Weekly Field Report Week: 03-30-14 through 04-05-14 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 twenty second 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 22nd Report for the LHCC dredging activities includes:

- Daily Inspection Reports from the dredging oversight performed during the week of March 30th through April 5th, 2014. These reports include notes on the equipment used on site, and a summary of contractor activities. (See Attachment 1);
- Water Quality Monitoring Forms completed for the week of March 30th through April 5th, 2014, (Attachment 2) summarizing monitoring survey data recorded during active dredging. 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 before the disposal of a scow for any visible debris or other items that could potentially become a hazard to navigation prior to the scow's departure for the offshore disposal site.

Summary:

The Contractor, Cashman Dredging and Marine Contracting, Co. LLC (Cashman) conducted dredging at the LHCC on March 31st and April 2nd, 3rd, 4th, and 5th. Dredging operations focused on the removal of Phase I Bottom of CAD Cell sediments. 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). Cashman was observed conducting these activities during the authorized operational window of 7AM until sunset, utilizing a single dredge plant – the Bobby D; two tugs – Ellsea and Lucinda Smith; a 2800 cubic yard split scow – Eddie Carroll; 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. Apex conducted one day of water quality monitoring on April 3rd 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 split scow Eddie Carroll, were recorded during the week and occurred on April 1st, 3rd, and 5th.

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	4,000
Approximate Bottom of CAD Volume Dredged to Date*	35,500

^{*} 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

Attachment 1 Daily Inspection Reports



	Inspection Report									
Inspector:	Adam Hart					Dat	e : 03/30/20	14		
Contractor:	Cashman/We	eks			Foreman/Supt	: Jun	ior Huggins			
Weather	AM:	Heavy Rai Rain	in		Temperature	AM: PM:	43 66			
Tides	High Low	0817 150		_AM _AM	2040 1350	PM PM				
Manpower Onsite Equipment Onsite										
Other: Contractor Ac No dredging acti Bobby D. north o	Operators Mate Deckhand Captains ctivities: (Attach	lge plant Bol	3 3 3 3 3 5heets	. crew	on site. 843 Tu	Lucinda S Ellsea Eddie Ca	rroll cinda Smith	Hrs Hrs Hrs Hrs Hrs	ne dredge	•
Tug boat Lucinda brings Bobby D. 1008- All crews o	a Smith brings o	lredge plant and to Shuste	Bobb er bull	y D. ne	ar silt curtain a	nd spuds	down. 955	Tug boa	t Lucinda S	mith
Visitors:										
Signature: Title: Copy to:	Environmenta File	l Technician				Pag	e: <u>03/30/20</u> e: <u>1of_</u> e: <u>DIR_LHC</u>	_1		



