Weekly Field Report Week: 02-02-14 through 02-08-14 New Bedford Harbor Lower Harbor CAD Cell (LHCC)

This Weekly Field Report was prepared to serve as a summary of field activities conducted throughout the week for Phase I dredging of the New Bedford Harbor Lower Harbor CAD Cell (LHCC) in New Bedford, Massachusetts.

1. Introduction:

The weekly field report describes the activities carried out by the Contractor (Cashman/Tripp Marine), the Owner's Representative (Apex Companies, LLC), and any subcontractors completing work within the scope of the project requirements.

This Weekly Field Report represents the fourteenth Report associated with Phase I dredging of the LHCC in New Bedford Harbor, and the associated handling and disposal of dredged materials at CAD cells within the Harbor, and at designated open-water disposal sites approved for this Project.

This 14th Report for the LHCC dredging activities includes:

- Daily Inspection Reports from the dredging oversight performed during the week of February 2nd through February 8th, 2014. Daily contractor activities are included in the form of Daily Inspection Reports noting equipment observed on site and a summary of contractor activities. (See Attachment 1);
- Water Quality Monitoring Forms completed for the week of February 2nd through February 8th, 2014 are attached (See Attachment 2). Included with the attached forms is Figure 1 Lower Harbor CAD Cell Phase I Water Quality Monitoring Plan, which shows the locations of the water quality monitoring events conducted during this reporting period. Per the approved Water Quality Monitoring Plan and associated performance standards for the dredging efforts being conducted during this reporting period, Apex has:
 - Conducted water quality monitoring a minimum of one day per week.
 - Performed visual inspections of dredged materials in the disposal scow for any visible debris or other items that could potential become a hazard to navigation prior to scow's departure for the offshore disposal site.

Summary:

The Contractor through its subcontractor, Tripp Marine conducted dredging at the LHCC on February 3rd, 4th, and 7th. Dredging operations focused on the strategic removal of Phase I Bottom of CAD Cell sediments to open up a 125-foot wide deep water channel entering in from the southwest corner of the LHCC to facilitate the access of larger barge mounted dredge equipment expected on site. During this reporting period dredging operations were conducted using a conventional digging bucket, with dredged materials being disposed offshore at the Rhode Island Sound Disposal Site (RISDS). Tripp Marine was observed conducting these activities during the authorized operational window of 7AM until sunset, utilizing a single dredge plant; the tug *Sand Pebble*; a 900 cubic yard dump scow – *TMC 140*; and two small utility boats. With time of year restrictions now in place (January 15th through June 15th) all dredging activities were conducted within a silt curtained perimeter surrounding the LHCC.

2. Operational Notes:

Dredging:

Dredging of LHCC Phase I Bottom of CAD sediments continued during the week. Dredging operations focused on the strategic removal of sediments to open up a 125-foot wide deep water access channel. Apex conducted one day of water quality monitoring on February 7th, while dredging was being performed to ensure that this activity did not result in an exceedance of any project-specific water quality standards.

Offshore Disposal:

Offshore disposal for LHCC Phase I Bottom of CAD sediments is scheduled and permitted for the Rhode Island Sound Disposal Site. Three offshore disposal events, using the dump scow TMC-140, were recorded during the week and occurred on February 2nd, 6th and 7th. Adverse weather and sea conditions offshore limited dredging and disposal activities during the week.

Table 1 – Cumulative Dredging Progress

Period of Activity	Volume (cy)
Approximate Top of CAD Volume Dredged to Date*	24,890
Approximate Bottom of CAD Volume Dredged this Reporting Period	2,400
Approximate Bottom of CAD Volume Dredged to Date*	4,600

^{*} Dredge volume quantities are estimated based on observed scow draft marks and an assumed density of the materials dredged. Given the uncertainty in the density of a composite mix of sediments being dredged, all volumes are confirmed and adjusted as necessary using bathymetric survey data.

3. Monitoring Summary

There were no water quality exceedances observed during this reporting period related to dredging operations. No water quality samples were collected.

