

Summary of CSO Receiving Water Quality Monitoring in Upper Mystic River/Alewife Brook and Charles River, 2015

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1 Introduction

This report summarizes data collected as part of the Massachusetts Water Resources Authority (MWRA) combined sewer overflow (CSO) receiving water monitoring program, and is produced in accordance with the variance for CSO discharges to Lower Charles River/Charles Basin and the variance for CSO discharges to the Alewife Brook/Upper Mystic River. The goal of this monitoring is to identify the water quality impacts of CSO discharges on those water bodies.

During the 2015 calendar year, MWRA completed construction of its approved Long Term CSO Control Plan (the “LTCP”), which addresses CSO discharges from CSO outfalls hydraulically related to the MWRA sewer system and member community sewer systems. MWRA developed and implemented the LTCP in compliance with the Federal District Court Order in the Boston Harbor Case (U.S. v. M.D.C, et al., No. 85-0489-RGS) and in accordance with national and Massachusetts CSO control regulations and policies. This monitoring summary provides an assessment of water quality in the Charles River, Mystic River and Alewife Brook, which are affected by one or more of the 35 CSO projects in the LTCP and the remaining CSO discharges as the plan is implemented.

For background, in 2013 the Massachusetts Department of Environmental Protection (MADEP) extended the Variance for CSO discharges to the Lower Charles River/Charles Basin issued to MWRA, Boston Water and Sewer Commission (“BWSC”) and the City of Cambridge by three years, to October 1, 2016. MADEP also extended the Variance for CSO discharges to the Alewife Brook/Upper Mystic River issued to MWRA, the City of Cambridge and the City of Somerville by three years, to September 1, 2016.

Under the agreement on the LTCP reached by EPA, MADEP and MWRA in March 2006, MADEP agreed to issue a series of three-year variance extensions through 2020 with no additional CSO obligations and related construction activities, and MWRA agreed to implement the approved LTCP by December 2015 and verify system performance and the levels of control at all CSO outfalls by December 2020. After MWRA completes its performance assessment and submits its report to EPA and DEP verifying attainment of the long-term levels of control, DEP will consider issuing long-term water quality standards determinations based on the verified performance of the LTCP and other conditions affecting the water quality and uses of these water bodies.

Conditions in the CSO variance extensions most recently issued by MassDEP in 2013 require MWRA to implement the LTCP in compliance with the federal court schedule (“Schedule Seven”) and require MWRA and the municipalities with CSOs (Boston, Cambridge, and Somerville) to continue to implement the Nine Minimum Controls of EPA’s National CSO Control Policy. Conditions in the variance extensions also require all of the CSO permittees to report estimated CSO discharge frequencies and volumes from their respective outfalls to these receiving waters on an annual basis. MWRA is also required to continue its receiving water quality monitoring program to assess the impacts of CSO discharges.

CSO control progress in 2015 as it relates to the Lower Charles River and the Alewife Brook/Upper Mystic River includes the following:

- MWRA attained substantial completion and beneficial use of the Control Gate and Floatables Control at Outfall MWR003 and MWRA Rindge Avenue Siphon Relief project in October 2015, in compliance with Schedule Seven. The project is located adjacent to the MBTA Alewife Station in Cambridge and is one of six projects in the LTCP intended to control CSO discharges to Alewife Brook.
- The City of Cambridge attained substantial completion and beneficial use of the CAM004 Sewer Separation project in December 2015, in compliance with Schedule Seven. With this project, Cambridge closed Outfall CAM004 and lowered CSO discharges at other outfalls to Alewife Brook.
- Outside of the variance areas of the Charles and Mystic/Alewife watersheds, BWSC attained substantial completion and beneficial use of the Reserved Channel Sewer Separation project in South Boston in December 2015 in compliance with Schedule Seven. This project has reduced CSO discharges to the Reserved Channel of Boston Harbor. With completion in 2015 of the three projects noted above, MWRA and the CSO communities have completed all 35 projects in the LTCP.

