture content and at standard laboratory temperature.
The axial load was applied continuously at a stress rate that produced failure in a test time between 2 and 15 minutes.
Young's Modulus and Poisson's Ratio calculated using the tangent to the line in the stress range listed.
Calculations assume samples are isotropic, which is not necessarily the case.

Client:	HNTB Corporation	Test Date:	12/14/2022
Project Name:	Vtrans Lyndon	Tested By:	jab
Project Location:	Lyndon, VT	Checked By:	smd
GTX #:	316415		
Boring ID:	B-4A		
Sample ID:	C-2		
Depth:	89-94 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.47	4.47	4.47
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	622.15		
Bulk Density, lb/ft^3	170	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? YES

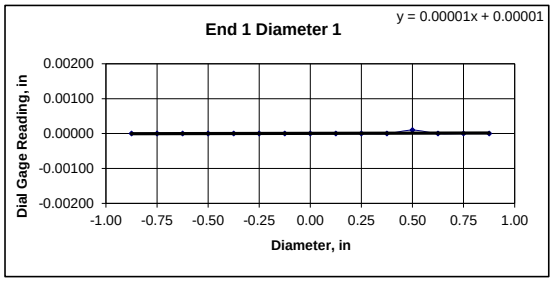
END FLATNESS AND PARALLELISM (Procedure FP1)

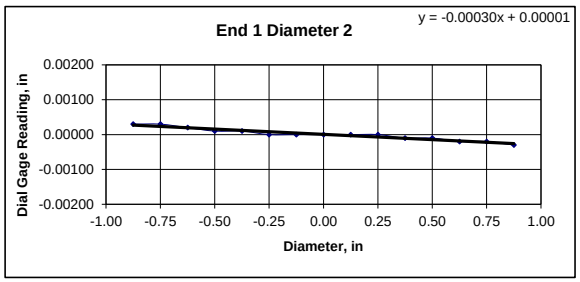
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00000	0.00000	0.00000
Diameter 2, in (rotated 90°)	0.00030	0.00030	0.00020	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00020	-0.00020	-0.00030

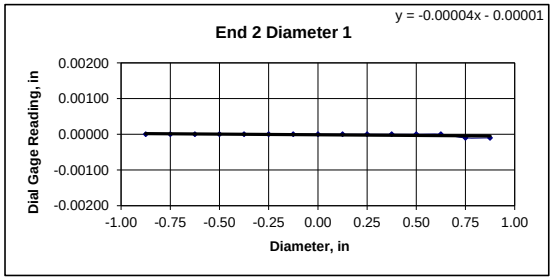
Difference between max and min readings, in:
0° = 0.00010 90° = 0.00060

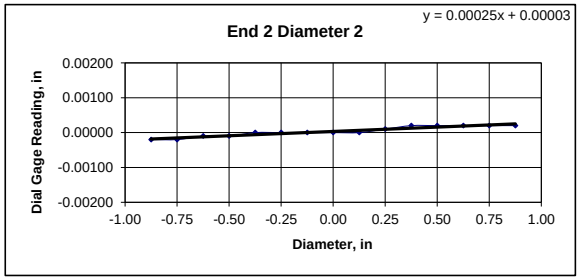
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010
Diameter 2, in (rotated 90°)	-0.00020	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00020	0.00020	0.00020	0.00020	0.00020

Difference between max and min readings, in:
0° = 0.0001 90° = 0.0004
Maximum difference must be < 0.0020 in. Difference = ± 0.00030
Flatness Tolerance Met? YES









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00001
Angle of Best Fit Line: 0.00065

End 2:
Slope of Best Fit Line 0.00004
Angle of Best Fit Line: 0.00213

Maximum Angular Difference: 0.00147

Parallelism Tolerance Met? YES
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00030
Angle of Best Fit Line: 0.01735

End 2:
Slope of Best Fit Line 0.00025
Angle of Best Fit Line: 0.01424

Maximum Angular Difference: 0.00311

Parallelism Tolerance Met? YES
Spherically Seated

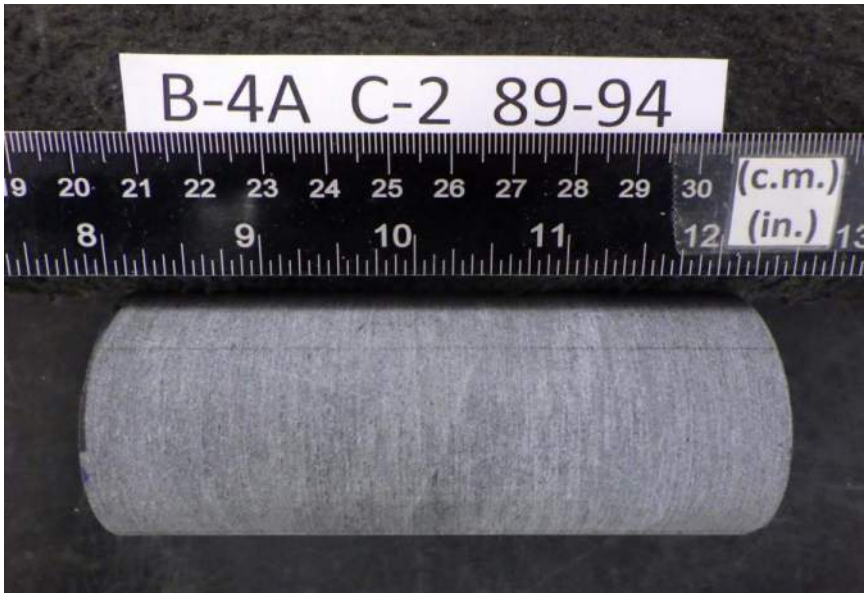
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00010	1.990	0.00005	0.003	YES
Diameter 2, in (rotated 90°)	0.00060	1.990	0.00030	0.017	YES

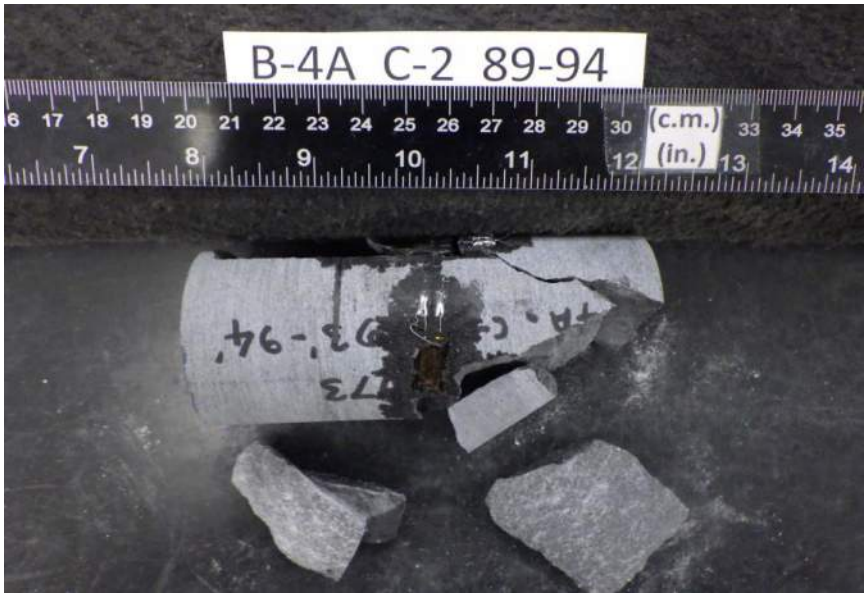
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? YES

END 2					
Diameter 1, in	0.00010	1.990	0.00005	0.003	YES
Diameter 2, in (rotated 90°)	0.00040	1.990	0.00020	0.012	YES

Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	12/15/2022
Tested By:	bp-jab
Checked By:	smd
Boring ID:	B-4A
Sample ID:	C-2
Depth, ft:	89-94



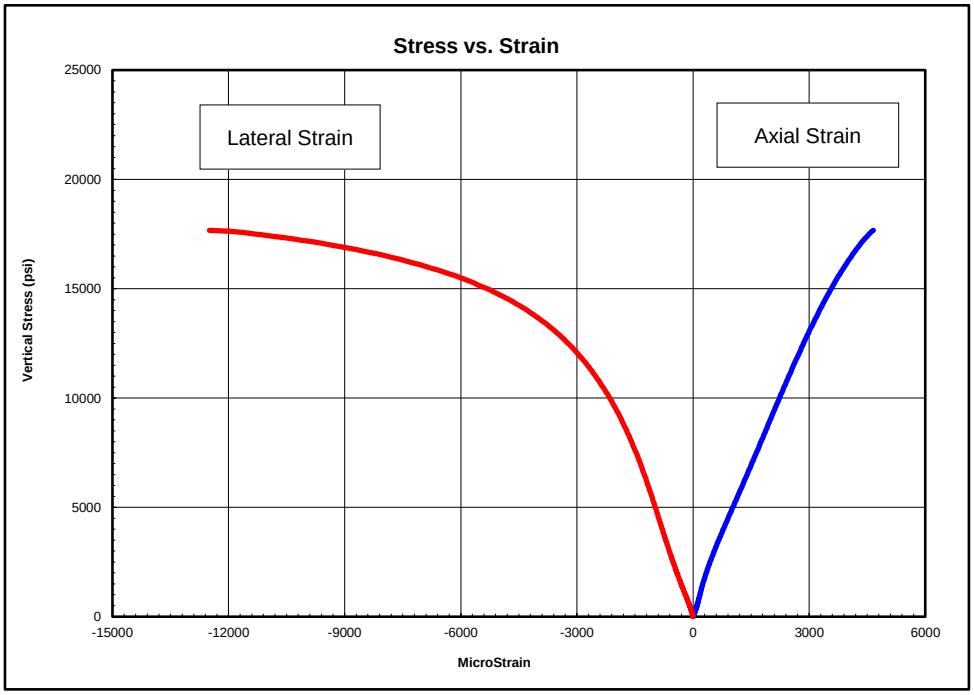
After cutting and grinding



After break

Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	12/15/2022
Tested By:	bp
Checked By:	jsc
Boring ID:	B-06
Sample ID:	C-1
Depth, ft:	20-25
Sample Type:	rock core
Sample Description:	See photographs Intact material failure

Compressive Strength and Elastic Moduli of Rock by ASTM D7012 - Method D



Peak Compressive Stress: 17,670 psi

The strain values recorded for this test produce values of Poisson's Ratio that exceed maximum values found in rocks.

Stress Range, psi	Young's Modulus, psi	Poisson's Ratio
1800-6500	4,250,000	---
6500-11200	4,180,000	---
11200-15900	3,510,000	---

Notes:
Test specimen tested at the approximate as-received moisture content and at standard laboratory temperature.
The axial load was applied continuously at a stress rate that produced failure in a test time between 2 and 15 minutes.
Young's Modulus and Poisson's Ratio calculated using the tangent to the line in the stress range listed.
Calculations assume samples are isotropic, which is not necessarily the case.

Client:	HNTB Corporation	Test Date:	12/14/2022
Project Name:	Vtrans Lyndon	Tested By:	jab
Project Location:	Lyndon, VT	Checked By:	smd
GTX #:	316415		
Boring ID:	B-06		
Sample ID:	C-1		
Depth:	20-25 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.45	4.44	4.45
Specimen Diameter, in:	1.98	1.98	1.98
Specimen Mass, g:	612.26		
Bulk Density, lb/ft^3	170	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:

Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.

Straightness Tolerance Met? NO

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00020	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010

Difference between max and min readings, in:

0° = 0.00040 90° = 0.00010

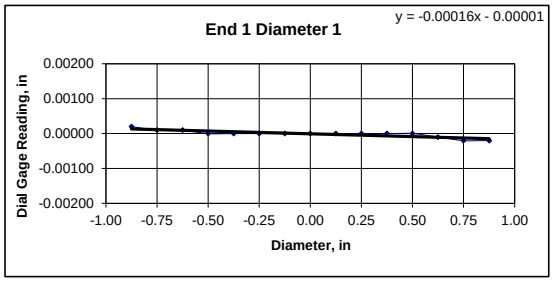
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020
Diameter 2, in (rotated 90°)	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

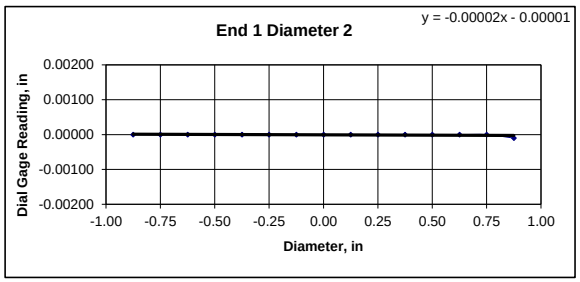
Difference between max and min readings, in:

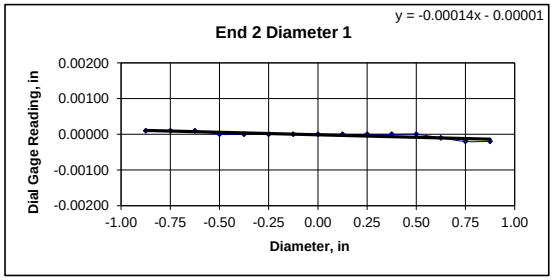
0° = 0.0003 90° = 0.0002

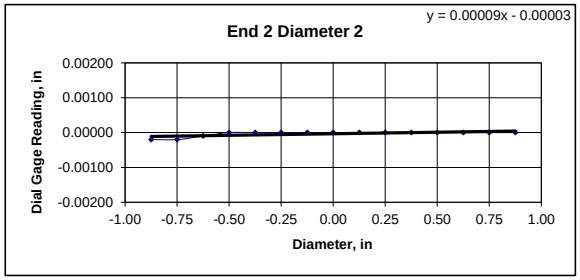
Maximum difference must be < 0.0020 in. Difference = ± 0.00020

Flatness Tolerance Met? YES









DIAMETER 1

End 1:
- Slope of Best Fit Line: 0.00016
- Angle of Best Fit Line: 0.00917

End 2:
- Slope of Best Fit Line: 0.00014
- Angle of Best Fit Line: 0.00802

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? YES

Spherically Seated

DIAMETER 2

End 1:
- Slope of Best Fit Line: 0.00002
- Angle of Best Fit Line: 0.00115

End 2:
- Slope of Best Fit Line: 0.00009
- Angle of Best Fit Line: 0.00507

Maximum Angular Difference: 0.00393

Parallelism Tolerance Met? YES

Spherically Seated

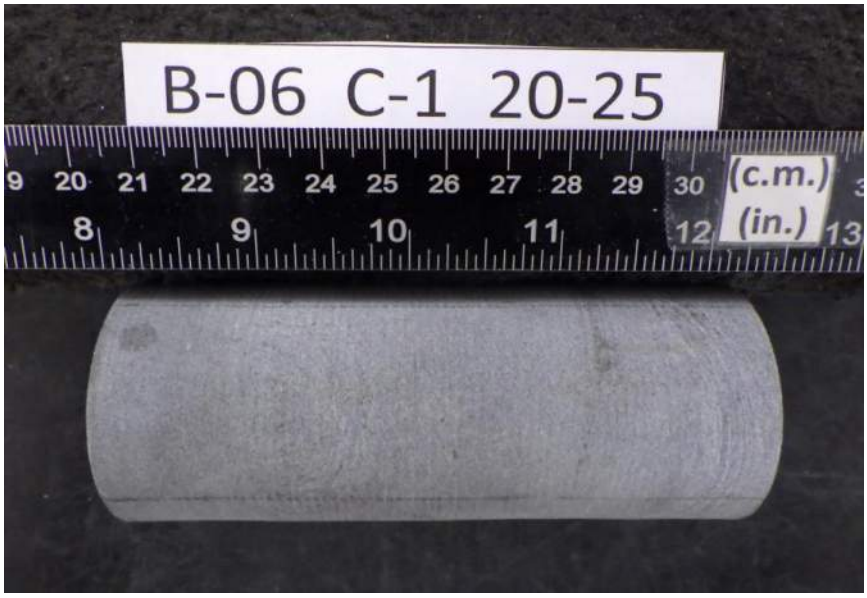
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00040	1.980	0.00020	0.012	YES
Diameter 2, in (rotated 90°)	0.00010	1.980	0.00005	0.003	YES
END 2					
Diameter 1, in	0.00030	1.980	0.00015	0.009	YES
Diameter 2, in (rotated 90°)	0.00020	1.980	0.00010	0.006	YES

Maximum angle of departure must be ≤ 0.25°

Perpendicularity Tolerance Met? YES

Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	12/15/2022
Tested By:	bp/jab
Checked By:	smd
Boring ID:	B-06
Sample ID:	C-1
Depth, ft:	20-25



After cutting and grinding

After break

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	---	Sample Type:	---	Tested By:	ckg
Sample ID:	---	Test Date:	01/20/23	Checked By:	ank
Depth :	---	Test Id:	702159		

Moisture Content of Soil and Rock - ASTM D2216

Boring ID	Sample ID	Depth	Description	Moisture Content,%
B-08	S- 8	24.0-26.0'	Moist, brown sandy silt	13.1
B-8C	S- 3	59.0-61.0'	Moist, dark brown silty sand with gravel	13.4
B-9A	S- 7	43.0-45.0'	Moist, dark yellowish brown silty clayey sand	22.2
B-9A	S- 9, S-10	47.0-51.0'	Moist, brown sandy silt	13.8
B-9A	S- 13	55.0-57.0'	Moist, dark olive brown silty sand	12.1
B-9A	S- 20	74.0-76.0'	Moist, gray clay with sand	15.0
B-12A	S- 1, S-2	9.0-11.0', 14'-16'	Moist, brownish gray silty sand	9.9
B-12A	S- 3	19.0-21.0'	Moist, grayish brown silty sand	9.3
B-12A	S- 15	79.0-81.0	Moist, dark gray sandy silt	8.5
B-12A	S- 16	84.0-86.0'	Moist, gray silt with sand	9.2

Notes: Temperature of Drying : 110º Celsius

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	---	Sample Type:	---	Tested By:	ckg
Sample ID:	---	Test Date:	01/20/23	Checked By:	ank
Depth :	---	Test Id:	702161		

Moisture Content of Soil and Rock - ASTM D2216

Boring ID	Sample ID	Depth	Description	Moisture Content,%
B-9	S- 2	2.0-4.0'	Moist, dark brown silty gravel with sand	7.9
B-12A	S- 9A	49.0-51.0'	Moist, brown silt	23.6

Notes: Temperature of Drying : 110º Celsius

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	---	Sample Type:	---	Tested By:	ckg
Sample ID:	---	Test Date:	01/18/23	Checked By:	ank
Depth :	---	Test Id:	702223		

Amount of Material Passing #200 Sieve - ASTM D1140

Boring ID	Sample ID	Depth	Visual Description	Fines, %
B-12A	S-9A	49.0-51.0'	Moist, brown silt	97.0
B-9A	S-7	43.0-45.0'	Moist, dark yellowish brown silty clayey sand	48.0
B-9A	S-20	74.0-76.0'	Moist, gray clay with sand	81.0

Notes: Tests performed using Method B - washing using a wetting agent

Dry mass of test specimen was determined directly

Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	01/17/23
Tested By:	nlb
Checked By:	ank

pH by AASHTO T 289

Boring ID	Sample ID	Depth, ft	Description	pH
B-12	S-10, S-11	54.0-56', 59.0-61.0'	Moist, grayish brown silt	8.24
B-8C	S-1, S-2	52.0-56.0'	Moist, dark olive gray silty gravel	7.80

Client:	HNTB Corporation
Project:	VTrans Lyndon
Location:	Lyndon, VT
GTX#:	316415
Test Date:	01/17/23
Tested By:	nlb
Checked By:	ank

