Date:	12/13/2011
*	-

A	APEX BORING LOG					
Proje	ct: EPA LF	ICC	Project No: 6724.001	X: 815	210	
Locati	on: New Be	edford Har	bor North of Popes Island	Y: 269	7039	
	ion at grade		Datum: MLLW	Boring No:	CO SHOW	
	Type: Stee		Boring Depth: -88	A2011-CAD4-I	3-1	
	Diameter:	4"	Drill Rig: CME 55			
Drill C	coewities - gasgirit squasquirito opgi		When a conservated to the second control of the con	Sheet: 1 of 4		
Drille			Log By: GCD & GAD		ji	
Depth below mudline (ft)	RQD Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Description (Color, Texture, Structur Trace < 10%, Little 10% to 20%, Some 20% to 35%, A		Elevation (MLLW)	
0	24.0"		3" Black, organic SILT, some shell has	h, some fine sand.	15	
2	6.0"	2,1,3,3	3" Dark grey, fine to medium SAND and organic S	ILT, trace shell hash.	-6.2	
4	24.0" 12.0"	6,23,16, 12	Light grey, fine SAND, little inor	V.	-8.2	
6	24.0" 15.0"	14,8,9,12	Grey, inorganic SILT	W 6	-10.2	
8	24.0" 8.0"	6,6,4,6	Grey, inorganic SILT and fin	e SAND.	-12.2	
10	24.0" 16.0"	5,4,10,24	Grey, inorganic SILT, little fi	ne sand.	-14.2	
12	24.0" 9.0"	6,4,7,10	Grey, inorganic SILT, little fi	ne sand.	-16.2	
14	24.0" 8.0"	7,4,5,5	Grey, inorganic SILT, little fi	ne sand.	-18.2	
16	24.0" 11.0"	6,5,5,7	Grey, inorganic SILT, little fi	ne sand.	-20.2	
18	24.0" 18.0"	6,4,4,6	Tan grey, SILT, little fine sand, grades to tan	grey, fine SAND, little silt.	-22.2	
20	24.0" 12.0"	9,9,12,9	Tan, fine SAND, grades to tan, SILT, littl	e to some fine sand.	-24.2	
22	24.0" 12.0"	4,6,6,9	Tan, fine SAND, little s	silt.	-26.2	
24	24.0" 12.0"	9,9,12,9	Tan, fine SAND, little s	silt.	-28.2	
26	24.0" 13.0"	8,5,7,7	Tan grey, SILT.		-30.2	

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

2/13/2011

APEX

/-\	1-1	ヒス		BORING LOG		
Proje	ect:	EPA LH	CC	Project No: 6724.001	X: 81	5210
Locati	ion:	New Be	dford Har	bor North of Popes Island	Y: 269	97039
Elevat	ion a	at grade:	-4.2	Datum: MLLW	Boring No:	
		pe: Stee		Boring Depth: -88	A2011-CAD4	-B-1
Casing	g Dia	ameter:	4''	Drill Rig: CME 55		
Drill (Co:	NH Bori	ng	Method: Drive and Wash	Sheet: 2 of 4	
Drille	er:	N. Stude	dard	Log By: GCD & GAD		
Depth below mudline (ft)	RaD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Description (Color, Texture, Structu Trace < 10%, Little 10% to 20%, Some 20% to 35%, A	- No.	Elevation (MLLW)
26 28		24.0" 9.0"	3,3,5,9	Tan grey, SILT.		-32.2
30		24.0" 7.0"	7,4,6,8	Tan grey, SILT, little fine	sand.	-34.2
32		24.0" 9.0"	8,9,14,14	Interbedded grey and tan, fine SA	AND and SILT.	-36.2
34		24.0" 15.0"	6,8,8,11	Interbedded grey and tan, fine SANI	O grades to SILT.	-38.2
36		24.0" 13.0"	2,2,5,8	Interbedded grey and tan, fine SANI	O grades to SILT.	-40.2
38	2	24.0" 12.0"	1,1,8,12	Interbedded grey and tan, fine SANI	O grades to SILT.	-42.2
		24.0"	0000	2" Tan, fine SAND.	ă	4
40		16.0"	6,6,8,6	14" Grey, fine SAND, grades	s to SILT.	-44.2
42		24.0" 12.0"	3,5,5,7	Grey, fine SAND, little S	BILT.	-46.2
44		24.0" 9.0"	9,12,11, 11	Tan grey, SILT, some fine	e sand.	-48.2
46		24.0" 14.0"	18,16,18, 18	Grey, SILT.		-50.2
48		24.0" 12.0"	9,11,11,8	Grey, SILT, little fine sa	and.	-52.2
49		12.0" 6.0"	19,*	Grey, SILT, little fine sand. *Casing advancin dropped 4' on removal of sp	• • •	-53.2
52		24.0" 11.0"	wor,wor, wor, 21	Grey, SILT - Casing penetrated through int inside of casing to collect s dline (ft)" column represent the depth below mudline of the	sample.	-56.2

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

Date:	12/13/2011

APEX

9790.	7.7				
Proje		EPA LH		Project No: 6724.001 X: 815	
	CANADIDAM	CONTRACTOR ATTRICTS	dford Har		7039
		at grade:		Datum: MLLW Boring No:	
		pe: Stee		Boring Depth: -88 A2011-CAD4-E	3-1
Casin	g Dia	ameter:		Drill Rig: CME 55	
Drill (7	NH Bori		Method: Drive and Wash Sheet: 3 of 4	
Drille	er:	N. Stude	dard	Log By: GCD & GAD	
Depth below mudline (ft)	RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%	Elevation (MLLW)
52		24.0"		7" Grev. fine SAND. little silt.	ш)
E 4		20. 25.000	8,17,17, 10		E0 0
54		9.0" 24.0"	40.00.40	2" Grey fine to coarse SAND, some fine to coarse gravel, little silt.	-58.2
56	E.	2.0"	18,22,16, 23	Grey, fine to coarse GRAVEL, little silt, little fine to coarse sand - TILL.	-60.2
58		24.0" 0.0"	20,23,16, 33	Coarse GRAVEL plugging nose of spoon - probable TILL.	-62.2
60		24.0" 13.0"	28,33,72, 33	Grey, SILT, some fine to coarse sand, some fine to coarse gravel - TILL.	-64.2
62		24.0" 4.0"	20,25,17, 44	Grey, SILT, some fine to coarse sand, some fine to coarse gravel - TILL.	-66.2
64		24.0" 1.0"	8,13,18,2 3	Grey, fine to coarse GRAVEL, some fine to coarse sand, some silt - TILL.	-68.2
66		3.0" 1.5"	150/3"	Coarse GRAVEL. Obstruction encountered - drilled with roller bit through 6" cobble.	-70.2
68		24.0" 0.0"	30,21,33, 46	No Recovery	-72.2
70		24.0" 3.0"	46,26,33, 38	Grey, fine to coarse SAND, some silt, some fine to coarse gravel - TILL.	-74.2
72		24.0" 0.0"	33,26,27, 42	No Recovery	-76.2
72.4		5.0" 0.0"	150/5"	Grey, fine to coarse SAND, some silt, some fine to coarse gravel - TILL.	-76.6
73.8				Obstruction Encountered - 76.6' MLLW. Advanced roller bit to 78.0' MLLW and began coring.	-78.0
78.8	%58	5' 3.7'	5-4-5-4-8	Rock Core #1 -78.0 to -83.0 MLLW Grey, moderately fractured, GRANITE, slight gneissic banding. Pink granitic PEGMATITE 1.9'-2.3'.	-83.0