Prepared by:

Apex Companies, LLC

John B. McAllister, P.E. Senior Project Engineer

Don Boyé Senior Project Manager

Attachment 1 Daily Inspection Reports



Inspector:	C. Stillman	l			-	Date	e: 03 Februa	ry 2014
Contractor:	Tripp Mari	ne			Foreman/Supt	:	Pyne Tripp	
Weather	AM: PM:	Fog / Sno	ow ow Winds !	5-10k N	Temperature	AM: PM:	28 42	
Tides	High Low		1025 0339	AM AM	2254 1553	PM PM		
Manpower O	nsite				Equipment O	nsite		
	Foreman	1	@8_	_ Hrs	Description:	Dred	ge Tripp 47	Hrs8
	Operators	1	@8	_ Hrs		Sco	w TMC 140	Hrs8
	Laborers	1	. @8	_ Hrs	Pu		and Pebble	Hrs8
	Drivers			_ Hrs			pport boat	Hrs8
Other:			. @	_ Hrs		Sco	w SEI 2000	Hrs0
Contractor Ac	tivities: (At	tach Addi	tional Shee	ets as N	ecessary)			
Apex on-site at (0545 and is	informed	by Tripp N	1arine t	hat dredging w	vill begin a	t 0815. Dred	dging begins on
schedule with m	aterials bei	ng placed	l into scow	TMC-1	40. Dredging c	ontinued	until 1527 w	ith end-of-day draft
marks on the pa	rtially filled	scow at 5	5' FWD and	7' AFT.	. Apex informe	d that dre	dging would	resume at 0715 on
04FEB. Apex de	parts site at	1545.						
No water quality	, issues wer	e observe	ed.					
Problems/Issi	ues or Actio	n Items:						
None / n/a								
Visitors:								
Signature:	D. Boye					Date	e: 03 Februa	ny 2014
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	file				-	_		
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				Ins	spec	tion Report							
Inspector:	J. Ray and	B. Your	ng			-		Date	: 04 Februa	ary 20:	14	-	
Contractor:	Tripp Mar	ine				Foreman/Supt	: Pyn	e Tripp					
Weather	AM: PM:	Clear Clear.	Winds	5k NW		Temperatui -	re	AM: PM:	34 21				
Tides	High Low		1118 0427		_AM _AM	2349 1633	PN PN						
Manpower O	nsite					Equipment Or	nsite						
Other: Contractor Ac Apex on-site at C dredging. 0845- between piles #2 draft- stern: 7.5' the southwest co bow: 9'	0758 to ove Dredge Trip 2 and #3 ap , bow: 5'. 10 orner of the	tach Ad rsee dro pp 47 bo proxim 055- Tri	ditional edging a egins drately 10 pp 47 is	Sheets activitie edging 00 feet s not dr ea. 1630	Hrs Hrs Hrs s as N es. 08 into S north edgin 0- Trip	ecessary) 43- Dredge Trip Scow TMC 140. of the southern g. 1445- Tripp 4	p 47 i Dredg n bour	Scov boat Sa Sup Scov s move ge is fac ndary o	cing west a of the silt cu redging ne	Hrs. Hrs. Hrs. Hrs.	begii dging 0855- s #2 a	8 8 8 0 n g in - TMC 14	n
Problems/Issu None / N/A	ues or Actio	n Items	s:										
Visitors:													
Signature: Title:	J. McAlliste	er				<u>.</u>			: <u>04 Februa</u> :1of_		14	-	
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Inspector:	C. Stillmar	1		•	Date:	05 Februa	ry 2014
Contractor:	Tripp Mari	ne		Foreman/Supt:	Р	yne Tripp	
Weather	AM: PM:	Overcast / Fog Rain/Snow. Winds	s 10-15k	Temperature NNE	AM: PM:	25 34	
Tides	High Low	0521	AM AM	-	PM PM		
Manpower O	nsite			Equipment Or	nsite		
	Foreman	@	Hrs	Description:	Dredge	e Tripp 47	Hrs
	Operators		Hrs			TMC 140	Hrs