Since the beginning of MWRA's CSO control planning efforts in the late 1980s, MWRA and the CSO communities have eliminated or virtually eliminated (i.e., achieved 25-year storm level of control) CSO discharges at 39 of the 84 outfalls addressed in the LTCP. The completion of the CAM004 Sewer Separation project closed the last of the 34 outfalls recommended for closure in the LTCP. MWRA and the CSO communities have also greatly reduced CSO discharges at the 45 outfalls that will remain.¹ Along the Charles River, ten CSO outfalls were closed and eight untreated and one treated CSO remain active. Along the Alewife Brook, seven CSO outfalls were closed and six CSOs remain active. Along the Upper Mystic River (Mystic Basin), two CSO outfalls were closed and one treated CSO (MWRA's Somerville Marginal facility) remains active. The Somerville Marginal facility discharges at outfall MWR205 below the Amelia Earhart dam in marine waters when not restricted by the tide. When the tide restricts discharge at MWR205, flow is discharged to the Mystic Basin at outfall MWR205A by the Route 28 bridge. Outfall BOS017 also discharges to marine waters below the dam.

Since the early 1990s, major MWRA system improvements, such as the upgrade of the Deer Island treatment plant and transport system and the completed CSO projects, have reduced the frequency and volume of CSO discharges and have resulted in increased treatment of remaining discharges. The LTCP is predicted to reduce region-wide CSO discharge volume in a Typical Year² from 3.3 billion gallons in 1988 to 0.404

¹ SOM002 and SOM006 were closed prior to the approval of the Long Term Control Plan and are included in this total. SOM009 discharges to the system upstream of other outfalls and is not included in the overall count. CAM009 and CAM011 are also included, which are temporarily closed pending the results of a long-term hydraulic assessment by the City of Cambridge. CSO discharges at BOS081, BOS082, BOS084, BOS085 and BOS086 are effectively eliminated, with a 25-year storm level of control.

² Typical Year rainfall was developed by MWRA in 1992 using a 40-year rainfall record and was approved by EPA and DEP as a basis for measuring the performance of CSO control alternatives and the water quality impacts of remaining CSO discharges. Level of CSO control in the Typical Year is a key performance objective of the LTCP.

billion gallons, an 88% reduction, with 94% of the remaining discharge volume receiving treatment at MWRA's four CSO treatment facilities. Figure 1-1 shows the estimated CSO flow reduction system-wide since 1988, and Figure 1-2 shows the CSO flow reduction by receiving water. For purposes of this report, receiving water quality data from 2010 to the present is considered representative of current conditions.

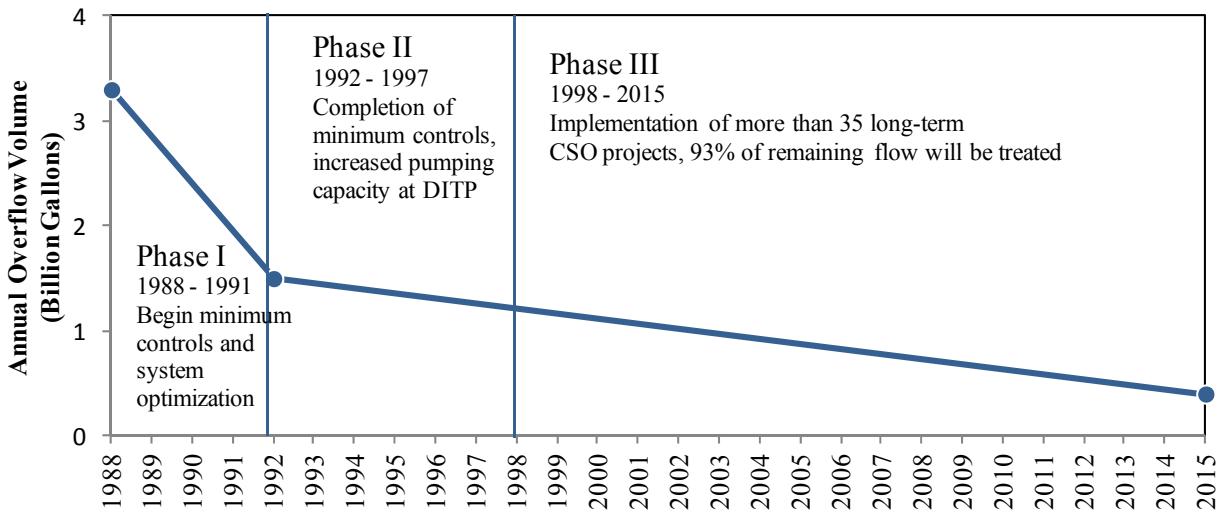


Figure 1-1. Estimated CSO flow reductions, 1988 – 2015.

