

Remedial Design For Operable Unit 01

New Bedford Harbor Superfund Site

SHEET

BORING NO.

FD-32

PROJECT

FILE NO.

1 of 3 48138.07

Concord, New Hampshire 03302				ire 03302			Ne	ew Bedford, Massachusetts				CHKD, BY		J. Trottier	_				
Boring Co Driller Logged By _		<i>F</i>	Atlantic T	esting Laborator A. Carter E. Thibodeau	ies, Li	mited	Boring Loc Mudline EI Date Start	northing 2696749.0 east -10.8 Datum 7/30/99 Date End				ing 814392.8 NGVD 8/2/99							
Sampler: 2-inch O.D. split-barret sampler driven 24 inches with free falling from a height of 30 inches. Drill Rig: Acker AD2 truck mount						with a 1	with a 140 lb safety hammer Groundwater Readings Not Applicable f						for Offshore Borings Stabilization Time						
Dri	lino Me	thod:	5-inch I	D (PW) flus	sh-joint casing and 4-in te hammer free falling	nch I.D.	(HW) flush-joint	casing.											
ē	Τ	T			ORMATION		neight of SO-Inch		IBI E DECCO	IDTION (AC	TA DOLOGI				R				
Р Т Н	Casin Blows (R)	Type & No.			DEPTH BLOWS PER 6 INCHES SPY (feet) N-Value		SAMPLE DESCRIPTION (ASTM D2488)							DESCRIPTION	E M K				
l	Hyd		-	<u> </u>			Advance PV	V outer drill casing	g to 6 ft. (hyd	raulic push)		·		 	s				
	Pusi	<u> </u>		 		ļ		7/8 in. roller bit fro											
2	Hyd. Pust	}	-	-	-	├	4								1				
_	Hyd	-	+-	1 -		 -	-{												
3	Pust			 			1												
	Hyd						1							ŀ					
4	Pust]								1				
_	Hyd.			ļ	ļ														
5	Pust		├	ļ			1								1				
6	Hyd. Push	-	 	-	 		-						-						
Ť	Hyd.	UQ-1	24/24	6-8			Sandy oman	io alou (OU): eas	/i!	. 050/ 5				ļ					
_7	Push				·		coarse sand	nic clay (OH); 69% , sligfit organic od	organic ciay for dark orav	v, ∠5% ⊓ne s: Shells and	and, 5% me shell fradm	gium sand, 1% ente notod is	6 -	I4392.8 IGVD 8/2/99 Borings Stabilization Time STRATUM DESCRIPTION K S OH 1 SP-SM 2 OH OH OH OH OH OH OH OH OH					
	Hyd.						sample.	,	ior, vark gray	. Oriens and	SHER Hagin	ents noted in							
8	Push	<u> </u>					Advance PW	Vouter drill casing	to 10 ft. (hyd	fraulic push)									
_	Hyd.	<u> </u>	<u> </u>		<u> </u>	<u> </u>		7/8 in, roller bit from				•		, ,					
9	Push	<u> </u>	 	 -			_												
10	Hyd. Push	<u> </u>	 	 	<u> </u>	<u> </u>	-												
10		UO-2	24/24	10-12		<u> </u>	Ton: Boods								1 1				
11	Push	00-2	1 2772-7	10112			Top: Poorly graded sand with silt (SP-SM); 85% fine sand, 5% medium sand, 10% silt, gray.							SP-SM	2				
	Hyd.		<u> </u>				Bottom: Simi												
12	Push			ĺ			Advance PW outer drill casing to 16 ft. (hydraulic push)							OH					
	Hyd.							/8 in. roller bit from		, . ,									
13	Push																		
1.4	Hyd. Push						ļ												
	Hyd.			···-															
15	Push	•																	
	Hyd.														1 1				
16	Push																		
	_ 1	S-1	24-20	16-18	2-5-5-10	10		d sand with silt (S						SP-SM	1				
17	3							10% silt, gray. A		in, organic t	ayer noted i	n sample. She	ell						
18	8						i -	ted in top portion											
	Ť							id advance HW in 8 in. button bit fro											
19	18							erial noted in wash					Ī						
			The state of the s																
20	23						·							e per					
	0 to 4 -	_		Salle:	. /						AMA (AL)			.:					
	5 to 10				0 to 2 - Very So 3 to 4 - Soft		1. S denotes split-barrel sampler, 7. PID denotes Photoioni 2. U denotes 3-inch O.D. undisturbed sample. 8. PPM denotes parts pe								- 1				
			lium Dens	e	5 to 8 - Medium	Stiff	3. UO denotes 3-inch Osterberg undisturbed sample. 8. PPM denotes parts per r 9. PP denotes Pocket Pene												
	31 to 5 Over 50		se Dense		9 to 15 - Stiff 16 to 30 - Very 5	Stiff	,	 PEN denotes perio REC denotes reco 				0. FV\$T denote:		e shear test. ality Designation					
	DEMA				Over 30 - Hard			S. SPT denotes Stan	-	•		2. R denotes co							