	Laborers	@	 Hrs	Pu	sh boat Sai	nd Pebble	Hrs
	Drivers	@	 Hrs	•	Sup	port boat	Hrs
Other:			Hrs	•	Scov	SEI 2000	Hrs
Contractor Ac	tivities: (At	tach Additional She	ets as N	ecessary)			
		erve scow TMC-140		• • • • • • • • • • • • • • • • • • • •	orior days o	dredging. Ir	nformed by Tripp
Marine that dreesea conditions we departs site.	dging will n vill delay a c	ot occur today due t disposal run to the R	to the fu	ıll loaded scow,	and that t	he current	weather and offshore ening of 06FEB. Apex
No water quality							
Problems/Issi None / n/a	ues of Actio	on items:					
NONE / II/a							
Visitors:							
Signature: Title:	D. Boye			- -		05 Februa 1of_	
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Inspector:	C. Stillman	1		-	Date	: 06 Februa	ry 2014
Contractor:	Tripp Mari	ne		_Foreman/Supt:	Р	yne Tripp	
Weather	AM: PM:	Overcast. Snow. Winds 5-10k N	NW	Temperature	AM: PM:	<u>16</u> 30	
Tides	High Low	0044 0645	_AM _AM		PM PM		
Manpower O	nsite			Equipment Or	nsite		
	Foreman	@	Hrs	Description:	Dredge	e Tripp 47	Hrs
	Operators		Hrs	•		/ TMC 140	Hrs12
	Laborers	@	- Hrs	Pu	sh boat Sa		Hrs 4
	Drivers	@	_	-		port boat	Hrs.
Other:			Hrs	Tug (Guilford Co		Hrs12
Contractor Ac	tivitios: (At	tach Additional Sheet	. ac N				
	•	tivity observed on-site		•	Marine at 1	015 that so	οω TMC-140 is
•	-	•					
	•	shore disposal at the f			-		
	•	ush boat Sand Pebble	at 155	30 maneuvering	SCOW INTO	position ioi	r readying scow for
transit offshore.							
No water quality	, issues was	ra absarvad					
Problems/Issi							
None / n/a	JES OF ACTIO	ii iteiris.					
None / n/a							
Visitors:							
Signature:	D. Boye				Date	: 06 Februa	rv 2014
Title:				-		: 1 of	·
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Inspector:	M. Martinl	no			_	D	ate: 07 Februa	ary 2014	
Contractor:	Tripp Marii	ne			_Foreman/Supt:		Pyne Tripp		_
Weather	AM: PM:	Clear. Sunny.	Winds	10k or less	Temperature . WSW	AN PM			
Tides	High Low		0141 0839	AN AN		PM PM			
Manpower O	nsite				Equipment O	nsite			
Other:	Foreman Operators Laborers Drivers	1 1 1	@ @	8 Hrs 8 Hrs Hrs	Pu	Sh boa	edge Tripp 47 cow TMC 140 t Sand Pebble Support boat cow SEI 2000	Hrs Hrs Hrs Hrs	8 8 8
Contractor Ac	tivities: (At	tach Ado	ditional	Sheets as I	Necessary)				
Apex on-site at (dredging begins conducts water scow TMC-140. At 1520 Tripp M be decided, but Apex departs sit	at 0825. Dr quality mon End-of-day arine inforn an update v	edge op litoring s draft mans Apex vill be pi	eration survey. arks on that the rovided	os conducte Dredging of the scow we e schedule I once the t	d within the concontinues until 1 vere 9' FWD and for transiting scorip has been sch	fines o 413 wi 11' AF ow TM(f a silt curtain th all dredged T. C-140 offshore	perimeter materials	r. Apex loaded into
Problems/Issi	ues or Actio	n Items:							
None / n/a									
Visitors:									
Signature: Title: Copy to:	D. Boye					P	Pate: 07 Februa age:1of File: DIR_LHC	1	