Source: MWRA CSO Annual Progress Report 2015 (March 2016)

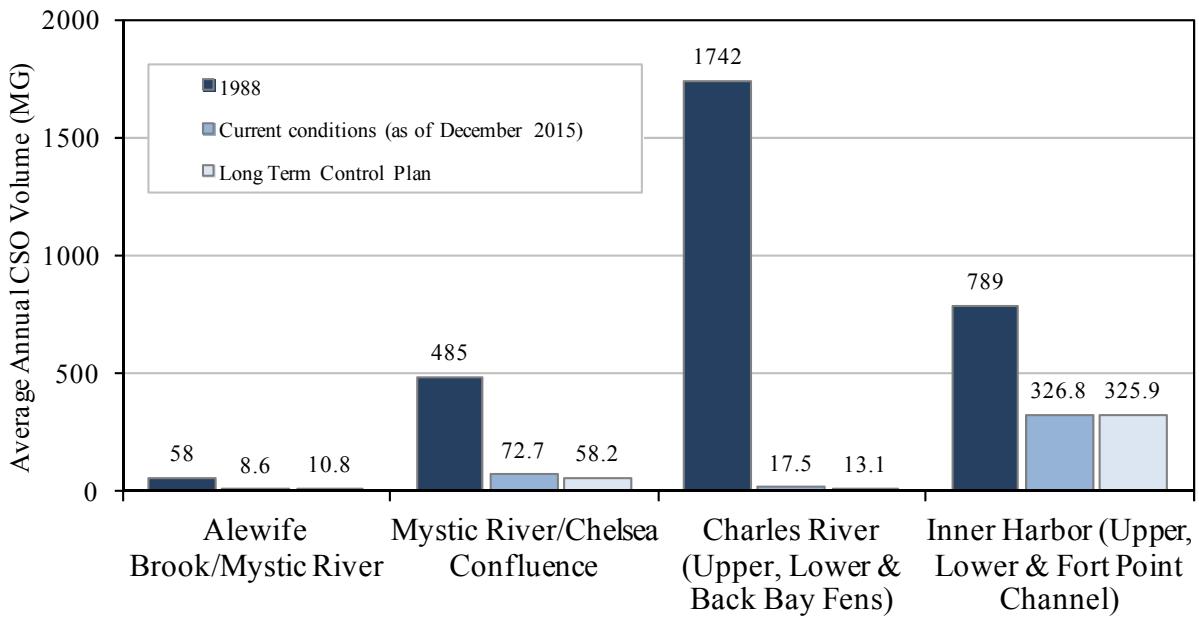


Figure 1-2. CSO Typical Year Discharge Volume Estimates for 1988, Current, and Approved Long Term Control Plan

2015 rainfall volumes at various gauge locations in the MWRA service area and comparison to MWRA's approved Typical Year appear in Table 1-1. The table summarizes the frequency of rain events within

selected ranges of total rainfall for 2015. 2015 rainfall totals were considerably lower than the Typical Year and official average annual rainfall volumes for the Boston area (43 inches) assumptions. This was due to a reduced number of larger storms in 2015 – storms that are more likely to contribute to CSO discharges. Numbers of storms in the <0.25, 0.25-0.5, 0.5-1.0, and 1.0-2.0 inch categories were roughly equivalent to the Typical Year, while large storms – those greater than or equal to two inches of rainfall – were a third of the number of large storms in the Typical Year at the rain gauges listed in the table. (Refer to Tables 3-3 and Table 4-3 for CSO discharge estimates for the Charles and Mystic, respectively.)

Table 1-1. Comparison of rain event frequency by rainfall volume, 2015 rainfall vs. typical year.

	Total Rainfall (in.)	Total Number of Storms	Number of storms, by rainfall volume				
			<0.25 inches	0.25 – 0.5 inches	0.5 – 1.0 inches	1.0 – 2.0 inches	≥2.0 inches
Typical Year	46.8	93	49	14	16	8	6
2015 Ward St. Headworks	35.07	84	43	17	14	8	2
2015 Columbus Park Headworks	34.81	87	49	14	13	9	2
2015 BWSC Charlestown	32.59	86	54	11	12	7	2
2015 Fresh Pond (USGS)	32.94	96	61	14	12	7	2

Source: MWRA letter to DEP and EPA, April 29, 2016, CSO Discharge Estimates and Rainfall Analyses for Calendar Year 2015, Table 1.