REMARKS:

- 1) Sample description based on laboratory test data and ASTM D2487. Refer to Test Report No. 3, prepared by GeoTesing Express, dated October 28, 1999.
- 2) Tide dropped substanially during sampling activities; therefore, actual sample interval may be slightly deeper than indicated here.

3)



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2 of 3

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Nobis Engineering PO Box 2890 Concord, New Humpshire 03302							New Bedford, Massachusetts				CHKD, BY		J. Trottier	-
Boring Co. Atlantic Testing Laboratories, Limi Driller A. Carter Logged By E. Thibodeau							ited Boring Location				96749.0 e Datum Date End	easting 81	114392.8 NGVD 8/2/99	
Sam	Nar	2.inch	OD solita	harrel same	oler driven 24 inches w	ith a 14	Oth safati hammer		Counduct	or Dondings	Not Analisable	Too Office of		_
		free fal	ling from a	a height of 3		Jula 14	to to sately nammer	Date	Time	er Keadings Depth	Not Applicable Elev.		Stabilization Time	
Drill Rig: Acker AD2 truck mount Drilling Method: 5-inch I.D. (PW) flush-joint casing and 4-inch I.D. (H								<u> </u>	-		-	 		_
All ca	ising d	riven wi				ree falling from a height of 30-inches.							1	R
E P	Casing		SAN	APLE INFO	ORMATION		SAM	SAMPLE DESCRIPTION (ASTM D2488)						E
T H	Blows (ft)	Type & No.]						DESCRIPTION	ĸ
-		S-2	24/12	20-22	12-10-9-11	N-Value	S-2A: Poorly graded sand w	ith silt (SP-SN	/I): medium de	ense. 40%	medium sand	30%	SP-SM	S
21	24						fine sand, 10% coarse sand,	•	•				, G. G.	
							S-2B: Silt with sand (ML); 50	_			n. (6 in.)		ML	
22	20						Advance HW inner drill casir	ng to 25 ft.						
		<u> </u>		<u> </u>		<u> </u>	Advance 3-7/8 in. button bit	from 20 to 25	ft.					
23	19					<u> </u>						•		
					1	<u> </u>								
24	17			1		\vdash								
25	22					├	-						•	
25	22	S-3	24/18	25-27	11-10-11-11	21	Silt with sand (ML); very stiff	70% silk 10%	0/ alau 200/ 6	ina sand h		dmataki		l
26	34	3-3	27/10	20-21	11-10-11-11	-21	1 in. coarse to medium sand					umatery	ML	
		i		-			Advance HW inner drill casir		in contoni porti	ion or samp	JIÇ.			İ
27	56						Advance 3-7/8 in, button bit	•	ft.		•	_	·	ı
_													1	ı
28	51] .					1.0		
]		+				.	
29	48													İ
		<u> </u>				<u> </u>]							
30	47	ļ		ļ	<u> </u>	ļ <u></u>								
		S-4	24/6	30-32	6-16-8-6	24	Poorly graded sand with silt	•		5% mediu	m sand, 25%	fine	SP-SM	
31	38			├	<u> </u>		1	sand, 15% coarse sand, 5% gravel, 10% silt, brown.						
32	40					\vdash	Advance HW inner drill casin Advance 3-7/8 in, button bit	•	4				ļ	
32	40						Advance 3-770 iii, bullon bit	10111 30 10 33	16.					
33	55						1							
							•						· .	ĺ
34	42						-							
											•			ĺ
35	59													
		S-5	24/10	35-37	4-4-24-14	28	S-5A: Poorly graded sand (SP); medium dense, 50% fine sand, 45% medium sand,					and,	SP	ĺ
36	25				<u> </u>	<u> </u>	1 ' '	5% silt, brown. (8 in.)						ĺ
	40					\vdash	S-5B: Poorly graded sand (S	•		oarse sand	, 25% mediun	n sand,		
37	48			-			20% fine sand, 10% gravel,		1. (2 IN.)				ł	ĺ
38	73					 	Advance HW inner drill casir Add bentonite to drilling fluid	-						
~	,,,						Advance 3-7/8 in, button bit i		ft.					
39	66													
		_	-				1					-		1
40	71						<u> </u>			_				
				TOTAL						B. CEOP	6 €/4			
		- Very L) - Loos		ĺ	0 to 2 - Very So 3 to 4 - Soft	m	S denotes split- U denotes 3-inc			j	PID denotesPPM denotes			
			dium Dens	se	5 to 8 - Medium	ı Stiff	3. UO denotes 3-i	nch Osterberg i	undisturbed sam	nple.	9. PP denotes	Pocket Pen	etrometer,	
31 to 50 - Dense 9 to 15 - Stiff 4, PEN denotes penetration length of sampler. 10, FVST denotes field vane														
Over 50 - Very Dense 16 to 30 - Very Stiff 5. REC denotes recovered length of sample. 11. RQD denotes Rock Quality Designation Over 30 - Hard 6 SPT denotes Standard Penetration Test. 12. R denotes core run number.														
		ARKS:					1							
							and ASTM D2487. Refer to					s, dated Od	ctober 28, 1999.	
 Tide dropped substanially during sampling activ 3) 							ies, therefore, actual sample t	incival may b	e slightly deep	per man m	dicated fiere.		•	
	4)													