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

	_					Date:	12/13	3/2011
Δ	P	EX		BORII	NG LOG			
Proje	ect:	EPA LH	CC		Project No: 6724.001	X:	815	210
	3125 E. C.	COMPLETE OUT CHEST CONTRACTOR	dford Har	bor	North of Popes Island	Y:	269	7039
		at grade:		Datum:	MLLW	Boring No:		
		pe: Steel		Boring Depth:	-88	A20	11-CAD4-I	3-1
			4"	Drill Rig:	CME 55			
		NH Bori		Method:	Drive and Wash	Sheet: 4	of 4	
Drill	er:	N. Studo		Log By:	GCD & GAD Description		7	
Depth below mudline (ft)	RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Trace < 10%, Little	(Color, Texture, Structu 10% to 20%, Some 20% to 35%, A	* Donate * Do		Elevation (MLLW)
83.1	%0	4.3' 0.6'			.0 to -87.3 MLLW Grey, intense talling during core run - no drill		ANITE. Drill	-87.3
83.8	%22	0.7' 5.1'			7.3 to -88.0 MLLW Grey, intens rill Rig stalling during core run -			-88.0
	i.							
Notes/ Comments:	or dril 2). Nu 3). SF	I tool advance Imbers in "Ele PT tests condi	ement. evation (MLLV ucted using a	/)" column represent th 2" Split Spoon, driven	sent the depth below mudline of the ne elevation of the bottom of the res with a 140 lb donut hammer droppe	spective split-spoored from a height of	n, core run, or d	rill tool.
ŏ	samp	le recovery, a	2" or 3" split :	spoon was readvanced	I through the same interval for incre	eased sample reco	very only.	

		Date:	12/19/2011
		15	
APEX	BORING LOG		

APEX BORING LOG					
Project:	EPA LH	CC	Project No: 6724.001	X:	815567
Location:	New Be	dford Har	bor North of Popes Island	Y:	2697300
Elevation	at grade:	-3.7	Datum: MLLW	Boring No:	
Casing T	ype: Stee	ľ	Boring Depth: -82.7	A-2011-	-CAD4-B-2
Casing D	iameter:	4"	Drill Rig: CME 55		
	NH Bori		Method: Drive and Wash	Sheet: 1 of	3
Driller:	N. Stude	dard	Log By: CAS		
Depth below mudline (ft) RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Description (Color, Texture, Struct Trace < 10%, Little 10% to 20%, Some 20% to 35%,	**************************************	Elevation (MLLW)
0 2	24.0" 12.0"	1, 1, 2, 2	Black, organic SILT, some fine sand, litt	le silt, trace shell ha	ish3.7
4	24.0" 9.0"	1, 1, 1, 2	Gray brown, fine SAND, t	race silt.	-7.7
6	24.0" 10.5"	1, 2, 4, 5	Brown, fine SAND, trace s	hell hash.	-9.7
8	24.0" 9.5"	3, 7, 11, 17	Brown, fine to medium	SAND.	-11.7
10	24.0" 10.0"	4, 4, 8, 8	Brown, fine to medium	SAND.	-13.7
12	24.0" 9.0"	2, 5, 11, 12	Brown, fine to coarse SAND), trace silt.	-15.7
14	21.0" 2.0"	12, 23, 30, 130-3	Brown, fine to coarse SAND), trace silt.	-17.7
16	24.0" 17.0"	39, 45, 39, 29	Light brown, fine to coars	e SAND.	-19.7
18	24.0" 10.0"	23, 12, 19, 16	Light brown, fine to coars	e SAND.	-21.7
20	24.0" 5.5"	11, 9, 11, 17	Light brown, fine to coars	e SAND.	-23.7
22	24.0" 11.0"	12, 20, 37, 17	Light brown, fine to coars	e SAND.	-25.7
24	24.0" 8.0"	15, 12, 10, 12,	Light brown, fine to coarse	e SAND.	-27.7
26	24.0" 5.0"	1, 3, 6, 7	Light brown, fine to coarse	e SAND.	-29.7

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

Date:	12/19/2011

/ \	ヒヘ		BURING LUG		
Project:	EPA LH	CC	Project No: 6724.001	X:	815567
Location:	New Be	dford Har	bor North of Popes Island	Y:	2697300
Elevation	at grade:	-3.7	Datum: MLLW	Boring No:	
Casing Ty	/pe: Steel		Boring Depth: -82.7	A-2011-CA	D4-B-2
Casing Di	iameter:	4''	Drill Rig: CME 55		
Drill Co:	Appropriate and the second second		Method: Drive and Wash	Sheet: 2 of 3	
Driller:	N. Stude	dard	Log By: CAS		
Depth below mudline (ft) RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Description (Color, Texture, Structu Trace < 10%, Little 10% to 20%, Some 20% to 35%, A	± 400 mg € 400 mg /	Elevation (MLLW)
26 28	24.0" 12.0"	5, 6, 5, 5	Light brown, very fine to coar	se SAND.	-29.7
30	24.0" 13.0"	1, 2, 4, 3	Light brown, very fine to coar	se SAND.	-33.7
32	24.0" 13.0"	5, 14, 15, 13	Light brown reddish, fine to co-	arse SAND.	-35.7
34	24.0" 4.0"	16, 18, 11, 13	Light brown reddish fine to coarse SAN	D, some fine gravel.	-37.7
36	24.0" 8.0"	18, 15, 27, 40	Brown red, fine to coarse SAND and fine	e to coarse GRAVEL.	-39.7
38	24.0" 8.0"	50, 15, 26, 21	Dark brown, fine to coarse SAND, sor	me medium gravel.	-41.7
40	24.0" 7.5"	90, 16, 10, 17	Dark brown, fine to coarse SAND, tra	ace coarse gravel.	-43.7
42	24.0" 7.0"	20, 24, 15, 29	Light brown, fine to coarse SAND), trace gravel.	-45.7
44	20.0" 8.5"	32, 31, 47, 100-4	Gray, fine to coarse SAND, so	ome gravel.	-47.7
44.25	3.0" 0.0"	120-3	Obstruction encountered, no	recovery.	-48.0
48	0.0" 0.0"	100-0"	Advanced with roller bit through coarse g	ravel to -51.7' MLLW.	-51.7
50	0.0" 0.0"	100-0"	Advanced with roller bit through coarse (gravel to 53.7' MLLW.	-53.7
51.1	11.0" 0.0"	50,120-5	Obstruction encountered at 54.8' MLLW, no r MLLW. dline (ft)" column represent the depth below mudline of the		-54.8

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^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

