



December 11, 2017

Mr. Edward Anthes-Washburn
Executive Director
New Bedford Harbor Development Commission
52 Fisherman's Wharf
New Bedford, MA 02740

Re: CAD Cell 1 and Borrow Pit CAD Cells
Capped Areas Operation and Maintenance Reporting 2017
New Bedford Harbor, MA

Dear Mr. Washburn,

Apex Companies, LLC (Apex) is pleased to provide an update to the New Bedford Harbor Development Commission (HDC) on the Operations and Maintenance (O&M) of the CAD Cell 1 and the Borrow Pit CAD Cell caps. These CAD Cells were created and used to receive navigational dredging material from within New Bedford Harbor. The CAD Cells last received navigational dredge material in 2009 and were allowed to consolidate and settle within the CAD cells for over four years prior to being capped.

Capping of both CAD Cells concluded on January 15th of 2014. Approximately 8.8 acres of the combined area encompassing the two CAD Cells were capped with clean material dredge from the footprint of the Marine Commerce Terminal channel dredge project in New Bedford. The capping commenced after a sufficient settling/consolidation period whereby softer organic material placed within the CAD Cells was left to settle to a sufficiently dense state to receive a cap of clean dredge sediment. The capping procedure was designed to encapsulate the dredge material within a manageable location within the harbor.

Bathymetric Surveys

As part of the post-capping monitoring activities, Apex has conducted bathymetric surveys of the Borrow Pit and CAD Cell 1 to ascertain and monitoring the settlement and consolidation of the cap. A pre-cap placement reference survey was conducted on November 13th, 2013; this survey has been compared to all subsequent surveys to calculate the quantity of settlement observed from year to year and see if the cap has finished consolidating. The design of the cap was to meet an average 3 foot thickness at the final stage to the post-cap settling period.

Apex's Bathymetric surveys were conduct using Reson 7125 Multibeam transducer mounted on a 25 foot Alaskan Hewescraft. The boat was equipped with an Applanix Internal Motion Unit and uses Real Time Kinematic GPS for vertical and horizontal accuracy. QAQC procedures are followed before, during, and after each survey to maintain accuracy and repeatability from survey to survey.

For quick reference, below is a brief description of the survey findings:

- Post cap surveys conducted on February 11th, 2014 following the completion of capping activities on January 15th, 2014 compared to the Pre-capping survey of November 11th, 2013 had a Mean value of 3.26 feet thick across the surface of the 8.8 acre area.

- First annual post cap survey conducted on January 6th, 2015 compared to the Pre-capping survey of November 11th, 2013 had a Mean value of 3.19 feet thick across the surface of the 8.8 acre area.
- Second annual post cap surveys conducted on December 15th, 2015 compared to the Pre-capping survey of November 11th, 2013 had a Mean value of 3.29 feet thick across the surface of the 8.8 acre area.
- Third annual post cap surveys conducted on November 22nd, 2016 compared to the Pre-capping survey of November 11th, 2013 had a Mean value of 3.39 feet thick across the surface of the 8.8 acre area.
- Fourth annual post cap surveys conducted on November 20th, 2017 compared to the Pre-Capping survey of November 11th, 2013 had a Mean Value of 3.50 feet thick across the surface of the 8.8 acre area.

Based on these surveys it appears that the cap is still consolidating and may have begun to receive depositional material on its surface. Since the original placement of the cap, the average design thickness of 3 feet has been maintained from conclusion of construction activities to now. The most recent set of bathymetric plans showing conditions from the November 20th, 2017 survey are included as Attachment 1. We will continue to monitor the CAD Cell caps through bathymetric surveys and we will review the cap consolidation status so that the HDC can begin the chemical and biological surveys required.

Shellfish Monitoring

On Tuesday October 21st, 2017 and Wednesday November 13th, 2017 members of the New Bedford Police Dive Unit mobilized to the CAD cell sites (Borrow Pit and CAD Cell 1) north of Route 6. The dive team had five fabricated 1 m x 1m square quadrants to be deployed in 2 locations in each of the CAD Cells and 1 control outside of the CAD cells in an undisturbed by dredging location. The divers used a three-tined garden hoe to sort each quadrat (frame) of sediment to a depth of approximately 12 inches. Soils raked within the quadrants within the Capped CAD Cells were described as sandy (granular) indicating that the CAD cell capping material had held its place and in the control area outside of the CAD Cells, were described as “mucky and soft”. No shellfish were recovered from any of the quadrats. The Field report from the Shellfish monitoring program is including as Attachment 2. Shellfish surveys will continue on an annual basis.