1.1 Overview of the monitoring program

MWRA's CSO receiving water quality monitoring program has been ongoing since 1989, with most sampling locations continuously monitored since 1991. All harbor and tributary areas affected by CSOs in Boston, Chelsea, Cambridge, and Somerville are included in the monitoring program. For most sampling locations included in this report, at least 20 samples have been collected each year.

1.2 Organization and purpose of the report

Chapter 2 presents the materials and methods used in monitoring. Chapters 3 and 4 of this report discuss the results of the CSO receiving water quality monitoring program in the Charles River and Mystic River/Alewife Brook, respectively. Water quality parameters examined for each region include: bacterial indicators (*E. coli*, *Enterococcus* and fecal coliform), dissolved oxygen, water clarity (Secchi depth, total suspended solids), nutrients (phosphate, ammonium, nitrate/nitrite) and chlorophyll.

The purpose of the report is to summarize 2015 water quality in the Charles and Alewife Brook/Mystic River. The report compares sampling results to water quality standards, and shows spatial and temporal variations in water quality, and differences between wet and dry weather. Data from the previous five

monitoring years are analyzed together for representativeness, and 2015 data for bacterial and physical parameters are also shown separately.

2 Materials and Methods

2.1 *Field and laboratory methods*

2.1.1 Selection of sampling locations

Some sampling locations were chosen for their proximity to CSO discharges and others were chosen to provide representative water quality measurements for a given area. Complete lists of stations including descriptions for the Charles and Mystic River/Alewife Brook appear in Section 3.1 and 4.1, respectively.

2.1.2 Sampling schedules

Approximately 20 station visits or more were made to each location each year, within two separate monitoring projects. Eutrophication monitoring is conducted monthly, year-round, at a subset of river locations, and includes nutrient, chlorophyll, TSS, bacteria, and physical measurements. CSO receiving water monitoring includes bacteria sampling and physical measurements that are collected between April and December of each year, in weekly rotations for each region. Sampling is random with respect to weather; however, efforts were made to collect additional samples during wet weather if an inadequate number of station visits had occurred following rainfall events by mid-year.

2.1.3 Sample collection

At all locations, water samples and water quality measurements were collected near-surface (approximately 0.1 meter below surface). Surface samples were collected by grab into rinsed sample containers. Bottom samples were collected at locations with a water depth greater than 3 meters, using a Kemmerer sampler or alpha bottle at 0.5 meter above the sediment surface. Bottom water quality measurements (physical measurements such as dissolved oxygen, temperature, and salinity) were made at most locations regardless of depth, but some upstream locations are too shallow for separate bottom readings. Separate sampling containers were used for bacteria, nutrient, and TSS analyses.

2.1.4 Field measurements

Field measurements were made with different instruments over the course of the monitoring program. Table 2-1 lists the instruments used and the variables measured.

Table 2-1. Field measurements.

Variable	Instruments used
Temperature, conductivity/salinity, dissolved oxygen, turbidity, pH	Hydrolab Datasonde 4 (1997 - 2008) Hydrolab Datasonde 5 (2006 - 2008) YSI 600XL for temperature, conductivity, dissolved oxygen (1999 – 2013) YSI6600, YSI6820 (2009 - present)
Secchi Depth	Wildco 8-inch limnological Secchi disk (upstream of dams) Wildco 8-inch oceanographic Secchi disk (marine waters)

2.1.5 Rainfall measurements

Rainfall measurements were taken from the National Weather Service (NWS) rain gauge located at Logan Airport in East Boston, as this was considered the most representative location for the entire monitoring area. Results from the gauge are reported in one-day intervals. Data are downloaded from the NWS website and stored in MWRA's Environmental Monitoring & Mapping System (EM&MS) database.

2.1.6 Laboratory analyses

Samples were analyzed at the MWRA Central Laboratory. For enumeration of bacteria, chlorophyll, nutrients, and TSS, MWRA Department of Laboratory Services Standard Operating Procedures are followed.

Detailed laboratory methods with quality assurance and quality control procedures are described in the Central Laboratory Quality Management Plan (MWRA 2009) and Standard Operating Procedures (MWRA 2008).