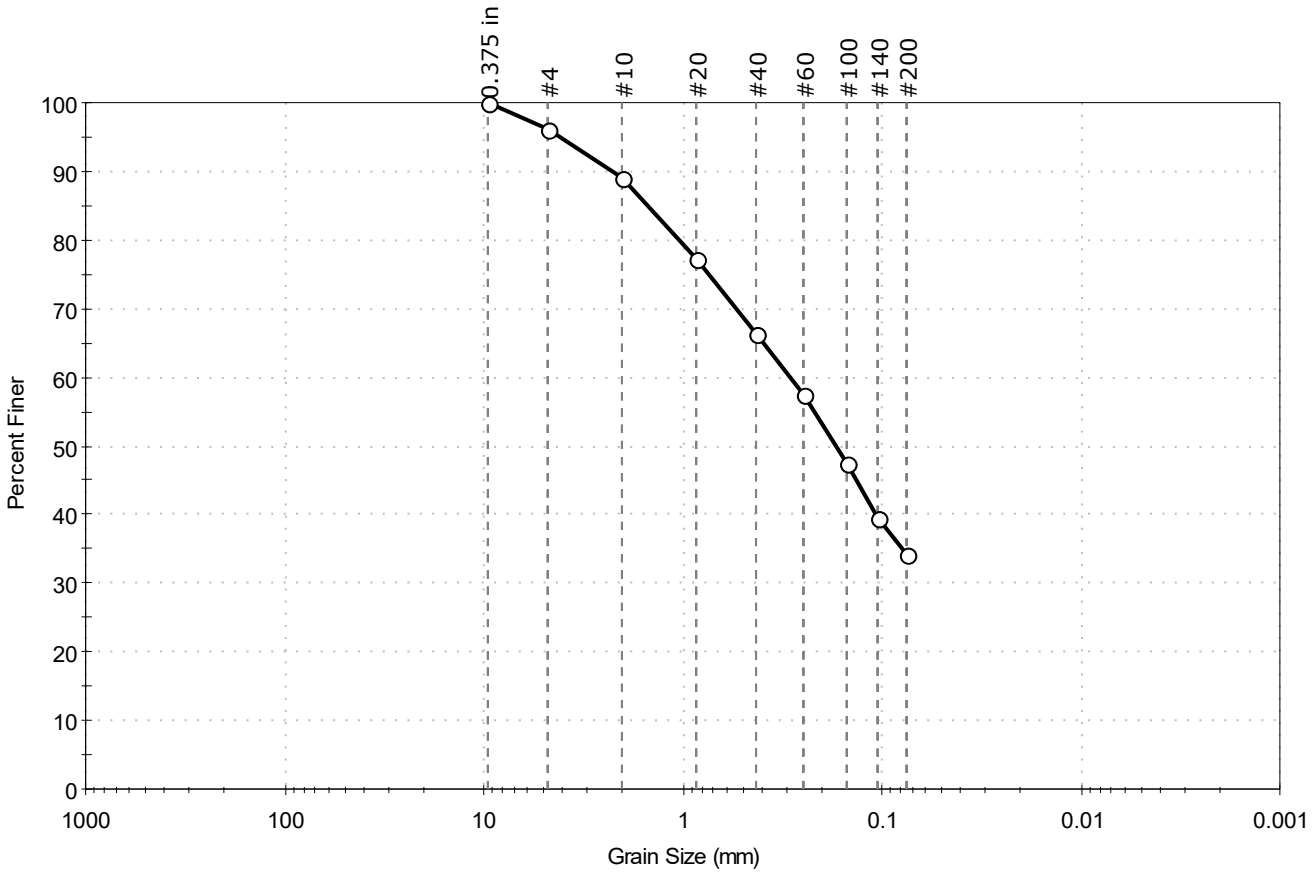
Laboratory Measurement of Soil Resistivity Using the Wenner Four-Electrode Method by ASTM G57 (Laboratory Measurement)

Boring ID	Sample ID	Depth, ft.	Sample Description	Electrical Resistivity, ohm-cm	Electrical Conductivity, $(ohm\text{-}cm)^{-1}$
B-12A	S-10, S-11	54.0-56', 59.0-61.0'	Moist, grayish brown silt	4,752	2.10E-04
B-8C	S-1, S-2	52.0-56.0'	Moist, dark olive gray silty gravel	2,066	4.84E-04

Notes: Test Equipment: Nilsson Model 400 Soil Resistance Meter, MC Miller Soil Box
Water added to sample to create a thick slurry prior to testing (saturated condition).
Electrical Conductivity is calculated as inverse of Electrical Resistivity (per ASTM G57)
Test conducted in standard laboratory atmosphere: 68-73 F

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-08	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-10	Test Date:	01/20/23	Checked By:	ank
Depth :	34.0-36.0'	Test Id:	702187		
Test Comment:	---				
Visual Description:	Moist, olive brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	3.7	62.0	34.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	96		
#10	2.00	89		
#20	0.85	77		
#40	0.42	66		
#60	0.25	58		
#100	0.15	47		
#140	0.11	39		
#200	0.075	34		

Coefficients

D_{85} = 1.4855 mm D_{30} = N/A

D_{60} = 0.2878 mm D_{15} = N/A

D_{50} = 0.1701 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

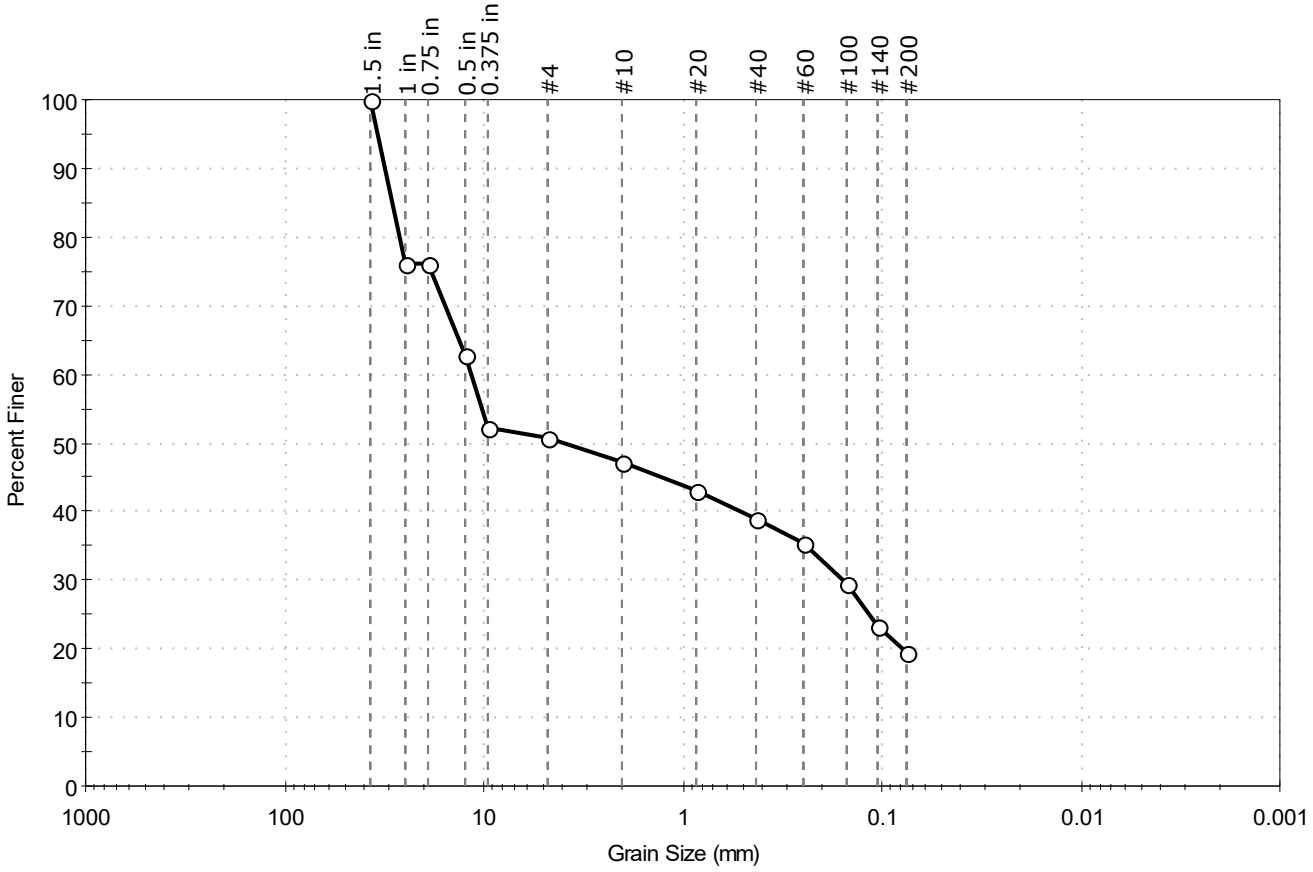
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-8C	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-1, S-2	Test Date:	01/20/23	Checked By:	ank
Depth :	52.0-56.0'	Test Id:	702188		

Test Comment: ---
Visual Description: Moist, dark olive gray silty gravel with sand
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	49.4	31.3	19.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	76		
0.75 in	19.00	76		
0.5 in	12.50	63		
0.375 in	9.50	52		
#4	4.75	51		
#10	2.00	47		
#20	0.85	43		
#40	0.42	39		
#60	0.25	35		
#100	0.15	29		
#140	0.11	23		
#200	0.075	19		

Coefficients

D_{85} = 29.0858 mm D_{30} = 0.1575 mm
D_{60} = 11.6282 mm D_{15} = N/A
D_{50} = 4.0558 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

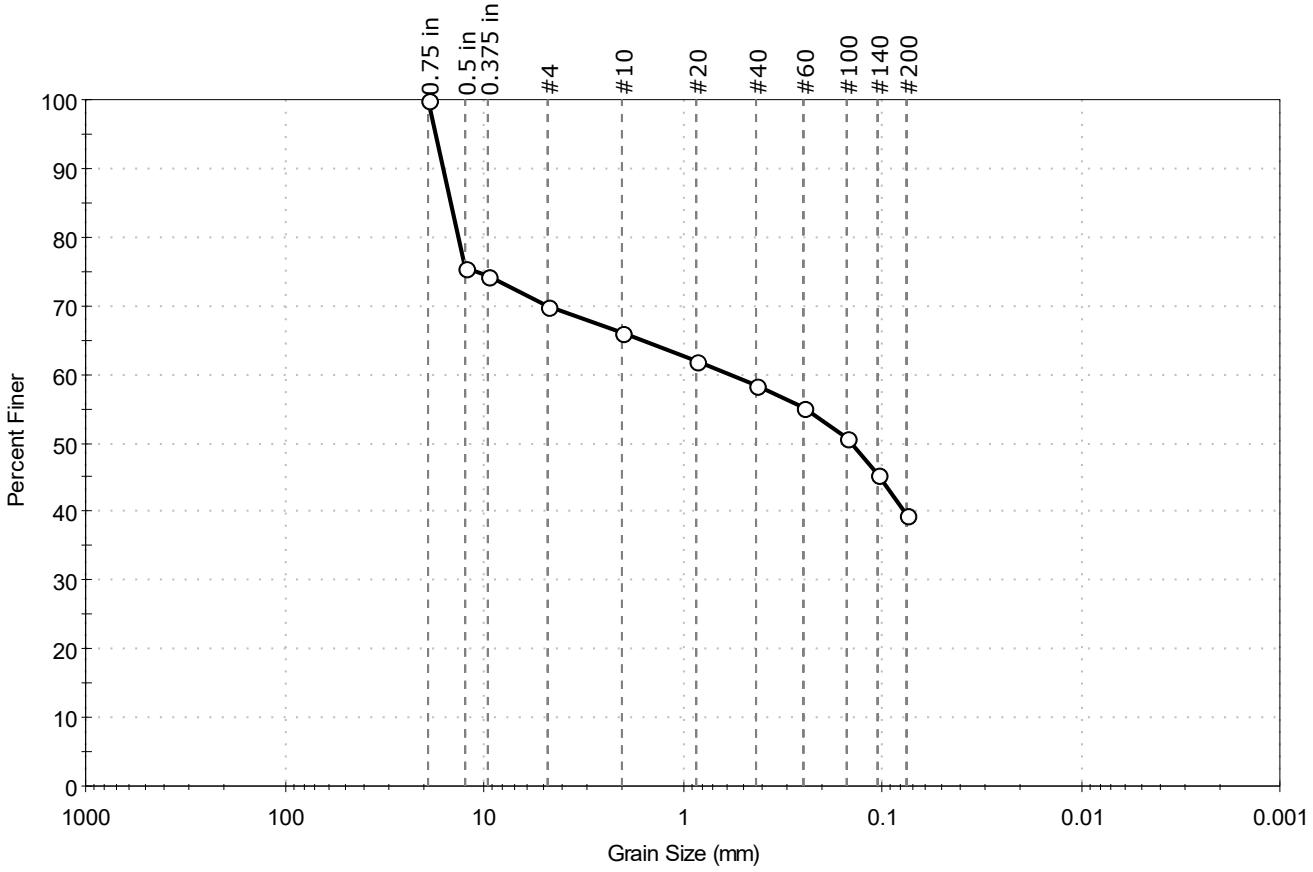
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-09	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-5	Test Date:	01/18/23	Checked By:	ank
Depth :	8.0-10.0'	Test Id:	702190		
Test Comment:	---				
Visual Description:	Moist, brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	30.1	30.2	39.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	75		
0.375 in	9.50	74		
#4	4.75	70		
#10	2.00	66		
#20	0.85	62		
#40	0.42	58		
#60	0.25	55		
#100	0.15	51		
#140	0.11	46		
#200	0.075	40		

Coefficients

D_{85} = 14.7043 mm D_{30} = N/A

D_{60} = 0.5884 mm D_{15} = N/A

D_{50} = 0.1429 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

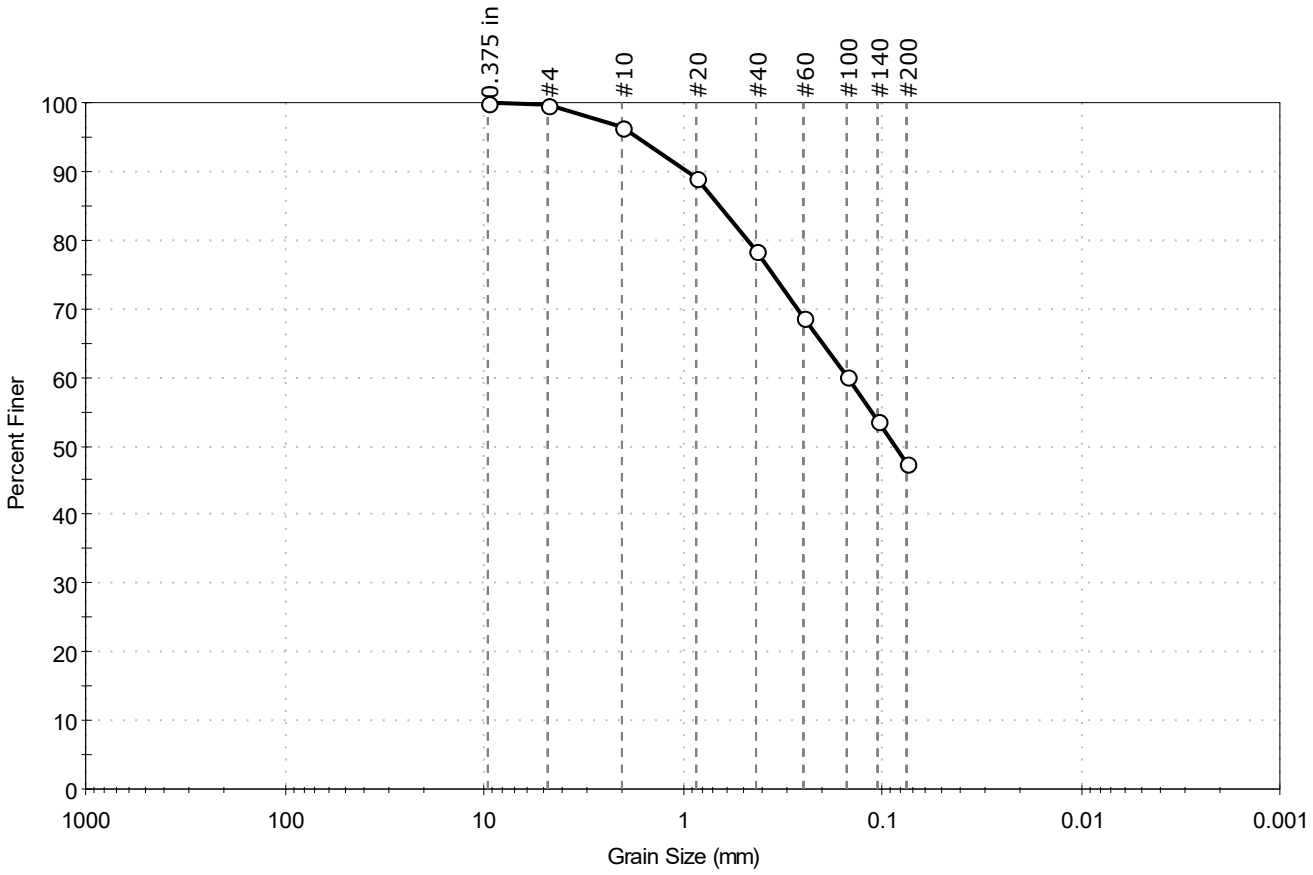
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-9A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-7	Test Date:	01/18/23	Checked By:	ank
Depth :	43.0-45.0'	Test Id:	702191		
Test Comment:	---				
Visual Description:	Moist, dark yellowish brown silty clayey sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.2	52.2	47.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	100		
#10	2.00	96		
#20	0.85	89		
#40	0.42	79		
#60	0.25	69		
#100	0.15	60		
#140	0.11	54		
#200	0.075	48		

Coefficients

D_{85} = 0.6527 mm	D_{30} = N/A
D_{60} = 0.1497 mm	D_{15} = N/A
D_{50} = 0.0861 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM Silty, Clayey SAND (SC-SM)

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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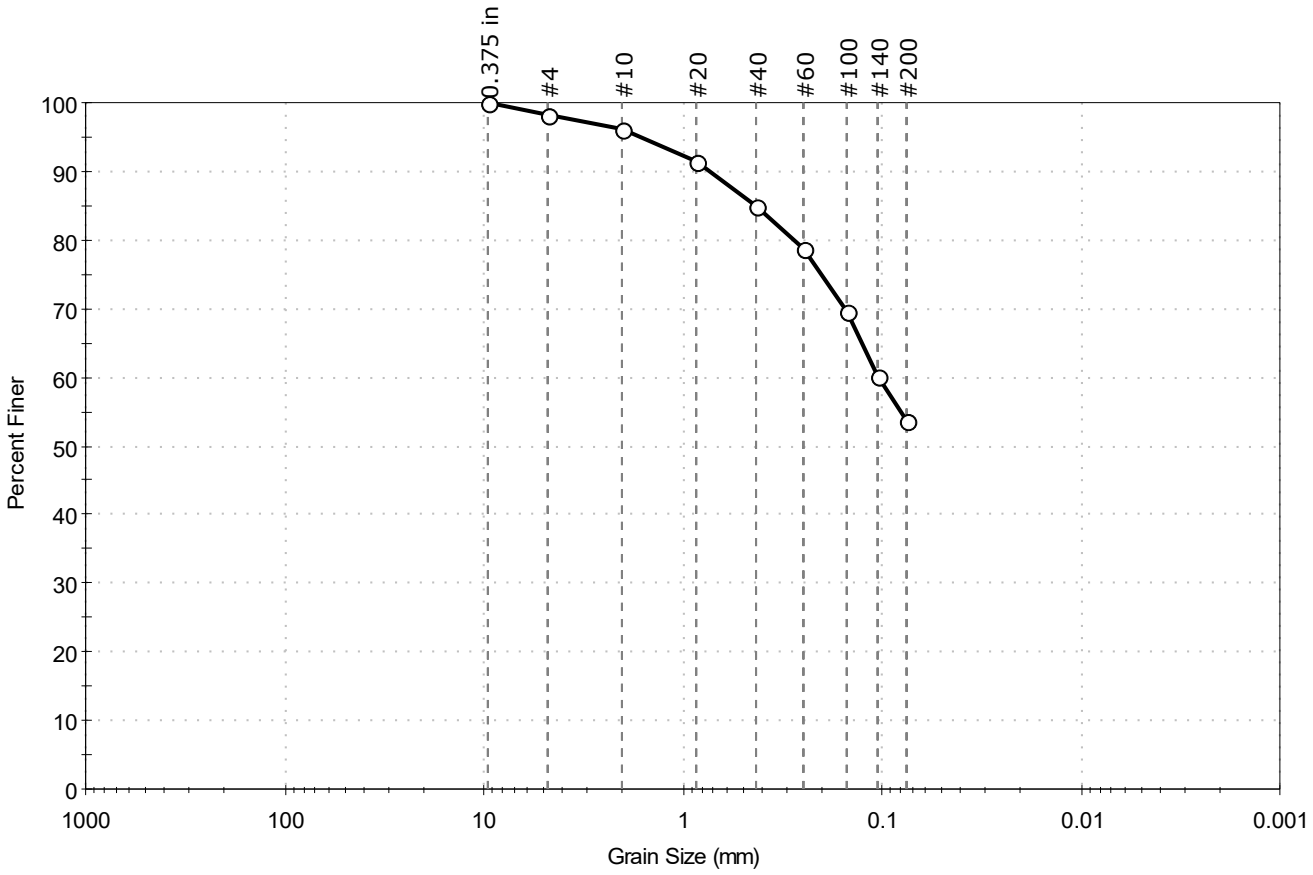
Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-9A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-11	Test Date:	01/18/23	Checked By:	n/a
Depth :	51.0-53.0'	Test Id:	702192		
Test Comment:	---				
Visual Description:	Moist, dark olive brown sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.9	44.5	53.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	98		
#10	2.00	96		
#20	0.85	92		
#40	0.42	85		
#60	0.25	79		
#100	0.15	70		
#140	0.11	60		
#200	0.075	54		