Faunal Enumeration

On Monday October 30th, 2017 the benthic monitoring took place at the CAD Cell sites. Apex continued to use the 25 foot Alaskan Hewescraft to run transects over the CAD Cells and equipped a tow behind SplashCam Deep Blue Pro Underwater Video Camera to document the benthic fauna establishing on the cap. Four transects were run in total, two each in CAD Cell 1 and the Borrow Pit. The video shows the establishment of marine life within the cad cells. The types of marine life observed during the benthic monitoring appeared consistent with what is commonly observed in other parts of the Harbor. Screen captures show plant and animal life including crabs, fish and brown algae. The density of marine life observed was consistent with that of an area being re-established and is expected to continue to densify. Screen captures can be found in Attachment 3.

Sediment Monitoring

On October 11th, 2017 Apex conducted sediment sampling within the CAD Cell caps to verify the structural integrity of the CAD Cell cap and analyze the sediments within the cap. Apex mobilized the 25 foot Crest pontoon boat equipped with an A-frame and winch for vibracore sampling. A 4 inch barrel was driven to a depth of 2 feet in order to penetrate the cap surface, but not puncture through the entire cap, therefore leaving the capped material beneath undisturbed. Apex conducted vibracores at four locations, two locations each in CAD Cell 1 and the Borrow Pit. Samples were visually classified and collected for laboratory analysis. Material was classified as Gray Fine to Coarse Sand, and SAND, trace Silt. Laboratory analysis was conducted to test for PCBs using the NOAA congener methodology. All four samples analyzed were non-detect for PCBs. Full lab analysis can be found in Attachment 4.

This work was conducted in accordance with the Confined Aquatic Disposal Cell Operations and Maintenance (O&M) plan dated June 26, 2014 and updated June 13, 2015. This letter is to provide the HDC with an update on the physical, chemical, and biological condition of the cap as revealed by the activities noted above.

Please review the contents of the letter and supporting plans and feel free to contact us to discuss at 617-784-2405.

Sincerely,
Apex Companies, LLC



Joshua Ray.
Project Manager

Attachments

- 1)CAD Cell Bathymetry Plans
- 2)Shellfish Report
- 3)Faunal Enumeration Screen Captures
- 4)Laboratory Analysis

[https://apexcos.sharepoint.com/sites/BostonMA/Documents/Jobs/6858-001 New Bedford/Apex -HDC - Fairhaven - Memo for 2016 CAD Cells O&M Work_rev1.docx](https://apexcos.sharepoint.com/sites/BostonMA/Documents/Jobs/6858-001%20New%20Bedford/Apex%20-HDC%20-%20Fairhaven%20-%20Memo%20for%202016%20CAD%20Cells%20O&M%20Work_rev1.docx)

