Water Quality Monitoring Program - Turbidity Data for the Lower Harbor
New Bedford Harbor Superfund Site
Current as of 3-JUNE-2016

This table shows the highest recorded measurements of turbidity, or movement of sediment in the water, at locations far from the dredge (Up-current Reference) as well as near the dredge (300-ft down current from dredge). EPA measures turbidity to ensure that PCB sediment is not being distributed beyond the dredge areas during work. Currents in the harbor are often changing, which is why EPA measures in many places around the dredge. PCBs like to attach to sediment and do not like to stay in the water. Therefore, if we know where the sediment is moving, we can monitor the movement of PCBs. Plans are in place to ensure proper action is taken in the event of high turbidity levels. If the turbidity levels are greater than 50 NTU* (above the reference level measured) at 300 feet down current of the dredging activities, EPA may stop or slow work and/or collect water samples.

Turbidity levels are also measured during sediment disposal into the Confined Aquatic Disposal (CAD) cell. While the silt curtain hinders sediment movement, measurements are still taken 25 feet from the silt curtain during disposal to ensure its effectiveness as a barrier. If the turbidity levels are greater than 50 NTU (above the reference level) 25 feet from the silt curtain, EPA will assess potential causes.

Monitoring Date	Turbidity (*NTU) Readings at Monitoring Stations:			Activity
	Up-current Reference	Compliance (50 NTU above reference level)		
		Debris Removal/ Dredging (300-ft down-current from dredge area boundary)	Disposal at EPA CAD cell (25-ft from silt curtain)	
09-Nov-15	0.8	1.1	-	Debris removal, flood tide
	0.8	0.7	-	Debris removal, ebb tide
10-Nov-15	0.7	2.6	-	Debris removal, flood tide
	2.2	1.1	-	Debris removal, ebb tide
12-Nov-15	1.5	0.9	-	Debris removal, flood tide
	0.8	1.0	-	Debris removal, ebb tide
16-Nov-15	0.8	0.8	-	Debris removal, flood tide
	1.7	1.3	-	Debris removal, ebb tide
17-Nov-16	1.7	1.2	-	Debris removal, flood tide
	2.4	1.3	-	Debris removal, ebb tide
03-Dec-15	0.7	1.5	-	Debris removal, flood tide
	1.7	0.7	-	Debris removal, ebb tide
09-Dec-15	0.9	0.8	-	Debris removal, flood tide
	1.0	4.3	-	Debris removal, ebb tide
16-Dec-15	0.6	1.3	-	Debris removal, flood tide
	0.9	0.6	-	Debris removal, ebb tide
06-Jan-16	0.8	0.8	-	Debris removal, flood tide
	1.1	0.6	-	Debris removal, ebb tide
14-Jan-16	1.7	2.6	-	Debris removal, flood tide
	1.9	not sampled	-	Debris removal, ebb tide
21-Jan-16	2.1	1.4	-	Debris removal, flood tide
	1.7	4.6	-	Debris removal, ebb tide
28-Jan-16	1.2	1.2	-	Debris removal, flood tide
	1.3	2.6	-	Debris removal, ebb tide
02-Feb-16	1.0	1.5	-	Mechanical dredging, flood tide
	1.7	4.0	-	Mechanical dredging, ebb tide
03-Feb-16	1.1	1.3	-	Mechanical dredging, flood tide
	0.8	1.1	-	Mechanical dredging, ebb tide
04-Feb-16	2.4	5.8	-	Mechanical dredging, flood tide
	2.2	3.1	-	Mechanical dredging, ebb tide
05-Feb-16	6.7	-	-	Disposal at EPA CAD cell cancelled due to weather, ebb tide
9-Feb-16	2.1	-	5.2	First disposal event at EPA CAD cell, ebb tide
	2.2	10.7	-	Mechanical dredging, ebb tide
	2.8	2.4	-	Mechanical dredging, flood tide
17-Feb-16	4.3	5.7	-	Mechanical dredging, flood tide
	3.6	13.1	-	Mechanical dredging, ebb tide
22-Feb-16	4.3	-	5.0	Disposal event at EPA CAD cell, ebb tide
	3.7	7.2	-	Mechanical dredging, ebb tide
	8.9	6.4	-	Mechanical dredging, flood tide
29-Feb-16	3.9	-	17.1	Disposal event at EPA CAD cell, flood tide
	2.2	2.0	-	Mechanical dredging, flood tide
	4.0	-	4.5	Disposal event at EPA CAD cell, ebb tide
	5.3	3.4	-	Mechanical dredging, ebb tide
11-Mar-16	1.7	4.5	-	Mechanical dredging at Cozy Cove (DMU H36), flood tide
	2.5	not sampled	-	Mechanical dredging at Cozy Cove (DMU H36), ebb tide; dredging activities moved to DMU G36 prior to conducting compliance readings.
	2.5	7.6	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	3.0	3.7	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	1.4	-	1.7	First disposal event at EPA CAD cell (09:47), ebb tide
	1.4	-	1.9	Second disposal event at EPA CAD cell (13:38), ebb tide
	1.6	2.2	-	Debris removal at DMU B33 flood tide

