GZA GeoEnvironmental, Inc. Engineers and Scientists

Harford RS 0113(40)
Hartford, Vermont

Boring No.: B-6 (OW)
Page: 1 of 2
File No.: 22721.5
Check: TAD

Contractor: New Hampshire Boring
Foreman: Bob Thompson
Logged by: S. Currier
Date Start/Finish: 3-27-02 / 3-27-02
Boring Location: 31+81.3, 100.4 ft. RT
GS Elev.: Datum: NGVD 1929

	Auger/ Casing	Sampler
Type:	HSA	SS
I.D.:	4-1/4"	1-3/8"
Hammer Wt.:		140#
Hammer Fall:		30"
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NOT ENCOUNTERED				

Depth (ft)	No.	Pen./ Rec. (in)	Depth (ft)	Blows (/6")	N Value	Sample Description & Classification	Stratum Desc.	Remarks
	S-1	24/ 19	0.0- 2.0	1-1 1-1	2	Very loose, brown, fine SAND, some Silt, trace organics and roots. (A-3)	0.3 ft TOPSOIL; SAND	
5	S-2	24/ 23	5.0- 7.0	3-4 6-6	10	Stiff, gray, SILT, little fine Sand, trace Clay. (A-4)	3.5 ft	
10	S-3	24/ 21	10.0- 12.0	2-4 5-4	9	Stiff, gray, SILT, little fine Sand, trace Clay. (A-4)		
15	S-4	24/ 22	15.0- 17.0	2-3 4-5	7	Medium stiff, gray, SILT, little fine Sand, trace Clay. (A-4)	SILT AND CLAY	
20	S-5	24/ 23	20.0- 22.0	3-3 5-5	8	Stiff, gray, SILT, little fine Sand, trace Clay. (A-4)		
25	S-6	24/ 23	25.0- 27.0	3-4 6-6	10	Stiff, gray, Clayey SILT, trace fine Sand. (A-4)		

Equipment Installed: PROTECTIVE CASING; CONCRETE; SEAL; 1'; 2" ID Solid Sch 40 PVC Well Riser; AUGER CUTTINGS

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-6 (OW)

SOIL BL WELL LOGS.GPJ GZA_MA.GDT 1/10/06

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Depth (ft)	No.	Pen./ Rec. (in)	Depth (ft)	Blows (/6")	N Value	Sample Description & Classification	Stratum Desc.	Remarks
	S-7	24/ 24	30.0- 32.0	3-4 3-5	7	Medium stiff, gray, Clayey SILT. (A-4)		
35	S-8	24/ 23	35.0- 37.0	3-4 5-6	9	Stiff, gray, Clayey SILT. (A-4)		
40	S-9	24/ 20	40.0- 42.0	4-4 8-9	12	Stiff, gray, Clayey SILT. (A-4)		
45	S-10	24/ 23	45.0- 47.0	3-6 8-10	14	Stiff, gray, Clayey SILT. (A-4)	SILT AND CLAY	
50	S-11	24/ 24	50.0- 52.0	3-5 6-6	11	Stiff, gray, SILT & CLAY. (A-4)		
55	S-12	24/ 18	55.0- 57.0	3-8 10-8	18	Very stiff, SILT & CLAY. (A-4)	57.0 ft	
60	S-13	24/ 14	60.0- 62.0	7-13 13-14	26	Very stiff, gray, fine SAND and Silt. (A-3)	SAND; 62.0 ft	
						Bottom of boring at 62 feet below ground surface. No refusal.		

Equipment Installed: 2" ID Solid Sch 40 PVC Well Riser; 45'; BENTONITE SEAL 47.5'; 50'; FILTER SAND; 2" ID Slotted Sch 40 PVC Well Screen (0.01" Slot); 60'

REMARKS

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Boring No.: B-6 (OW)

SOIL BL WELL LOGS.GPJ GZA_MA.GDT 1/10/06

GZA GeoEnvironmental, Inc. Engineers and Scientists

Harford RS 0113(40)
Hartford, Vermont

Boring No.: B-7
Page: 1 of 3
File No.: 22721.5
Check: TAD

Contractor: New Hampshire Boring
Foreman: Bob Thompson
Logged by: S. Currier
Date Start/Finish: 3-26-02 / 3-26-02
Boring Location: 32+58.2, 82.9 ft. RT
GS Elev.: 488.0 ft Datum: NGVD 1929