Date:	12/19/2011
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AP	'EX		BORING LOG		
Project:	EPA LH	CC	Project No: 6724.001	X: 815	567
Location:	New Be	dford Har	bor North of Popes Island	Y: 2697	7300
Elevation	at grade:	-3.7	Datum: MLLW	Boring No:	
Casing Ty	inesis.		Boring Depth: -82.7	A-2011-CAD4-E	3-2
Casing Di		4"	Drill Rig: CME 55		
Drill Co:	Application of the School of the School		Method: Drive and Wash	Sheet: 3 of 3	
Driller:	N. Stude	•	Log By: CAS		
Depth below mudline (ft) RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Description (Color, Texture, Structu Trace < 10%, Little 10% to 20%, Some 20% to 35%, A		Elevation (MLLW)
52 53	12" 4.5"	73, 100-6"	Gray/black, fine to coarse SAND, some grave at -56.7' MLLW, advanced with roller I		-56.7
54.75	9.0" 8.0"	15, 120-3"	Light gray, fine to coarse SAND a	and GRAVEL.	-58.5
56.2	2.0" 0.0"	120-2"	Obstruction Encountered: 59	.9' MLLW.	-59.9
59			Advanced roller bit through cobbles and bou began core run.		-62.7
	5' 4.8'	8-8-8-8	Rock Core #1: -62.7' to -67. Grey, moderately fractured, Grar		07.7
64	5'		Rock Core #2: -67.7 to -72.	9 Ottos Sale Remain Managere (Sale)	-67.7
7247271	5'	9-9-9-9	\$4.000000000000000000000000000000000000	A STANDARD SERVICE STANDARD SERVICES	
69	3		Grey, moderately fractured, Grar	IIIIC GIVEISS.	-72.7
1). N	lumbers in "De	epth below mu	dline (ft)" column represent the depth below mudline of the	e bottom of the respective split-spo	on, core run,

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

Date: 12/23/2011	Date:
	7.5

		ヒス		BORING LOG		
Proje	ect:	EPA LH	CC	Project No: 6724.001	X: 8	15854
Locat	tion:	New Be	dford Har	bor North of Popes Island	Y: 26	696087
Eleva	tion	at grade:	-6.7	Datum: MLLW	Boring No:	
Casin	ıg Ty	pe: Stee		Boring Depth: -94.3	A2011-CAD	4-B-3
		ameter:	4"	Drill Rig: CME 55		
		NH Bori		Method: Drive and Wash	Sheet: 1 of 4	
Drill	er:	N. Stude	dard	Log By: GCD & GAD		
Depth below mudline (ft)	RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Description (Color, Texture, Structu Trace < 10%, Little 10% to 20%, Some 20% to 35%, A	*m	Elevation (MLLW)
0		24.0" 7.0"	WOR/24"	Black, organic SILT		-8.7
4		24.0" 2.0"	WOH/24"	Black, organic SILT	3	-10.7
6		24.0" 20.0"	WOH/24"	Black, organic SILT		-12.7
8		24.0" 16.0"	1, WOH, 1, WOH	Black, organic SILT, grades to dark grey, orga	anic SILT, trace shell has	h. -14.7
10		24.0" 21.0"	WOR/24"	Dark grey, organic SILT, trace	-16.7	
12		24.0" 7.0"	WOR/24"	Dark grey, organic SILT, trace	shell hash.	-18.7
14		24.0" 19.0"	WOR/12" WOH/12"	Dark grey, organic SII	ZT.	-20.7
16	4	24.0" 24.0"	WOR/12" WOH/12"	Dark grey, organic SII	-T.	-22.7
18		24.0" 12.0"	WOR/24"	Dark grey, organic SII	⊒T.	-24.7
20		24.0" 12.0"	WOR/24"	Dark grey, organic SILT.		-26.7
22		24.0" 9.0"	WOR/12" 3,2	Dark brown, PEAT and orga	anic SILT	-28.7
24	4	24.0" 24.0"	WOR,2,2,	Dark brown to black, organic SIL	T, trace peat.	-30.7
26		24.0" 20.0"	WOR/12" 3,2	Dark grey, organic SILT, some plan	14.04-14.04-14.05-15.05 (2.157) - 2.07-15.	-32.7

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

Date: 12/23/2011

Α	PI	ΞX		BORII	NG LOG		
Proje	ct:	EPA LH	CC		Project No: 6724.001	X:	815854
Location	on:	New Be	dford Har	bor	North of Popes Island	Y:	2696087
Elevati	ion a	at grade:	-6.7	Datum:	MLLW	Boring No:	
		pe: Steel		Boring Depth:	-94.3	A2011-CA	D4-B-3
Casing	g Dia	ameter:	4"	Drill Rig:	CME 55		
Drill C	co:	NH Bori	ng	Method:	Drive and Wash	Sheet: 2 of 4	
Drille	er:	N. Studo		Log By:	GCD & GAD		
Depth below mudline (ft)	RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Trace < 10%, Little	Description (Color, Texture, Structure) at 10% to 20%, Some 20% to 35%, A		Elevation (MLLW)
26 28		24.0" 3.0"	8,9,8,7		Grey, fine SAND, little inorg	anic silt.	-34.7
30		24.0" 10.0"	8,9,25,45	(Grey, fine SAND, trace med	ium sand.	-36.7
32		24.0" 10.0"	3,4,8,12		Grey, fine SAND.		
34		24.0" 6.0"	5,8,7,8	Grey, fine SAND.			-40.7
36		24.0" 8.0"	3,4,8,9	Grey, fine SAND.		-42.7	
38		24.0" 12.0"	4,6,6,10		Grey, fine to medium Sa	AND.	-44.7
40		24.0" 6.0"	5,6,10,18		Grey, fine to coarse SA	ND.	-46.7
42		24.0" 2.0"	7,8,8,10	Grey, fine	to coarse SAND and fine G	GRAVEL, trace silt.	-48.7
44		24.0" 9.0"	9,8,8,11	Grey, f	fine SAND. Grades to fine S	AND, some silt.	-50.7
46		24.0" 6.0"	46,41,41, 30		Grey, fine to coarse SAND, trace silt		-52.7
48		24.0" 3.0"	30,28,26, 21	Greenis	h grey, fine to coarse SAND	, trace silt - TILL.	-54.7
50				Obstruction En	countered - advanced with r	oller-bit to -57.7' MLLV	V56.7
53		24.0" 0.0"	32,11,15, 23		rock fragment in nose of		-59.7

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or dill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