SEMS Doc ID 587771

Water Quality Monitoring Program - Turbidity Data for the Lower Harbor
New Bedford Harbor Superfund Site
Current as of 3-JUNE-2016

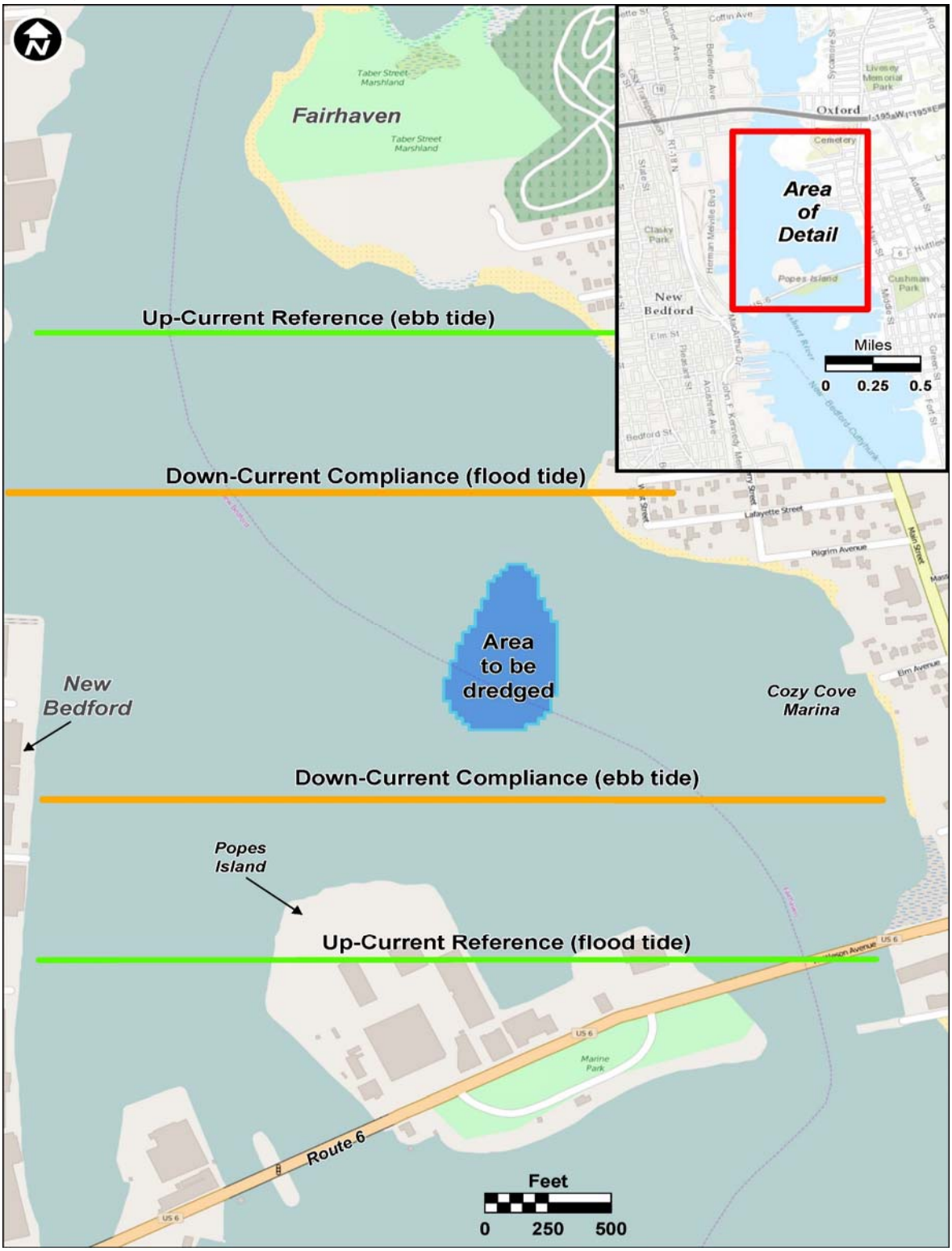
This table shows the highest recorded measurements of turbidity, or movement of sediment in the water, at locations far from the dredge (Up-current Reference) as well as near the dredge (300-ft down current from dredge). EPA measures turbidity to ensure that PCB sediment is not being distributed beyond the dredge areas during work. Currents in the harbor are often changing, which is why EPA measures in many places around the dredge. PCBs like to attach to sediment and do not like to stay in the water. Therefore, if we know where the sediment is moving, we can monitor the movement of PCBs. Plans are in place to ensure proper action is taken in the event of high turbidity levels. If the turbidity levels are greater than 50 NTU* (above the reference level measured) at 300 feet down current of the dredging activities, EPA may stop or slow work and/or collect water samples.