Coefficients

D_{85} = 0.4229 mm D_{30} = N/A

D_{60} = 0.1057 mm D_{15} = N/A

D_{50} = N/A D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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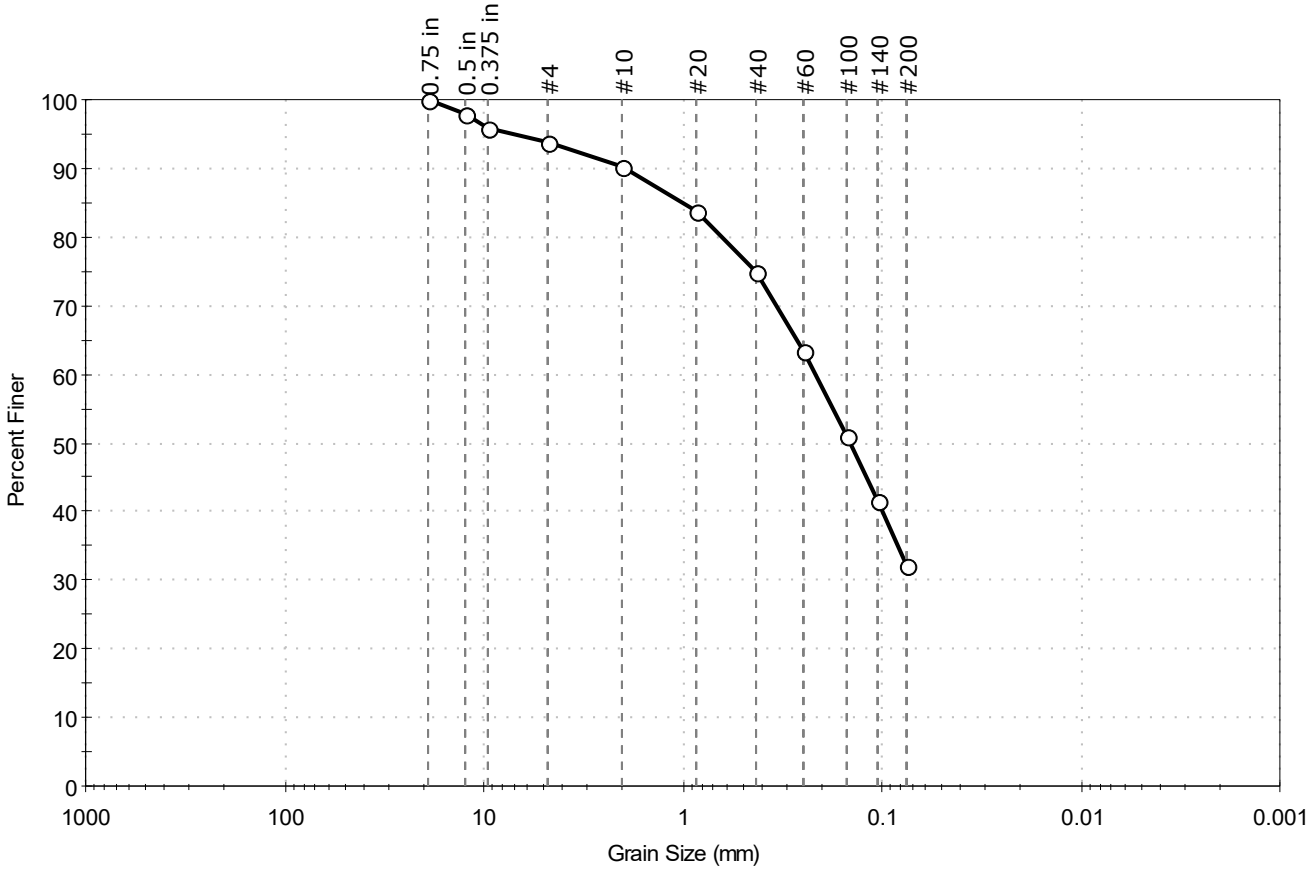
Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-9A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-13	Test Date:	01/20/23	Checked By:	ank
Depth :	55.0-57.0'	Test Id:	702193		
Test Comment:	---				
Visual Description:	Moist, dark olive brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	6.1	61.7	32.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	98		
0.375 in	9.50	96		
#4	4.75	94		
#10	2.00	90		
#20	0.85	84		
#40	0.42	75		
#60	0.25	63		
#100	0.15	51		
#140	0.11	42		
#200	0.075	32		

Coefficients

D_{85} = 0.9828 mm D_{30} = N/A

D_{60} = 0.2170 mm D_{15} = N/A

D_{50} = 0.1443 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

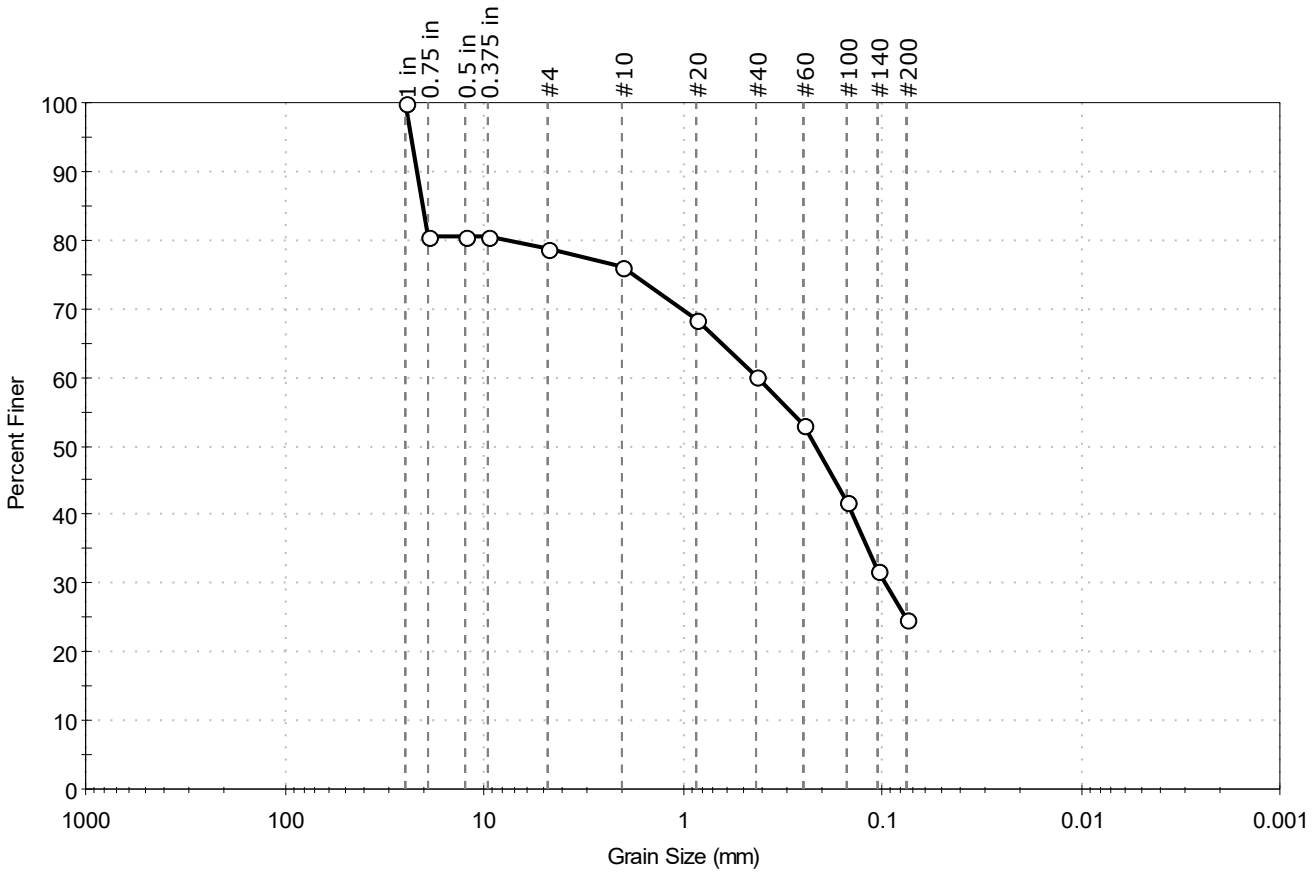
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-9A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-16	Test Date:	01/20/23	Checked By:	ank
Depth :	61.0-63.0'	Test Id:	702194		
Test Comment:	---				
Visual Description:	Moist, dark brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	21.3	54.0	24.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	81		
0.5 in	12.50	81		
0.375 in	9.50	81		
#4	4.75	79		
#10	2.00	76		
#20	0.85	68		
#40	0.42	60		
#60	0.25	53		
#100	0.15	42		
#140	0.11	32		
#200	0.075	25		

Coefficients

D_{85} = 20.2076 mm	D_{30} = 0.0967 mm
D_{60} = 0.4238 mm	D_{15} = N/A
D_{50} = 0.2169 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

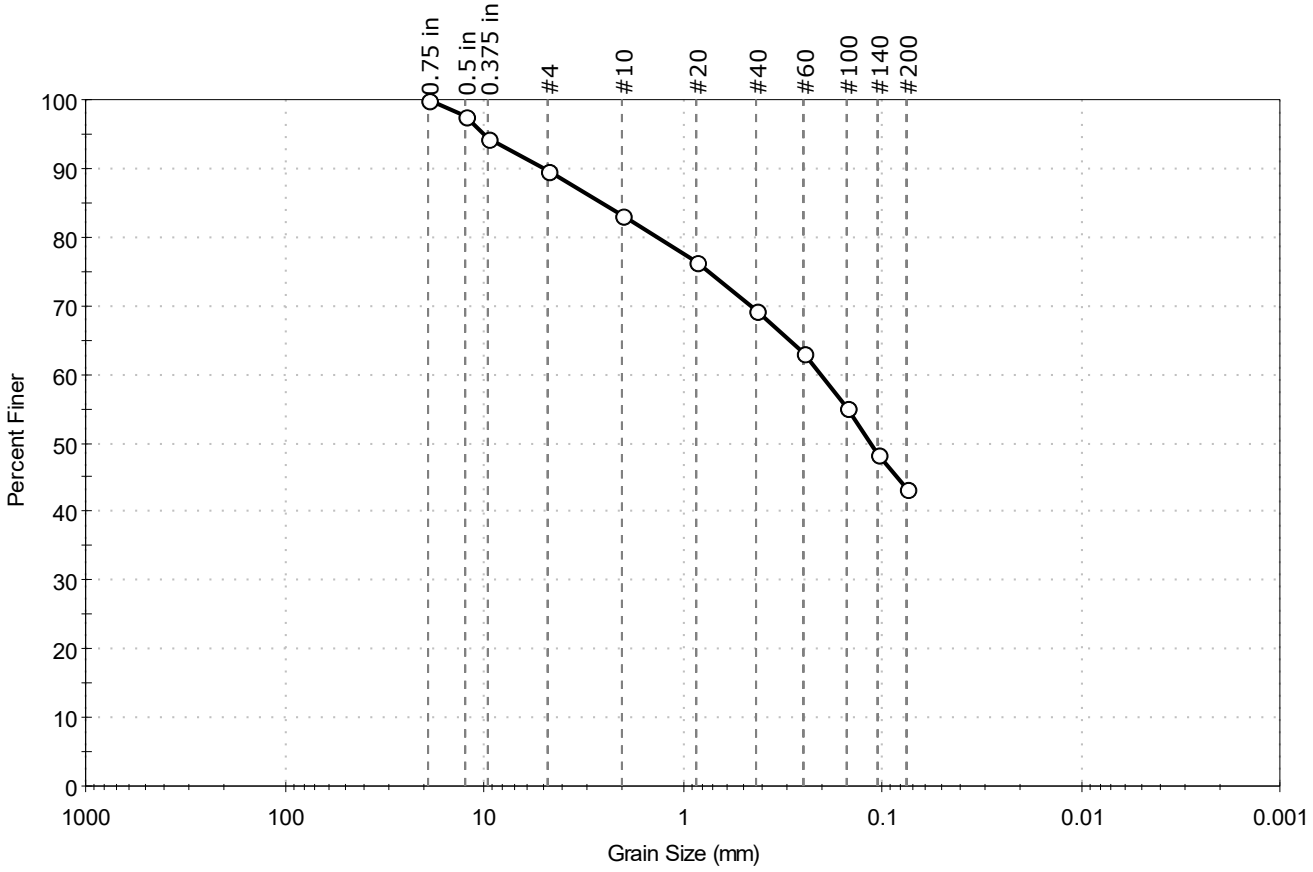
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-12A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-1, S-2	Test Date:	01/20/23	Checked By:	ank
Depth :	9.0-11.0', 14'-16'	Test Id:	702196		
Test Comment:	---				
Visual Description:	Moist, brownish gray silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	10.3	46.4	43.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	98		
0.375 in	9.50	95		
#4	4.75	90		
#10	2.00	83		
#20	0.85	76		
#40	0.42	69		
#60	0.25	63		
#100	0.15	55		
#140	0.11	48		
#200	0.075	43		

Coefficients

D_{85} = 2.5426 mm D_{30} = N/A
D_{60} = 0.2050 mm D_{15} = N/A
D_{50} = 0.1154 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

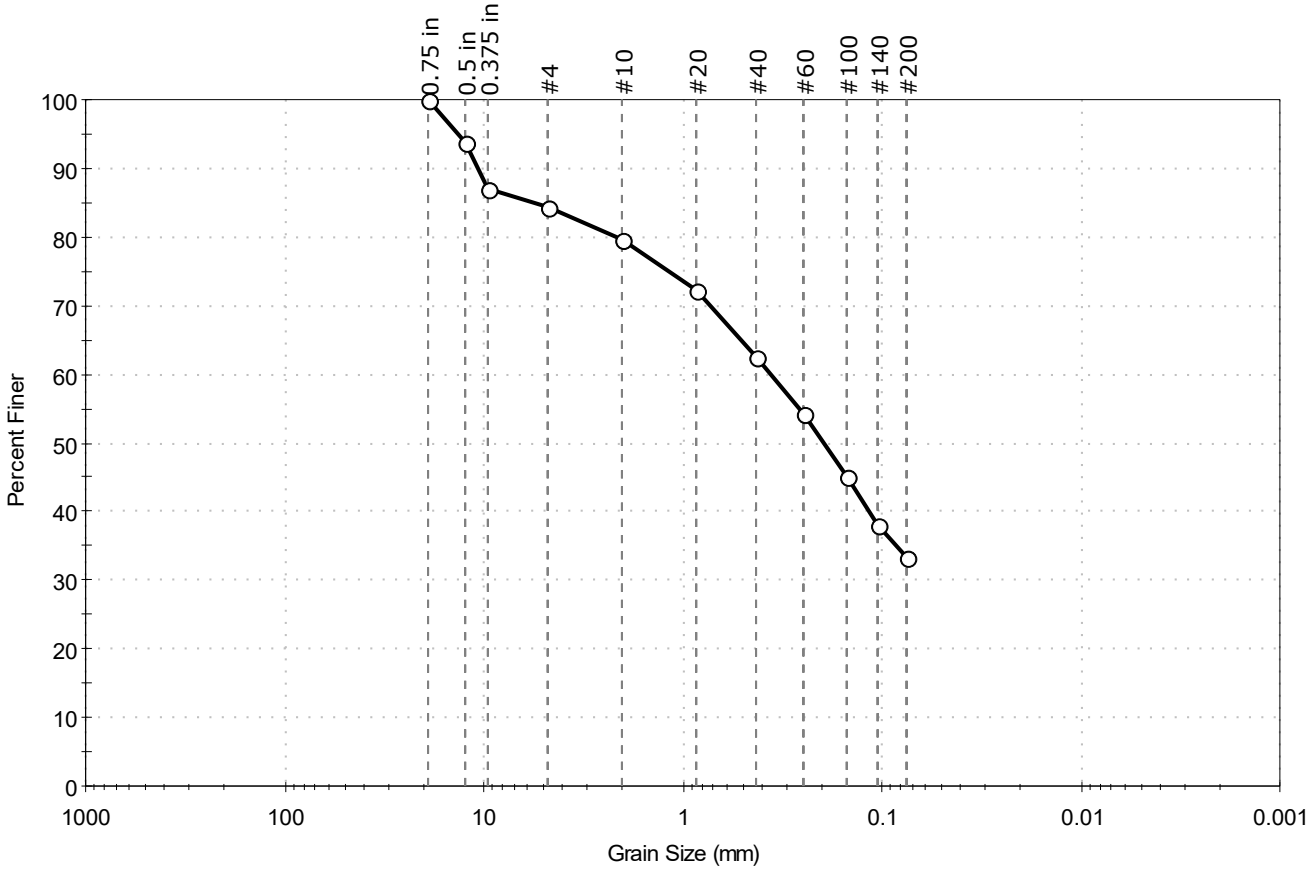
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-9A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-17	Test Date:	01/18/23	Checked By:	ank
Depth :	63.0-65.0'	Test Id:	702195		
Test Comment:	---				
Visual Description:	Moist, dark brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	15.6	51.0	33.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	94		
0.375 in	9.50	87		
#4	4.75	84		
#10	2.00	80		
#20	0.85	72		
#40	0.42	63		
#60	0.25	54		
#100	0.15	45		
#140	0.11	38		
#200	0.075	33		

Coefficients

D_{85} = 5.5489 mm D_{30} = N/A

D_{60} = 0.3601 mm D_{15} = N/A

D_{50} = 0.1958 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

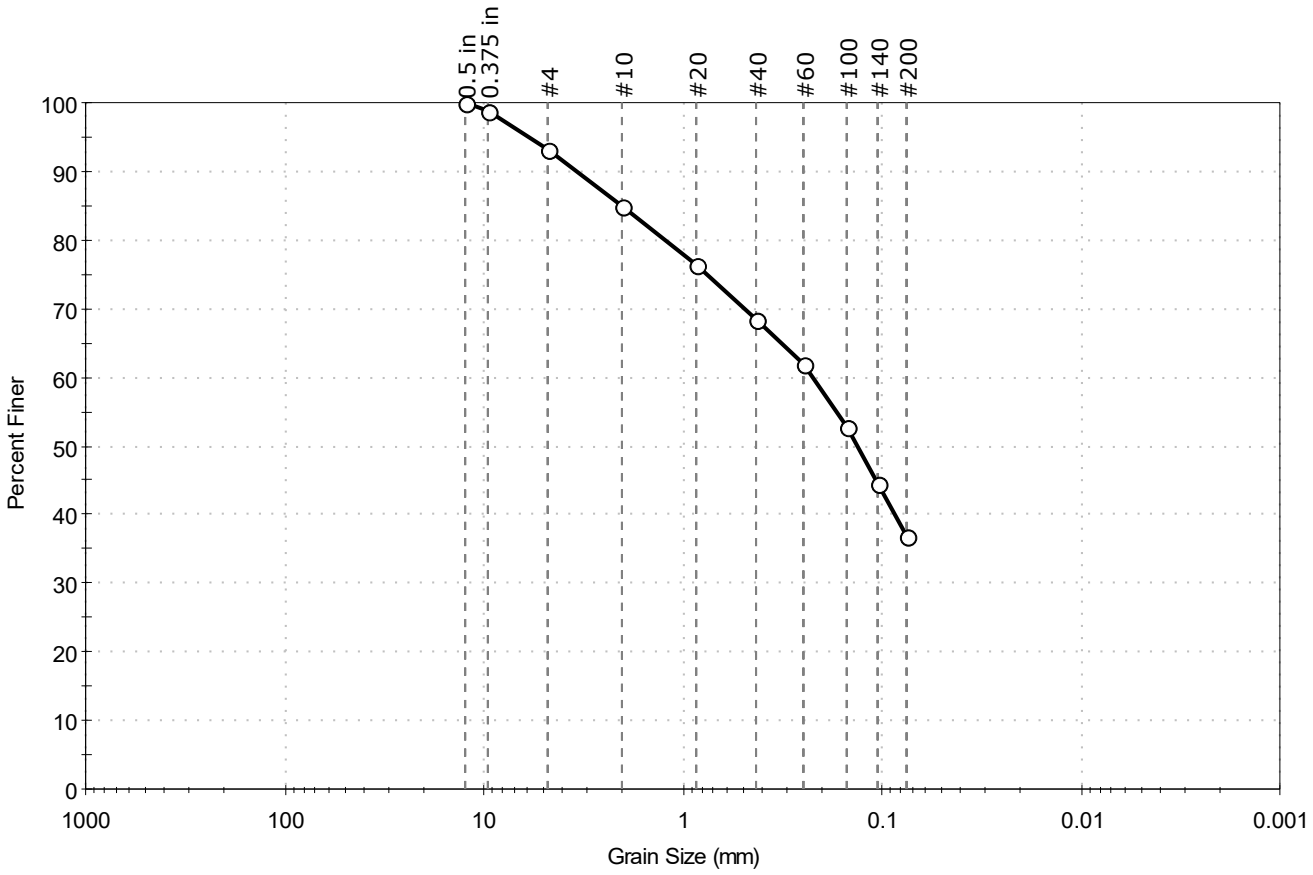
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-12A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-7	Test Date:	01/20/23	Checked By:	ank
Depth :	39.0-41.0'	Test Id:	702198		
Test Comment:	---				
Visual Description:	Moist, olive brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	6.9	56.2	36.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	99		
#4	4.75	93		
#10	2.00	85		
#20	0.85	76		
#40	0.42	69		
#60	0.25	62		
#100	0.15	53		
#140	0.11	45		
#200	0.075	37		