Date:	12/23/2011

/-	(1-	ヒヘ		DOM	AG LOG		
Proje	ect:	EPA LH	CC		Project No: 6724.001	X: 815	854
Locat	ocation: New Bedford Harbor North of Popes Island Y: 2696				6087		
Eleva	tion	at grade:	-6.7	Datum:	MLLW	Boring No:	
Casin	g Ty	pe: Stee	1-5-51	Boring Depth:	-94.3	A2011-CAD4-	3-3
		ameter:	4"	Drill Rig:	CME 55		
Drill (THE PERSON NAMED IN	NH Bori		Method:	Drive and Wash	Sheet: 3 of 4	
Drille	er:	N. Stude	1	Log By:	GCD & GAD		
Depth below mudline (ft)	RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Trace < 10%, Little	Description (Color, Texture, Structu 10% to 20%, Some 20% to 35%,	No. 1000 M ™	Elevation (MLLW)
53 55		24.0" 4.0"	30,24,29, 46	Greenish grey,	fine to coarse SAND, trace f	ine gravel, trace silt, TILL.	-61.7
57		24.0" 3.0"	28,14,12, 11	Greenish grey,	fine to coarse SAND, trace f	ine gravel, trace silt, TILL.	-63.7
59		24.0" 6.0"	12,16,11, 15		Tan, fine to coarse SA	ND.	-65.7
61		24.0" 12.0"	52,38,21, 28		Tan, fine to coarse SA	ND.	-67.7
63		na na	na	Obstruction end	countered at -67.7' MLLW. A 69.7' MLLW.	dvanced with roller bit to -	-69.7
65	i.	24.0" 18.0"	11,14,27, 39		Tan, fine to medium SAND,	trace silt.	-71.7
67		24.0" 8.0"	12,14,28, 62	Olive green, fi	ne to coarse SAND, trace si	lt, trace fine gravel, TILL	-73.7
68	ž.	na na	NA	Obstruction enc	ountered at -73.7' MLLW. A 74.7' MLLW.	dvanced with roller bit to -	-74.7
70		24.0" 4.0"	19,25,31, 77	Olive green, fir	ne to coarse SAND, trace silf	t, trace fine gravel - TILL.	-76.7
72	4	24.0" 12.0"	20,25,30, 30	Olive green, fir	ne to coarse SAND, trace silt	t, trace fine gravel - TILL.	-78.7
74		24.0" 8.0"	25,37,41, 66	Olive green, fir	ne to coarse SAND, trace silt	t, trace fine gravel - TILL.	-80.7
75.3		16.0" 5.0"	25,39, 100/4"	Olive green, fir	ne to coarse SAND, trace silt	t, trace fine gravel - TILL.	-82.0
				Obstruction Enco	untered - elevation -82.0' MI -84.3' MLLW and began o		

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

	_					Date:	12/23	3/2011
Δ	P	EX		BORII	NG LOG			
Proje	ect:	EPA LH	CC		Project No: 6724.001	X:	815	854
Locat	ion:	New Be	dford Harl	bor	North of Popes Island	Y:	269	6087
Eleva	tion	at grade:	-6.7	Datum:	MLLW	Boring No:		
		pe: Steel		Boring Depth:	-94.3	A20	11-CAD4-I	B-3
		ameter:	4"	Drill Rig:	CME 55			
		NH Borii		Method:	Drive and Wash	Sheet: 4 of	4	
Drille	er:	N. Stude	dard	Log By:	GCD & GAD			
Depth below mudline (ft)	RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Trace < 10%, Little	Description (Color, Texture, Structu 10% to 20%, Some 20% to 35%, A	■ 1000 × 1000	4	Elevation (MLLW)
77.55 82.55	%97	5' 2.9'	8-7-8-7-7	Rock Core #1 -	84.3 to -89.3 MLLW Grey, in GNEISS	tensely fracture	ed, granitic	-89.3
87.55	%89	5' 4.8'	7-7-8-7-7	Rock Core #2	-89.3 to -94.3 MLLW Grey, fractured, granitic GNE	10.00	oderately	-94.3
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	2							
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							-	
							*	
Notes/ Comments:	or dril 2). Nu 3). SF	tool advance mbers in "Ele T tests cond	ement. evation (MLLW ucted using a	/)" column represent th 2" Split Spoon, driven	sent the depth below mudline of the ne elevation of the bottom of the res with a 140 lb donut hammer droppe	spective split-spoored from a height of	n, core run, or d 30". In instanc	rill tool.
ပိ	samp	e recovery, a	2" or 3" split s	spoon was readvanced	through the same interval for incre	ased sample reco	very only.	

Date:	1/6/2012
71	

APEX BORING LOG							
Project	: EPA LH	CC		Project No: 6724.001	X:	816005	
Location	n: New Be	dford Har	bor	North of Popes Island	Y:	2695847	
	n at grade:		Datum:	MLLW	Boring No:		
	Гуре: Stee		Boring Depth:	The state of the s	A-201	1-CAD4-B-4	
	Diameter:	4"	Drill Rig:	CME 55			
	: NH Bori		Method:	Drive and Wash	Sheet: 1 o	of 3	
Driller:		T	Log By:	Description			
Depth below mudline (ft)	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Trace < 10%, Little	(Color, Texture, Structu 10% to 20%, Some 20% to 35%, A	•	Elevation (MLLW)	
0 2	24.0"	WOR	~	Black, organic SILT		-9.2	
4	24.0" 8.0"	WOR		Black, organic SILT	e	-11.2	
6	24.0" 10.0"	WOR		Black, organic SILT		-13.2	
8	24.0" 12.0"	WOR		Black, organic SILT	e	-15.2	
10	24.0" 12.0"	WOR		Black, organic SILT		-17.2	
12	24.0" 8.0"	WOR		Black/grey, organic SI	LT.	-19.2	
14	24.0" 24.0"	WOR, WOR, 1, 1		Black, organic SILT		-21.2	
16	24.0" 20.0"	WOR, 6, 12, 15	Black	κ, organic SILT, some fine to	medium sand.	-23.2	
18	24.0" 4.0"	19, 21, 24, 30		Grey, fine to medium Sa	AND.	-25.2	
20	24.0" 12.0"	15, 15, 12, 11		Grey, inorganic SILT	ī.	-27.2	
22	24.0" 16.0"	6, 7, 14, 16		Grey, inorganic SILT	Ţ.	-29.2	
24	24.0" 19.0"	25, 22, 19, 11		Grey, inorganic SILT		-31.2	
26	24.0" 9.0"	10, 15, 19, 25		Grey, inorganic SILT	200	-33.2	

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

Date:	1/6/2012
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/ (1			DOM	10 200			
Project:	EPA LH	CC		Project No: 6724.001	X:	8160	05
Location	Se Management Control and Cont				2695	847	
	at grade:		Datum:	MLLW	Boring No:		
	ype: Stee		Boring Depth:	-69.2	A-20	11-CAD4-B	-4
Casing D		4"	Drill Rig:	CME 55]		
The second secon	NH Bori		Method:	Drive and Wash	Sheet: 2	of 3	
Driller:	N. Stude	dard	Log By:	CAS			
Depth below mudline (ft) RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Trace < 10%, Little	Description (Color, Texture, Structu 10% to 20%, Some 20% to 35%, A	CONTROL OF THE CONTRO		Elevation (MLLW)
26 28	24.0" 11.0"	7, 14, 17, 21		Grey, inorganic SILT	Γ.		-35.2
30	24.0"	19, 24, 25, 30		Grey, inorganic SILT	Γ.		-37.2
32	24.0" 11.0"	17, 23, 25, 31		Grey, inorganic SILT	Γ.		-39.2
34	24.0" 7.0"	4, 6, 7, 6		Grey, fine to medium SA	AND.		-41.2
36	NA NA	NA	Obstruction enco	ountered at - 41.2' MLLW. Ac MLLW.	Ivanced Roller I	oit to -43.2	-43.2
38	24.0" 10.0"	21, 13, 16, 25		Grey, fine to coarse SAND	- TILL.		-45.2
39	NA NA	NA	Obstruction end	countered at45.2 MLLW, A -46.2 MLLW.	dvanced with ro	oller bit to	-46.2
41	24.0" 8.0"	30, 24, 21, 11	Grey	, fine to coarse SAND, trace	gravel - TILL.		-48.2
43	24.0" 6.0"	13, 13, 10, 19		Grey, fine to coarse SAND	- TILL.		-50.2
45	24.0" 6.0"	24, 14, 18, 24		Brown, fine to medium SAN	D - TILL.		-52.2
47	24.0" 4.0"	23, 20, 38, 25		Brown, fine to medium SAN	D - TILL.		-54.2
49.8	22.0" 4.0"	37, 25, 15, 25/4"		Brown, fine to medium SAN	D - TILL.		-57.0
52			ro	ountered at -57.0 through -59 ller bit to -59.2 MLLW and be sent the depth below mudline of the	egan coring.		-59.2