Table 2-2 lists the analytes measured and methods used in the monitoring program. MWRA discontinued *E. coli* monitoring at marine locations in 2007 due to methodological concerns with the use of the Colilert method for marine samples, replacing *E. coli* with fecal coliform.

Table 2-2. Laboratory measurements.

Analyte	Method
<i>Enterococcus</i>	Standard Methods 9230C 2c, membrane filtration (for samples collected 1996 – 2003) EPA Method 1600 (for samples collected 1999 – 2006, some 2007) Enterolert (for samples collected 2008 – present)
<i>E. coli</i>	Modified EPA 1103.1, membrane filtration (for samples collected 2000 – 2006) Colilert-18 (for samples collected 2007 - present)
Fecal coliform	Standard Methods 9222D, membrane filtration
Total suspended solids	Clesceri et al. (1998, Method 2540D), using nucleopore filters
Total phosphorus	TP and/or TDP: Solarzano and Sharp (1980a); PP: Solarzano and Sharp (1980a), Whatman GF/F
Phosphate	Murphy and Riley (1962), modified as in Clesceri et al (1998, Method 4500-P F) Skalar SAN ^{plus} autoanalyzer, Whatman GF/F filters
Total Nitrogen	TN and/or TDN: Solarzano and Sharp (1980b), Whatman G/F filters; PN: Perkin Elmer CHN analyzer, Whatman GF/F
Ammonium	Fiore and O'Brien (1962), modified as in Clesceri et al (1998, Method 4500-NH3 H), Skalar SAN ^{plus} autoanalyzer, Whatman GF/F filters
Nitrate+nitrite	Bendschneider and Robinson (1952), modified as in Clesceri et al (1998, Method 4500-NO3 F), Skalar SAN ^{plus} autoanalyzer, Whatman GF/F filters
Chlorophyll <i>a</i>	Acid-corrected (Holm-Hansen et al. 1965) as described in EPA (1992). Trilogy fluorometer, GF/F filters

2.2 Data analysis

Descriptive Analyses. Indicator bacteria counts are typically log-normally distributed, and therefore a proper measure of central tendency for these data is the geometric mean. Geometric means and their associated 95% confidence intervals were calculated for the measurements made at each station over the sampling period.

Many results are plotted as percentile box plots, as shown in Figure 2-1. These plots present a frequency distribution of a group of measurements. Each box comprises measurements from a single sampling location. Values are shown in Figure 2-1 for the 10th, 25th, 50th, 75th, and 90th percentiles. Open circles at the top and bottom represent maximum and minimum measurements.

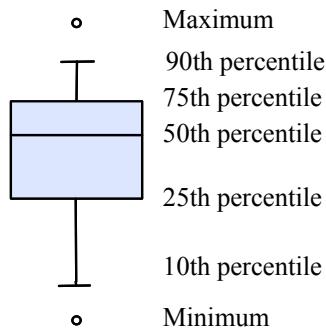


Figure 2-1. Percentile distributions indicated on percentile box plots

Box plots display the range and central tendencies of the data allow for easy comparison of the results among stations. The 50th percentile (median) is equivalent to the geometric mean, assuming the data are log-normally distributed.

2.3 Water Quality Standards used in this report

Standards are shown in Table 2-3, and include standards and guidelines from the Massachusetts Department of Environmental Protection (MADEP), Environmental Protection Agency (EPA), Massachusetts Department of Public Health (MADPH), and the Massachusetts Division of Marine Fisheries (MADMF). The MADEP standard for Class SB waters (fishable swimmable) are based on *E. coli* and/or *Enterococcus* counts for freshwater, and *Enterococcus* counts for marine waters, following a USEPA recommendation for *Enterococcus* in marine waters (USEPA 1986). The MADPH issued regulations for beach management based on the USEPA criteria. MADMF uses fecal coliform to monitor shellfish growing waters. MADPH uses Secchi depth to assess water transparency at public bathing beaches and lakes. There are no public bathing beaches in the Charles or Upper Mystic/Alewife Brook, but the MADPH standard can still serve as a useful benchmark.