Turbidity levels are also measured during sediment disposal into the Confined Aquatic Disposal (CAD) cell. While the silt curtain hinders sediment movement, measurements are still taken 25 feet from the silt curtain during disposal to ensure its effectiveness as a barrier. If the turbidity levels are greater than 50 NTU (above the reference level) 25 feet from the silt curtain, EPA will assess potential causes.

Monitoring Date	Turbidity (*NTU) Readings at Monitoring Stations:			Activity
	Up-current Reference	Compliance (50 NTU above reference level)		
		Debris Removal/ Dredging (300-ft down-current from dredge area boundary)	Disposal at EPA CAD cell (25-ft from silt curtain)	
16-Mar-16	1.9	2.8	-	Mechanical dredging at Cozy Cove (DMU J36), flood tide
	1.4	2.0	-	Mechanical dredging at Cozy Cove (DMU J36), ebb tide
	1.8	3.6	-	Mechanical dredging at Cozy Cove (DMU H36), ebb tide
	1.4	-	1.9	Disposal event at EPA CAD cell, flood tide
	1.3	1.4	-	Debris removal at DMU B33 flood tide
22-Mar-16	1.3	2.8	-	Mechanical dredging at Cozy Cove (DMU H36), ebb tide
	1.1	1.1	-	Debris removal at DMU B33 ebb tide
	2.8	1.5	-	Debris removal at DMU B33 flood tide
30-Mar-16	1.1	7.1	-	Mechanical dredging at Cozy Cove (DMU I36), flood tide
	4.7	3.3	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	1.1	-	1.5	Disposal event at EPA CAD cell (16:00), ebb tide
06-Apr-16	1.2	2.1	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	2.3	1.2	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	1.6	-	8.2	Disposal event at EPA CAD cell (17:22), flood tide
07-Apr-16	2.1	2.2	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	1.7	1.7	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
08-Apr-16	1.8	1.7	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	2.0	2.5	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	1.7	-	2.2	Disposal event at EPA CAD cell (07:00), flood tide
	1.7	-	2.0	Disposal event at EPA CAD cell (08:08), flood tide
	1.7	-	2.7	Disposal event at EPA CAD cell (11:00), ebb tide
13-Apr-16	3.2	6.7	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	3.7	2.6	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	0.6	-	3.9	Disposal event at EPA CAD cell (12:06), flood tide