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CHKD.	ВΥ
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10. FVST denotes field vane shear test.

12 R denotes core run number

11 ROD denotes Rock Quality Designation.

	ning (Co	A	tlantic T	esting Laboratori	es, Li	mited Boring Loc	ation					
Uniler					A. Carter		Boring Location northing Mudline El10.8					g 814392.8	
Logged By					E. Thibodeau		Date Start			Datum		NGVD	
e	npler:	7	00						<u> </u>	Date End		8/2/99	_
ya.	прист.	free fa	i O.D. spili Illina from	-barrel sam a height of	pler driven 24 inches 1	with a 1	10 lb safety hammer	Groundwai	er Readings	Not Applicable fo	or Offshor	e Borings	
	Rig:	Acker	AD2 truck	mount			•	Date Time	Depth	Elev.		Stabilization Time	
All (ing Me asino r	lhod: Jriven w	Jinch I.I ⊪ 002 a diti). (PW) flus	h-joint casing and 4-in le hammer free falling	ch I.D.	HW) flush-joint casing:			 			_
•		T				anning mont a rieight of 30-inches.							
E	Casing	,	SAN	APLE INF	ORMATION		SAM	PLE DESCRIPTION (AST	M D2488)			STRATUM	T
				DEPTH	BLOWS PER 6 INCHES								
H	(11)	S-6	(inches)	(feet)		N-Valu			<u> </u>			DESCRIPTION	K
\$-6 24/12 40-4; 41 117				40-42	62-29-29-31	58	Poorly graded sand with grav	el (SP); very dense, 40% i	nedium sar	d, 30% fine sa	and.	SP	┼ै
		 	 	<u> </u>	 	<u> </u>	10% coarse sand, 15% grave	l, 5% silt, brown.					
40	420	├—			 		Advance HW inner drill casing						
42	128						Advance 3-7/8 in, button bit fr	om 40 to 45 ft:				1	
		 -											1
43	127	<u> </u>				<u> </u>				-			
-												1	
44	127												ļ
				<u></u>					٠.				
45	141	L											
		S-7	21/4	45-46.7	45-25-15-	40	Poorly graded sand with silt (S	P-SM) dense 45% fine s	and 250/ -				
46	111				14/3"-25/0"		coarse sand, 5% gravel, 10%	silt brown	airu, 23% ii	ledium sand,	15%	SP-SM	1
	175/						Advance HW inner drill casing	to 46.7 ft : essing softwal					
17	9"						Advance 3-7/8 in. button bit fro	om 45 to 46 7 ft					
ı							Top of bedrock at 46.7 ft.	71. 40 to 40.1 it.				•	
18			÷.	in 14	7/05/ 45/3 0		Advance 3-7/8 in. button bit fro	nm 46 7 to 49 0 6					ľ
Ţ			a ni	NEL T	766		Begin NX rock core at 48.2 ft.	JIII 40.7 (0 46.2 ft.				BEDROCK	ł
19		R1	48.2	-49.2	4 mins.		R1: 48.2 to 50.5 ft.						