Table 2-3. Water quality standards for Class B and Class SB waters.¹

Designated Use/Standard	Parameter	Support
Inland waters, Class B, warm water fishery Massachusetts waters, MADEP	Dissolved Oxygen	$\geq 5.0 \text{ mg/L}$ $\geq 60\% \text{ saturation unless background conditions lower}$
	Temperature	$\leq 28.3^\circ\text{C} (83^\circ\text{F})$
	pH	6.5 to 8.3 S.U.
Coastal/marine waters, Class SB Massachusetts waters, MADEP	Dissolved Oxygen	$\geq 5.0 \text{ mg/L}$ $\geq 60\% \text{ saturation unless background conditions lower}$
	Temperature	$< 26.7^\circ\text{C} (80^\circ\text{F})$
	pH	6.5 to 8.5 S.U.
Primary contact recreation (designated swimming area), MADPH, MADEP	<i>Enterococcus</i>	Single sample limit 61 counts/100 mL (freshwater), 104 counts/100 mL (marine); geometric mean 33 counts/100 mL (freshwater), 35 counts/100 mL (marine)
Freshwater primary contact recreation (designated swimming area), MADPH, MADEP	<i>E. coli</i>	Single sample limit 235 counts/100 mL (freshwater only); geometric mean 126 counts/100 mL (freshwater only)
Former standard, primary contact recreation, MADEP (pre-2007)	Fecal coliform	Geometric mean $\leq 200 \text{ counts/100 mL}$, no more than 10% of samples above 400 counts/100 mL
Restricted shellfishing, MADMF	Fecal coliform	Geometric mean $\leq 88 \text{ counts/100 mL}$ $< 10\% \text{ of samples } > 260 \text{ per 100 mL}$
Primary contact recreation, MADPH, aesthetics/transparency	Secchi disk depth	$\geq 1.2 \text{ meters (4 feet) at public bathing beaches}$ and lakes

¹ All receiving water areas discussed in this report are either Class B or SB according to MADEP standards current as of December 2013 (except for Mystic River mouth, which is SB_{CSO}. SB_{CSO} has the same water quality standards as SB except CSOs are present).

From MADEP 2013:

Inland Water Class B: These waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of water supply with appropriate treatment (“Treated Water Supply”). They shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.

Coastal and Marine Class SB: These waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetic value.

3 Results: Charles River

3.1 Sampling area

MWRA's sampling area in the Charles River includes the river segment from the Watertown Dam in Watertown downstream to the New Charles River Dam in Boston, near the river mouth. This area, the "Charles Basin" for purposes of this report, is freshwater and designated Class B with a variance for Combined Sewer Overflows by MADEP (with the variance currently extending to October 2016). The river segment is approximately 10.3 km (8.6 mi) long. The New Charles River Dam and locks limit river flow and tidal exchange at the river mouth.

MWRA monitoring locations are primarily located midstream, bracketing CSO outfalls. Boat-accessible locations were also selected near to or downstream of outfalls: at the Stony Brook outlet and CSO (MWR023), the Faneuil Brook outlet and CSO that has since been closed (BOS032, closed in 1997), and downstream of the Cottage Farm CSO treatment facility outfall diffusers (MWR201).

For purposes of this report, MWRA's monitoring area in the lower Charles is divided into three smaller reaches. Sampling locations and CSOs appear in Figure 3-1. Table 3-1 describes the reaches, sampling locations and CSOs within each reach.



Figure 3-1. Map of MWRA Charles River sampling locations.

Table 3-1. MWRA monitoring locations, Charles River Basin.

Reach	Description of Reach	Sampling location	Location Description
Upper Basin (Class B/Variance, warm water fishery)	Watertown Dam in Watertown, downstream to Magazine Beach (near BU Bridge) in Cambridge	012, Watertown	Watertown Dam at footbridge (upstream of all CSOs)
		001, Newton	Downstream of Newton Yacht Club (upstream of all CSOs)
		144, Allston	Faneuil Brook outlet (at BOS032, closed 11/97)
		002, Allston	Downstream of Beacon St. Bridge (downstream of BOS033, closed 10/96)
		003, Cambridge	Downstream of Eliot Bridge, Cambridge side (at CAM005)
		004, Cambridge/Allston	Between River St. and Western Ave. bridges
Mid-Basin (Class B/Variance, warm water fishery)	BU Bridge on Boston/Cambridge line to downstream of Longfellow Bridge	005, Cambridge	10 m off of Magazine Beach
		006, Cambridge/Boston	BU Bridge, downstream side (downstream of MWR201)
		007, Cambridge	MIT Boathouse, Cambridge side
		145, Boston	Stony Brook outlet, Boston side (at MWR023)
		008, Cambridge/Boston	Mass. Ave Bridge, downstream side (downstream of MWR023, MWR018)
		009, Cambridge/Boston	Longfellow Bridge, upstream side (downstream of MWR021, closed 3/00)
Lower Basin (Class B/Variance, warm water fishery)	Science Museum to North Station railroad bridge, near Charlestown.	010, Boston	Longfellow Bridge, downstream side (downstream of MWR022, closed 3/00)
		166, Boston	Science Museum, upstream of old dam (downstream of all lower basin CSOs)
		011, Boston	Between Science Museum and New Charles River Dam/locks (downstream of all Charles CSOs)