	1.7	-	1.8	Disposal event at EPA CAD cell (16:04), ebb tide
19-Apr-16	0.6	1.1	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	4.8	1.8	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	0.6	-	11.9	Disposal event at EPA CAD cell (09:56), ebb tide
27-Apr-16	0.6	4.3	-	Mechanical dredging at Cozy Cove (DMU L36), flood tide
	0.8	2.8	-	Mechanical dredging at Cozy Cove (DMU L36), ebb tide
	0.6	-	0.7	Disposal event at EPA CAD cell (10:32), flood tide
	0.4	-	2.9	Disposal event at EPA CAD cell (14:59), ebb tide
29-Apr-16	0.5	2.7	-	Mechanical debris removal in Upper Harbor, flood tide
	0.7	0.9	-	Mechanical debris removal in Upper Harbor, ebb tide
03-May-16	0.8	-	-	Mechanical dredging at Cozy Cove (DMU K36), ebb tide
	0.2	0.4	-	Mechanical dredging at Cozy Cove (DMU K36), flood tide
	0.6	-	0.7	Disposal event at EPA CAD cell (15:21), flood tide
04-May-16	0.4	0.5	-	Mechanical debris removal in Upper Harbor, ebb tide
	0.7	2.1	-	Mechanical debris removal in Upper Harbor, flood tide
9-May-16	3.5	3.9	-	Mechanical dredging at Cozy Cove (DMU J36), flood tide
	0.8	3.3	-	Mechanical dredging at Cozy Cove (DMU J36), ebb tide
10-May-16	0.4	1.3	-	Debris removal in Upper Harbor, flood tide
	0.3	0.7	-	Debris removal in Upper Harbor, ebb tide
17-May-16	0.7	-	0.6	Disposal event at EPA CAD cell (08:20), ebb tide
	2.1	1.3	-	Mechanical dredging at Cozy Cove (DMU K36), ebb tide
	0.5	1.6	-	Mechanical dredging at Cozy Cove (DMU K36), flood tide
	1.4	-	0.9	Disposal event at EPA CAD cell (15:16), flood tide
20-May-16	0.7	0.8	-	Debris removal in Upper Harbor, ebb tide
	0.8	1.8	-	Debris removal in Upper Harbor, flood tide
23-May-16	0.4	0.7	-	Debris removal in Upper Harbor, flood tide
	0.2	0.5	-	Debris removal in Upper Harbor, ebb tide
26-May-16	0.4	-	0.7	Disposal event at EPA CAD cell (09:55), flood tide
	0.8	1.1	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	0.4	-	0.7	Disposal event at EPA CAD cell (15:36), ebb tide
31-May-16	2.1	1.3	-	Mechanical dredging at Cozy Cove (DMU G36), ebb tide
	1.6	0.9	-	Mechanical dredging at Cozy Cove (DMU G36), flood tide
	1.2	-	1.5	Disposal event at EPA CAD cell (14:05), flood tide
3-Jun-16	1.0	1.3	-	Debris removal in Upper Harbor, ebb tide
	1.1	0.9	-	Debris removal in Upper Harbor, flood tide