Coefficients

D_{85} = 1.9895 mm D_{30} = N/A

D_{60} = 0.2242 mm D_{15} = N/A

D_{50} = 0.1332 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

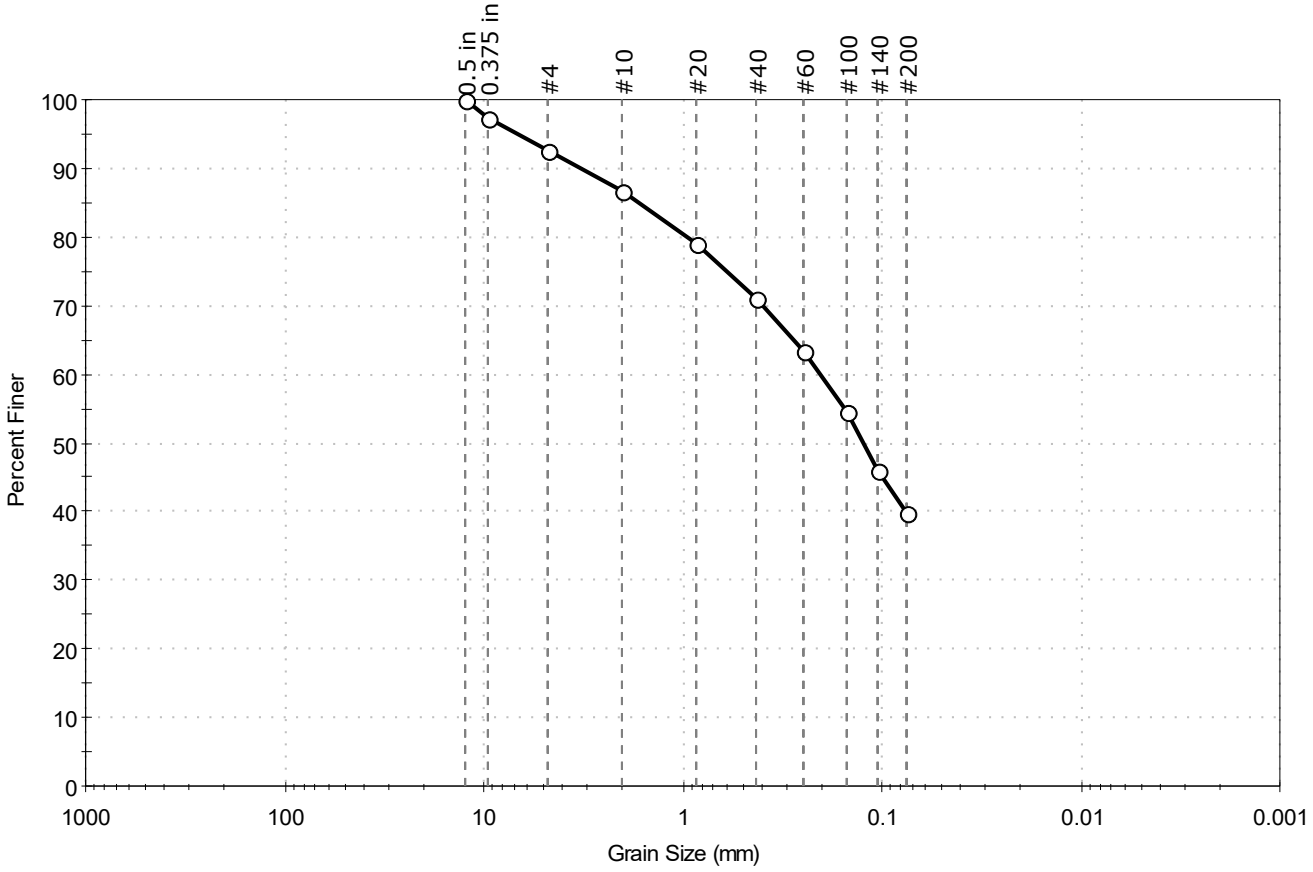
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-12A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-3	Test Date:	01/18/23	Checked By:	ank
Depth :	19.0-21.0'	Test Id:	702197		
Test Comment:	---				
Visual Description:	Moist, grayish brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	7.3	52.8	39.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	97		
#4	4.75	93		
#10	2.00	87		
#20	0.85	79		
#40	0.42	71		
#60	0.25	64		
#100	0.15	55		
#140	0.11	46		
#200	0.075	40		

Coefficients

D_{85} = 1.6628 mm D_{30} = N/A

D_{60} = 0.2043 mm D_{15} = N/A

D_{50} = 0.1245 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

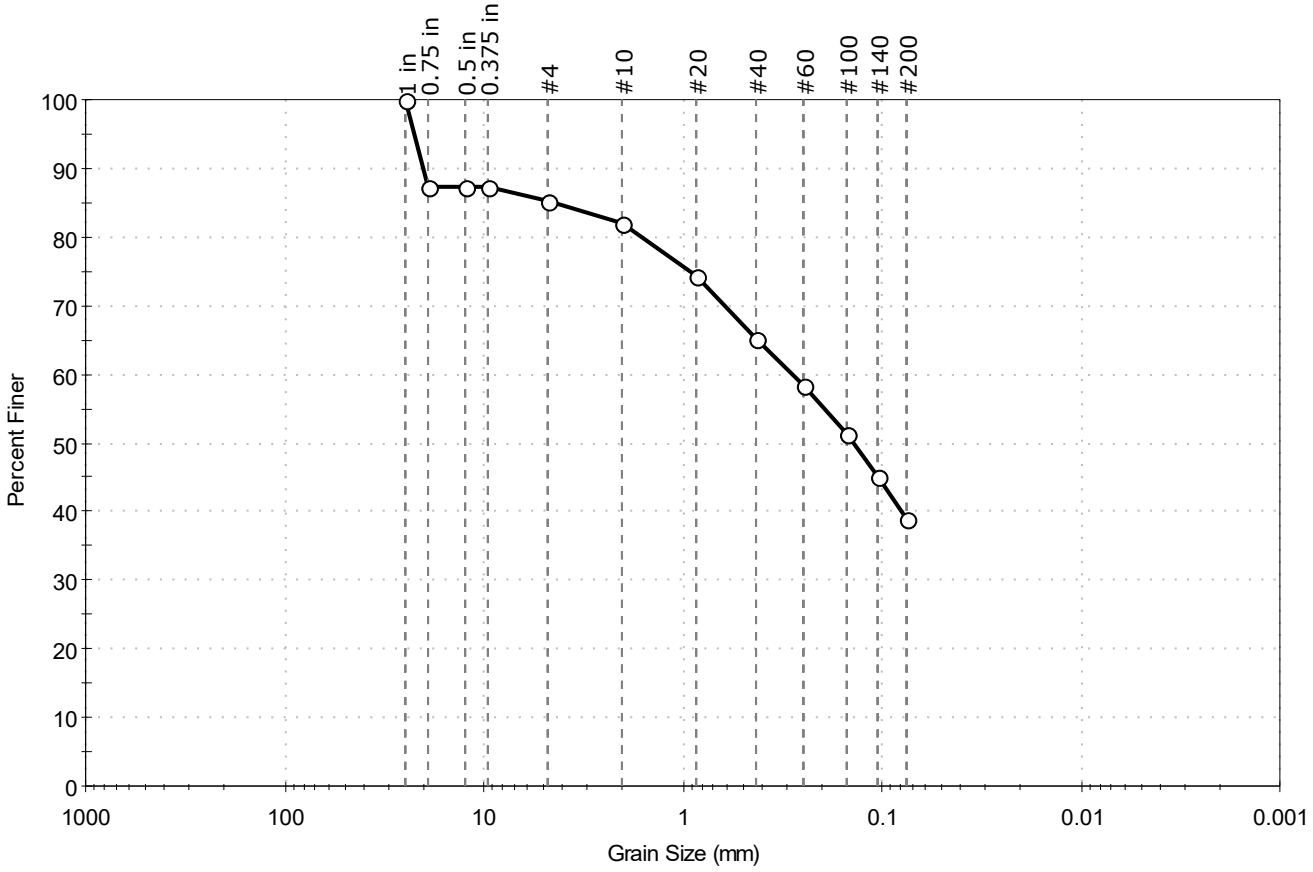
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-12A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-9	Test Date:	01/18/23	Checked By:	ank
Depth :	49.0-51.0'	Test Id:	702199		
Test Comment:	---				
Visual Description:	Moist, brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	14.7	46.4	38.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	87		
0.5 in	12.50	87		
0.375 in	9.50	87		
#4	4.75	85		
#10	2.00	82		
#20	0.85	74		
#40	0.42	65		
#60	0.25	59		
#100	0.15	51		
#140	0.11	45		
#200	0.075	39		

Coefficients

D_{85} = 4.3706 mm	D_{30} = N/A
D_{60} = 0.2811 mm	D_{15} = N/A
D_{50} = 0.1392 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

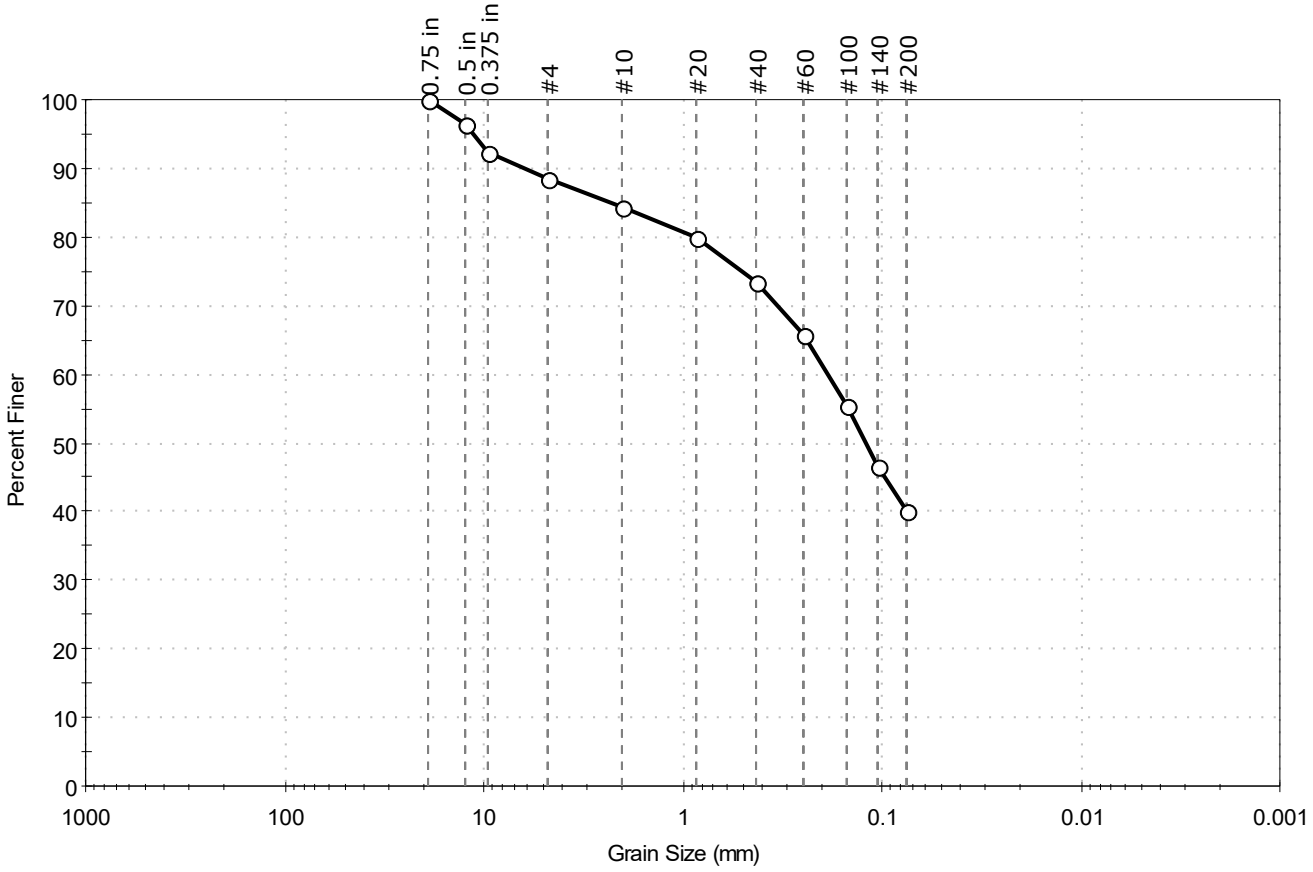
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-12A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-10, S-11	Test Date:	01/18/23	Checked By:	ank
Depth :	54.0-56', 59.0-61.0'	Test Id:	702201		
Test Comment:	---				
Visual Description:	Moist, grayish brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	11.5	48.4	40.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	97		
0.375 in	9.50	92		
#4	4.75	88		
#10	2.00	84		
#20	0.85	80		
#40	0.42	74		
#60	0.25	66		
#100	0.15	55		
#140	0.11	46		
#200	0.075	40		

Coefficients

D_{85} = 2.2891 mm D_{30} = N/A

D_{60} = 0.1885 mm D_{15} = N/A

D_{50} = 0.1216 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

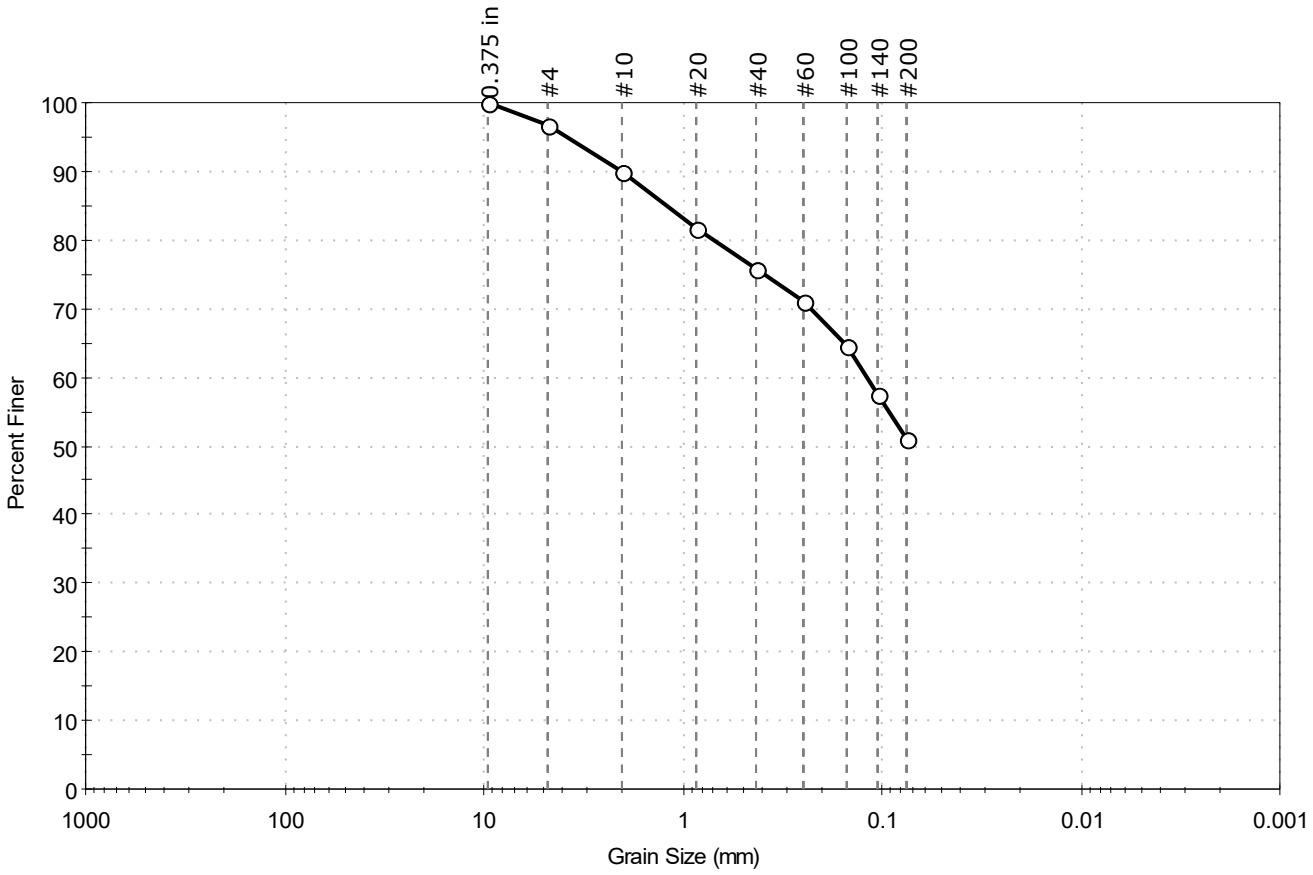
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-12A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-12	Test Date:	01/20/23	Checked By:	ank
Depth :	64.0-66.0'	Test Id:	702202		
Test Comment:	---				
Visual Description:	Moist, gray sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	3.4	45.5	51.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	97		
#10	2.00	90		
#20	0.85	82		
#40	0.42	76		
#60	0.25	71		
#100	0.15	65		
#140	0.11	58		
#200	0.075	51		

Coefficients

D_{85} = 1.1878 mm D_{30} = N/A

D_{60} = 0.1193 mm D_{15} = N/A

D_{50} = N/A D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

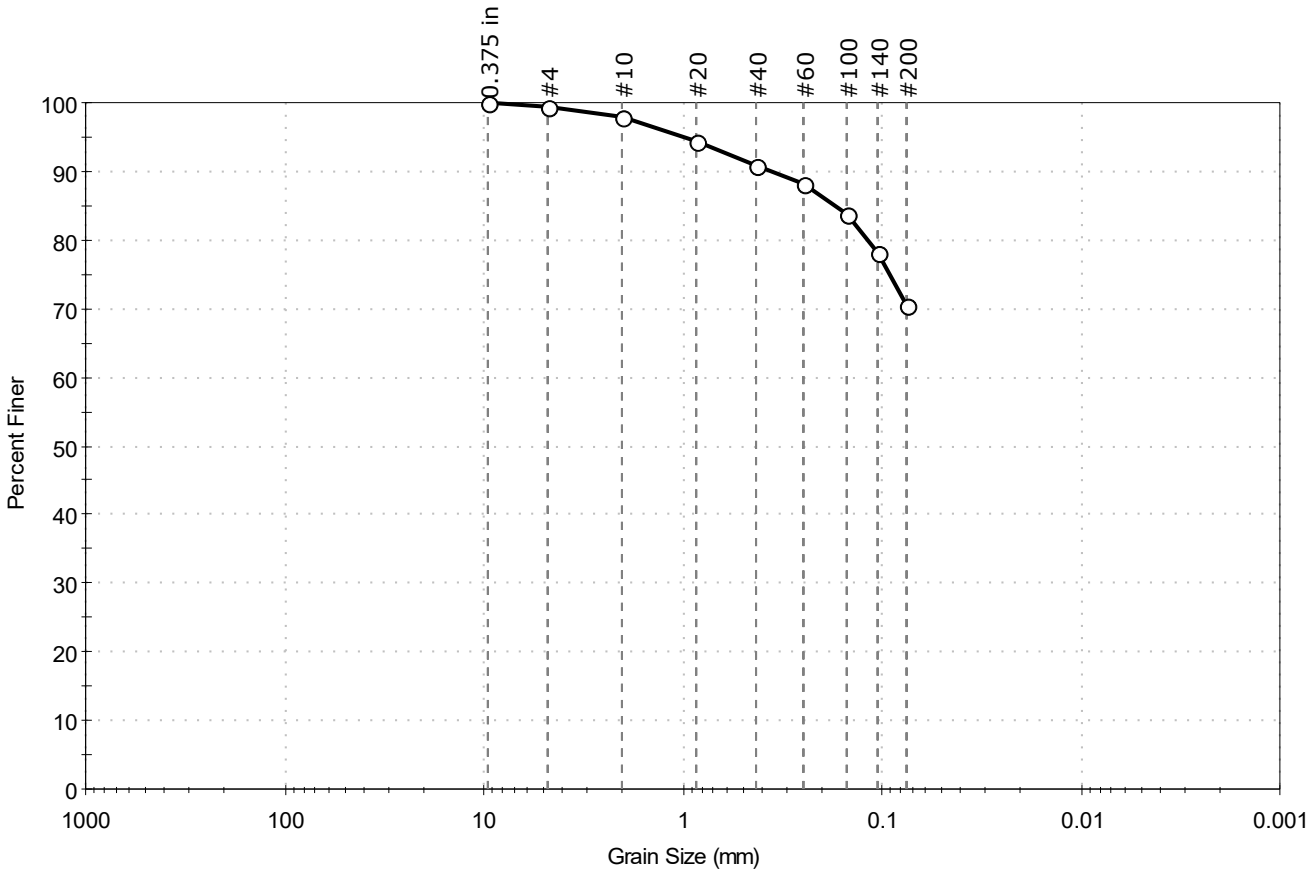
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-12A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-13	Test Date:	01/18/23	Checked By:	ank
Depth :	69.0-71.0'	Test Id:	702203		
Test Comment:	---				
Visual Description:	Moist, gray silt with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.6	28.9	70.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	99		
#10	2.00	98		
#20	0.85	94		
#40	0.42	91		
#60	0.25	88		
#100	0.15	84		
#140	0.11	78		
#200	0.075	71		