Inspection Report										
Inspector:	Brett Young						Date:	3/31/2014		
Contractor:	Cashman					Foreman/Supt:	Junior	Huggins		
Weather	AM: PM:	ſ	Frozen Rain		_	Temperature	AM: PM:	34 41		
Tides	High Low		0905 0237		AM AM	2127 1429	PM PM			
Manpower O	nsite Foreman Operators Laborers Drivers Other:	1 1 3 1	@	12 12 12 12 12 9.5	Hrs Hrs Hrs Hrs	Equipment Ons Description:			Hrs Hrs Hrs Hrs Hrs Hrs	9 12 12 11 12 0
Contractor Activities: (Attach Additional Sheets as Necessary) 0740- The Ellsea is moving the Bobby D while the Lucinda Smith moves the Eddie Carroll. Survey 4 is onsite. The silt curtain gate is open. 0805- Survey 4 exits the silt curtain and is offsite. 0810- The silt curtain gate is closed and dredging begins in cut 8 station 7+86. The Eddie Carroll is drafting; bow-4.5', stern-5'. 0820- The Bobby D is dredging full buckets into the Eddie Carroll. 0915- The Bobby D stops dredging to fix a cable and coordinate dredge locations with the operator. 0920- The Bobby D is relocating. 0940- The Bobby D begins dredging cuts 6, 7, & 8 station 7+47. 1015- The Bobby D stops dredging and the operator comes down to discuss dredge plan. 1107- The Bobby D resumes dredging into the Eddie Carroll. 1236- The Bobby D stops dredging to reposition. (continued)										
Problems/Issues or Action Items: The excavator on the Bobby D was taken off the barge on Saturday (3/29/14) in anticipation of a new one arriving on Sunday (3/30/14). The new excavator did not arrive on Sunday and may not be onsite until Wednesday (4/2/14). The old excavator was then put back on the Bobby D on Sunday instead. The GPS for the excavator was not put back into place and all station location data for this DIR was estimated using the cursor chainage for approximate bucket location. This is also the reason why the operator came down to discuss the dredge plan multiple times throughout the day, he was operating without a screen. Silt curtain is detached from a pylon in the north east corner. Junior is aware of the problem and is waiting for a less windy day to fix it.										
Visitors:										
Signature: Title:	Environmen	tal Sci	ientist					3/31/2014 1of3		
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Inspection Report								
Inspector:	Brett Young				Dat	te: 3/31/2014		
Contractor:	Cashman			Foreman/Supt:	Junio	or Huggins		
Weather	AM: PM:	Frozen Mix Rain		Temperature	AM:	34 41		
Tides	High _ Low _	0905 0237	AM AM	2127 1429	PM PM			
Contractor Activities: (Attach Additional Sheets as Necessary) 1256- The Bobby D resumes dredging into the Eddie Carroll at cuts 6, 8, & 10 station 7+10. 1354- The Bobby D stops dredging to reposition. 1400- The Bobby D resumes dredging cuts 6, 8, & 10 station 6+92. 1405- The Bobby D stops dredging to adjust the scow with assistance from Lucinda Smith. 1420- The Bobby D resumes dredging in cuts 6, 8, & 10 station 6+92. 1520- The Bobby D stops dredging to reposition. 1528- The Bobby D resumes dredging in cuts 8 & 10 station 6+85. 1535- The Bobby D stops dredging. 1550- The Bobby D resumes dredging into the Eddie Carroll. Drafts; bow-9.5', stern-10.5'. 1655- The Bobby D stops dredging and the operator comes down to discuss the dredging plan. They decide to delay dredging to wait for the tide. 1700- Silt curtain gate is opened. 1705- Lucinda Smith exits silt curtain headed southbound to South Terminal. 1708- Silt curtain is closed. 1745- Ellsea ties up to the Bobby D. 1746- The Bobby D repositions with assistance from Ellsea. Lucinda Smith tied up to the Richie Barber. 1805- Lucinda Smith unties from the Richie Barber and waits at the silt curtain gate. 1806- The Bobby D resumes dredging into the Eddie Carroll at cuts 5 & 10 station 5+88. 1816- The Bobby D stops dredging and begins to water down the Eddie Carroll. 1818- Silt curtain gate is opened and Lucinda Smith enters and ties up to the Eddie Carroll. The Bobby D places the bucket on the deck. 1820- The Eddie Carroll is inspected and cleared for offshore disposal. Eddie Carroll will not dispose tonight due to high winds offshore. Lucinda Smith will take the Eddie Carroll offshore tomorrow morning (4/1/14) after they assist the Bobby D in exchanging for the new excavator. Eddie Carroll final drafts; bow-10.5', stern-12'. 1825- Lucinda Smith takes the Eddie Carroll out of the silt curtain and brings it southbound to the staging area at south terminal.								
Problems/Issu	ues or Action It	ems:						
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Inspection Report

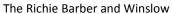
Inspector:	Brett Young	Date: 3/3:	1/2014
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Contractor: Cashman Foreman/Supt: Junior Huggins











Portion of silt curtain dislodged from the pylon



Eddie Carroll with Lucinda Smith and Ellsea alongside

Visitors:

Signature:

Title:

Environmental Scientist

Date: 3/31/2014

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Inspector:	Chris Stillmar	1					Date:	4/1/2014	_	
Contractor:	Cashman					Foreman/Supt:	Junior H	luggins		
Weather	AM:		Over		_	Temperature	AM:	36		
	PM: _		Cle	ar	_		PM:	42		
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	Low		031	L9	AM	1512	PM			
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	Foreman	1	@	12	Hrs	Description:			Hrs.	0
	Operators	1	- C -	12	Hrs	· ·	Eddie Carrol	II	Hrs.	12
	Laborers	2	 	12	Hrs		Ellsea	· <u>·</u>	Hrs.	0
	Drivers	1	 	12	Hrs		Lucinda Smi	th	Hrs.	12
	_				Hrs	•	Red Skiff		Hrs.	12
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	inspection	n keport	
Inspector:	Chris Stillman		Date: 4/1/2014
Contractor:	Cashman	Foreman/Supt:	Junior Huggins
Photo 1: A new of barge.	excavator for the Bobby D arrives on a flat		
Visitors:			
Signature: Title:	Chris Stillman, Environmental Scientist		Date: 4/1/2014 Page:2of2
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Inspection Report										
Inspector:	Kyle Miller						Date:	4/2/2014		
Contractor:	Cashman					Foreman/Supt:	Junior I	Huggins		
Weather	AM: PM:		Sun Clou			Temperature	AM: PM:	36 52		
Tides	High Low		104	48	AM AM	2300 1548	PM PM	<u> </u>		
Manpower Onsite Equipment Onsite										
	Foreman	1		13	Hrs	Description:			Hrs.	3
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	Engineer Deckhand		@_	13 13	— Hrs Hrs		Ellsea Lucinda Sm	i+h	Hrs	0 11
	Mate:	<u>_</u>	@_	13	Hrs		Red Skiff	ILII	Hrs. Hrs.	13
Engineer from		1	. @ _	9	_''''	•	SEI 2000		Hrs.	0
ziigiiieei iioii						•	<u> </u>		Hrs.	
Contractor Ac	tivities: (Atta	ch Ado	dition	al Sheets	s as Ne	cessary)				
						vest of the silt cur	rtain openin	g at the LHCC	. 0823 A	new
Dorothy takes the bucket. 1136 changing the buckets in order continues fabrica LHCC silt curtain. The Bobby D sto	te SEI 33, the SThe Jacobs Cocket and is now to mount the ating the brace. 1640 The Books dredging.	barge Compa ow inst e exca ckets. obby D The Ed	that only is calling avator 1607 beginder	delivered inside LH g the GPS r to the d The Luci ns dredgi	d the ne HCC sur 5. 1240 deck of inda Sm ing into	up. The tugs Dord ew excavator, soo eveying the CAD of Survey 4 arrives of the Bobby D. 14: nith moves the Edo of the Eddie Carrol (5). 1900 The Bol	uth. 0934 Thell. 1140 The on site. 1305 20 The buck ddie Carrol a I, drafting 4'	e Bobby D cree Bobby D cree The crew is set is installed and Bobby D be, in Cut 6, Sta	ew is cha ew contir fabricati and the pack insid	anging nues ng crew de the
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Inspection Report								
Inspector:	Kyle Miller	-	Date: 4/2/2014					
Contractor:	Cashman	Foreman/Supt:	Junior Huggins					
noto 1: The Bo	bby D with a new excavator on board.	Photo 2: The crew of the new excavator.	on the Bobby D changes the bucket on					
Visitors:								
Signature: Title:	Ryle Miller Kyle Miller, Environmental Scientist	-	Date: 4/2/2014 Page:2of2					
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Inspector:	Chris Stillma	an, Jos	sh Ray				Date:	4/3/2014			_
Contractor:	Cashman					Foreman/Supt:	Horace	Huggins			
Weather	AM: PM:	-	Clea Clea		<u>-</u>	Temperature	AM: PM:	40 52			
Tides	High Low	<u> </u>	112 043		AM _ AM _	2349 1627	PM PM				
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Jr Huggins	Captain:	1	@	12	Hrs	Description:	Bobby D		Hrs.	12	
Tom	Operators	1	@	12	Hrs		Eddie Carro	oll	Hrs.	12	
Dave	Mate	1	@	12	Hrs		Ellsea		Hrs.	0	
Dwight	Engineer	1	_ @	10	Hrs		Lucinda Sm	ith	Hrs.	5	\dashv
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Problems/Issu	ues or Action	Items	:								
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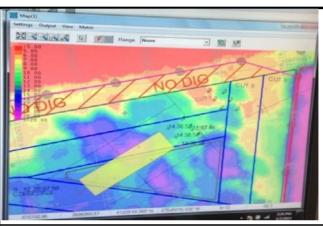
Inspection Report

Inspector:	Chris Stillman, Josh Ray	Date:	4/3/2014
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Contractor: Cashman Foreman/Supt: Horace Huggins



Bobby D. Dredging in Cut 6 in the Northeast corner of the CAD Cell.