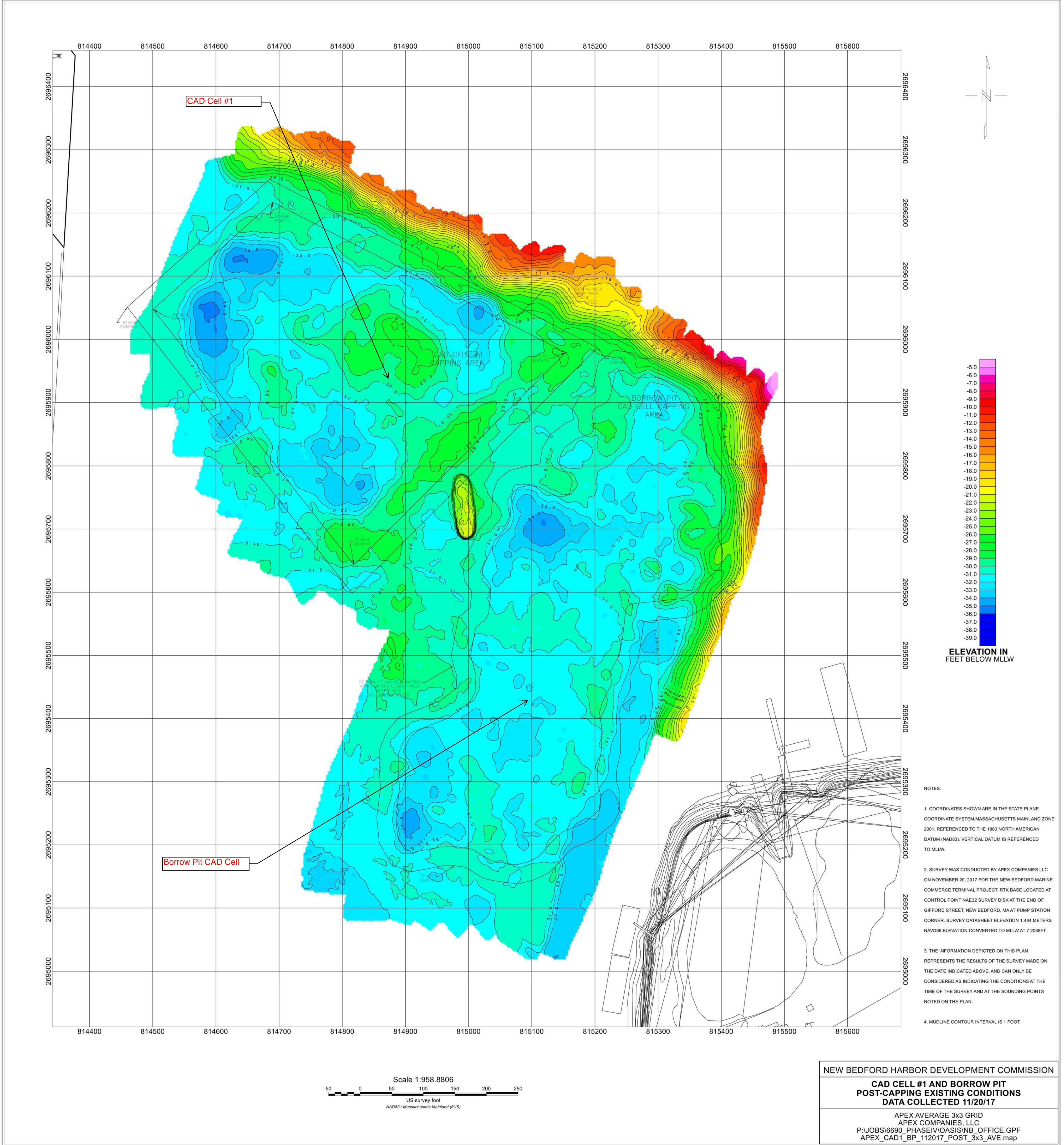


CAD Cell 1 and Borrow Pit CAD Cells

Capped Areas Operation and Maintenance Reporting 2016

Attachment 1

Bathymetric Survey

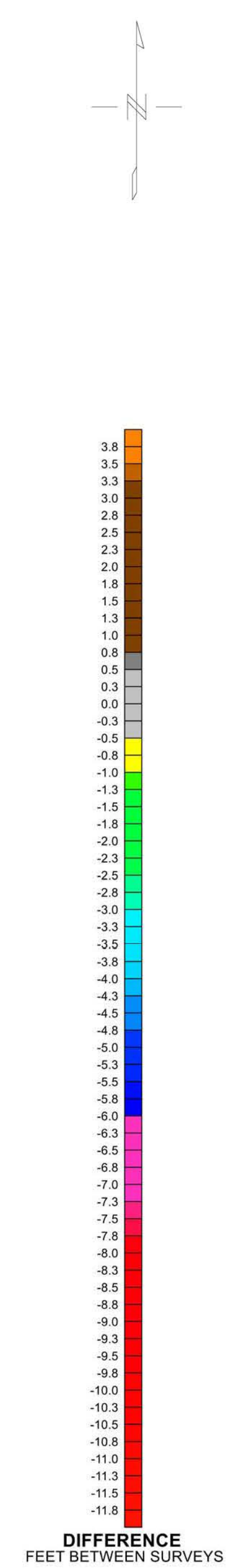
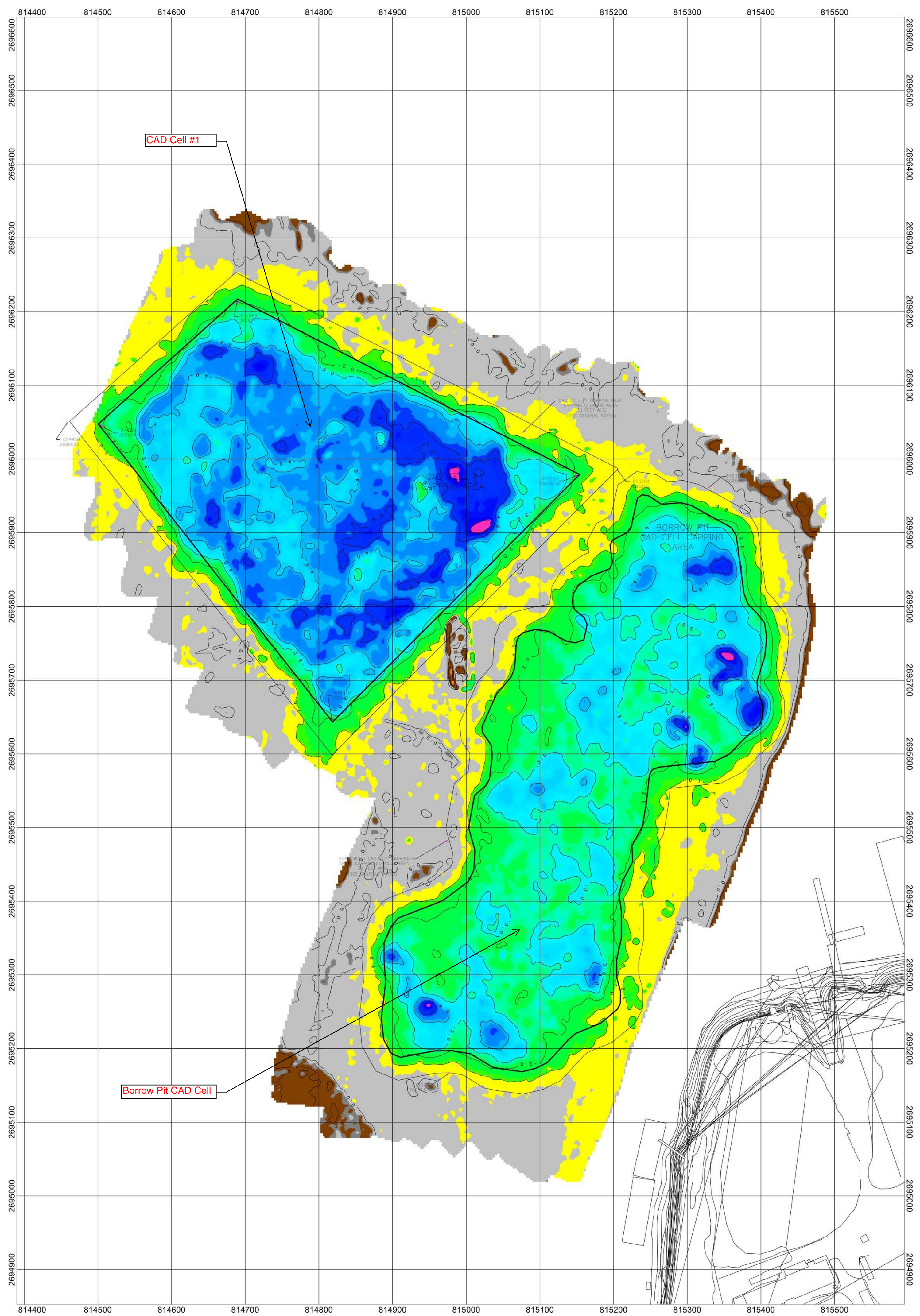