Coefficients

D_{85} = 0.1736 mm	D_{30} = N/A
D_{60} = N/A	D_{15} = N/A
D_{50} = N/A	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

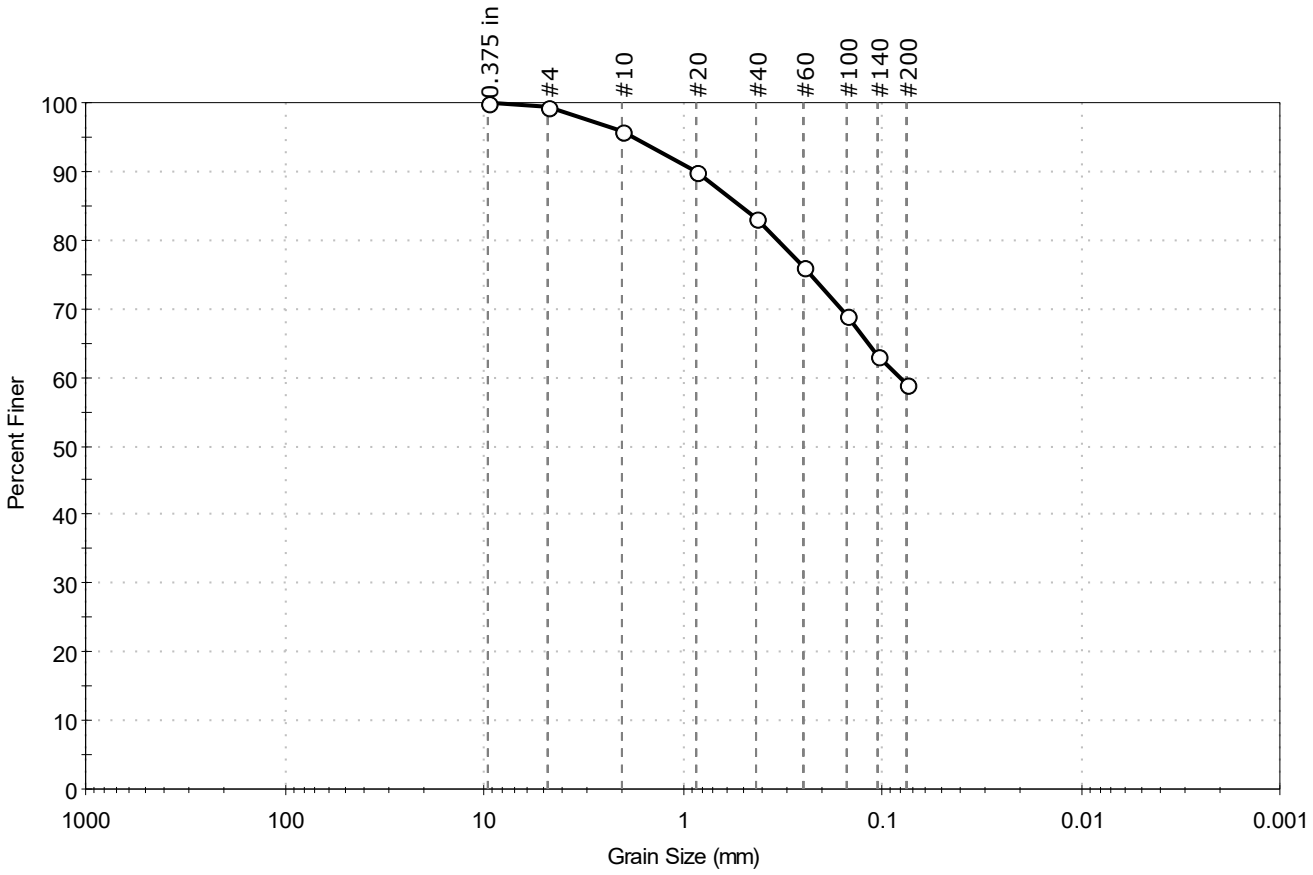
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-12A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-15	Test Date:	01/18/23	Checked By:	ank
Depth :	79.0-81.0	Test Id:	702204		
Test Comment:	---				
Visual Description:	Moist, dark gray sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.7	40.4	58.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	99		
#10	2.00	96		
#20	0.85	90		
#40	0.42	83		
#60	0.25	76		
#100	0.15	69		
#140	0.11	63		
#200	0.075	59		

Coefficients

D_{85} = 0.5128 mm D_{30} = N/A

D_{60} = 0.0820 mm D_{15} = N/A

D_{50} = N/A D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

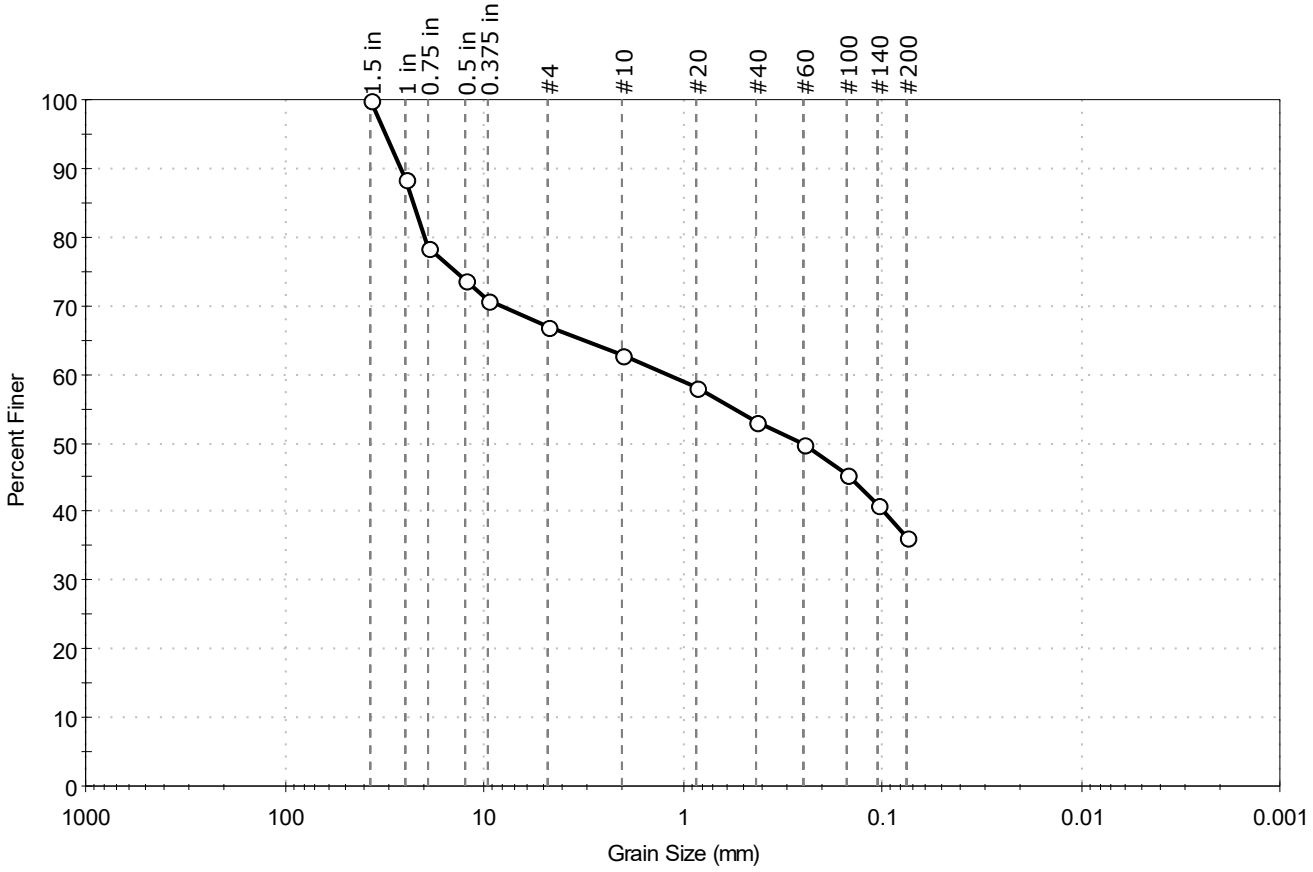
Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-9	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-2	Test Date:	01/18/23	Checked By:	ank
Depth :	2.0-4.0'	Test Id:	702205		
Test Comment:	---				
Visual Description:	Moist, dark brown silty gravel with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	33.1	30.6	36.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	88		
0.75 in	19.00	79		
0.5 in	12.50	74		
0.375 in	9.50	71		
#4	4.75	67		
#10	2.00	63		
#20	0.85	58		
#40	0.42	53		
#60	0.25	50		
#100	0.15	45		
#140	0.11	41		
#200	0.075	36		

Coefficients

D_{85} = 22.7420 mm	D_{30} = N/A
D_{60} = 1.1796 mm	D_{15} = N/A
D_{50} = 0.2605 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

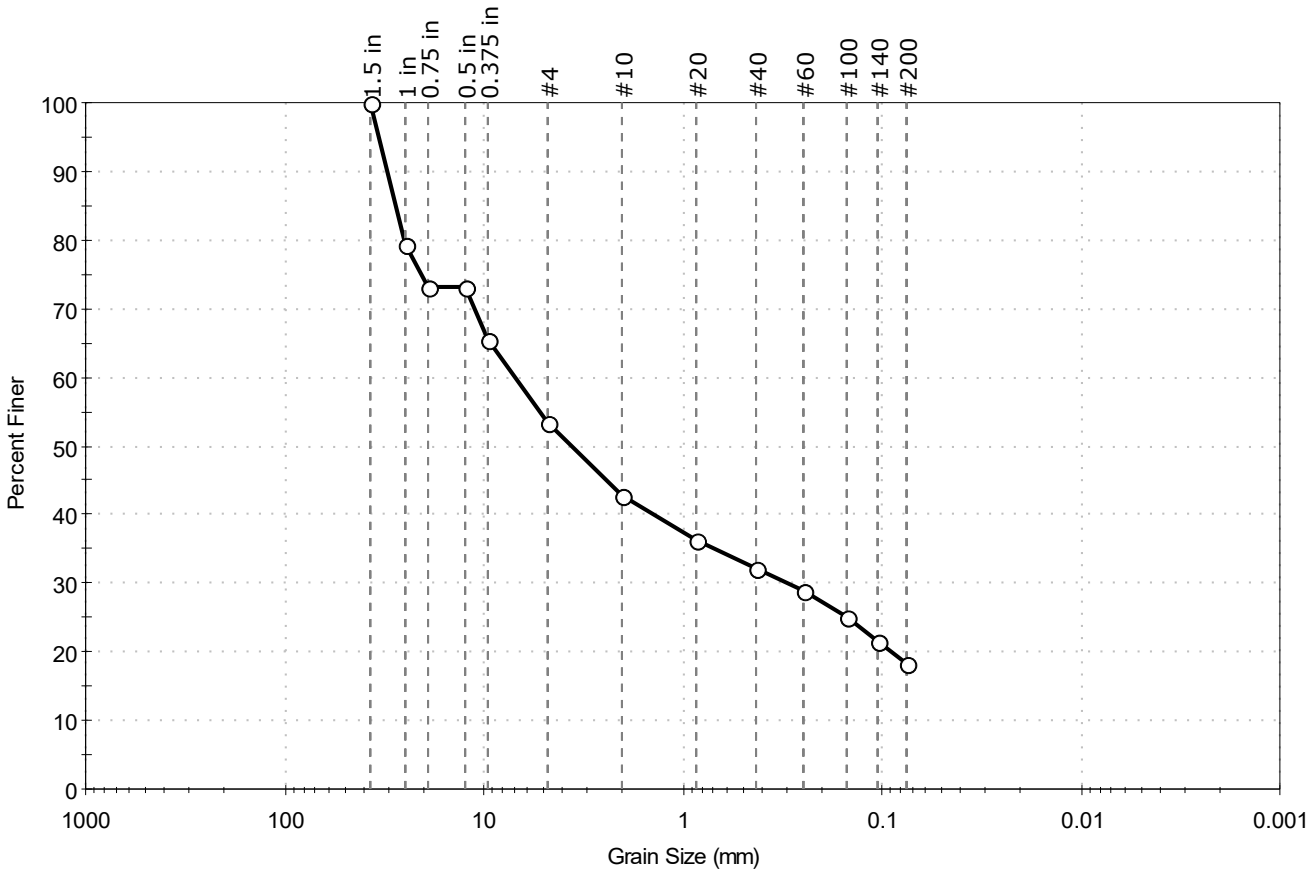
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-9A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-6	Test Date:	01/18/23	Checked By:	ank
Depth :	41.0-43.0'	Test Id:	702206		
Test Comment:	---				
Visual Description:	Moist, gray silty gravel with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	46.7	35.2	18.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	79		
0.75 in	19.00	73		
0.5 in	12.50	73		
0.375 in	9.50	65		
#4	4.75	53		
#10	2.00	43		
#20	0.85	36		
#40	0.42	32		
#60	0.25	29		
#100	0.15	25		
#140	0.11	22		
#200	0.075	18		

Coefficients

D_{85} = 27.9436 mm	D_{30} = 0.2975 mm
D_{60} = 6.9811 mm	D_{15} = N/A
D_{50} = 3.6107 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

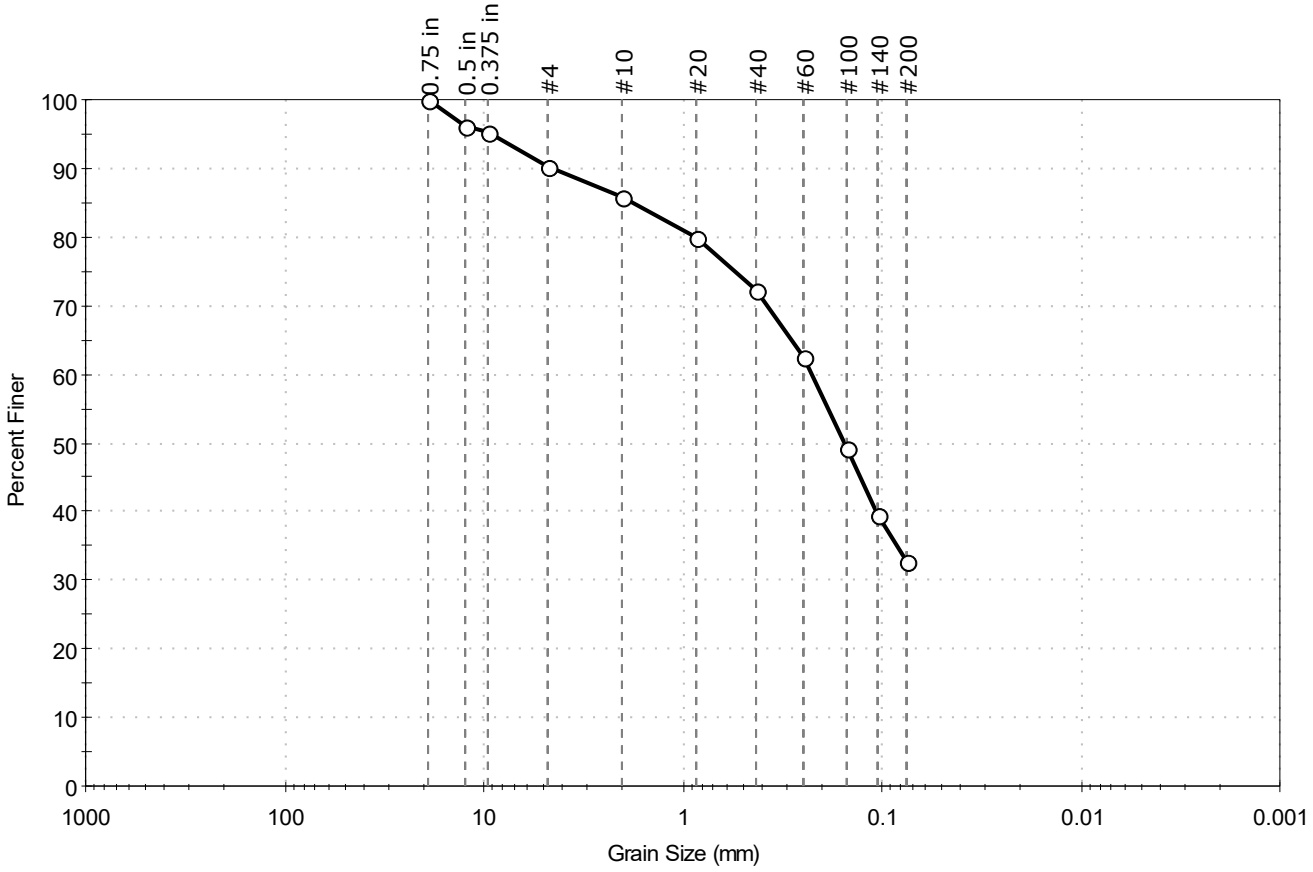
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-8	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-11	Test Date:	01/18/23	Checked By:	ank
Depth :	39.0-41.0'	Test Id:	702207		
Test Comment:	---				
Visual Description:	Moist, dark brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	9.8	57.5	32.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	96		
0.375 in	9.50	95		
#4	4.75	90		
#10	2.00	86		
#20	0.85	80		
#40	0.42	72		
#60	0.25	63		
#100	0.15	49		
#140	0.11	39		
#200	0.075	33		

Coefficients

D_{85} = 1.7474 mm D_{30} = N/A

D_{60} = 0.2258 mm D_{15} = N/A

D_{50} = 0.1543 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

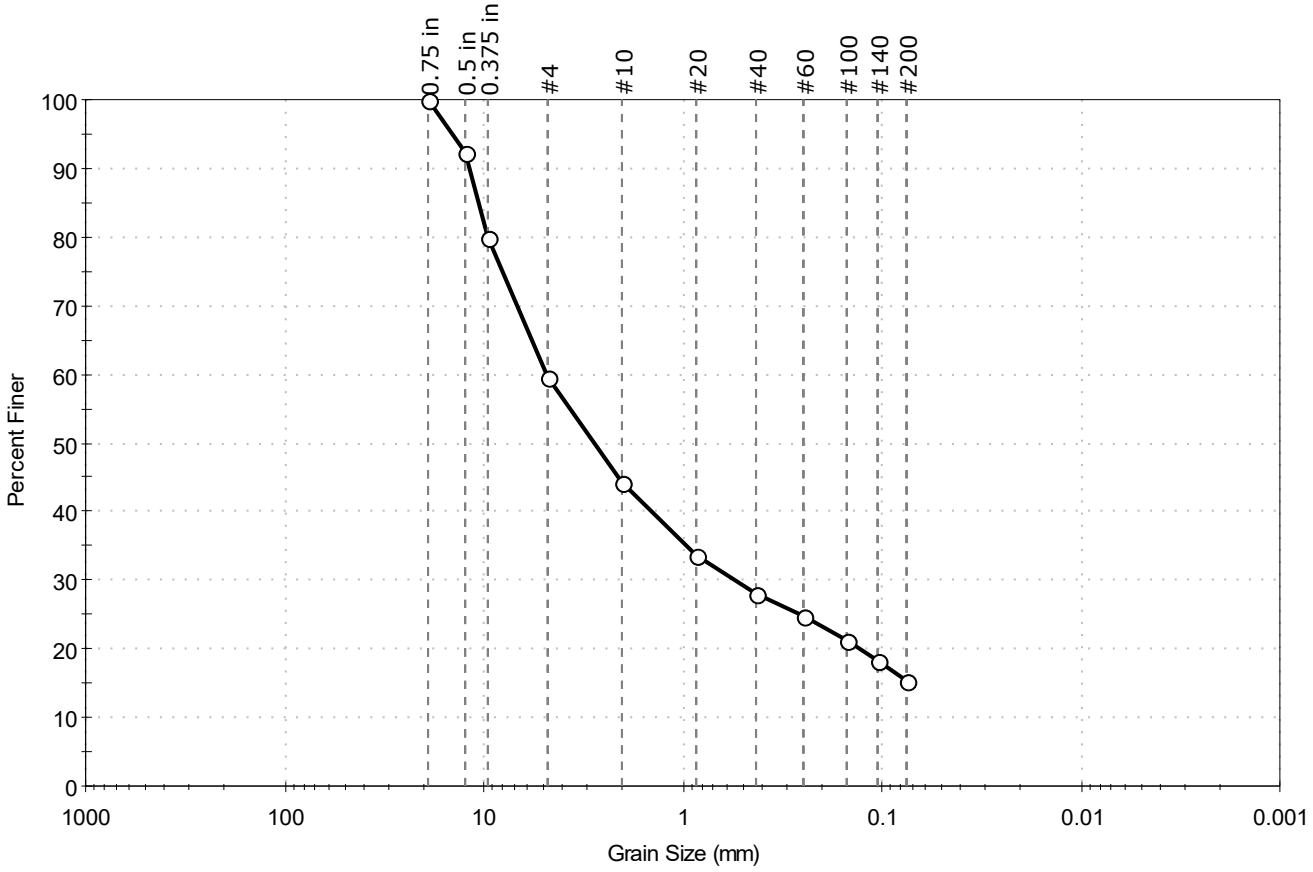
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-9A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-1	Test Date:	01/17/23	Checked By:	ank
Depth :	19.0-21.0'	Test Id:	702208		
Test Comment:	---				
Visual Description:	Moist, brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	40.3	44.4	15.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	92		
0.375 in	9.50	80		
#4	4.75	60		
#10	2.00	44		
#20	0.85	34		
#40	0.42	28		
#60	0.25	25		
#100	0.15	21		
#140	0.11	18		
#200	0.075	15		