Sampling locations are midstream unless otherwise noted.

3.2 Pollution sources

Known pollution sources to the Charles River are shown in Table 3-2, which include nine active CSOs, eight untreated and one treated. MWRA's Cottage Farm CSO treatment facility, located immediately upstream of the BU Bridge, screens, chlorinates and dechlorinates CSO flow before discharge, and is the only source of treated CSO discharge to the river. (MWRA's Prison Point CSO facility, located near the Charles River mouth, has its discharge point on the Boston Harbor side of the New Charles River Dam.) With increases in

sewer system capacity and removal of large volumes of stormwater from the sewer system with sewer separation projects, the number of activations at Cottage Farm has decreased over the last two decades. In the late 1990s more than 20 activations annually was common, but in the 2013-2015 period there were only two to three activations annually. The Stony Brook/Muddy River outlet near Kenmore Square is a source of contaminated brook flow and stormwater flows to the basin area, as well as infrequent CSO discharges. CSO discharge volumes to the Stony Brook were greatly reduced in 2006 with completion of sewer separation by BWSC.

Table 3-3 shows the MWRA model simulation results for CSOs affecting the Charles River Basin in calendar year 2015. Actual CSO volumes and activation frequency are available for the Cottage Farm CSO facility, while the remaining results are estimated using a sewer system model.

The receiving water program is designed to capture water quality in all weather conditions. Table 3-4 summarizes the proportion of samples collected in dry, damp, and wet weather, which indicate a slightly higher proportion of samples collected in damp conditions than prior years.

Table 3-2. Charles River Basin pollution sources.

Source	Upper Basin	Mid-Basin	Lower Basin
CSOs (untreated)	2 active, 4 closed CAM005, CAM007 CAM009 closed 11/07 ¹ CAM011 closed 11/07 ¹ BOS032 closed 11/97 BOS033 closed 10/96	6 active, 3 closed MWR010, MWR018, MWR019, MWR020, MWR023, CAM017 BOS042 closed 5/96 MWR021 closed 3/00 MWR022 closed 3/00	3 closed BOS049 closed 7/10 BOS028 closed prior to 1997 SOM010 closed prior to 1996
CSO treatment facility (settling and detention; screened, chlorinated and dechlorinated CSO discharge)	No	Yes Cottage Farm (MWR201) activated 2 times in 2015	No
Storm drains	Yes	Yes	Yes
Upstream inputs (elevated bacteria counts upstream)	Yes	Yes	Yes
Dry weather inputs (elevated bacteria counts in dry weather)	Yes	Yes	Yes
Tributary brook or stream flow	Yes	Yes	Yes

¹Pending continuing hydraulic evaluations by City of Cambridge.

Table 3-3. Charles River Basin CSO activations, results of MWRA model simulations and facility records for 2015 system conditions and 2015 rainfall.¹

CSO Outfall	Activation Frequency	Total Discharge Duration (hr)	Total Discharge Volume (million gallons)
<i>Upper Charles</i>			
CAM005	2	8.95	2.53
CAM007	2	2.72	1.65
TOTAL		11.67	4.18
<i>Back Bay Fens (Muddy River)</i>			
BOS046	0	0.00	0.00
TOTAL		0.00	0.00
<i>Lower Charles</i>			
CAM017	1	1.00	1.79
MWR010	0	0.00	0.00
MWR018	1	1.98	1.08
MWR019	1	0.66	0.01
MWR020	0	0.00	0.00
MWR201 (Cottage Farm Facility) ²	2	8.33	32.67
MWR023 (Stony Brook)	0	0.00	0.00
TOTAL³		11.97	35.55

¹ Activation frequency and volume are from MWRA model results, except where noted.