- NOTES:
1. COORDINATES SHOWN ARE IN THE STATE PLANE COORDINATE SYSTEM MASSACHUSETTS MAINLAND ZONE 2001, REFERENCED TO THE 1983 NORTH AMERICAN DATUM (NAD83). VERTICAL DATUM IS REFERENCED TO MLLW.
 2. SURVEY WAS CONDUCTED BY APEX COMPANIES LLC ON NOVEMBER 20, 2017 FOR THE NEW BEDFORD MARINE COMMERCE TERMINAL PROJECT. RTK BASE LOCATED AT CONTROL POINT NAE32 SURVEY DISK AT THE END OF GIFFORD STREET, NEW BEDFORD, MA AT PUMP STATION CORNER. SURVEY DATASHEET ELEVATION 1.484 METERS NAVD83 ELEVATION CONVERTED TO MLLW AT 7.2088FT.
 3. THE INFORMATION DEPICTED ON THIS PLAN REPRESENTS THE RESULTS OF THE SURVEY MADE ON THE DATE INDICATED ABOVE, AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS AT THE TIME OF THE SURVEY AND AT THE SOUNDING POINTS NOTED ON THE PLAN.
 4. MUDLINE CONTOUR INTERVAL IS 1 FOOT.

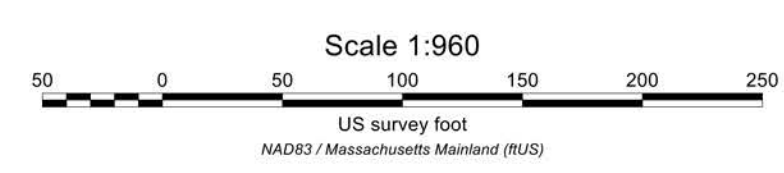
NEW BEDFORD HARBOR DEVELOPMENT COMMISSION