Coefficients

D_{85} = 10.6377 mm	D_{30} = 0.5375 mm
D_{60} = 4.8024 mm	D_{15} = N/A
D_{50} = 2.7709 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

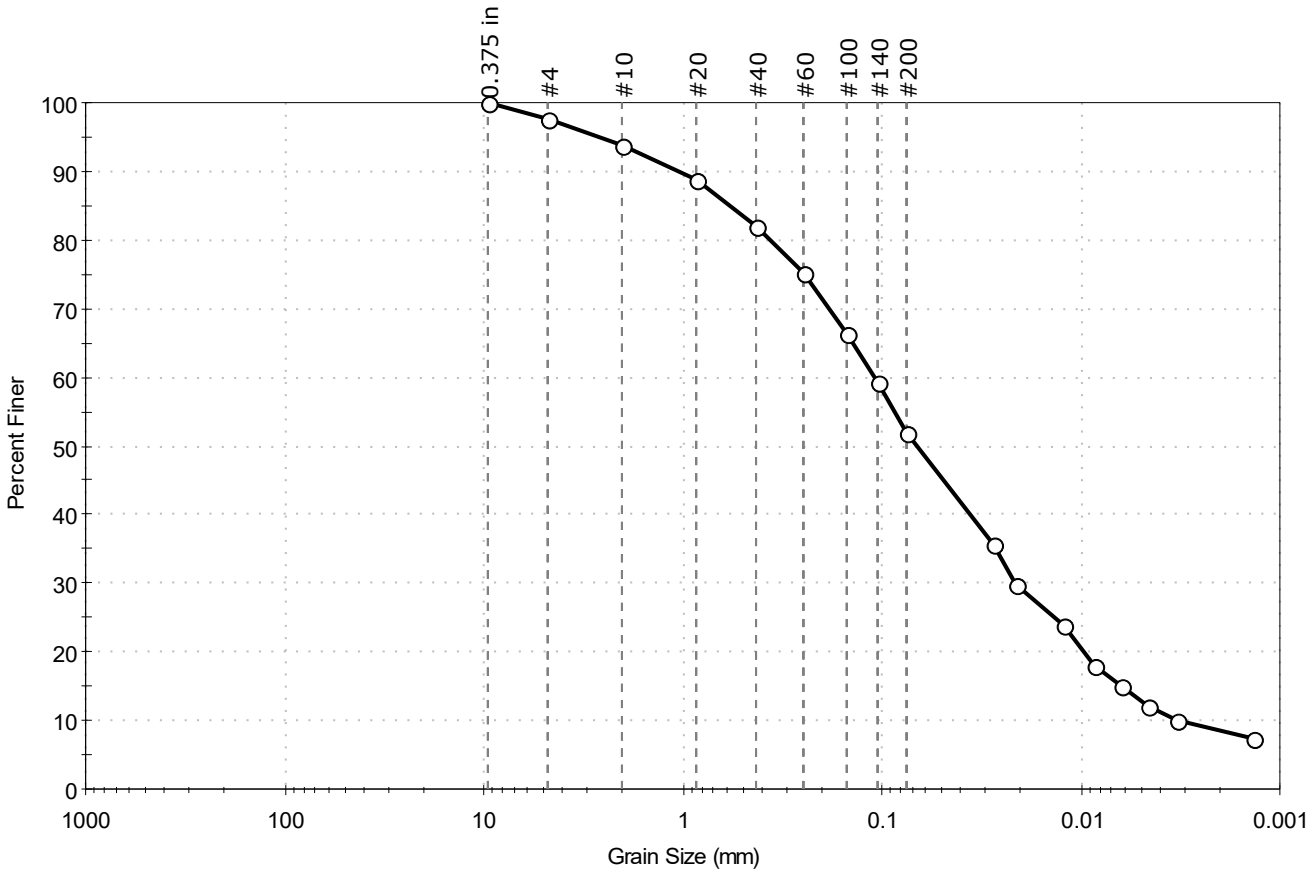
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-08	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-8	Test Date:	01/24/23	Checked By:	ank
Depth :	24.0-26.0'	Test Id:	702215		
Test Comment:	---				
Visual Description:	Moist, brown sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	2.4	45.6	52.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	98		
#10	2.00	94		
#20	0.85	89		
#40	0.42	82		
#60	0.25	75		
#100	0.15	66		
#140	0.11	59		
#200	0.075	52		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0279	36		
---	0.0210	30		
---	0.0124	24		
---	0.0086	18		
---	0.0062	15		
---	0.0046	12		
---	0.0033	10		
---	0.0013	7		

Coefficients

D_{85} =0.5706 mm	D_{30} =0.0213 mm
D_{60} =0.1102 mm	D_{15} =0.0062 mm
D_{50} =0.0665 mm	D_{10} =0.0033 mm
C_u =33.394	C_c =1.248

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

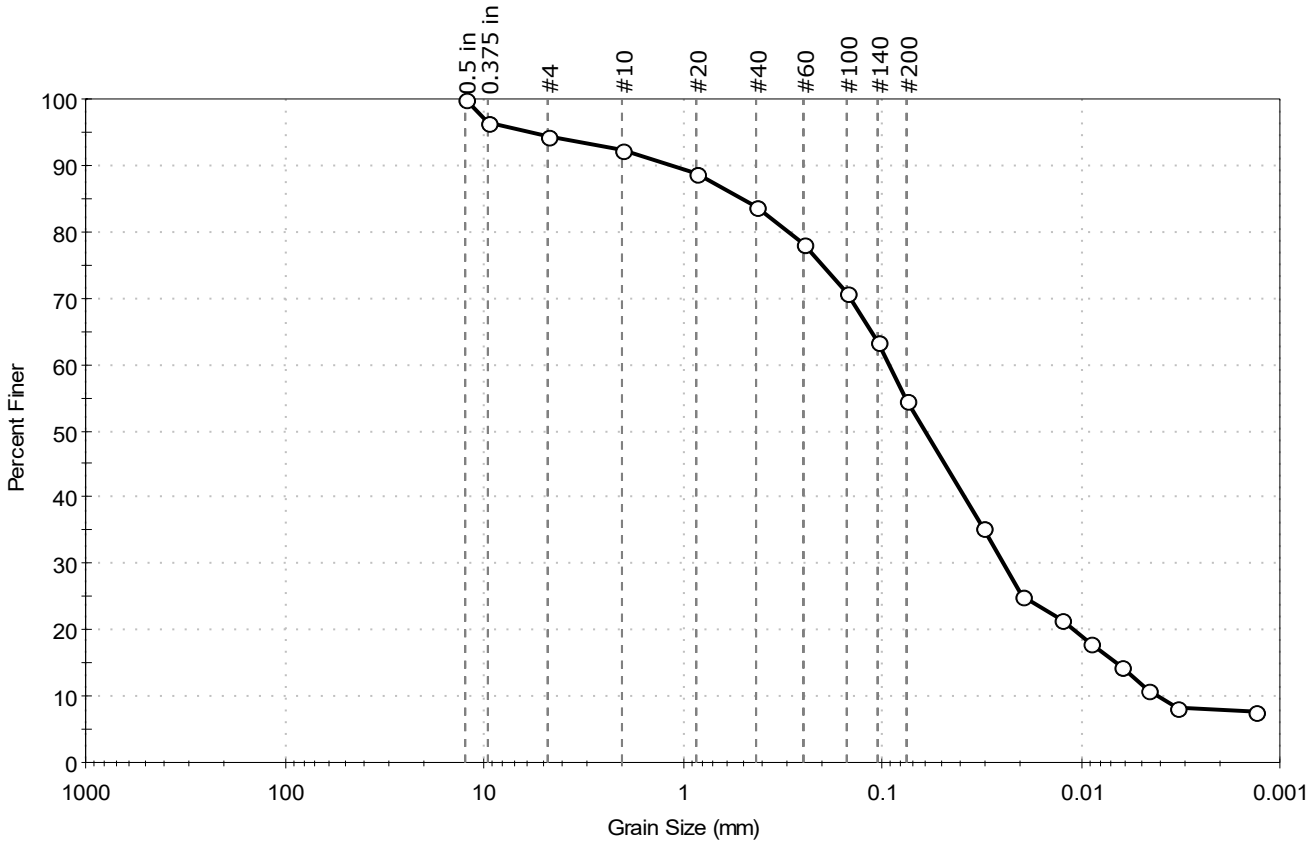
Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

GeoTesting EXPRESS

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-9A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-9, S-10	Test Date:	01/24/23	Checked By:	ank
Depth :	47.0-51.0'	Test Id:	702216		
Test Comment:	---				
Visual Description:	Moist, brown sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	5.5	39.8	54.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	96		
#4	4.75	94		
#10	2.00	92		
#20	0.85	89		
#40	0.42	84		
#60	0.25	78		
#100	0.15	71		
#140	0.11	63		
#200	0.075	55		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0311	35		
---	0.0199	25		
---	0.0124	22		
---	0.0091	18		
---	0.0063	15		
---	0.0046	11		
---	0.0033	8		
---	0.0013	8		

Coefficients

D_{85} = 0.5086 mm	D_{30} = 0.0246 mm
D_{60} = 0.0928 mm	D_{15} = 0.0066 mm
D_{50} = 0.0605 mm	D_{10} = 0.0041 mm
C_u = 22.634	C_c = 1.591

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

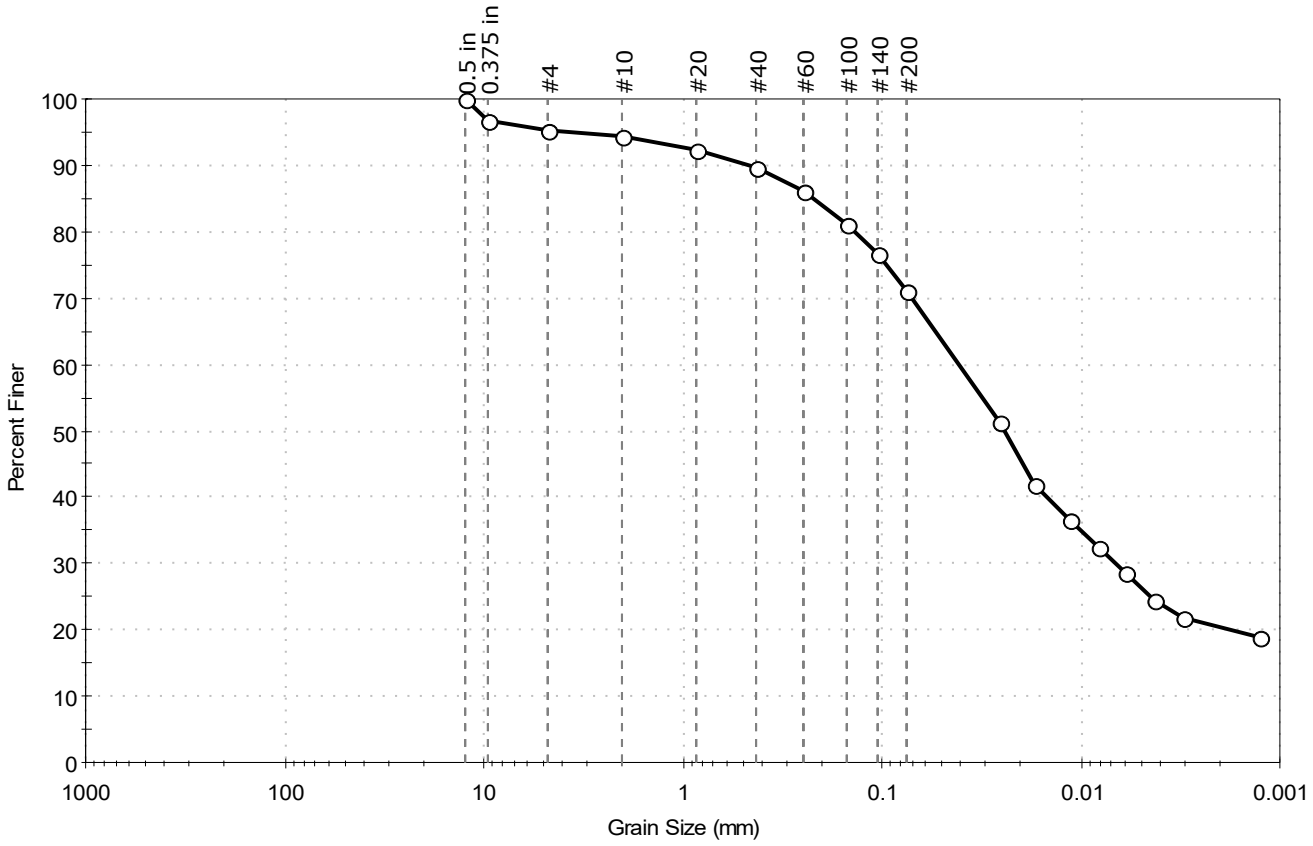
Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-12A	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-16	Test Date:	01/24/23	Checked By:	ank
Depth :	84.0-86.0'	Test Id:	702217		
Test Comment:	---				
Visual Description:	Moist, gray silt with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	4.6	24.2	71.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	97		
#4	4.75	95		
#10	2.00	95		
#20	0.85	92		
#40	0.42	90		
#60	0.25	86		
#100	0.15	81		
#140	0.11	77		
#200	0.075	71		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0257	51		
---	0.0171	42		
---	0.0115	37		
---	0.0082	33		
---	0.0060	28		
---	0.0043	24		
---	0.0031	22		
---	0.0013	19		

Coefficients

D_{85} = 0.2219 mm	D_{30} = 0.0067 mm
D_{60} = 0.0412 mm	D_{15} = N/A
D_{50} = 0.0244 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

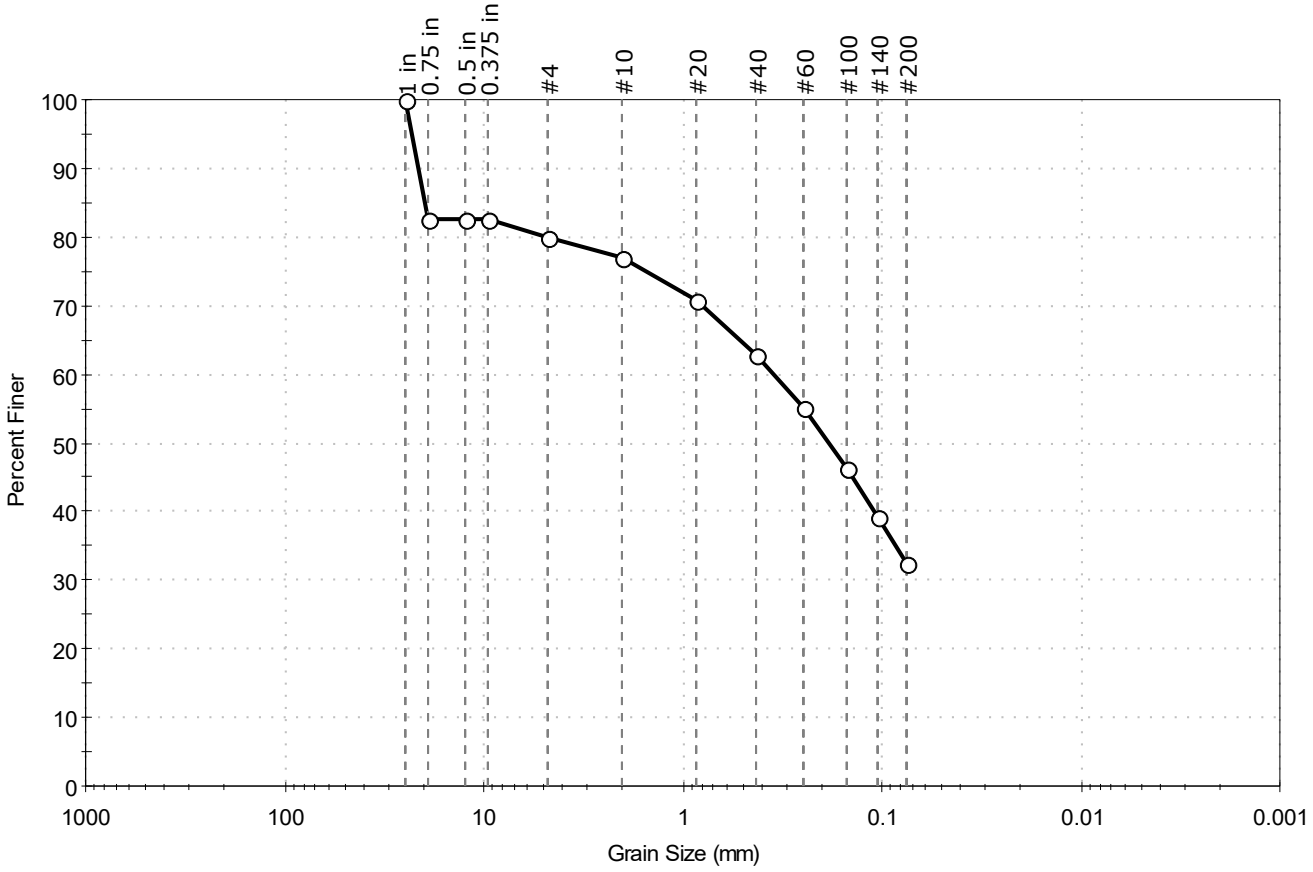
Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-8C	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-3	Test Date:	01/18/23	Checked By:	ank
Depth :	59.0-61.0'	Test Id:	702311		
Test Comment:	---				
Visual Description:	Moist, dark brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	19.9	47.5	32.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	83		
0.5 in	12.50	83		
0.375 in	9.50	83		
#4	4.75	80		
#10	2.00	77		
#20	0.85	71		
#40	0.42	63		
#60	0.25	55		
#100	0.15	46		
#140	0.11	39		
#200	0.075	33		

Coefficients

D_{85} = 19.6988 mm D_{30} = N/A

D_{60} = 0.3484 mm D_{15} = N/A

D_{50} = 0.1849 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

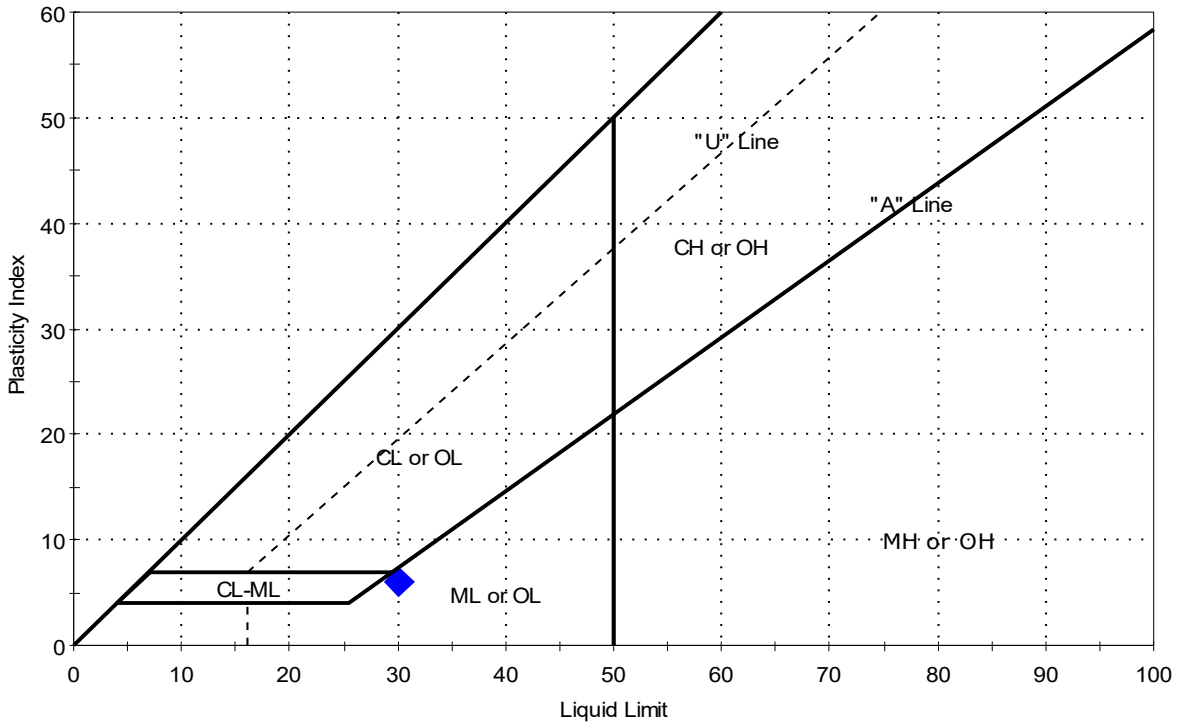
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-12A	Sample Type:	jar	Tested By:	cam
Sample ID:	S-9A	Test Date:	01/20/23	Checked By:	ank
Depth :	49.0-51.0'	Test Id:	702164		
Test Comment:	---				
Visual Description:	Moist, brown silt				
Sample Comment:	---				