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

						Date:	1/6/.	2012
Δ	P	EX		BORII	NG LOG			
		EPA LH	CC		Project No: 6724.001	X:	816	6005
			dford Har	hor	North of Popes Island	Λ. Υ:		5847
ACREA MAN CONTRACTOR	A. 500 STOCK	at grade:	MADE (TACAMORAD) - COLONGA (TACAMORA)	Datum:	MLLW	Boring No:	200	00-17
		pe: Steel		Boring Depth:	-69.2		11-CAD4-	B-4
			4''	Drill Rig:	CME 55	7.4.20	11 0/101	C model is
		NH Borir		Method:	Drive and Wash	Sheet: 3	of 3	
Drill		N. Studo		Log By:	CAS		20-10-10-10-1	
t) 0		/uc	φE		Description	REC.		
ne (f		tratic	3low ' / Di		(Color, Texture, Structu	re)		tion M)
Depth below mudline (ft)	RaD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Trace < 10% Little	10% to 20%, Some 20% to 35%, A	nd 35% to 50%		Elevation (MLLW)
52	I III	5'	оо≥ш	11ace - 1070, Little	Rock Core #1 -59.2 to -64.2		3) (1
	76%	0.000	8-8-8-8	Crov. m.	oderate to intensily fractured		20	
57		4.5'		Gley, III	romanemosdissediser Apolitoremoson 🛣 - mana etaselpasoste		oo.	-64.2
	80%	5'	8-8-8-8	-	Rock Core #2 -64.2 to -69.2			
62		4.6'		Grey, m	oderate to intensily fractured	granitic GNEIS	3S.	-69.2
				×				
	2						6	
		p		6			77	
							8	
	ž.			5			2	
							-	
				5				
				,				
	2			<u> </u>				
				0			7	
11 22 42				dline (ft)" column repre	sent the depth below mudline of the	bottom of the res	pective split-sp	oon, core run,
s/ nts		l tool advance		ιΛ" actumen ren	on algorition of the bettern of the	nostive salit		rill tool
Notes/ mment	505		10	1500 50	ne elevation of the bottom of the res	3 80 19		
Notes/ Comments:					with a 140 lb donut hammer droppe I through the same interval for incre			es of poor
_	3800	\$30	98	50	0 <u>7</u> 8	2800	51 35	

Date:	1/10/2012
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A	APEX BORING LOG					
Proje	ct: EPA LH	ICC	Project No: 6724.001	X: 815579		
Locati	on: New Be	dford Har	bor North of Popes Island	Y: 2697429		
Elevati	ion at grade	: -6.0	Datum: MLLW	Boring No:		
Casing	Type: Stee		Boring Depth: -56.0	A-2011-CAD4-B	-5	
-	g Diameter:		Drill Rig: CME 55			
Drill C			N 1992 - 1	Sheet: 1 of 2		
Drille	er: N. Stud		Log By: CAS			
Depth below mudline (ft)	RQD Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Description (Color, Texture, Structur Trace < 10%, Little 10% to 20%, Some 20% to 35%, A		Elevation (MLLW)	
2	24.0" 12.0"	WOR,12, 1,	Black, organic SILT, trace sh	ell hash.	-8.0	
4	24.0" 12.0"	WOR, 6, 1, 1	Black/brown, fine to medium SAND, s	some organic silt.	-10.0	
6	24.0" 16.0"	18, 15, 14, 10	Black/brown, fine to medium SAND, some org	anic silt, trace shell hash.	-12.0	
8	24.0" 7.0"	4, 4, 8, 10	Black/brown, fine to medium SAND,	trace shell hash.	-14.0	
10	24.0" 9.0"	14, 22, 23, 29	Brown, fine to medium S/	AND.	-16.0	
12	24.0" 14.0"	5, 9, 7, 11	Brown, fine to medium SAND	, little silt.	-18.0	
14	24.0" 10.0"	15, 16, 22,	Brown red to grey, fine to medium S	SAND, trace silt.	-20.0	
16	24.0" 8.0"	42, 25, 31, 47	Grey, fine to medium SAND,	trace silt.	-22.0	
18	24.0" 4."0	45, 9, 9, 15	Grey, medium to coarse gravel. Obstruction en Advanced with roller bit to -25		-24.0	
21	24.0" 8.0"	10, 14, 20, 19	Brown, fine to coarse SAND and	d GRAVEL.	-27.0	
23	24.0" 6.0"	23, 21, 25, 25	Brown, medium to coarse SAND a	and GRAVEL.	-29.0	
25	24.0" 5.0"	31, 30, 22, 25	Brown, fine to coarse SA	AND.	-31.0	
27	24.0" 7.0"	35, 21, 12, 40	Brown, fine to coarse SAND, so	ome gravel.	-33.0	
	45 M	and the first second	dline (ff)" as lump represent the donth halou mudline of the b	action of the reenestive onlit eneer		

1). Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or dill tool advancement.

2). Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

3). SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

Notes/ Comments:

 Date:	1/10/2012
1.5	

Δ	ΛP	EX		BORING	LOG			
Proje	ect:	EPA LH	CC	Proje	The state of the s	X:	815579	
Locat	ion:	New Be	dford Harl	oor North	of Popes Island	Υ:	2697429	
Elevat	tion a	at grade:	-6.0	Datum:	MLLW	Boring No:	ne.	
		pe: Steel		Boring Depth: -56.0		A-20	011-CAD4-B	-5
Casin	g Dia	ameter:	4"	Drill Rig: CME	55			
Drill (NH Bori		Management (August Land Co.)		Sheet: 2	of 2	
Drille	er:	N. Studo	dard	Log By: CAS	7			
Depth below mudline (ft)	RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Trace < 10%, Little 10% to	Description (Color, Texture, Structure 20%, Some 20% to 35%, An	·		Elevation (MLLW)
27		NA	NA	Obstruction encounte	red at -33.0' MLLW. Ad	dvanced with	rollerbit to	HELING DE
30		NA 16.0"	nusera (100m)			AMER ® ® 1990-b M 177/00-00 AND SHATE FOR	10000000 1000000	-36.0
31.3		4.0"	24, 11, 120/4"	250	e SAND - TILL. Obstrudvanced with roller bit			-37.3
33.3		16.0" 0.0"	30, 32, 140/4"	No recovery. Obstructi	on encountered at -39. roller bit to -40.0' MLLV		anced with	-39.3
		24.0"	40, 46, 42,	122				
36	1	2.0"	41	Brown	n, fine to coarse SAND	- TILL.		-42.0
37		NA NA	NA	Obstruction encounter	ed at -42.0 MLLW, adv 43.0' MLLW.	anced with ro	oller bit to -	-43.0
37.75		9.0" 6.0"	47, 125/3"	Red brown, fine to coa	rse SAND - TILL. Obsi 43.8' MLLW.	truction encou	intered at -	-43.8
40			NA	Advanced with ro	ller bit to -46.0' MLLW	and began co	oring.	-46.0
		5.0'		C1- Rock Core -46' to -5	1' MLLW			
45	90%	5.0'	8-8-8-8	Grey, moderately to sligh	ntly fractured granitic G	NEISS.		-51.0
	S Commence	5.0'	1	C2- Rock Core -51' to -5	6' MLLW			
50	34%	5.0'	8-8-8-8	Grey, intensely fractured	granitic GNEISS.			-56.0
			23, 21, 25, 25					
	1). Nu	ımbers in "De	pth below muc	fline (ft)" column represent the c	lepth below mudline of the b	ottom of the resp	ective split-spoor	n, core run, or

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

Notes/ Comments:

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

1/3 1/30 mm (Date:	1/16/2012
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APEX Project: EPA LHCC 816110 Project No: 6724.001 X: Location: New Bedford Harbor North of Popes Island 2696504 Elevation at grade: -8.6 MLLW Boring No: Datum: Casing Type: Steel Boring Depth: -76.6 A-2011-CAD4-B-6 Casing Diameter: Drill Rig: **CME 55** Drill Co: NH Boring Method: Drive and Wash Sheet: 1 of 3 Driller: N. Studdard Log By: CAS Description Depth below mudline (ft) SPT Blows per 6" / Drill Min. per Foot Penetration, Recovery (Color, Texture, Structure) Elevation (MLLW) Rad Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50% 0 24.0" WOR/24" Black, organic SILT. 10.0" 2 -10.624.0" WOR/24" Black, organic SILT. 7.0" 4 -12.6 24.0" WOR/24" Black, organic SILT. 22.0" 6 -14.6 24.0" WOR/24" Black, organic SILT. 22.0" 8 -16.6 24.0" WOH/24" Black, organic SILT. 18.0" 10 -18.6 24.0" WOH/24" Black, organic SILT. 20.0" 12 -20.6 24.0" WOR. Black, organic SILT, grades to grey, inorganic SILT. WOR, 7,14 24.0" 14 -22.6 24.0" 7, 6, 4, 4 Grey, inorganic SILT. 7.0" 16 -24.6 24.0" 6, 7, 6, 6 Grey, inorganic SILT. 8.0" 18 -26.6 24.0" 6, 7, 7, 10 Grey, inorganic SILT. 8.0" 20 -28.6 24.0" 17, 17, 32, Grey, fine to medium SAND, trace silt. 14 2.0" 22 -30.624.0" 17, 20, 21, 7 Grey, fine to medium SAND. 13.0" 24 -32.624.0" 28, 14, 12, Grey, fine to medium SAND. 12 26 6.0" -34.6

Comments

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

	Date:	1/16/2012
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APEA BORING LOG					
Project:	EPA LH	CC	Project No: 6724.001	X: 816110	
Location:	New Be	dford Har	bor North of Popes Island	Y: 2696504	
Elevation	at grade:	-8.6	Datum: MLLW	Boring No:	
Casing Ty	pe: Stee		Boring Depth: -76.6	A-2011-CAD4-B	- 6
Casing D	iameter:	4"	Drill Rig: CME 55		
Drill Co:	NH Bori	ng	Method: Drive and Wash	Sheet: 2 of 3	
Driller:	N. Stude	dard	Log By: CAS		
Depth below mudline (ft) RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, A		Elevation (MLLW)
26 28	24.0" 8.0"	22, 25, 38, 31	Brown/grey, fine to medium SAN	ND, trace silt.	-36.6
30	24.0" 10.0"	WOH, 4, 3, 1	Brown, fine to medium S	AND.	-38.6
32	24.0" 11.0"	5, 4, 6, 4	Brown, fine to medium S	AND.	-40.6
34	24.0" 4.0"	24, 29, 24, 14	Brown, fine to coarse SAND,	trace silt.	-42.6
36	24.0" 3.0"	WOR, 13, 21, 33	Brown, fine to coarse SAND,	trace silt.	-44.6
38	24.0" 1.0"	11, 9, 7, 6	Brown, fine to coarse SAND,	trace silt.	-46.6
40	24.0" 2.0"	17, 39, 46, 25	Brown, fine to coarse SAND,	trace silt.	-48.6
42	24.0" 1.0"	9, 15, 18, 7	Brown, medium to coarse SAN	D, trace silt.	-50.6
44	24.0" 3.0"	12, 56, 6, 10	Brown, fine to coarse SAND,	trace silt.	-52.6
46	NA NA	NA	Cobbles encountered at -52.6' MLLW. Advan	nced with roller bit to -54.6'	-54.6
46.4	5.0" 1.0"	120/5"	Brown, fine to medium SAND. Obstruction en advanced with roller bit to -55	The production of the control of the	-55.0
49	24.0" 7.0"	35, 27, 70, 90	Brown, fine to medium SAND, some gravel- of 57.6' MLLW, advanced with roller bi		-57.6
53	24.0 5.0	65, 28, 33, 43	Brown, fine to medium SAND, dline (ft)" column represent the depth below mudline of the	HESTON ALLEN - 1708 P. SALES AND STORE	-61.6

1). Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

		V.,			Date:	1/16	/2012
200							
^	/P	EX		BORING LOG			
Proje	ect:	EPA LH	CC	Project No: 6724.001	X:	816110	
Locat	ion:	New Be	dford Har	bor North of Popes Island	Y :	2696504	
		at grade:		Datum: MLLW	Boring No:		
		pe: Steel		Boring Depth: -76.6	A-2	011-CAD4-	B-6
		ameter:	4"	Drill Rig: CME 55			
		NH Bori		Method: Drive and Wash	Sheet: 3	of 3	
Drill	er:	N. Stude	dard	Log By: CAS			
(f)		/noi /	S III	Description (Color Texture Structure	ro)		_
h be		etrat	Blo S" / [per	(Color, Texture, Structur	re)		atio. -W)
Depth below mudline (ft)	Rad	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Trace < 10%, Little 10% to 20%, Some 20% to 35%, A	and 35% to 50%	1	Elevation (MLLW)
53		2.0	120/2"	Obstruction encountered at 61.8 MLLW, adva	nced with rolle	er bit to -64.6'	
53.2		0.0	120/2	MLLW.			-61.8
		4.0	144/4"	Brown, very fine to medium SAND. Obstruction encountered -64.9'			
56.3	2	2.0	13-03	MLLW.			-64.9
58				Advanced with roller bit to -66.6' MLLW, and began coring			-66.6
- 56		5'		C1- Rock core -66 6 to -71 6	C1- Rock core -66.6 to -71.6 MLLW		
63	40%	4'	7-7-7-7	Grey, intensely fractured granit	201 - 201 01 10 10 10 10 10 10 10 10 10 10 10 1		-71.6
		5'		C2- Rock core -71.6 to -76.6		1	-71.0
68	34%	5'	8-8-8-8	Grey, moderately fractured gran			-76.6
						*	
						6	
		5					
						-	
						9	

1). Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, Notes/ Comments: or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

		Date:	1/19/2012
		12	
APEX	BORING LOG		

APEX BORING LOG					
Project	:: EPA LH	CC	Project No: 6724.001	X: 815079	
Locatio	n: New Be	dford Har		Y: 2697445	
Elevatio	n at grade:	-8.1	Datum: MLLW	Boring No:	
Casing ¹	Type: Stee		Boring Depth: -70.1	A-2011-CAD4-B-	7
	Diameter:	4"	Drill Rig: CME 55		
	: NH Bori		Method: Drive and Wash	Sheet: 1 of 3	
Driller:		dard	Log By: CAS	<u> </u>	
	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Description (Color, Texture, Structu Trace < 10%, Little 10% to 20%, Some 20% to 35%, A	er dees v in	Elevation (MLLW)
0 2	24.0" 20.0"	WOR/24"	Black, organic SILT		-10.1
4	24.0" 10.0"	WOR/24"	Black, organic SILT	a .	-12.1
6	24.0" 23.0"	WOR/24"	Grey/Black, organic SI	LT.	-14.1
	24.0"	15, 12, 12,	6" Black, organic SIL	T.	
8	22.0"	10	16" Grey, fine SAND).	-16.1
10	24.0" 20.0"	6, 13, 10, 8	Brown, very fine to fine SAND, som	ne inorganic silt.	-18.1
12	24.0" 13.0"	9, WOH/18"	Brown, very fine to fine SAND, some silt	t, trace red fine sand.	-20.1
14	24.0" 23.0"	WOH,8, 12, 8	Brown, very fine to fine S	SAND.	-22.1
16	24.0" 7.0"	13, 9, 14, 15	Red-brown, very fine to fine	e SAND.	-24.1
18	24.0" 7.0"	9, 10, 14, 14	Brown, fine to medium S	SAND.	-26.1
19.9	21.0" 19.0"	11, 17, 36, 160/5"	Brown, fine to medium S	SAND.	-28.0
20	NA NA	NA	Obstruction encountered - cobble. Advance MLLW.	ed with roller bit to -29.1'	-28.1
23	24.0" 19.0"	8, 8, 20, 30	Brown red, very fine to medium SAND	D, trace shell hash.	-31.1
25	24.0" 15.0"	12, 12, 13, 18	Brown, very fine to fine SAND, trac	e medium sand.	-33.1

1). Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

 Date:	1/19/2012
95	

APEX 815079 Project: EPA LHCC Project No: 6724.001 X: Location: New Bedford Harbor North of Popes Island 2697445 Elevation at grade: -8.1 MLLW Datum: Boring No: Casing Type: Steel Boring Depth: -70.1 A-2011-CAD4-B-7 Casing Diameter: **CME 55** Drill Rig: Drill Co: NH Boring Method: Drive and Wash Sheet: 2 of 3 Driller: N. Studdard Log By: CAS Depth below mudline (ft) Description Blows 5" / Drill Penetration, Elevation (MLLW) Recovery (Color, Texture, Structure) per RQD SPT per 6 Min. p Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50% 25 24.0" 7, 5, 5, 5 Brown, very fine to fine SAND. 27 18.0" -35.124.0" 5, 18, 33, 28 Brown, very fine to medium SAND. 22.0" 29 -37.1 24.0" 14, 19, 26, Brown grey, very fine to fine SAND. 26 21.0" 31 -39.124.0" WOH/12" Brown, fine to medium SAND. 3,2 20.0" 32 -40.1 24.0" WOH/18", 2 Brown, very fine to fine SAND. 20.0" 34 -42.124.0" 4, 6, 8, 10 Brown, very fine to fine SAND. 36 17.0" -44.1 24.0" 9, 11, 12, 14 Brown, very fine to fine SAND. 24.0" 38 -46.124.0" 2" Red brown, very fine to fine SAND, trace gravel. 6, 12, 15, 23 7.0" 5" Red brown, fine to coarse SAND. 40 -48.1 24.0" 3, 5, 11, 13 Red brown, fine to coarse SAND. 8.0" 42 -50.124.0" 42, 22, 14, Brown grey, fine to coarse SAND. 15 6.0" 44 -52.1 24.0" WOH. 5, 12, No recovery. 13 0.0" 46 -54.16.0" 120/6" Brown, fine to coarse SAND, trace gravel. 1.0" 46.5 -54.6 NA Obstruction encountered at -54.6' MLLW, Advanced with roller NA NA bit to -56.1' MLLW. 48 -56.1

1). Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

Comments

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

		· ·			Date:	1/19	/2012
^				POPING LOC			
/-		EX		BORING LOG			
		EPA LH			X :	815079	
0.000.4640.900406790	XXXXXXXXXXX	COMPANION CHARGE	dford Har		Y:	2697445	
		at grade:		Datum: MLLW	Boring No:	044 04 04	7.7
		pe: Steel ameter:	4"	Boring Depth: -70.1 Drill Rig: CME 55	A-2	011-CAD4-E	3-7
		NH Borii		Method: Drive and Wash	Sheet: 3	of 3	
Drille		N. Stude		Log By: CAS	Officer. O	01 0	
Depth below mudline (ft)	RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, A			Elevation (MLLW)
48 48.4		5.0" 5.0"	120/5"	Brown, fine to medium SAND. Obstruction end	countered at -	56.5' MLLW.	-56.5
52				Advanced with roller bit to -60.1' MLLW	, and began o	oring.	-60.1
	92%	5'	7-8-8-7-8	C1- Rock core -60.1 to -65.	1 MLLW	2	
57	0270	5'		Grey, slightly fractured granition	GNEISS.		-65.1
	80%	5'	7-7-7-7	C2- Rock core -65.1 to -70.1 MLLW			
62	5576	5'	3855554 6 6	Grey, slightly fractured granition	GNEISS.	4	-70.1
						2	
	2						
						2	

Notes/ Comments:

or drill tool advancement.

1). Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run,

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

Date:	1/23/2012

APEX

Notes/ Comments:

/-(1-	ビス		BUKII	NG LOG			
Project:	EPA LH	CC		Project No: 6724.001	X:	816	040
Location: New Bedford Har			bor	North of Popes Island	Y:	2696	6259
Elevation	at grade:	: -7.9	Datum:	MLLW	Boring No:		
Casing T	ype: Stee		Boring Depth:	-79.9	A-2	2011-CAD4-B	-8
Casing D	iameter:	4"	Drill Rig:	CME 55			
Drill Co:	NH Bori	ng	Method:	Drill and Wash	Sheet: 1	of 3	
Driller:	N Stude	lard	Log By:	CAS			
Depth below mudline (ft) RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Trace < 10%, Little	Description (Color, Texture, Structu 10% to 20%, Some 20% to 35%,	vec. 4.000 v. ₩ 1000		Elevation (MLLW)
0 2	24.0" 12.0"	WOR/24"		Black, organic, SIL	Γ,		-9.9
4	24.0" 10.0"	WOH/24"		Black, organic, SIL	Γ.		-11.9
6	24.0" 24.0"	WOH/24"		Black, organic, SIL	Γ,	3	-13.9
8	24.0" 12.0"	WOH/12" 1, WOH		Black, organic, SIL	Γ.		-15.9
10	24.0" 7.0"	WOH/24"		Black, organic, SIL	Γ.		-17.9
12	24.0" 24.0"	WOH/24"		Dark grey to black, organ	ic SILT.		-19.9
14	24.0" 24.0"	1,2,1,2		Dark grey to black, organ	ic SILT.		-21.9
17	36.0" 24.0"	WOR/12" 2,2, WOH/12"		Dark grey to black, organ	ic SILT.		-24.9
18	12.0" 12.0"	3,4	Da	rk grey to black, organic SIL	T, trace peat.		-25.9
20	24.0" 24.0"	WOR,12, 5,6	Da	rk grey to black, organic SIL	T and PEAT.		-27.9
22	24.0" 24.0"	WOR, 3,3,6		Black, organic SILT and	PEAT.		-29.9
24	24.0" 23.0"	WOR, 2,8,9	Blac	ck to dark brown, organic SII	_T and PEAT.		-31.9
26	24.0" 24.0"	8,8,7,9	Dar	k brown, PEAT, trace to som	ne organic silt.		-33.9

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core rur or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

Date:	1/23/2012
W-	¥2

/41-	'EX		BORING L	OG			
Project:	EPA LH			No: 6724.001	X:	816	040
Location	: New Be	dford Har	oor North	of Popes Island	Y :	2696	259
	at grade:		Datum: M	LLW	Boring No:		
	ype: Stee		Boring Depth: -79.9		A-2	011-CAD4-B	8
Casing D		4"	Drill Rig: CME 5	5			
Drill Co:			Method: Drill and Wash Sheet: 2 of 3			of 3	
Driller:	N Stude	lard	Log By: CAS				
Depth below mudline (ft) RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	(C Trace < 10%, Little 10% to 20°	Description olor, Texture, Structure %, Some 20% to 35%, Ar		3	Elevation (MLLW)
26 28	24.0" 24.0"	7,8,9,7	Brown	, PEAT, trace organ	ic silt.		-35.9
30	24.0" 9.0"	7,7,8,7	Brown grey, very fine to co	parse SAND and ino	rganic SILT, t	race gravel.	-37.9
	24.0"	8,9,10,22	5" Gr	ey, fine to coarse SA	ND.	7	
32	7.0"	0,9,10,22	2"	Grey, inorganic SIL	Γ.		-39.9
34	24.0" 10.0"	25,18,19, 29	(Grey, inorganic SILT.	k		-41.9
36	24.0" 8.0"	15,15,28, 24	(Grey, inorganic SILT.			-43.9
38	24.0" 1.0"	13,17,16, 13	C	Grey, inorganic SILT.	k		-45.9
40	24.0" 10.0"	10,11,6,1 0	Grey	, very fine to fine SA	ND.		-47.9
42	24.0" 15.0"	11,13,14, 9	Grey	, very fine to fine SA	ND.		-49.9
9/34/32	24.0"	16,10,16,	9" Gre	y, very fine to fine S	AND.	7	
44	11.0"	29	2"	Grey, inorganic SIL	Γ.		-51.9
46	24.0" 18.0"	4,11,12, 14	N. 190	, very fine to fine SA	MANAGARANA		-53.9
48	NA NA	NA	Obstruction Encountered	ed. Advanced with ro	ller bit to -55.9	9' MLLW.	-55.9
50	24.0" 18.0"	15,18,20, 17	Grey, \	ery fine to medium S	SAND.	ū	-57.9
51	NA NA	NA	Obstruction encountered				-58.9

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.

Date:	1/23/2012
7	

AF	EX		BORIN	G LOG		
Project:	EPA LH	CC	F	Project No: 6724.001	X: 816	040
	: New Be				Y: 2696	3259
Elevation	at grade:	-7.9	Datum:	MLLW	Boring No:	
Casing T	ype: Stee		Boring Depth: -	79.9	A-2011-CAD4-B	-8
Casing D	iameter:	4"	Drill Rig: 0	CME 55		
145, 460, 460, 460, 460, 460, 460, 460, 460	NH Bori		The second second the second s	Orill and Wash	Sheet: 3 of 3	
Driller:	N Stude	lard	Log By: C	CAS		
Depth below mudline (ft) RQD	Penetration/ Recovery	SPT Blows per 6" / Drill Min. per Foot	Trace < 10%, Little 10	Description (Color, Texture, Structure) 3% to 20%, Some 20% to 35%, A		Elevation (MLLW)
51 53	NA NA	NA	Obstruction ence	ountered. Advanced with ro	oller bit to -60.9' MLLW.	-60.9
55	24.0" 4.0"	23,18,20, 40	Grey, fine to	coarse SAND. Coarse grav	vel in nose of spoon.	-62.9
57	24.0" 10.0"	46,70, 84,62		Grey, fine to medium SA	AND.	-64.9
59	NA NA	NA	Obstruction encountered. Advanced with roller bit to -66.9' MLLW.			-66.9
61	24.0" 7.0"	40,30, 30, 21		Grey, fine to medium SAND.		
61.8	10.0" 10.0"	47, 100/4"	Brown red, fine to c	oarse SAND. Obstruction I	Encountered -69.7' MLLW.	-69.7
62			Advanced w	ith roller bit to -69.9' MLLW	, and began coring.	-69.9
-	5'	7777	С	1 - Rock core -69.9 to -74.	9' MLLW	
67	5'	7-7-7-7	Grey, intens	sely to moderately fractured	d granitic GNEISS.	-74.9
	5'		C	2 - Rock core -74.9 to - 79.	9' MLLW	1.77
72	5'	8-8-8-8	Grey, moderately f	fractured granitc GNEISS. 2.8' and 3.8 to 5.0'.		-79.9
41	lumboro in "De	anth below mu	dline (ft)" column represe	nt the depth below mudling of the	hottom of the respective split-spo	on core run

^{1).} Numbers in "Depth below mudline (ft)" column represent the depth below mudline of the bottom of the respective split-spoon, core run, or drill tool advancement.

^{2).} Numbers in "Elevation (MLLW)" column represent the elevation of the bottom of the respective split-spoon, core run, or drill tool.

^{3).} SPT tests conducted using a 2" Split Spoon, driven with a 140 lb donut hammer dropped from a height of 30". In instances of poor sample recovery, a 2" or 3" split spoon was readvanced through the same interval for increased sample recovery only.