Bobby D. matrix display showing dredge locations in Cuts 8, 7, and 6.



Bobby D. loading scow Eddie Carroll.



Scow Eddie Carroll at end of shift, Tug Lucinda Smith to transport to offshore disposal site.

Visitors:		
Signature: Title:	Chapter State Environmental Scientist	Date: 04/03/14 Page:2of2
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Inspector:	Mike Tumolo)					Date	4/4/2014		
Contractor:	Cashman					Foreman/Supt:	Junior	Huggins		
Weather	AM:		Sun		_	Temperature	AM:	34		
	PM:		Sun	ny	_		PM:	42		
Tides	⊔iah		121	10	AM	NI/A	PM			
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Manpower O	nsite					Equipment Ons	site			
	Captain	1	@	8	Hrs	Description:	Bobby D		Hrs.	5
	Operators	1	@	8	Hrs		Eddie Carr	oll	Hrs.	14
	Mate	1	@	8	Hrs		Ellsea		Hrs.	0
	Deckhand	3	@	8	Hrs		Lucinda Sr	nith	Hrs.	14
	Engineer	1	@	8	Hrs		Red Skiff		Hrs	8
	Drivers	2		14	Hrs		SEI 2000		Hrs	0
Contractor Ac						• • • • • • • • • • • • • • • • • • • •				
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	-					ldie Carroll at cut				=
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	=					by D resumes dre				
=				_	-	7 Dredging stops	=			-
	_					cut 10, station 6+				
						lobby D resumes				
Bobby D relocate	es 30' north ai	nd be	gins d	redging	from c	ut 10, station 6+7	77. 1516 Th	e Bobby D fini	shes dre	dging
into the Eddie Ca	arroll. Its final	draft	mark	s are: bo	w- 8.5	', stern- 6'. 1600-	There is no	activity on sit	e.	
Problems/Issu	ies or Action I	tems:								
Visitors:	None									
	while	2								
Signature:							Date	4/4/14		
Title:	Mike Tumolo	o, Env	ironm	nental Sc	ientist		Page	1of2	<u> </u>	
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Inspection Report

Inspector:	Mike Tumolo	Date:	4/4/2014
inspector:	wike rumoio	Date:	4/4/2014

Contractor: Cashman Foreman/Supt: Junior Huggins



Photo 1: The Bobby D dredges material into the Eddie Carroll.



Photo 2: Material dredged from the CAD area into the Eddie Carroll.



Photo 3: The Bobby D dredging into the Eddie Carroll.

Visitors: None

Signature:

Title: Mike Tumolo, Environmental Scientist

Date: 4/4/2014

Page: __2__of__2__

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			ins	spect	ion Report				
Inspector:	Kyle Miller					Date:	4/5/2014		
Contractor:	Cashman				Foreman/Supt:	Horace H	Huggins		
Weather	AM: PM:		Rain oudy		Temperature	AM: PM:	54 32		
Tides	High Low		0034	AM AM	1305 1756	PM PM			
Manpower O	Foreman Operators Engineer Deckhand Mate Wood 1 Eng	1 @ 1 @ 1 @ 2 @ 1 @	12.5 10 11 12.5 12.5 3	Hrs Hrs Hrs Hrs Hrs				Hrs Hrs Hrs Hrs Hrs Hrs	8 12 2 10 12 0
0804- The Bobby dredging. 1238- ring failure. 1550 for the day to at resumes dredgin operating. 1745- Eddie Carroll is in Problems/Issu	The Bobby D is D- The crew is stend to person g material into The Bobby D inspected and content of the Bobby D inspected and content the Bobby D in the Bobby D	dging ma s still dre still atter nal busin o the Edo engineer cleared fo	terial into deging into mpting to cess and the die Carroll for leaves for or offshore	the Ede the Ede complete e rest of from cu the ev e dispos	die Carroll, drafti die Carroll, 1430- te repairs on the of the crew contin ut 5, station 6+47 vening. 1904- The sal, drafting at 9'.	- The Bobby I excavator. 10 nues with rep 7. The engine Bobby D sto . 1915- The c	D stops dred 630- The ope pairs. 1732- T eer from the ops dredging crew of the B	ging due terator lead the Bobby Wood 1 is for the da Bobby D. c	to an o- ves early / D s ay. The departs.
Visitors:									
Signature: Title:	Environment	Mille al Scient	ist			Date: <u>/</u> Page: _	4/5/14 1of2		
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Inspection Report