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	S-9A	B-12A	49.0-51.0	24	30	24	6	-0.1	

Sample Prepared using the WET method

Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

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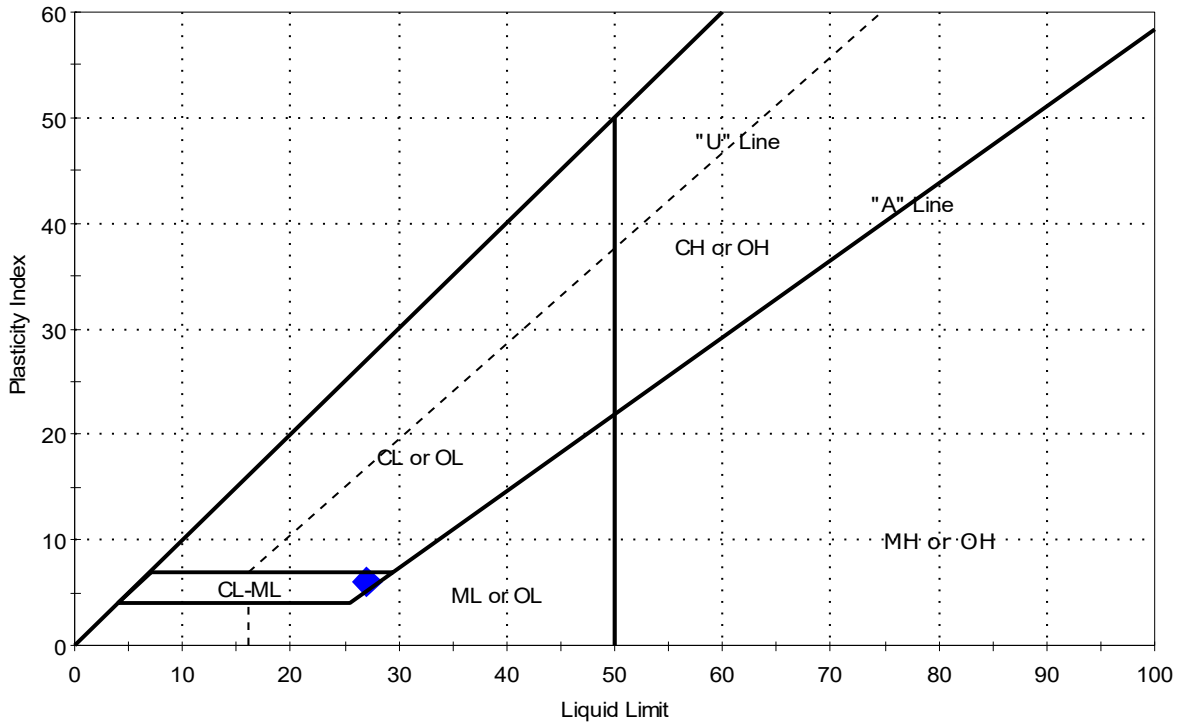
Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-9A	Sample Type:	jar	Tested By:	cam
Sample ID:	S-7	Test Date:	01/19/23	Checked By:	ank
Depth :	43.0-45.0'	Test Id:	702162		
Test Comment:	---				
Visual Description:	Moist, dark yellowish brown silty clayey sand				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

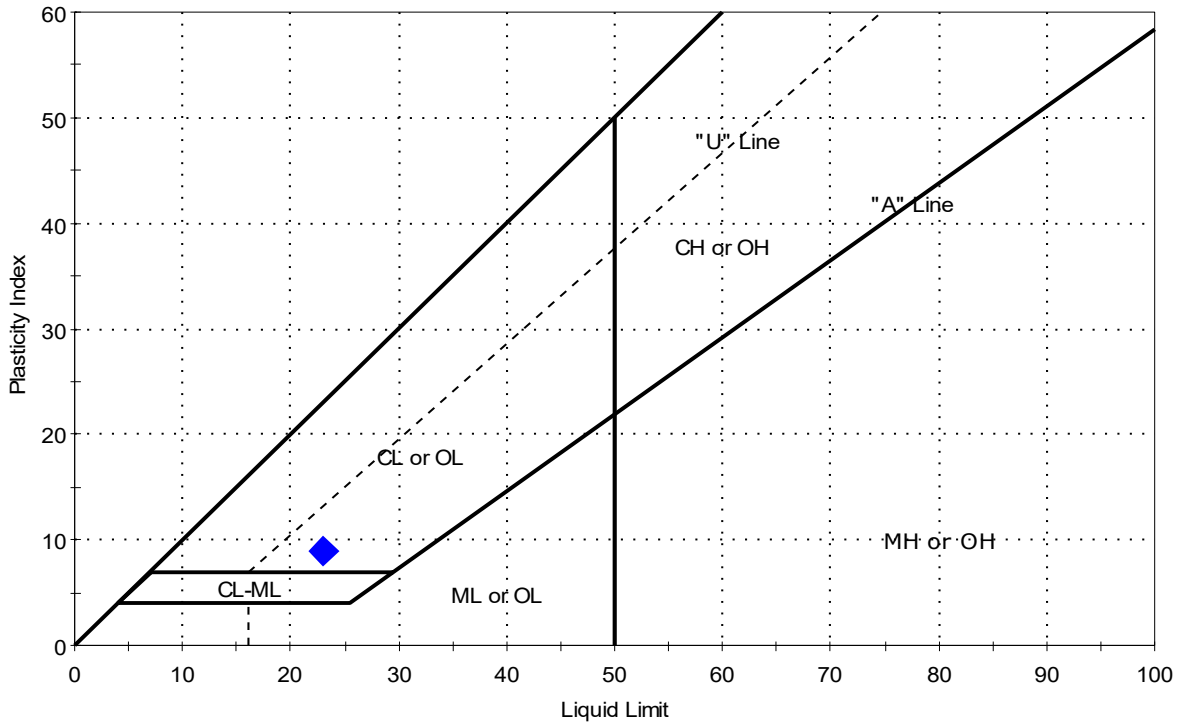


Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	S-7	B-9A	43.0-45.0	22	27	21	6	0.2	Silty, Clayey SAND (SC-SM)

Sample Prepared using the WET method
21% Retained on #40 Sieve
Dry Strength: VERY HIGH
Dilatancy: SLOW
Toughness: LOW

Client:	HNTB Corporation				
Project:	VTrans Lyndon				
Location:	Lyndon, VT			Project No:	GTX-316415
Boring ID:	B-9A	Sample Type:	jar	Tested By:	cam
Sample ID:	S-20	Test Date:	01/20/23	Checked By:	ank
Depth :	74.0-76.0'	Test Id:	702163		
Test Comment:	---				
Visual Description:	Moist, gray clay with sand				
Sample Comment:	---				

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	S-20	B-9A	74.0-76.0	15	23	14	9	0.1	

Sample Prepared using the WET method

Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

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GEOTESTING EPXRESS INCORPORATED
125 NAGOG PARK
ACTON MA 01720-3451
USA

Analysis No.	TS-A2310863
Report Date	23 January 2023
Date Sampled	13 January 2023
Date Received	20 January 2023
Where Sampled	Acton, MA USA
Sampled By	Client

This is to attest that we have examined: Soil: Project: VTrans Lyndon; Site Location: - — -; Job Number: GTX-316415

When examined to the applicable requirements of:

AASHTO T-291-18	"Standard Method of Test for Determining Water-Soluble Chloride Ion Content in Soil" Method B
AASHTO T 290-20	"Standard Method of Test for Determining Water-Soluble Sulfate Ion Content in Soil"

Results:

AASHTO T 291 - Chloride Method B

Sample		Results		Detection Limit
		ppm (mg/kg)	%[1]	
B-8C		115.	0.0115	10.
S-1, S-2	52.0 – 56.0'			
B-12A		97.	0.0097	
S-10, S-11	54.0-56.0' – 59.0-61.0'			

NOTE: [1]Percent by weight after drying and prepared as per the Standard.

AASHTO T 290 – Sulfates (Soluble)

Sample		Results		Detection Limit
		ppm (mg/kg)	%[1]	
B-8C		18.	0.0018	10.
S-1, S-2	52.0 – 56.0'			
B-12A		22.	0.0022	
S-10, S-11	54.0-56.0' – 59.0-61.0'			

NOTE: [1]Percent by weight after drying and prepared as per the Standard.

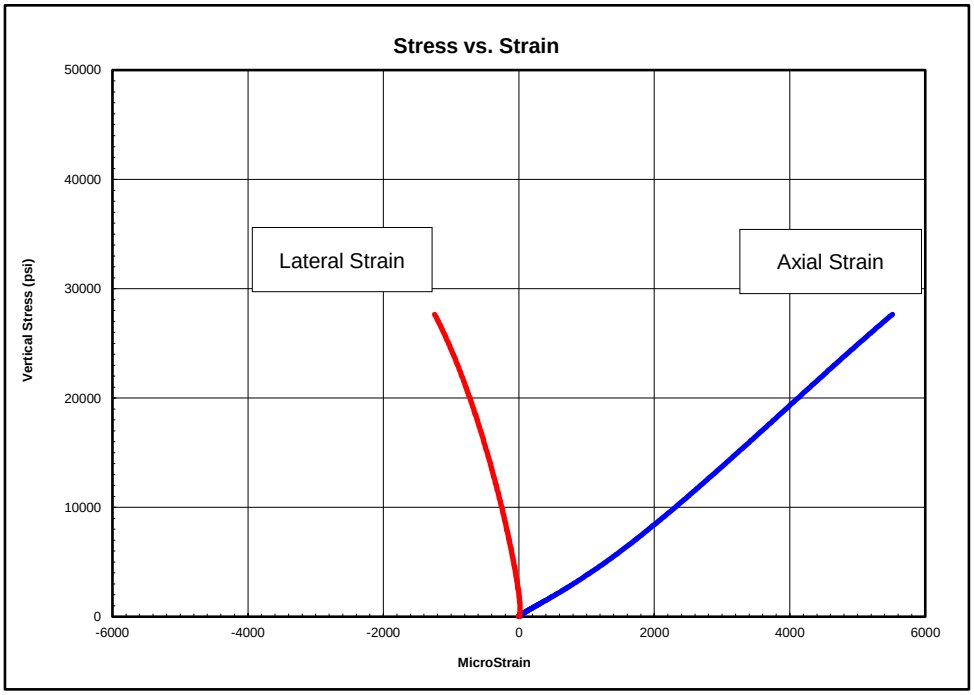
END OF ANALYSIS

USEPA Laboratory ID UT00930

Merrill Gee P.E. – Engineer in Charge

Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	1/23/2023
Tested By:	bp
Checked By:	jsc
Boring ID:	B-9A
Sample ID:	C-1
Depth, ft:	83.0-88.0
Sample Type:	rock core
Sample Description:	See photographs Intact material failure

Compressive Strength and Elastic Moduli of Rock by ASTM D7012 - Method D



Peak Compressive Stress: 27,649 psi

Stress Range, psi	Young's Modulus, psi	Poisson's Ratio
2800-10100	4,640,000	0.15
10100-17500	5,490,000	0.25
17500-24900	5,600,000	0.33

Notes:
Test specimen tested at the approximate as-received moisture content and at standard laboratory temperature.
The axial load was applied continuously at a stress rate that produced failure in a test time between 2 and 15 minutes.
Young's Modulus and Poisson's Ratio calculated using the tangent to the line in the stress range listed.
Calculations assume samples are isotropic, which is not necessarily the case.

Client:	HNTB Corporation	Test Date:	1/20/2023
Project Name:	Vtrans Lyndon	Tested By:	bp
Project Location:	Lyndon, VT	Checked By:	smd
GTX #:	316415		
Boring ID:	B-9A		
Sample ID:	C-1		
Depth:	83.0-88.0 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.31	4.32	4.32
Specimen Diameter, in:	1.98	1.98	1.98
Specimen Mass, g:	602.95		
Bulk Density, lb/ft^3	173	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:

Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.

Straightness Tolerance Met? YES

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00030	-0.00040

Difference between max and min readings, in:

0° = 0.00060 90° = 0.00040

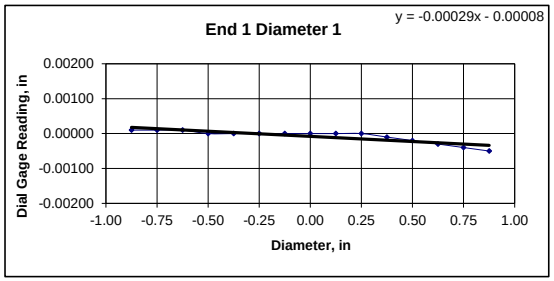
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00060
Diameter 2, in (rotated 90°)	-0.00050	-0.00040	-0.00030	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

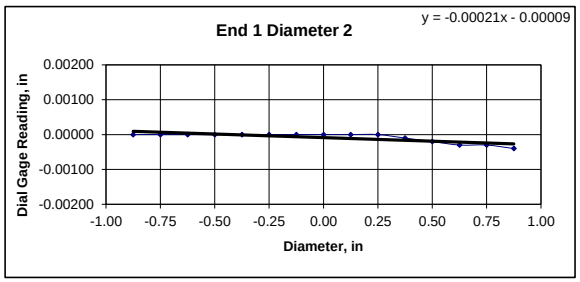
Difference between max and min readings, in:

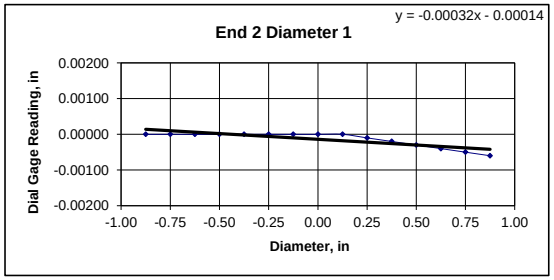
0° = 0.0006 90° = 0.0005

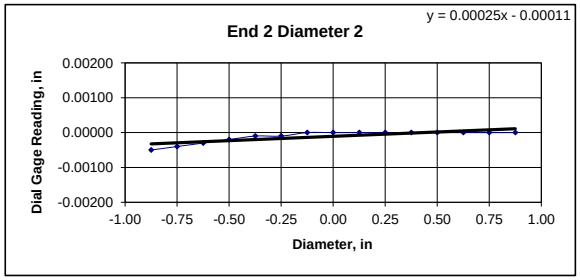
Maximum difference must be < 0.0020 in. Difference = ± 0.00030

Flatness Tolerance Met? YES









DIAMETER 1

End 1:
- Slope of Best Fit Line: 0.00029
- Angle of Best Fit Line: 0.01686

End 2:
- Slope of Best Fit Line: 0.00032
- Angle of Best Fit Line: 0.01833

Maximum Angular Difference: 0.00147

Parallelism Tolerance Met? YES

Spherically Seated

DIAMETER 2

End 1:
- Slope of Best Fit Line: 0.00021
- Angle of Best Fit Line: 0.01179

End 2:
- Slope of Best Fit Line: 0.00025
- Angle of Best Fit Line: 0.01424

Maximum Angular Difference: 0.00246

Parallelism Tolerance Met? YES

Spherically Seated

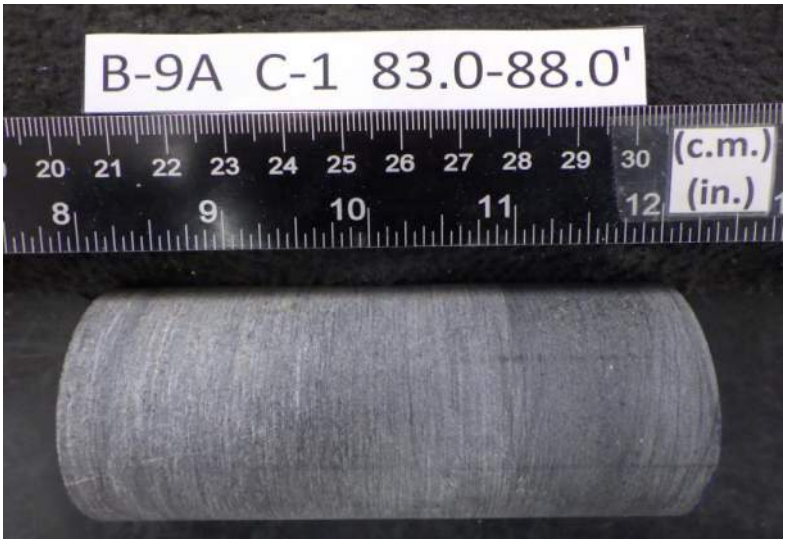
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00060	1.980	0.00030	0.017	YES
Diameter 2, in (rotated 90°)	0.00040	1.980	0.00020	0.012	YES
END 2					
Diameter 1, in	0.00060	1.980	0.00030	0.017	YES
Diameter 2, in (rotated 90°)	0.00050	1.980	0.00025	0.014	YES

Maximum angle of departure must be ≤ 0.25°

Perpendicularity Tolerance Met? YES

Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	1/23/2023
Tested By:	bp
Checked By:	smd
Boring ID:	B-9A
Sample ID:	C-1
Depth, ft:	83.0-88.0

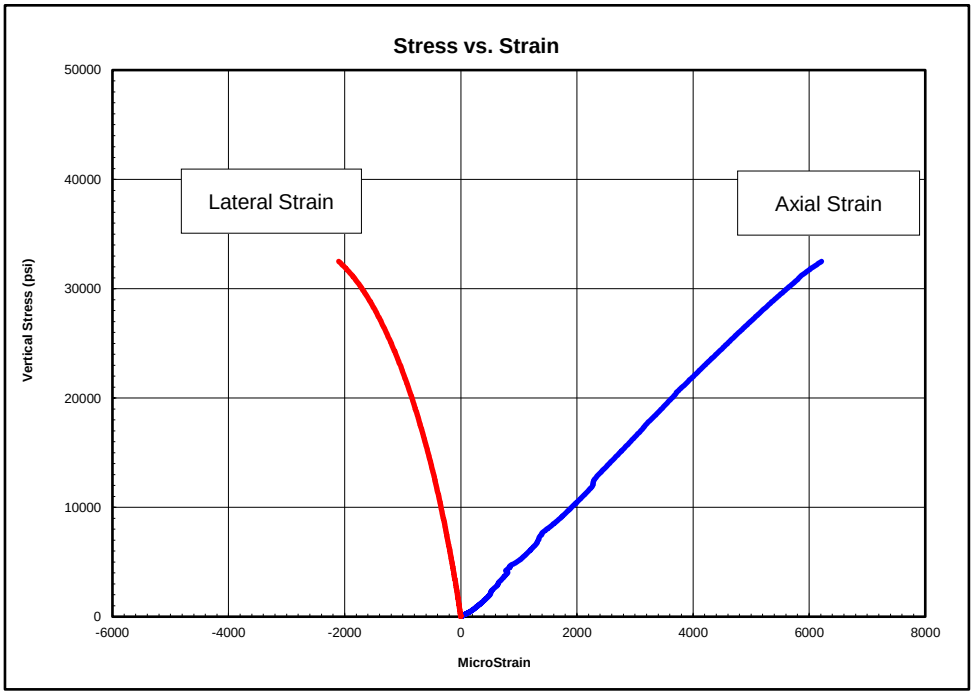


After cutting and grinding

After break

Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	1/23/2023
Tested By:	bp
Checked By:	jsc
Boring ID:	B-9A
Sample ID:	C-2
Depth, ft:	88.0-93.2
Sample Type:	rock core
Sample Description:	See photographs Intact material failure

Compressive Strength and Elastic Moduli of Rock by ASTM D7012 - Method D



Peak Compressive Stress: 32,502 psi

Stress Range, psi	Young's Modulus, psi	Poisson's Ratio
3300-11900	5,350,000	0.20
11900-20600	5,630,000	0.30
20600-29300	5,060,000	0.42

Notes:
Test specimen tested at the approximate as-received moisture content and at standard laboratory temperature.
The axial load was applied continuously at a stress rate that produced failure in a test time between 2 and 15 minutes.
Young's Modulus and Poisson's Ratio calculated using the tangent to the line in the stress range listed.
Calculations assume samples are isotropic, which is not necessarily the case.

Client:	HNTB Corporation	Test Date:	1/20/2023
Project Name:	Vtrans Lyndon	Tested By:	jab
Project Location:	Lyndon, VT	Checked By:	smd
GTX #:	316415		
Boring ID:	B-9A		
Sample ID:	C-2		
Depth:	88.0-93.2 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.26	4.26	4.26
Specimen Diameter, in:	1.98	1.98	1.98
Specimen Mass, g:	591.54		
Bulk Density, lb/ft^3	171	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:

Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.