**CAD CELL #1 AND BORROW PIT
POST-CAPPING EXISTING CONDITIONS
DATA COLLECTED 11/20/17**

APEX AVERAGE 3x3 GRID
APEX COMPANIES, LLC
P:\JOBS\6690_PHASEIV\OASIS\NB_OFFICE.GPF
APEX_CAD1_BP_112017_POST_3x3_AVE.map



- NOTES:
1. COORDINATES SHOWN ARE IN THE STATE PLANE COORDINATE SYSTEM MASSACHUSETTS MAINLAND ZONE 2001, REFERENCED TO THE 1983 NORTH AMERICAN DATUM (NAD83). VERTICAL DATUM IS REFERENCED TO MLLW.
 2. SURVEY WAS CONDUCTED BY APEX COMPANIES LLC ON NOVEMBER 20, 2017 FOR THE NEW BEDFORD MARINE COMMERCE TERMINAL PROJECT. RTK BASE LOCATED AT CONTROL POINT NAE32 SURVEY DISK AT THE END OF GIFFORD STREET, NEW BEDFORD, MA AT PUMP STATION CORNER. SURVEY DATASHEET ELEVATION 1.484 METERS NAVD83 ELEVATION CONVERTED TO MLLW AT 7.208FT.
 3. THE INFORMATION DEPICTED ON THIS PLAN REPRESENTS THE RESULTS OF THE SURVEY MADE ON THE DATE INDICATED ABOVE, AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS AT THE TIME OF THE SURVEY AND AT THE SOUNDINGS POINTS NOTED ON THE PLAN.
 4. MUDLINE CONTOUR INTERVAL IS 1 FOOT.



NEW BEDFORD HARBOR DEVELOPMENT COMMISSION
**CAD 1 AND BORROW PIT POST CAPPING
 SUBTRACTED GRID AS OF NOVEMBER 20, 2017**
APEX COMPANIES, LLC
 P:\JOBS\6690 NBH_PHASE IV\OASIS\BORROWPIT_CAPPING.GPF
 SUBT_APEX_111313_CAD_AREAS_PROG_3X3_AVE-
 APEX_CAD1_BORROW_CAPPING_112017_PROG_AVE_MSK.MAP



CAD Cell 1 and Borrow Pit CAD Cells
Capped Areas Operation and Maintenance Reporting 2016

Attachment 2

Shellfish Monitoring



HARBOR DEVELOPMENT COMMISSION

52 Fisherman's Wharf TEL (508) 961-3000
New Bedford, MA 02740 FAX (508) 979-1517
WWW.PORTOFNEWBEDFORD.ORG

Borrow Pit and CAD 1 Shellfish and Faunal Survey

On Tuesday October 31st and Monday November 13th, the New Bedford Police Port Security Unit and Dive Team deployed divers to locate five quadrats in the New Bedford/Fairhaven Harbor. The dive team had deployed five fabricated 1 m x 1m square quadrats approximately one year prior. These quadrats were marked with a buoy attached to them designed to float one to two feet above the quadrat. They were given coordinates in which to place these. Upon placing the quadrats, they recorded the coordinates. The coordinates are slightly dissimilar to those provided in the initial deployment and are listed below. There are two locations in each of the CAD Cells and one control outside of the CAD cells in a location not disturbed by dredging.

Control Point: N 41' 38.598' W 070' 55.172

CAD 1a: N 41' 38.676' W 070' 55.201'

CAD 1b: N 41' 38.649' W 070' 55.161'

Borrow Pit a: N 41' 38.624' W 070' 55.077'

Borrow Pit b: N 41' 38.558' W 070' 55.121'

Control Point

On October 31st, divers located the single quadrat in the control area outside areas of dredging or capping associated with the CAD Cells. The divers had a mesh dive bag with the intention of collecting any shellfish or other organisms found. Soils raked within the quadrants were described as muddy and mucky indicative of an area outside of any dredging or capping activities. No shellfish were recovered from the quadrat.

CAD

On November 13th, divers located the two quadrats in CAD Cell 1. The divers had a mesh dive bag with the intention of collecting any shellfish or other organisms found. Soils raked within the quadrants were described as soft and sandy (granular) indicating that the CAD cell capping material had held its place. No shellfish were recovered from either quadrat.

Borrow Pit



HARBOR DEVELOPMENT COMMISSION

52 Fisherman's Wharf TEL (508) 961-3000
New Bedford, MA 02740 FAX (508) 979-1517
WWW.PORTOFNEWBEDFORD.ORG

On November 13th, divers located two quadrats in the Borrow Pit CAD Cell. The divers had a mesh dive bag with the intention of collecting any shellfish or other organisms found. Soils raked within the quadrants were described as soft and sandy (granular) indicating that the CAD cell capping material had held its place. No shellfish were recovered from either quadrat.



CAD Cell 1 and Borrow Pit CAD Cells

Capped Areas Operation and Maintenance Reporting 2016

Attachment 3


Benthic Monitoring Video Screen Grabs

Crab burrow hole



Aquatic Growth



A grayscale satellite image showing a large, diffuse, and textured area in the ocean, identified as a fish plume. The plume exhibits a complex, wavy pattern of light and dark patches. A red arrow points from a white rectangular label containing the text 'Fish plume' to the specific feature within the plume. The background is a dark, uniform color, likely representing the surrounding ocean water.