Inspector:	Kyle Miller	Date:	4/5/2014	
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Contractor: Cashman Foreman/Supt: Horace Huggins



The Bobby D dredging with Edna alongside.



The Bobby D dredging into the Eddie Carrol.



The Bobby D dredging into the Eddie Carrol.



Dredged material inside the Eddie Carrol.

Visitors:		
Signature:	Kyl. Miller	Date: 4/5/2014
Title:	Environmental Scientist	Page:2of2
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Attachment 2 Water Quality Monitoring Forms

PROJECT: New Bedford Harbor Lower Harbor CAD Cell

JOB NUMBER: 6724

DATE: 4/3/2014 MONITORS: Josh Ray

WEATHER CONDITIONS: High: 52 Low: 40

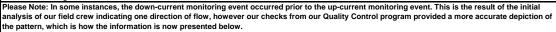
WIND: 4-15 mph East

PRIOR STORM EVENTS:

DREDGE UPDATE: Dredging currently in NE Corner Cuts 6, 7, 8

TYPE OF WATER QUALITY MONITORING EVENT: TOP CAD Dredging / BTM CAD Dredging / Disposal

DE High: 1126/2349 Low: 0438/1637





Monitoring ID #	NORTHING/ EASTING	TIME	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft)	TURBIDITY (NTUs)	GPS FILE NAME	TIDAL STAGE	TYPE OF WQM & DISTANCE FROM LOCATION	NUMBER OF HOURS DREDGING
040314-00-1-1		751		1	3.06				
040314-00-1-6		753	12	6	3.21]			
040314-00-1-11	GPS malfunction	755		11	2.65		Flood	15' S of Silt Curtain	00
			AVERAGE T	URBIDITY:	2.97				
040314-02-1-1		931		1	3.25	-			
040314-02-1-7		933	14	7	3.35				
040314-02-1-13	815129, 2696499	935	AVERAGE T	13 URBIDITY:	3.78 3.46		Flood	15' S of Silt Curtain	02
			7.7.2.0.02	0110101111		_			
040314-04-1-1		1129		1	2.27				
040314-04-1-5	045040 0007050	1130	10	5	2.77		F.1.	45111 - (07) 0 - (-)	24
040314-04-1-9	815043, 2697059	1132	AVEDACET	9 TUDDIDITY	2.65		Ebb	15' N of Silt Curtain	04
			AVERAGE T	URBIDITY:	2.56	n T			
040314-06-1-1		1332		1	3.8				
040314-06-1-3		1333	6	3	3.43				
040314-06-1-5	815097, 2697039	1334		5	3.84		Ebb	15' N of Silt Curtain	06
			AVERAGE T	URBIDITY:	3.69	Ц			
040314-08-1-1		1532		1	2.95				
040314-08-1-3		1534	6	3	4.39				
			1 P						
	815233, 2697012	1536	AVERAGE T	5 URBIDITY:	6.14 4.49		Ebb	15' N of Silt Curtain	08
	815233, 2697012 NORTHING/EASTING		AVERAGE T	5 TURBIDITY: SAMPLE DEPTH (ft)			Ebb TIDAL STAGE	DISTANCE FROM DREDGE/SILT	08 NUMBER OF HOURS DREDGING
040314-08-1-5 Monitoring ID #		1536	TOTAL WATER	SAMPLE	4.49 Down-Curr TURBIDITY	ent GPS FILE NAME		DISTANCE FROM	NUMBER OF HOURS
Monitoring ID # 040314-00-9-1 040314-00-9-5		TIME 808 810	TOTAL WATER	SAMPLE	Down-Curr TURBIDITY (NTUs) 3.86	ent GPS FILE NAME		DISTANCE FROM DREDGE/SILT	NUMBER OF HOURS