	Auger/ Casing	Sampler
Type:	HSA/HW	SS
I.D.:	4-1/4"/4"	1-3/8"
Hammer Wt.:	-/300#	140#
Hammer Fall:	-/24"	30"
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Depth (ft)	No.	Pen./ Rec. (in)	Depth (ft)	Blows (/6")	N Value	Sample Description & Classification	Stratum Desc.	Remarks
	S-1	24/ 13	0.0- 2.0	1-1 1-3	2	Very loose, brown, SILT, some fine Sand, trace organics and roots. (A-4)	0.3 ft TOPSOIL	
5	S-2	24/ 22	5.0- 7.0	4-6 7-8	13	Stiff, gray, Clayey SILT, little fine Sand. (A-4)		
10	S-3	24/ 19	10.0- 12.0	7-8 8-7	16	Very stiff, gray, Clayey SILT, trace fine Sand, trace Clay. (A-4)		
15	S-4	24/ 17	15.0- 17.0	3-3 5-7	8	Stiff, gray, Clayey SILT, trace Sand, trace Clay. (A-4)	SILT AND CLAY	
20	S-5	24/ 19	20.0- 22.0	4-5 7-7	12	Stiff, gray, Clayey SILT, trace fine Sand. (A-4)		1
25	S-6	24/ 19	25.0- 27.0	4-5 7-7	12	Stiff, gray, Clayey SILT, trace fine Sand. (A-4)		2

Equipment Installed: No Equipment Installed

REMARKS

1. Laboratory corrosivity testing performed on S-5.
2. Laboratory sieve analysis, hydrometer testing, and Atterberg limit testing performed on S-6 and S-9.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-7

SOIL BL WELL LOGS.GPJ GZA_MA.GDT 1/10/06

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Check: TAD

Depth (ft)	No.	Pen./ Rec. (in)	Depth (ft)	Blows (/6")	N Value	Sample Description & Classification	Stratum Desc.	Remarks
	S-7	24/ 21	30.0- 32.0	2-4 5-5	9	Stiff, gray, CLAY & SILT. (A-4)		
35	S-8	24/ 21	35.0- 37.0	4-4 6-9	10	Stiff, gray, CLAY & SILT. (A-4)		
40	U-1	28/ 27	40.0- 42.3	PUSH		Gray, Clayey SILT. (A-4)	SILT AND CLAY	3
45	S-9	24/ 20	45.0- 47.0	4-6 7-10	13	Stiff, gray, CLAY & SILT. (A-4)		
50	S-10	24/ 23	50.0- 52.0	4-5 5-7	10	Stiff, gray, CLAY & SILT. (A-4)		
55	S-11	24/ 19	55.0- 57.0	4-4 10-11	14	Stiff, gray, CLAY & SILT. (A-4)	57.0 ft	
60	S-12	24/ 17	60.0- 62.0	8-12 14-19	26	Very stiff, gray, SILT, little fine Sand. (A-4)	SILT AND CLAY	

Equipment Installed: Remarks

REMARKS

3. Obtained an undisturbed shelby tube sample. Performed sieve analysis, hydrometer testing, Atterberg limit testing, and undrained shear strength testing.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-7

SOIL BL WELL LOGS.GPJ GZA_MA.GDT 1/10/06

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Check: TAD

Depth (ft)	No.	Pen./ Rec. (in)	Depth (ft)	Blows (/6")	N Value	Sample Description & Classification	Stratum Desc.	Remarks
	S-13	24/ 17	65.0- 67.0	15-15 20-19	35	Hard, gray, SILT, little fine to medium SAND. (A-4)		
70	S-14	24/ 13	70.0- 72.0	13-20 24-23	44	Hard, gray, SILT, little fine Sand. (A-4)	SILT AND CLAY	
75	S-15	24/ 24	75.0- 77.0	7-8 7-10	15	Stiff, gray, Clayey SILT, trace fine Sand. (A-4)		
80	S-16	24/ 20	80.0- 82.0	9-12 13-15	25	Very stiff, gray, Clayey SILT, trace fine Sand. (A-4)		
						Bottom of boring at 82 feet below ground surface. No refusal.	82.0 ft	

Equipment Installed: Remarks

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-7

SOIL BL WELL LOGS.GPJ GZA_MA.GDT 1/10/06

GZA GeoEnvironmental, Inc. Engineers and Scientists

Harford RS 0113(40)
Hartford, Vermont

Boring No.: B-8 (OW)
Page: 1 of 3
File No.: 22721.5
Check: TAD

Contractor: New Hampshire Boring
Foreman: Bob Thompson
Logged by: S. Currier
Date Start/Finish: 3-25-02 / 3-25-02
Boring Location: 32+50.4, 116.9 ft. RT
GS Elev.: 489.9 ft Datum: NGVD 1929

	Auger/ Casing	Sampler
Type:	HSA/HW	SS
I.D.:	4-1/4"/4"	1-3/8"
Hammer Wt.:	-/300#	140#
Hammer Fall:	-/24"	30"
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
4/3/02	12:30	61.9 ft	PVC	9 days
4/10/02	08:41	60.2 ft	PVC	15 days