							Fresh, hard, gray, aphanitic GI	JEICC with low and					l
50			49.2	-50.2	8 mins.		discolored, open, joints. REC	= 100%: POD = 46% /===	ciose, roug	gh, planar,			
1							49.2 ft: loss of water return obs	- 100%, RQD - 46% (p00	"		1		
1			50.2	50.5	2 mins.								
T	• 1					50.5 to 51.3 ft: core barrel dropped; probable void or cavity. Terminate core run at 51.3 ft., attempt split-barrel sample.							
2		R2	51.3-	52.3	8 mins.		\$-8: 51.3 to 51.3 ft: 25/0". No	motorial sample	٠.		1		
T							R2: 51.3 to 56.6 ft.	natenai recovered.					
3			52.3-53.3		5 mins.			IEIOO WAA			1		
T			***				Fresh, hard, gray, aphanitic GN slightly discolored, partly open	ieloo wiiii nonzontai, mod	ierately spa	ced, rough, pla	anar,		ļ
4	·		53.3-	54 3	6 mins.		REC = 100%; RQD = 90% (exc						-
1											- 1		
5	ı		54.3-	55.3	8 mins.		51.5 to 51.8 ft; highly fractured	zone.					
7	_				O ITIMAS.						İ	•	ļ
5	l	$\neg \uparrow$	55.3-	56.3	4 mins			4			ļ		l
†	-	1	33.3-		4 mins.								
,	-	-+	56.3-	56.6	1 min		3-Ma					ĺ	
+	\dashv	$\neg +$	30.34	-	1 min.	'	Bottom of exploration at 56.6 ft.	; boring terminated in bedi	ock.			ļ	Ì
	- 1	<u> </u>		- 				No. of the second			1.		ŀ
+		\dashv						*			-	ļ	1
	H	\dashv				 							
4-	\dashv	\dashv										ĺ	
.[-										-		ļ
	13.146	101 42	المراجع والم	man est	(56) (\$3) v E.30)		a shall a shall a			·		<u></u>	_ [
0	lo 4 - \	ery Lo	ose		0 to 2 - Very Soft		S denotes split-ban					وسافلم ومفارات	
5	to 10 -	Loose		- 1	3 to 4 - Soft			rei sampier. D. undisturbed sample.		PID denotes Pho PPM denotes pa			
11 to 30 - Medium Dense					5 to 8 - Medium S	Stiff		Osterberg undisturbed sample		PP denotes Poc			- [

REMARKS:

31 to 50 - Dense

Over 50 - Very Dense

1) Sample description based on laboratory test data and ASTM D2487. Refer to Test Report No. 3, prepared by GeoTesing Express, dated October 28, 1999. 2) Tide dropped substanially during sampling activities; therefore, actual sample interval may be slightly deeper than indicated here.

PEN denotes penetration length of sampler.

REC denotes recovered length of sample.

6. SPT denotes Standard Penetration Test

9 to 15 - Stiff

Over 30 - Hard

16 to 30 - Very Stiff

3) 4)