040314-08-1-5 Monitoring ID # 040314-00-9-1		1536 TIME 808	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft) 1 5	Down-Curry TURBIDITY (NTUS) 3.86 3.92 3.51	ent GPS FILE NAME		DISTANCE FROM DREDGE/SILT	NUMBER OF HOURS
Monitoring ID # 040314-00-9-1 040314-00-9-5	NORTHING/ EASTING	TIME 808 810	TOTAL WATER DEPTH (ft)	SAMPLE DEPTH (ft) 1 5 8 URBIDITY:	Down-Curr TURBIDITY (NTUs) 3.86	ent GPS FILE NAME	TIDAL STAGE	DISTANCE FROM DREDGE/SILT CURTAIN	NUMBER OF HOURS DREDGING
Monitoring ID # 040314-00-9-1 040314-00-9-8 040314-02-9-1	NORTHING/ EASTING	TIME 808 810 812	TOTAL WATER DEPTH (ft) 9 AVERAGE T TURBIDITY I	SAMPLE DEPTH (ft) 1 5 8 URBIDITY: NCREASE:	Down-Curr TURBIDITY (NTUs) 3.86 3.92 3.51 3.76 0.79	ent GPS FILE NAME	TIDAL STAGE	DISTANCE FROM DREDGE/SILT CURTAIN	NUMBER OF HOURS DREDGING
Monitoring ID # 040314-00-9-1 040314-00-9-8 040314-02-9-1 040314-02-9-6	NORTHING/ EASTING GPS malfunction	TIME 808 810 812	TOTAL WATER DEPTH (ft) 9 AVERAGE T	SAMPLE DEPTH (ft) 1 5 8 TURBIDITY: NCREASE:	Down-Curr TURBIDITY (NTUs) 3.86 3.92 3.51 3.76 0.79 4.52 4.11	ent GPS FILE NAME	TIDAL STAGE Flood	DISTANCE FROM DREDGE/SILT CURTAIN 15' N of Silt Curtain	NUMBER OF HOURS DREDGING 00
Monitoring ID # 040314-08-1-5 Monitoring ID # 040314-00-9-1 040314-00-9-8 040314-02-9-1 040314-02-9-6	NORTHING/ EASTING	TIME 808 810 812	TOTAL WATER DEPTH (ft) 9 AVERAGE T TURBIDITY I	SAMPLE DEPTH (ft) 1 5 8 TURBIDITY: NCREASE: 1 6	1.49 Down-Curr TURBIDITY (NTUS) 3.86 3.92 3.51 3.76 0.79 4.52 4.11 3.22	ent GPS FILE NAME	TIDAL STAGE	DISTANCE FROM DREDGE/SILT CURTAIN	NUMBER OF HOURS DREDGING
Monitoring ID # 040314-08-1-5 Monitoring ID # 040314-00-9-1 040314-00-9-8 040314-02-9-1 040314-02-9-6	NORTHING/ EASTING GPS malfunction	TIME 808 810 812	TOTAL WATER DEPTH (ft) 9 AVERAGE T TURBIDITY I	SAMPLE DEPTH (ft) 1 5 8 URBIDITY: NCREASE: 1 6 10 URBIDITY:	Down-Curr TURBIDITY (NTUs) 3.86 3.92 3.51 3.76 0.79 4.52 4.11	ent GPS FILE NAME	TIDAL STAGE Flood	DISTANCE FROM DREDGE/SILT CURTAIN 15' N of Silt Curtain	NUMBER OF HOURS DREDGING 00
Monitoring ID # 040314-08-1-5 Monitoring ID # 040314-00-9-1 040314-00-9-8 040314-02-9-1 040314-02-9-1 040314-02-9-10	NORTHING/ EASTING GPS malfunction	TIME 808 810 812 939 941 943	TOTAL WATER DEPTH (ft) 9 AVERAGE T TURBIDITY I 11 AVERAGE T TURBIDITY I	SAMPLE DEPTH (ft) 1 5 8 URBIDITY: NCREASE: 1 6 10 URBIDITY: NCREASE:	4.49 Down-Curr TURBIDITY (NTUs) 3.86 3.92 3.51 3.76 0.79 4.52 4.11 3.22 3.95 0.49	ent GPS FILE NAME	TIDAL STAGE Flood	DISTANCE FROM DREDGE/SILT CURTAIN 15' N of Silt Curtain	NUMBER OF HOURS DREDGING 00