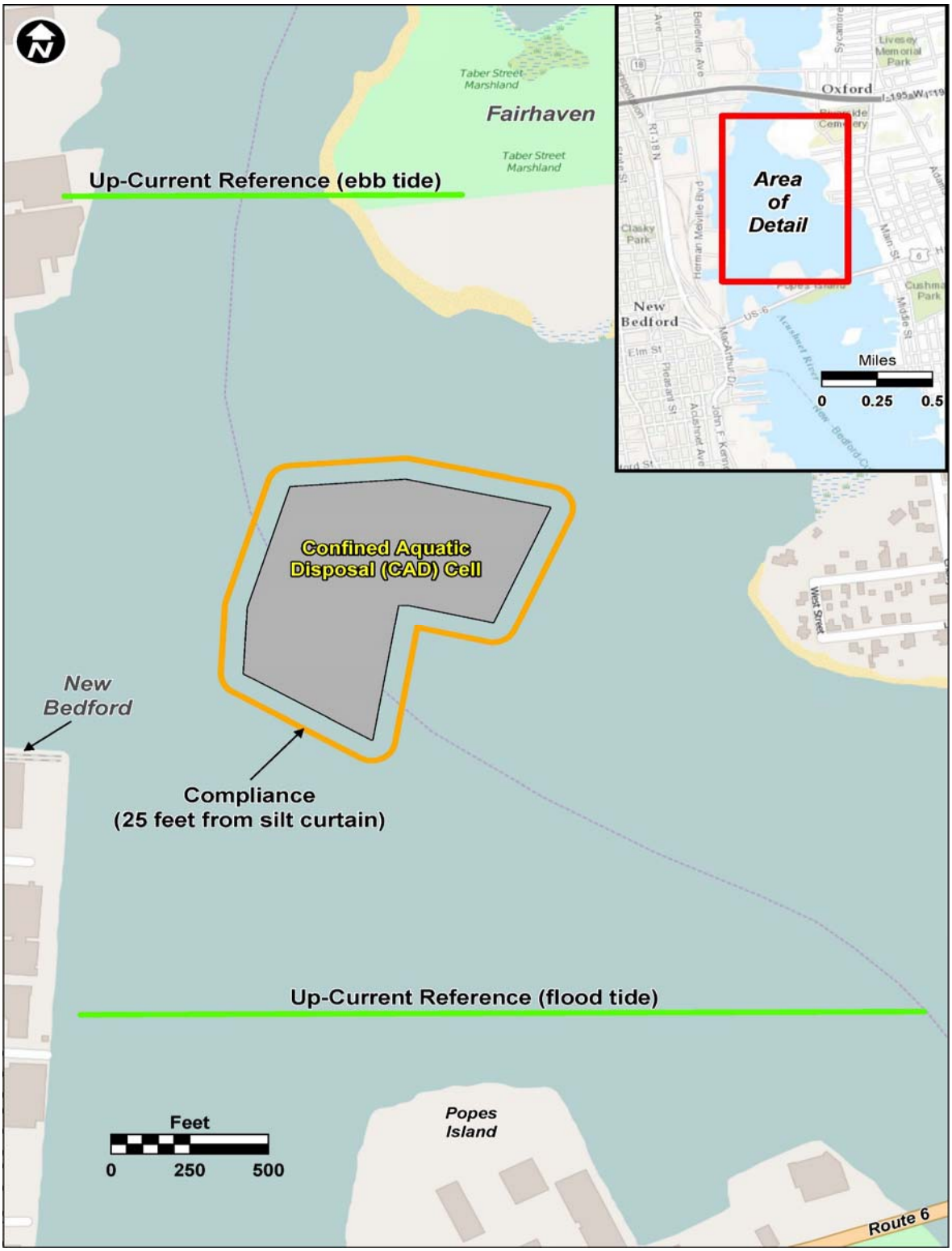
*NTU - The instrument we use to measure turbidity levels with reports data as NTU, which are Nephlometric Turbidity Units.

The map below is an example of where we collect sediment level data, or turbidity, around a dredging area. Action is taken if the turbidity levels are greater than 50 NTU* (above the reference level measured) 300 feet down current from the dredge area.



*NTU - The instrument we use to measure turbidity levels with reports data as NTU, which are Nephlometric Turbidity Units.

The map below shows where turbidity monitoring takes place in the water when mud is disposed of into the Confined Aquatic Disposal (CAD) cell. Action is taken if the turbidity levels are greater than 50 NTU* (above the reference level measured) 25 feet from the silt curtain. The silt curtain is intended to hinder sediment movement.



*NTU - The instrument we use to measure turbidity levels with reports data as NTU, which are Nephlometric Turbidity Units.