Straightness Tolerance Met? YES

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00040	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010
Diameter 2, in (rotated 90°)	-0.00040	-0.00030	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00020	0.00020	0.00020

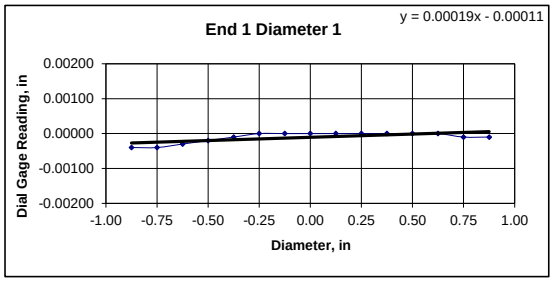
Difference between max and min readings, in: 0° = 0.00040, 90° = 0.00060

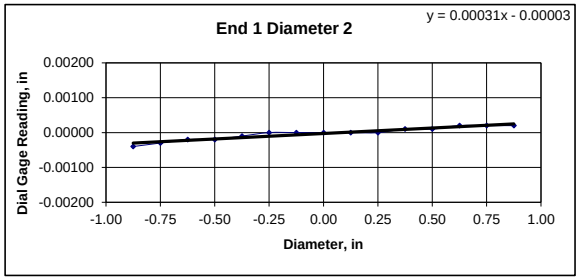
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00030	-0.00030	-0.00030	-0.00030	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00040	-0.00050	-0.00060

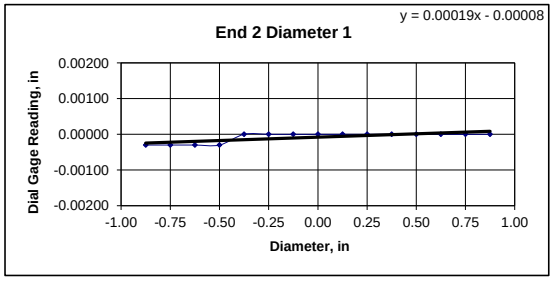
Difference between max and min readings, in: 0° = 0.0003, 90° = 0.0006

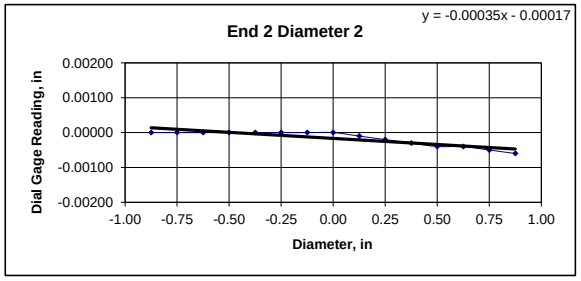
Maximum difference must be < 0.0020 in. Difference = ± 0.00030

Flatness Tolerance Met? YES









DIAMETER 1

End 1:
- Slope of Best Fit Line: 0.00019
- Angle of Best Fit Line: 0.01064

End 2:
- Slope of Best Fit Line: 0.00019
- Angle of Best Fit Line: 0.01080

Maximum Angular Difference: 0.00016

Parallelism Tolerance Met? YES

Spherically Seated

DIAMETER 2

End 1:
- Slope of Best Fit Line: 0.00031
- Angle of Best Fit Line: 0.01801

End 2:
- Slope of Best Fit Line: 0.00035
- Angle of Best Fit Line: 0.01997

Maximum Angular Difference: 0.00196

Parallelism Tolerance Met? YES

Spherically Seated

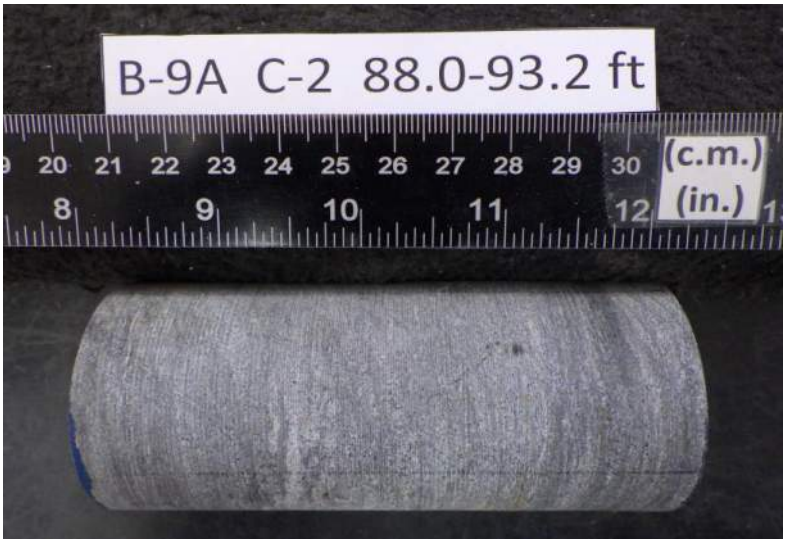
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00040	1.980	0.00020	0.012	YES
Diameter 2, in (rotated 90°)	0.00060	1.980	0.00030	0.017	YES
END 2					
Diameter 1, in	0.00030	1.980	0.00015	0.009	YES
Diameter 2, in (rotated 90°)	0.00060	1.980	0.00030	0.017	YES

Maximum angle of departure must be ≤ 0.25°

Perpendicularity Tolerance Met? YES

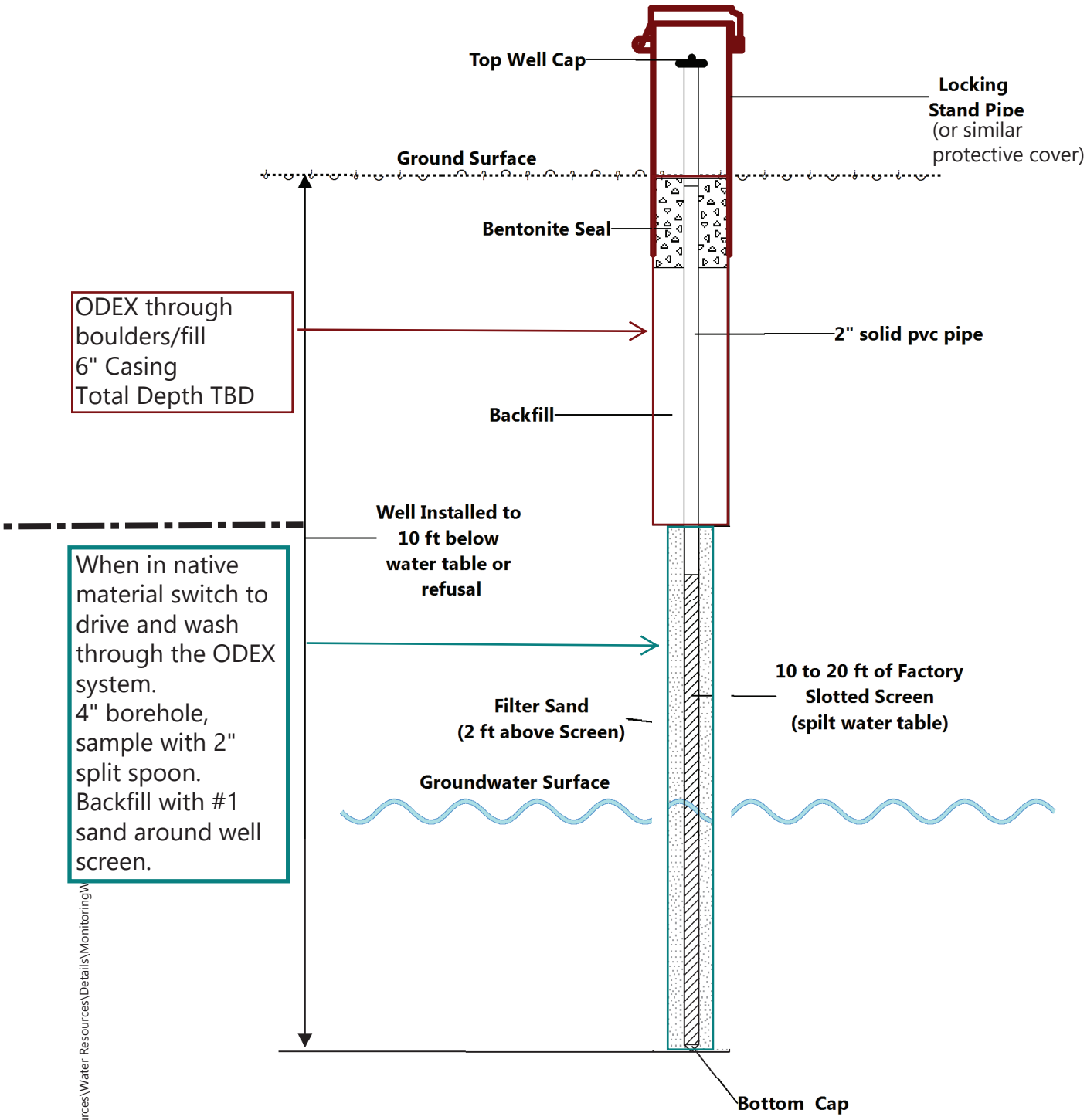
Client:	HNTB Corporation
Project Name:	Vtrans Lyndon
Project Location:	Lyndon, VT
GTX #:	316415
Test Date:	1/23/2023
Tested By:	bp
Checked By:	smd
Boring ID:	B-9A
Sample ID:	C-2
Depth, ft:	88.0-93.2



After cutting and grinding

After break

Attachment I – VHB Well Schematic



\\VTSBDATA\resources\Water Resources\Details\MonitoringW

Attachment II – Energy Measurement Drill Rig Calibration Sheets

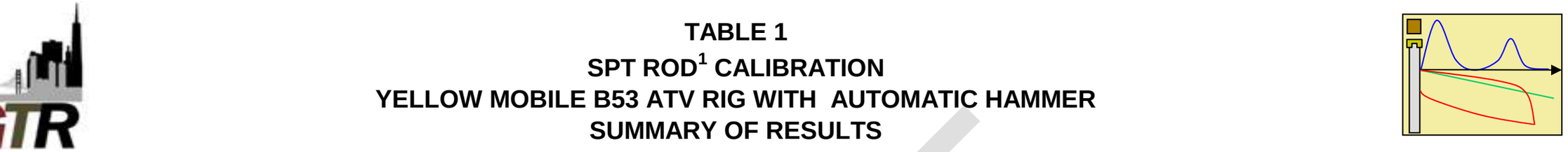
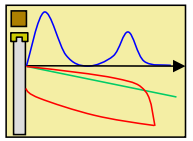


TABLE 1
SPT ROD[1] CALIBRATION
YELLOW MOBILE B53 ATV RIG WITH AUTOMATIC HAMMER
SUMMARY OF RESULTS

RIG TYPE	HAMMER TYPE	BORING	DATE	Test Number	OPERATOR	DEPTH	SAMPLE [2] DESCRIPTION	BLOW [2] COUNT	BLOWS [3] ANALYZED		EMX[4] (k-ft)	ER[5] (k-ft)	ETR[6] (%)	FMX (kips)	BPM (bpm)	Cn[7]
Blue Mobile B57 ATV Rig (Serial No. 2014-021)	Auto Hammer	Rig #4	10/9/19	#1	M.T	20-22	f-c SAND, trace inorganic Silt, trace Gravel	4-6-5-5	11	Average	0.289	0.350	82.6	40.3	37.9	1.38
										Std.Dev.	0.003	0.000	0.9	0.6	0.2	
										Maximum	0.296	0.350	84.5	41.4	38.2	
										Minimum	0.285	0.350	81.3	38.9	37.5	
				#2	M.T	23-25	f-c SAND, trace inorganic Silt, trace Gravel	4-6-4-5	10	Average	0.288	0.350	82.4	34.2	37.7	1.37
										Std.Dev.	0.004	0.000	1.1	0.3	0.1	
										Maximum	0.293	0.350	83.6	34.5	37.4	
										Minimum	0.279	0.350	79.7	33.4	37.5	
				#3	M.T	26-28	f-c SAND, trace inorganic Silt, trace Gravel	5-6-6-5	12	Average	0.299	0.350	85.4	40.2	38.0	1.42
										Std.Dev.	0.006	0.000	1.7	0.4	0.1	
										Maximum	0.312	0.350	89.3	41.1	38.2	
										Minimum	0.291	0.350	83.1	39.6	37.7	
				#4	M.T	29-31	f-c SAND, trace Silt	5-5-7-8	12	Average	0.312	0.350	89.3	41.1	37.4	1.49
										Std.Dev.	0.005	0.000	1.4	0.8	0.1	
										Maximum	0.320	0.350	91.4	42.0	37.7	
										Minimum	0.302	0.350	86.2	39.4	37.2	
				#5	M.T	32-34	f-c SAND, trace Silt	6-6-7-8	13	Average	0.300	0.350	85.7	41.3	36.9	1.43
										Std.Dev.	0.006	0.000	1.6	0.6	0.1	
										Maximum	0.309	0.350	88.2	42.2	37.2	
										Minimum	0.291	0.350	83.0	40.1	36.7	
				Average	M.T	-	-	-	58	Average	0.298	0.350	85.2	39.6	37.6	1.42
										Maximum	0.320	0.350	91.4	42.2	38.2	
										Minimum	0.279	0.350	79.7	33.4	36.7	

Notes:
1. NWJ rods used with NWJ instrumented rod.
2. The soil description and SPT N-value were recorded by others. The SPT N-value is the sum of the middle 2 numbers when the sampler s driven for 4 - six inch intervals
3. Blows analyzed correspond to SPT N-value and may not match up exactly with the N-value due to differences in blow count logging between PDA and inspector or poor data quality.
4. EMX is the integration of F and V obtained from the PDA.
5. ER is the rated energy of 0.35 kip-ft based on 140 pound hammer and 2.5 feet drop height.
6. ETR is the energy transfer ratio based on (EMX/ER)*100%.
7. Cn is the energy correction factor which is equal to ETR/60% and is used to convert the measured SPT N-value to the corrected equivalent value representing 60% energy transfer.

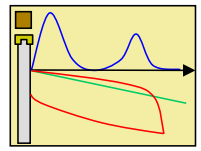
TABLE 1
SPT ROD[1] CALIBRATION
WHITE VERSADRILL GT-8 TRUCK RIG WITH AUTOMATIC HAMMER
SUMMARY OF RESULTS



RIG TYPE	HAMMER TYPE	BORING	DATE	Test Number	OPERATOR	DEPTH	SAMPLE [2] DESCRIPTION	BLOW [2] COUNT	BLOWS [3] ANALYZED		EMX[4] (k-ft)	ER[5] (k-ft)	ETR[6] (%)	FMX (kips)	BPM (bpm)	Cn[7]
White Versadrill GT-8 Truck Rig (VIN 4712-A-GT8-P)	Auto Hammer	GT-8	10/9/19	#1	M.D	20-22	f-c SAND, trace inorganic Silt	3-3-4-4	9	Average	0.285	0.350	81.4	41.9	43.0	1.36
										Std.Dev.	0.002	0.000	0.7	0.3	0.2	
										Maximum	0.289	0.350	82.6	42.3	43.1	
										Minimum	0.287	0.350	80.6	41.3	42.6	
				#2	M.D	24-46	f.SAND	4-5-5-5	10	Average	0.293	0.350	83.7	42.5	43.0	1.40
										Std.Dev.	0.006	0.000	1.6	0.6	0.2	
										Maximum	0.300	0.350	85.6	43.6	43.4	
										Minimum	0.280	0.350	80.1	41.6	42.7	
				#3	M.D	27-29	f-c SAND, trace inorganic Silt	4-5-5-4	10	Average	0.294	0.350	84.1	43.2	42.2	1.40
										Std.Dev.	0.004	0.000	1.2	0.3	0.4	
										Maximum	0.301	0.350	86.1	43.7	43.0	
										Minimum	0.288	0.350	82.3	42.6	41.6	
				#4	M.D	30-32	f-c SAND, trace inorganic Silt	4-7-7-8	14	Average	0.305	0.350	87.2	42.0	43.4	1.45
										Std.Dev.	0.007	0.000	2.1	0.6	0.4	
										Maximum	0.324	0.350	92.5	43.1	44.0	
										Minimum	0.292	0.350	83.4	40.5	42.8	
				#5	M.D	33-35	f-c SAND	3-6-8-7	14	Average	0.307	0.350	87.7	38.5	43.5	1.46
										Std.Dev.	0.005	0.000	1.4	0.7	0.6	
										Maximum	0.317	0.350	90.7	40.2	44.3	
										Minimum	0.299	0.350	85.4	37.6	42.5	
				#6	M.D	36-38	f-m SAND, trace Silt	5-6-8-8	14	Average	0.317	0.350	90.6	36.5	45.4	1.51
										Std.Dev.	0.004	0.000	1.2	0.7	0.1	
										Maximum	0.322	0.350	92.0	37.9	45.7	
										Minimum	0.306	0.350	87.5	34.7	45.2	
				Average	M.D	-	-	-	62	Average	0.304	0.294	87.0	33.4	43.6	1.45
										Maximum	0.324	0.350	92.5	43.7	45.7	
										Minimum	0.280	0.350	80.1	34.7	41.6	

Notes:
1. NWJ rods used with NWJ instrumented rod.
2. The soil description and SPT N-value were recorded by others. The SPT N-value is the sum of the middle 2 numbers when the sampler s driven for 4 - six inch intervals
3. Blows analyzed correspond to SPT N-value and may not match up exactly with the N-value due to differences in blow count logging between PDA and inspector or poor data quality.
4. EMX is the integration of F and V obtained from the PDA.
5. ER is the rated energy of 0.35 kip-ft based on 140 pound hammer and 2.5 feet drop height.
6. ETR is the energy transfer ratio based on (EMX/ER)*100%.
7. Cn is the energy correction factor which is equal to ETR/60% and is used to convert the measured SPT N-value to the corrected equivalent value representing 60% energy transfer.

TABLE 1
SPT ROD[1] CALIBRATION
WHITE MOBILE STRATASTAR TRUCK RIG WITH AUTOMATIC HAMMER
SUMMARY OF RESULTS



RIG TYPE	HAMMER TYPE	BORING	DATE	Test Number	OPERATOR	DEPTH	SAMPLE [2] DESCRIPTION	BLOW [2] COUNT	BLOWS [3] ANALYZED		EMX[4] (k-ft)	ER[5] (k-ft)	ETR[6] (%)	FMX (kips)	BPM (bpm)	Cn[7]
White Mobile Sratastar Truck RIG (S/N 908022)	Auto Hammer	Boring #1	10/19/20	#1	K.S.	20-22	m-c SAND, some Gravel	5,4,5,6	9	Average	0.194	0.350	55.5	36.4	51.0	0.93
										Std.Dev.	0.003	0.000	0.9	0.8	0.2	
										Maximum	0.201	0.350	57.5	37.2	51.4	
										Minimum	0.191	0.350	54.5	34.7	50.7	
				#2	K.S.	23-25	m-c SAND, some Gravel	17,9,9,8	18	Average	0.200	0.350	57.2	35.7	57.9	0.95
										Std.Dev.	0.003	0.000	0.9	0.6	0.2	
										Maximum	0.207	0.350	59.2	37.3	58.3	
										Minimum	0.196	0.350	56.0	34.2	57.6	
				#3	K.S.	26-28	m-c SAND, some Gravel	9,8,9,13	17	Average	0.202	0.350	57.6	36.2	50.9	0.96
										Std.Dev.	0.004	0.000	1.0	0.4	0.1	
										Maximum	0.210	0.350	59.9	36.7	51.0	
										Minimum	0.195	0.350	55.8	35.2	50.8	
				#4	K.S.	29-31	f-m-c SAND, some Gravel	16,13,9,9	22	Average	0.201	0.350	57.4	33.4	51.9	0.96
										Std.Dev.	0.007	0.000	2.1	0.8	0.1	
										Maximum	0.213	0.350	60.9	34.8	52.1	
										Minimum	0.187	0.350	53.5	32.0	51.7	
				#5	K.S.	32-34	f-m-c SAND, some Gravel	28,29,12,10	41	Average	0.204	0.350	58.1	35.6	48.1	0.97
										Std.Dev.	0.005	0.000	1.4	0.7	1.2	
										Maximum	0.211	0.350	60.4	36.7	48.9	
										Minimum	0.191	0.350	54.6	34.2	45.6	
				#6	K.S.	35-37	f-m SAND, some Gravel	6,7,5,4	12	Average	0.211	0.350	60.2	33.7	53.9	1.00
										Std.Dev.	0.003	0.000	0.8	0.5	0.2	
										Maximum	0.215	0.350	61.5	34.6	54.2	
										Minimum	0.206	0.350	58.8	33.2	53.6	
				Average	K.S.	-	-	-	110	Average	0.203	0.350	58.0	35.1	51.5	0.97
										Maximum	0.215	0.350	61.5	37.3	58.3	
										Minimum	0.187	0.350	53.5	32.0	45.6	

Notes:
1. NWJ rods used with NWJ instrumented rod.
2. The soil description and SPT N-value were recorded by others. The SPT N-value is the sum of the middle 2 numbers when the sampler s driven for 4 - six inch intervals
3. Blows analyzed correspond to SPT N-value and may not match up exactly with the N-value due to differences in blow count logging between PDA and inspector or poor data quality.
4. EMX is the integration of F and V obtained from the PDA.
5. ER is the rated energy of 0.35 kip-ft based on 140 pound hammer and 2.5 feet drop height.
6. ETR is the energy transfer ratio based on (EMX/ER)*100%.
7. Cn is the energy correction factor which is equal to ETR/60% and is used to convert the measured SPT N-value to the corrected equivalent value representing 60% energy transfer.
8. Test #1 was not included in the final average Cn value due to the N-value being less than 10.