			Шороо	non Roport				
Inspector:	M. Tumolo			-	Date	e: 08 Februa	ry 2014	
Contractor:	Tripp Marir	ne		Foreman/Supt	:	Pyne Tripp		
Weather	AM: PM:	Clear Sunny. Winds	s 5-10k W	_ Temperature	AM: PM:	<u>17</u> <u>28</u>		
Tides	High Low	0241 0944		1503 2023	PM PM			
Manpower O	nsite			Equipment O	nsite			
Other: Contractor Ac 0700 No activity at 0815. Apex a cellular and is in	Laborers Drivers tivities: (Attoccuring of LHCC site aformed that	ach Additionan-site. Apex of the O850; no Tridredging will	Hrs Hrs Hrs Hrs Sheets as Ne	Tug ecessary) TMC-140 retur aff observed. A	Scorush boat S Sugar Guilford (Ining north	cts Tripp Mar		
Problems/Issu None / n/a	ies of Action	ritems:						
Visitors:								
Signature: Title: Copy to:	D. Boye			- - -	Page	e: 08 Februa e:1of_ e: DIR_LHCC	_1	

Attachment 2 Water Quality Monitoring Forms

PROJECT:	New Bedford Harbor L	ower Harbor CAD Cell					
JOB NUMBER:	6724						
SURVEY DATE:	07 February 2014						
MONITORS:	M. Martinho						
WEATHER CONDITIONS:	Mostly cloudy	Low:	10	High	: :	30	
WIND CONDITIONS:	Speed:	10k or less		Direction:	WSW		
PRIOR STORM EVENTS:	N/A						
DREDGE / SCOW Position:	: Northing/Easting:	SW corner of curtaine	d area.				
TYPE OF WATER QUALITY	MONITORING EVENT:	TOP CAD Dredging /	BTM C	AD Dredging	/ Dispo	sal	
TIDE INFORMATION:	High:	0141/1403	Low	0839/1912			
WAS WATER QUALITY SA	MPLING PERFORMED?	(YES/NO):	N	IF YES, ATTA	CH CO	C FORMS	
CENEDAL NOTES:	Dredging begins at 08	25 Joading Bottom of	CAD soc	limante into e	OW TM	C-140 Dredging ands for the day	/ at 1/13