Fish plume

Aquatic growth



Fish plume



Crab burrow hole



Crab burrow hole





CAD Cell 1 and Borrow Pit CAD Cells

Capped Areas Operation and Maintenance Reporting 2016

Attachment 4

Sediment Monitoring Laboratory Results



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 7J13045

Client Project: New Bedford Harbor Development Commission

Report Date: 20-October-2017

Prepared for:

Apex Companies
Apex Companies, LLC
1213 Purchase Street, Suite 301
New Bedford, MA 02740

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Project: New Bedford Harbor Development Commission

Case Number: 7J13045

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
7J13045-01	BP-1	Soil	10/11/2017	10/13/2017
7J13045-02	BP-2	Soil	10/11/2017	10/13/2017
7J13045-03	CAD-1-1	Soil	10/11/2017	10/13/2017
7J13045-04	CAD-1-2	Soil	10/11/2017	10/13/2017

Project: New Bedford Harbor Development Commission

Case Number: 7J13045

Request for Analysis

BP-1

Analysis

% Solids

PCBs (Congener Specific)

Method

Gravimetric

EPA 8082A

BP-2

Analysis

% Solids

PCBs (Congener Specific)

Method

Gravimetric

EPA 8082A

CAD-1-1

Analysis

% Solids

PCBs (Congener Specific)

Method

Gravimetric

EPA 8082A

CAD-1-2

Analysis

% Solids

PCBs (Congener Specific)

Method

Gravimetric

EPA 8082A

Project: New Bedford Harbor Development Commission

Case Number: 7J13045

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

PCBs

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria. Samples were extracted via EPA 3540C - Soxhlet.

Project: New Bedford Harbor Development Commission

Case Number: 7J13045

Sample: BP-1
7J13045-01 ()

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Polychlorinated Biphenyls (PCBs)						
2,4'-Dichlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',5-Trichlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,4,4'-Trichlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,5'-Tetrachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',5,5'-Tetrachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3',4,4'-Tetrachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
3,3',4,4'-Tetrachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
3,4,4',5-Tetrachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',4,5,5'-Pentachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3,3',4,4'-Pentachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3,4,4',5-Pentachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3',4,4',5-Pentachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2',3,4,4',5-Pentachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
3,3',4,4',5-Pentachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,4,4',5'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',4,4',5,5'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3,3',4,4',5-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3,3',4,4',5'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3,4',4,5'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
3,3',4,4',5,5'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4',5-Heptachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,4,4',5,5'-Heptachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,4',5,5',6-Heptachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3,3',4,4',5,5'-Heptachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4',5,6-Octachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
Decachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
Surrogate(s)	Recovery%		Limits			
2,4,5,6-Tetrachloro-m-xylene (TCMX)	82.3%		45-125		10/18/17	10/20/17

Project: New Bedford Harbor Development Commission

Case Number: 7J13045

Sample: BP-2
7J13045-02 ()

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Polychlorinated Biphenyls (PCBs)						
2,4'-Dichlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',5'-Trichlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,4,4'-Trichlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,5'-Tetrachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',5,5'-Tetrachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3',4,4'-Tetrachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
3,3',4,4'-Tetrachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
3,4,4',5'-Tetrachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',4,5,5'-Pentachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3,3',4,4'-Pentachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3,4,4',5'-Pentachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3',4,4',5'-Pentachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2',3,4,4',5'-Pentachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
3,3',4,4',5'-Pentachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,4,4',5'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',4,4',5,5'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3,3',4,4',5'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3,3',4,4',5'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3,4',4,5',5'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
3,3',4,4',5,5'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4',5'-Heptachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,4,4',5,5'-Heptachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,4',5,5',6'-Heptachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3,3',4,4',5,5'-Heptachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4',5,6'-Octachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
Decachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
Surrogate(s)	Recovery%		Limits			
2,4,5,6-Tetrachloro-m-xylene (TCMX)	68.4%		45-125		10/18/17	10/20/17

Project: New Bedford Harbor Development Commission

Case Number: 7J13045

Sample: CAD-1-1
7J13045-03 ()