Monitoring ID # 040314-08-1-5 Monitoring ID # 040314-00-9-1 040314-00-9-8 040314-02-9-1 040314-02-9-10 040314-04-9-1 040314-04-9-8	NORTHING/ EASTING GPS malfunction 815155, 2697052	TIME 808 810 812 939 941 943 1138 1140	TOTAL WATER DEPTH (ft) 9 AVERAGE T TURBIDITY I 11 AVERAGE T	SAMPLE DEPTH (ft) 1 5 8 TURBIDITY: NCREASE: 1 6 10 TURBIDITY: NCREASE: 1 1 8	4.49 Down-Curr TURBIDITY (NTUs) 3.86 3.92 3.51 3.76 0.79 4.52 4.11 3.22 3.95 0.49 7.48 3.13	ent GPS FILE NAME	TIDAL STAGE Flood	DISTANCE FROM DREDGE/SILT CURTAIN 15' N of Silt Curtain	NUMBER OF HOURS DREDGING 00
Monitoring ID # 040314-08-1-5 Monitoring ID # 040314-00-9-1 040314-00-9-8 040314-02-9-1 040314-02-9-10 040314-04-9-1 040314-04-9-8	NORTHING/ EASTING GPS malfunction	TIME 808 810 812 939 941 943	TOTAL WATER DEPTH (ft) 9 AVERAGE T TURBIDITY I 11 AVERAGE T TURBIDITY I	SAMPLE DEPTH (ft) 1 5 8 TURBIDITY: NCREASE: 1 6 10 TURBIDITY: NCREASE: 1 8 15	4.49 Down-Curr TURBIDITY (NTUs) 3.86 3.92 3.51 3.76 0.79 4.52 4.11 3.22 3.95 0.49 7.48 3.13 2.55	ent GPS FILE NAME	TIDAL STAGE Flood	DISTANCE FROM DREDGE/SILT CURTAIN 15' N of Silt Curtain	NUMBER OF HOURS DREDGING 00
Monitoring ID # 040314-08-1-5 Monitoring ID # 040314-00-9-1 040314-00-9-8 040314-02-9-1 040314-02-9-10 040314-04-9-1 040314-04-9-8	NORTHING/ EASTING GPS malfunction 815155, 2697052	TIME 808 810 812 939 941 943 1138 1140	TOTAL WATER DEPTH (ft) 9 AVERAGE T TURBIDITY I 11 AVERAGE T TURBIDITY I	SAMPLE DEPTH (ft) 1 5 8 IURBIDITY: NCREASE: 1 10 IURBIDITY: NCREASE: 1 1 8 15 IURBIDITY:	4.49 Down-Curr TURBIDITY (NTUs) 3.86 3.92 3.51 3.76 0.79 4.52 4.11 3.22 3.95 0.49 7.48 3.13	ent GPS FILE NAME	TIDAL STAGE Flood	DISTANCE FROM DREDGE/SILT CURTAIN 15' N of Silt Curtain	NUMBER OF HOURS DREDGING 00
Monitoring ID # 040314-08-1-5 Monitoring ID # 040314-00-9-1 040314-00-9-5 040314-00-9-8 040314-02-9-1 040314-02-9-10 040314-04-9-1 040314-04-9-1	NORTHING/ EASTING GPS malfunction 815155, 2697052	TIME 808 810 812 939 941 943 1138 1140	TOTAL WATER DEPTH (ft) 9 AVERAGE T TURBIDITY I AVERAGE T TURBIDITY I 16 AVERAGE T	SAMPLE DEPTH (ft) 1 5 8 IURBIDITY: NCREASE: 1 10 IURBIDITY: NCREASE: 1 1 8 15 IURBIDITY:	4.49 Down-Curr TURBIDITY (NTUs) 3.86 3.92 3.51 3.76 0.79 4.52 4.11 3.22 3.95 0.49 7.48 3.13 2.55 4.39	ent GPS FILE NAME	TIDAL STAGE Flood	DISTANCE FROM DREDGE/SILT CURTAIN 15' N of Silt Curtain	NUMBER OF HOURS DREDGING 00