TIDE INFORMATION:	High:	0141/1403	Low:	0839/1912					
WAS WATER QUALITY S	AMPLING PERFORMED	? (YES/NO):	N	IF YES, ATTA	CH COC FOR	MS			
GENERAL NOTES:	Dredging begins at 08	325, loading Bot	tom of CAD sedi				or the day at 1413.		
					UP-CURREN	I			
		7							
Monitoring ID #	NORTHING / EASTING	TIME	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft)	TURBIDITY (NTUs)	GPS FILE NAME	TIDAL STAGE	RELATIVE POSITION OF MEASUREMENT	NUMBER OF HOUF DREDGING
20714-00-1-1		0830		1	3.4				
20714-00-1-2	2697030 / 815297	0832	4.2	2	4.3	4	Ebbing / Slack	200' N of Dredge	0
20714-00-1-4		0834	AVERAGE	4	4.7 4.13	ļ l			
			AVERAGE	IURBIDITT:	4.13	_			
20714-02-1-1		1030		1	2.9				
20714-02-1-4	2696565 / 815002	1032	8.1	4	3.5	4	Flooding tide	200' S of Dredge	2
20714-02-1-8		1034	AVERAGE	8	3.9 3.43	<u> </u>			
			AVERAGE	IUNDIDITI.	3.43	_			
20714-04-1-1		1230		1	3.4				
20714-04-1-5	2696594 / 814850	1232	11.6	5	3.9	-	Flooding tide	200' S of Dredge	4
20714-04-1-10		1234	AVERAGE	10	4.2 3.83	l			
			AVERAGE	TORDIDITT.	3.03	_			
20714-06-1-1		1430		1	3.7				
20714-06-1-5	2696565 / 815002	1432	10.1	5	3.6	4	Ebbing	200' N of Dredge	6
20714-06-1-9		1434	AVERAGE	9 FURBIDITY:	3.8 3.70	l			
			TVEITIGE	TORDIDITT.	3.70	_			
	4				1				
	‡					_			
			AVERAGE T	TURBIDITY:	Down-Currer	nt			
Manitoring ID #	NODTHING (FACTOR)	TIME	TOTAL WATER	SAMPLE	Down-Currer TURBIDITY		TIDAL STACE	DISTANCE FROM	NUMBER OF HOUF
Monitoring ID #	NORTHING / EASTING	TIME		SAMPLE DEPTH (ft)	TURBIDITY (NTUs)	nt GPS FILE NAME	TIDAL STAGE	DISTANCE FROM LOCATION	NUMBER OF HOUR DREDGING
20714-00-9-1		0840	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft)	TURBIDITY (NTUs)			LOCATION	DREDGING
)20714-00-9-1)20714-00-9-3	NORTHING / EASTING 2696546 / 815115	0840 0842	TOTAL WATER	SAMPLE DEPTH (ft)	TURBIDITY (NTUs) 3.9 4.2		TIDAL STAGE Ebbing / Slack		NUMBER OF HOUR DREDGING 0
)20714-00-9-1)20714-00-9-3		0840	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft) 1 3 6	TURBIDITY (NTUs)			LOCATION	DREDGING
20714-00-9-1 20714-00-9-3		0840 0842	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY:	TURBIDITY (NTUs) 3.9 4.2 4.4			LOCATION	DREDGING
20714-00-9-1 20714-00-9-3 20714-00-9-6		0840 0842 0844	TOTAL WATER DEPTH (ft) 6.8 AVERAGE	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17			LOCATION	DREDGING
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-2		0840 0842 0844 0844	TOTAL WATER DEPTH (ft) 6.8 AVERAGE	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8			LOCATION	DREDGING
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-1 20714-02-9-2	2696546 / 815115	0840 0842 0844	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1		Ebbing / Slack	200' S of Dredge	O O
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-1 20714-02-9-2	2696546 / 815115	0840 0842 0844 0844	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE	SAMPLE DEPTH (ft) 1 3 6 TURBIDITY: INCREASE: 1 2 4 TURBIDITY:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40		Ebbing / Slack	200' S of Dredge	O O
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-2	2696546 / 815115	0840 0842 0844 0844	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6	SAMPLE DEPTH (ft) 1 3 6 TURBIDITY: INCREASE: 1 2 4 TURBIDITY:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1		Ebbing / Slack	200' S of Dredge	O O
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-2 20714-02-9-4	2696546 / 815115 2697014 / 815204	0840 0842 0844 0844 1040 1042 1044	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE TURBIDITY	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4 FURBIDITY: INCREASE: 1 1 1 1	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97		Ebbing / Slack Flooding tide	200' S of Dredge 200' N of Dredge	DREDGING 0