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Polychlorinated Biphenyls (PCBs)						
2,4'-Dichlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',5'-Trichlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,4,4'-Trichlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,5'-Tetrachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',5,5'-Tetrachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3',4,4'-Tetrachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
3,3',4,4'-Tetrachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
3,4,4',5'-Tetrachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',4,5,5'-Pentachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3,3',4,4'-Pentachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3,4,4',5'-Pentachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3',4,4',5'-Pentachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2',3,4,4',5'-Pentachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
3,3',4,4',5'-Pentachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,4,4',5'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',4,4',5,5'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3,3',4,4',5'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3,3',4,4',5'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3,4',4,5',5'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
3,3',4,4',5,5'-Hexachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4',5'-Heptachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,4,4',5,5'-Heptachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,4',5,5',6'-Heptachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,3,3',4,4',5,5'-Heptachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4',5,6'-Octachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
Decachlorobiphenyl	ND		9	ug/kg	10/18/17	10/20/17
Surrogate(s)	Recovery%		Limits			
2,4,5,6-Tetrachloro-m-xylene (TCMX)	64.2%		45-125		10/18/17	10/20/17

Project: New Bedford Harbor Development Commission

Case Number: 7J13045

Sample: CAD-1-2
7J13045-04 ()

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Polychlorinated Biphenyls (PCBs)						
2,4'-Dichlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',5'-Trichlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,4,4'-Trichlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,5'-Tetrachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',5,5'-Tetrachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3',4,4'-Tetrachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
3,3',4,4'-Tetrachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
3,4,4',5'-Tetrachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',4,5,5'-Pentachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3,3',4,4'-Pentachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3,4,4',5'-Pentachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3',4,4',5'-Pentachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2',3,4,4',5'-Pentachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
3,3',4,4',5'-Pentachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,4,4',5'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',4,4',5,5'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3,3',4,4',5'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3,3',4,4',5'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3,4',4,5',5'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
3,3',4,4',5,5'-Hexachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4',5'-Heptachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,4,4',5,5'-Heptachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,4',5,5',6'-Heptachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,3,3',4,4',5,5'-Heptachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4',5,6'-Octachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
Decachlorobiphenyl	ND		8	ug/kg	10/18/17	10/20/17
Surrogate(s)	Recovery%		Limits			
2,4,5,6-Tetrachloro-m-xylene (TCMX)	83.2%		45-125		10/18/17	10/20/17

Project: New Bedford Harbor Development Commission

Case Number: 7J13045

Quality Control

Polychlorinated Biphenyls (PCBs)

Analyte	Result Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: B7J0675 - EPA 3540C

Blank (B7J0675-BLK1)

Prepared: 10/18/17 Analyzed: 10/20/17

2,4'-Dichlorobiphenyl	ND	10	ug/kg						
2,2',5-Trichlorobiphenyl	ND	10	ug/kg						
2,4,4'-Trichlorobiphenyl	ND	10	ug/kg						
2,2',3,5'-Tetrachlorobiphenyl	ND	10	ug/kg						
2,2',5,5'-Tetrachlorobiphenyl	ND	10	ug/kg						
2,3',4,4'-Tetrachlorobiphenyl	ND	10	ug/kg						
3,3',4,4'-Tetrachlorobiphenyl	ND	10	ug/kg						
3,4,4',5-Tetrachlorobiphenyl	ND	10	ug/kg						
2,2',4,5,5'-Pentachlorobiphenyl	ND	10	ug/kg						
2,3,3',4,4'-Pentachlorobiphenyl	ND	10	ug/kg						
2,3,4,4',5-Pentachlorobiphenyl	ND	10	ug/kg						
2,3',4,4',5-Pentachlorobiphenyl	ND	10	ug/kg						
2',3,4,4',5-Pentachlorobiphenyl	ND	10	ug/kg						
3,3',4,4',5-Pentachlorobiphenyl	ND	10	ug/kg						
2,2',3,3',4,4'-Hexachlorobiphenyl	ND	10	ug/kg						
2,2',3,4,4',5'-Hexachlorobiphenyl	ND	10	ug/kg						
2,2',4,4',5,5'-Hexachlorobiphenyl	ND	10	ug/kg						
2,3,3',4,4',5-Hexachlorobiphenyl	ND	10	ug/kg						
2,3,3',4,4',5'-Hexachlorobiphenyl	ND	10	ug/kg						
2,3,4',4,5',5-Hexachlorobiphenyl	ND	10	ug/kg						
3,3',4,4',5,5'-Hexachlorobiphenyl	ND	10	ug/kg						
2,2',3,3',4,4',5-Heptachlorobiphenyl	ND	10	ug/kg						
2,2',3,4,4',5,5'-Heptachlorobiphenyl	ND	10	ug/kg						
2,2',3,4',5,5',6-Heptachlorobiphenyl	ND	10	ug/kg						
2,3,3',4,4',5,5'-Heptachlorobiphenyl	ND	10	ug/kg						
2,2',3,3',4,4',5,6-Octachlorobiphenyl	ND	10	ug/kg						
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	ND	10	ug/kg						
Decachlorobiphenyl	ND	10	ug/kg						

Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX) 26.8 ug/kg 33.3 80.4 45-125

Project: New Bedford Harbor Development Commission

Case Number: 7J13045

Quality Control
(Continued)