Depth (ft)	No.	Pen./ Rec. (in)	Depth (ft)	Blows (/6")	N Value	Sample Description & Classification	Stratum Desc.	Remarks
	S-1	24/ 3	0.0- 2.0	1-1 1-2	2	Very loose, brown, fine SAND, some Silt, trace organics and roots. (A-3)	SAND	
5	S-2	24/ 20	5.0- 7.0	5-5 7-6	12	Medium dense, gray, Clayey SILT, trace fine Sand. (A-4)	5.0 ft	
10	S-3	24/ 15	10.0- 12.0	4-6 6-7	12	Stiff, gray, SILT & CLAY. (A-4)		
15	S-4	24/ 16	15.0- 17.0	2-4 4-5	8	Stiff, gray, SILT & CLAY. (A-4)	SILT AND CLAY	
20	S-5	24/ 17	20.0- 22.0	4-4 6-7	10	Stiff, gray, SILT & CLAY. (A-4)		
25	S-6	24/ 21	25.0- 27.0	2-5 4-4	9	Stiff, gray, SILT & CLAY. (A-4)		1

Equipment Installed: PROTECTIVE CASING; CONCRETE; SEAL; 1'; AUGER CUTTINGS; 2" ID Solid Sch 40 PVC Well Riser

REMARKS

1. Laboratory sieve analysis, hydrometer testing and Atterberg limit testing performed on S-6.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-8 (OW)

SOIL BL WELL LOGS.GPJ GZA_MA.GDT 1/10/06

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Harford RS 0113(40)
Hartford, Vermont

Boring No.: B-8 (OW)
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File No.: 22721.5
Check: TAD

Depth (ft)	No.	Pen./ Rec. (in)	Depth (ft)	Blows (/6")	N Value	Sample Description & Classification	Stratum Desc.	Remarks
	S-7	24/ 18	30.0- 32.0	4-4 7-10	11	Stiff, gray, CLAY & SILT. (A-4)		
35	S-8	24/ 22	35.0- 37.0	3-5 6-6	11	Stiff, gray, CLAY & SILT. (A-4)		
40	S-9	24/ 22	40.0- 42.0	6-6 9-9	15	Stiff, gray, CLAY & SILT. (A-4)		
45	S-10	24/ 24	45.0- 47.0	4-4 6-7	10	Stiff, gray, CLAY & SILT. (A-4)	SILT AND CLAY	
50	S-11	24/ 24	50.0- 52.0	4-5 6-12	11	Stiff, gray, CLAY & SILT. (A-4)		
55	S-12	24/ 17	55.0- 57.0	4-7 14-19	21	Very stiff, gray, CLAY & SILT, trace fine Sand. (A-4)		
60	S-13	24/ 17	60.0- 62.0	21-26 26-20	52	Very dense, gray, fine SAND, some Silt. (A-3)	60.0 ft; SAND	

Equipment Installed: AUGER CUTTINGS; 2" ID Slotted Sch 40 PVC Well Screen (0.01" Slot)

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-8 (OW)

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Check: TAD

Depth (ft)	No.	Pen./ Rec. (in)	Depth (ft)	Blows (/6")	N Value	Sample Description & Classification	Stratum Desc.	Remarks
	S-14	24/ 20	65.0- 67.0	7-12 15-19	27	Very stiff, gray, SILT, trace fine Sand, trace Clay. (A-4)	65.0 ft; SILT; 69.5 ft	
70	S-15	24/ 12	70.0- 72.0	15-19 23-23	42	Dense, gray-brown, fine to coarse SAND, little Silt. (A-2-4)	SAND	
75	S-16	24/ 13	75.0- 77.0	30-27 26-27	53	Very dense, gray-brown, fine to coarse SAND, little Gravel, little Silt. (A-2-4)		
80	S-17	24/ 16	80.0- 82.0	15-15 18-20	33	Dense, gray-brown, fine to coarse SAND, little Silt. (A-2-4)		
						Bottom of boring at 82 feet below ground surface. No refusal.	82.0 ft	

Equipment Installed: 65'; BENTONITE SEAL 67'; FILTER SAND; 70'; 2" ID Slotted Sch 40 PVC Well Screen (0.01" Slot); 80'

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-8 (OW)

SOIL BL WELL LOGS.GPJ GZA_MA.GDT 1/10/06

BORING LOG SHEET 2

PROJECT NAME: HARTFORD
PROJECT NUMBER: RS 0113(40)

FILE NAME: z86c027borlog.DGN
PROJECT LEADER: KEN UPMAL
DESIGNED BY: K.ISHIKURA/E.ATKINS

PLOT DATE: 1/6/2007
DRAWN BY: P. MILEWSKI
CHECKED BY: K. ISHIKURA
SHEET 152 OF 239