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-2 20714-02-9-4 20714-04-9-1 20714-04-9-5	2696546 / 815115	0840 0842 0844 0844 1040 1042 1044 1240 1242	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4 FURBIDITY: INCREASE: 1 5	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97		Ebbing / Slack	200' S of Dredge	O O
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-1 20714-02-9-2 20714-02-9-4 20714-04-9-1 20714-04-9-5	2696546 / 815115 2697014 / 815204	0840 0842 0844 0844 1040 1042 1044	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE TURBIDITY 10.6	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4 FURBIDITY: INCREASE: 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97 4.7 6.9 9.4		Ebbing / Slack Flooding tide	200' S of Dredge 200' N of Dredge	DREDGING 0
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-1 20714-02-9-2 20714-02-9-4 20714-04-9-1 20714-04-9-5	2696546 / 815115 2697014 / 815204	0840 0842 0844 0844 1040 1042 1044 1240 1242	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE TURBIDITY	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 4 FURBIDITY: INCREASE: 1 5 10 FURBIDITY:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97		Ebbing / Slack Flooding tide	200' S of Dredge 200' N of Dredge	DREDGING 0
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-2 20714-02-9-4 20714-04-9-1 20714-04-9-1 20714-04-9-1	2696546 / 815115 2697014 / 815204	0840 0842 0844 1040 1042 1044 1240 1242 1244	TOTAL WATER DEPTH (II) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE TURBIDITY 10.6 AVERAGE AVERAGE	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4 FURBIDITY: INCREASE: 1 5 10 FURBIDITY: INCREASE:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97 4.7 6.9 9.4 7.00 3.17		Ebbing / Slack Flooding tide	200' S of Dredge 200' N of Dredge	DREDGING 0
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-1 20714-02-9-4 20714-04-9-1 20714-04-9-1 20714-04-9-1 20714-04-9-1	2696546 / 815115 2697014 / 815204	0840 0842 0844 1040 1042 1044 1240 1242 1244	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE TURBIDITY 10.6 AVERAGE TURBIDITY	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4 FURBIDITY: INCREASE: 1 5 10 FURBIDITY: INCREASE: 11 10 FURBIDITY: INCREASE: 11 11 11 12 13 14 14 15 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97 4.7 6.9 9.4 7.00 3.17		Ebbing / Slack Flooding tide	200' S of Dredge 200' N of Dredge	DREDGING 0
120714-00-9-1 120714-00-9-3 120714-00-9-6 120714-02-9-1 120714-02-9-2 120714-02-9-4 120714-04-9-1 120714-04-9-1 120714-04-9-1 120714-04-9-1 120714-06-9-1 120714-06-9-5	2696546 / 815115 2697014 / 815204 2697026 / 815419	0840 0842 0844 1040 1042 1044 1240 1242 1244	TOTAL WATER DEPTH (II) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE TURBIDITY 10.6 AVERAGE AVERAGE	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4 FURBIDITY: INCREASE: 1 5 10 FURBIDITY: INCREASE:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97 4.7 6.9 9.4 7.00 3.17		Ebbing / Slack Flooding tide	200' S of Dredge 200' N of Dredge 200' N of Dredge	DREDGING 0 2
120714-00-9-1 120714-00-9-3 120714-00-9-6 120714-02-9-1 120714-02-9-2 120714-02-9-4 120714-04-9-1 120714-04-9-1 120714-04-9-1 120714-04-9-1 120714-06-9-1 120714-06-9-5	2696546 / 815115 2697014 / 815204 2697026 / 815419	0840 0842 0844 1040 1042 1044 1240 1242 1244 1435 1437	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE TURBIDITY 10.6 AVERAGE TURBIDITY 12.2 AVERAGE	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4 FURBIDITY: INCREASE: 1 5 10 FURBIDITY: INCREASE: 1 1 5 10 FURBIDITY: INCREASE: 1 1 TURBIDITY: INCREASE:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97 4.7 6.9 9.4 7.00 3.17 2.7 3.9 4.6 3.73		Ebbing / Slack Flooding tide	200' S of Dredge 200' N of Dredge 200' N of Dredge	DREDGING 0 2