Polychlorinated Biphenyls (PCBs) (Continued)

Analyte	Result Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: B7J0675 - EPA 3540C (Continued)

LCS (B7J0675-BS1)

Prepared: 10/18/17 Analyzed: 10/20/17

2,3,3',4,4'-Pentachlorobiphenyl	34	10	ug/kg	33.3		102	40-140		
2,3',4,4',5-Pentachlorobiphenyl	37	10	ug/kg	33.3		110	40-140		
2,2',3,3',4,4'-Hexachlorobiphenyl	35	10	ug/kg	33.3		105	40-140		
2,2',3,4,4',5'-Hexachlorobiphenyl	37	10	ug/kg	33.3		112	40-140		
2,3,3',4,4',5-Hexachlorobiphenyl	35	10	ug/kg	33.3		106	40-140		
2,2',3,3',4,4',5-Heptachlorobiphenyl	35	10	ug/kg	33.3		106	40-140		
<hr/>									
Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)		27.4	ug/kg	33.3		82.3	45-125		

LCS Dup (B7J0675-BS1)

Prepared: 10/18/17 Analyzed: 10/20/17

2,3,3',4,4'-Pentachlorobiphenyl	34	10	ug/kg	33.3		103	40-140	0.431	200
2,3',4,4',5-Pentachlorobiphenyl	37	10	ug/kg	33.3		111	40-140	0.959	200
2,2',3,3',4,4'-Hexachlorobiphenyl	35	10	ug/kg	33.3		106	40-140	1.16	200
2,2',3,4,4',5'-Hexachlorobiphenyl	37	10	ug/kg	33.3		112	40-140	0.620	200
2,3,3',4,4',5-Hexachlorobiphenyl	36	10	ug/kg	33.3		108	40-140	1.64	200
2,2',3,3',4,4',5-Heptachlorobiphenyl	36	10	ug/kg	33.3		107	40-140	0.851	200
<hr/>									
Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)		29.1	ug/kg	33.3		87.4	45-125		

Project: New Bedford Harbor Development Commission

Case Number: 7J13045

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.
RPD	Relative Percent Difference.
%REC	Percent Recovery.
Source	Sample that was matrix spiked or duplicated.

NEW ENGLAND TESTING LABORATORY, INC.
 59 Greenhill Street
 West Warwick, RI 02893
 1-888-863-8522



CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME/LOCATION				A C C E P T E D	S O I L	O T H E R	N O. O F C O N T A I N E R S	A D J U S T M E N T	T E S T S	R E M A R K S
CLIENT New Bedford Harbor Harbor Commission												
REPORT TO:												
INVOICE TO:												
DATE	TIME	C O M P	G R A B	SAMPLE I.D.								
10/11/17	0845		X	BP-1		X		1		X		
10/11/17	0930		X	BP-2		X		1		X		
10/11/17	1040		X	CAD-1-1		X		1		X		
10/11/17	1125		X	CAD 1-2		X		1		X		

Sampled by: (Signature) <i>[Signature]</i>	Date/Time 10/13/17	Received by: (Signature) <i>[Signature]</i>	Date/Time 10/13/17 1:45	Laboratory Remarks: 2. Temp. received: _____ Cooled <input type="checkbox"/>	Special Instructions: List Specific Detection Limit Requirements:
Relinquished by: (Signature) <i>[Signature]</i>	Date/Time 10/13/17 1600	Received by: (Signature) <i>[Signature]</i>	Date/Time 10/13/17 1600		
Relinquished by: (Signature) <i>[Signature]</i>	Date/Time	Received for Laboratory by: (Signature) <i>[Signature]</i>	Date/Time		
Turnaround (Business Days) _____					

**Netlab subcontracts the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates

MassDEP Analytical Protocol Certification Form

Laboratory Name: New England Testing Laboratory, Inc.

Project #:

Project Location: New Bedford, MA

RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):
7J13045

Matrices: Groundwater/Surface Water Soil/Sediment Drinking Water Air Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A <input type="checkbox"/>	7470/7471 Hg CAM III B <input type="checkbox"/>	MassDEP VPH (GC/PID/FID) CAM IV A <input type="checkbox"/>	8082 PCB CAM V A <input checked="" type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>	6860 Perchlorate CAM VIII B <input type="checkbox"/>
8270 SVOC CAM II B <input type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	MassDEP VPH (GC/MS) CAM IV C <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	MassDEP APH CAM IX A <input type="checkbox"/>
6010 Metals CAM III A <input type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	MassDEP EPH CAM IV B <input type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
E	VPH, EPH, APH, and TO-15 only a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
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Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹

¹All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.

Signature: 

Position: Laboratory Director

Printed Name: Richard Warila

Date: 10/20/2017