Monitoring ID # 040314-08-1-5 Monitoring ID # 040314-00-9-1 040314-00-9-5 040314-00-9-8 040314-02-9-1 040314-02-9-10 040314-04-9-1 040314-04-9-15 040314-04-9-15	NORTHING/ EASTING GPS malfunction 815155, 2697052	TIME 808 810 812 939 941 943 1138 1140 1142	TOTAL WATER DEPTH (ft) 9 AVERAGE T TURBIDITY I AVERAGE T TURBIDITY I 16 AVERAGE T	SAMPLE DEPTH (ft) 1 5 8 IURBIDITY: NCREASE: 1 10 IURBIDITY: NCREASE: 1 1 8 15 IURBIDITY:	4,49 Down-Curr TURBIDITY (NTUs) 3.86 3.92 3.51 3.76 0.79 4.52 4.11 3.22 3.95 0.49 7.48 3.13 2.55 4.39 1.82	ent GPS FILE NAME	TIDAL STAGE Flood	DISTANCE FROM DREDGE/SILT CURTAIN 15' N of Silt Curtain	NUMBER OF HOURS DREDGING 00
Monitoring ID # 040314-08-1-5 Monitoring ID # 040314-00-9-1 040314-00-9-5 040314-00-9-8 040314-02-9-1 040314-02-9-10 040314-04-9-1 040314-04-9-15 040314-06-9-1 040314-06-9-5	NORTHING/ EASTING GPS malfunction 815155, 2697052	TIME 808 810 812 939 941 1138 1140 1142	TOTAL WATER DEPTH (ft) 9 AVERAGE T TURBIDITY I 11 AVERAGE T TURBIDITY I 16 AVERAGE T TURBIDITY I	SAMPLE DEPTH (ft) 1 5 8 URBIDITY: NCREASE: 1 6 10 URBIDITY: NCREASE: 1 8 15 URBIDITY: NCREASE:	4.49 Down-Curr TURBIDITY (NTUs) 3.86 3.92 3.51 3.76 0.79 4.52 4.11 3.22 3.95 0.49 7.48 3.13 2.55 4.39 1.82	ent GPS FILE NAME	TIDAL STAGE Flood	DISTANCE FROM DREDGE/SILT CURTAIN 15' N of Silt Curtain	NUMBER OF HOURS DREDGING 00
Monitoring ID # 040314-00-9-1 040314-00-9-8	NORTHING/ EASTING GPS malfunction 815155, 2697052 815209, 2696532	TIME 808 810 812 939 941 943 1138 1140 1142	TOTAL WATER DEPTH (ft) 9 AVERAGE T TURBIDITY I 11 AVERAGE T TURBIDITY I 16 AVERAGE T TURBIDITY I	SAMPLE DEPTH (ft) 1 5 8 URBIDITY: NCREASE: 1 1 6 10 URBIDITY: NCREASE: 1 1 8 15 URBIDITY: NCREASE: 1 1 9 URBIDITY:	4.49 Down-Curr TURBIDITY (NTUs) 3.86 3.92 3.51 3.76 0.79 4.52 4.11 3.22 3.95 0.49 7.48 3.13 2.55 4.39 1.82 2.91	ent GPS FILE NAME	Flood Flood Ebb	DISTANCE FROM DREDGE/SILT CURTAIN 15' N of Silt Curtain 15' N of Silt Curtain	NUMBER OF HOURS DREDGING 00 02

3.36

5.39

8.03

5.59

1.10

Ebb

15' S of Silt Curtain

08

UP-CURRENT

Copy of WQM_LHCC_040314_rev1.xlsx

815181, 2696563

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

1542

1544

1546

AVERAGE TURBIDITY:

TURBIDITY INCREASE

040314-08-9-1

040314-08-9-3

040314-08-9-5

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