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-2 20714-02-9-4 20714-04-9-1 20714-04-9-1 20714-04-9-1 20714-06-9-1 20714-06-9-5	2696546 / 815115 2697014 / 815204 2697026 / 815419	0840 0842 0844 1040 1042 1044 1240 1242 1244 1435 1437	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE TURBIDITY 10.6 AVERAGE TURBIDITY	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4 FURBIDITY: INCREASE: 1 5 10 FURBIDITY: INCREASE: 1 1 5 10 FURBIDITY: INCREASE: 1 1 TURBIDITY: INCREASE:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97 4.7 6.9 9.4 7.00 3.17		Ebbing / Slack Flooding tide	200' S of Dredge 200' N of Dredge 200' N of Dredge	DREDGING 0 2
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-2 20714-02-9-4 20714-04-9-1 20714-04-9-1 20714-04-9-1 20714-06-9-1 20714-06-9-5	2696546 / 815115 2697014 / 815204 2697026 / 815419	0840 0842 0844 1040 1042 1044 1240 1242 1244 1435 1437	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE TURBIDITY 10.6 AVERAGE TURBIDITY 12.2 AVERAGE	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4 FURBIDITY: INCREASE: 1 5 10 FURBIDITY: INCREASE: 1 1 5 10 FURBIDITY: INCREASE: 1 1 TURBIDITY: INCREASE:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97 4.7 6.9 9.4 7.00 3.17 2.7 3.9 4.6 3.73		Ebbing / Slack Flooding tide	200' S of Dredge 200' N of Dredge 200' N of Dredge	DREDGING 0 2
20714-00-9-1 20714-00-9-3 20714-00-9-6 20714-02-9-1 20714-02-9-2 20714-02-9-4 20714-04-9-1 20714-04-9-1 20714-04-9-1 20714-06-9-1 20714-06-9-5	2696546 / 815115 2697014 / 815204 2697026 / 815419	0840 0842 0844 1040 1042 1044 1240 1242 1244 1435 1437	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE TURBIDITY 10.6 AVERAGE TURBIDITY 12.2 AVERAGE	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4 FURBIDITY: INCREASE: 1 5 10 FURBIDITY: INCREASE: 1 1 5 10 FURBIDITY: INCREASE: 1 1 TURBIDITY: INCREASE:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97 4.7 6.9 9.4 7.00 3.17 2.7 3.9 4.6 3.73		Ebbing / Slack Flooding tide	200' S of Dredge 200' N of Dredge 200' N of Dredge	DREDGING 0 2
120714-00-9-1 120714-00-9-3 120714-00-9-6 120714-02-9-1 120714-02-9-2 120714-02-9-4 120714-04-9-1 120714-04-9-1 120714-04-9-1 120714-04-9-1 120714-06-9-1 120714-06-9-5	2696546 / 815115 2697014 / 815204 2697026 / 815419	0840 0842 0844 1040 1042 1044 1240 1242 1244 1435 1437	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE TURBIDITY 10.6 AVERAGE TURBIDITY 12.2 AVERAGE TURBIDITY	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4 FURBIDITY: INCREASE: 1 5 10 FURBIDITY: INCREASE: 1 1 5 11 FURBIDITY: INCREASE:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97 4.7 6.9 9.4 7.00 3.17 2.7 3.9 4.6 3.73		Ebbing / Slack Flooding tide	200' S of Dredge 200' N of Dredge 200' N of Dredge	DREDGING 0 2
Monitoring ID # 120714-00-9-1 120714-00-9-3 120714-00-9-6 120714-02-9-1 120714-02-9-2 120714-02-9-4 120714-04-9-1 120714-04-9-1 120714-06-9-1 120714-06-9-1 120714-06-9-1	2696546 / 815115 2697014 / 815204 2697026 / 815419	0840 0842 0844 1040 1042 1044 1240 1242 1244 1435 1437	TOTAL WATER DEPTH (ft) 6.8 AVERAGE TURBIDITY 4.6 AVERAGE TURBIDITY 10.6 AVERAGE TURBIDITY 12.2 AVERAGE	SAMPLE DEPTH (ft) 1 3 6 FURBIDITY: INCREASE: 1 2 4 FURBIDITY: INCREASE: 1 5 10 FURBIDITY: INCREASE: 1 5 11 TURBIDITY: INCREASE: 1 TURBIDITY: INCREASE: 1 TURBIDITY: INCREASE: ITURBIDITY: INCREASE: ITURBIDITY: INCREASE: ITURBIDITY: INCREASE: ITURBIDITY: INCREASE:	TURBIDITY (NTUs) 3.9 4.2 4.4 4.17 0.03 3.3 6.8 9.1 6.40 2.97 4.7 6.9 9.4 7.00 3.17 2.7 3.9 4.6 3.73		Ebbing / Slack Flooding tide	200' S of Dredge 200' N of Dredge 200' N of Dredge	DREDGING 0 2

* Turbidity Increase = Down-Current Average Turbidity - Up-Current Average Turbidity

Figure 1 Lower Harbor CAD Cell Phase I – Water Quality Monitoring