²Treated discharge. Activation frequency and volume are from MWRA facility records (measurements).

³32.67 million gallons of 35.55 million gallons – or 92% – of total annual CSO discharge to the Lower Charles is treated.

Table 3-4. Charles River sample collection by rainfall condition.

Sampling period	Dry ¹	Damp ¹	Wet ¹	Total
2010 - 2014	34% 1147 samples	32% 1095 samples	34% 1143 samples	100% 3385 samples
2015	33% 214 samples	37% 240 samples	30% 198 samples	100% 652 samples

¹ Dry: no rainfall for previous 3 days; Wet: at least 0.5 inches in previous 2 days; damp is everything in between. Sampling is random with respect to weather, though if needed wet weather sampling is added late in the year to maintain a representative distribution of weather conditions.

3.3 Summary of water quality, 2011-2015

A summary of water quality results collected during the last five years is shown in Table 3-5.

Table 3-5. Summary of water quality, Charles River Basin, 2011 - 2015.

Parameter		MADEP Water Quality Guideline or Standard	Upper Basin				Mid-Basin				Lower Basin			
			Mean ± SD	% meeting guideline	Range	n	Mean ± SD	% meeting guideline	Range	n	Mean ± SD	% meeting guideline	Range	n
Bottom water dissolved oxygen (mg/L) ¹	Summer	< 28.3	21.4 ± 4.4	99.4	6.3 - 28.7	966	20.6 ± 4.6	99.0	6.8 - 29.4	864	22.3 ± 4.5	88.5	8.4 - 30.0	261
	Winter		5.3 ± 5.4	100.0	-0.1 - 17.5	78	10.0 ± 2.0	100.0	5.4 - 13.1	23	4.0 ± 3.7	100.0	-0.5 - 15.8	46
Surface Temperature (°C) ¹	Summer	5.0	7.8 ± 1.5	96.7	0.9 - 12.6	966	5.9 ± 3.2	69.1	0 - 11.9	864	7.1 ± 2.2	80.0	1.7 - 13.3	260
	Winter		5.0	12.9 ± 1.7	100.0	9.1 - 15.7	73	9.8 ± 3.7	87.0	0.5 - 12.3	23	12.7 ± 1.3	100.0	9.1 - 15
pH ² (S.U.)		6.5-8.3	7.4 ± 0.4	98.9	6.7 - 8.6	1511	7.4 ± 0.5	95.3	6.2 - 9.1	1273	7.4 ± 0.5	94.6	6.4 - 8.8	459
Water clarity	Total Suspended Solids (mg/L)	NS	4.4 ± 6.7	-	0.5 - 60.1	101	ND	-	ND		4.6 ± 5.7	-	1.1 - 51.7	120
	Secchi depth (m) ³	NS	1.1 ± 0.3	-	0.4 - 2.4	484	1.2 ± 0.3	-	0.5 - 3.1	636	1.3 ± 0.3	-	0.6 - 2.6	167
	Turbidity (NTU)	NS	6.8 ± 3.5	-	0.4 - 32.5	1315	7.1 ± 4	-	0 - 59.2	1240	5.3 ± 2.6	-	0.1 - 16.8	333

Table 3-5. Summary of water quality, Charles River Basin, 2011 - 2015, continued.

Parameter		MA DEP Water Quality Guideline or Standard	Upper Basin				Mid- Basin				Lower Basin			
			Mean ± SD (95% CI)	% meeting guideline	Range	n	Mean ± SD (95% CI)	% meeting guideline	Range	n	Mean ± SD (95% CI)	% meeting guideline	Range	n
Bacteria (col/100ml) ⁴	<i>E. coli</i>	126 / 235 ⁵	139 (127-153)	67.9	0 - 38400	826	74 (67-81)	69.7	0 - 53800	1061	49 (42-56)	74.3	0 - 6490	342
	<i>Enterococcus</i>	35 / 61 ^{5,6}	11 (9-13)	78.4	0 - 19900	828	5 (4-5)	88.3	0 - 3450	1065	5 (4-6)	90.4	0 - 1270	342
Nutrients (µmol/L)	Phosphate	NS	0.68 ± 0.31	-	0.16 - 1.39	101	ND	-	ND		0.62 ± 0.42	-	0.03 - 2.14	121
	Ammonium	NS	4.4 ± 4.1	-	0.2 - 25.5	101	ND	-	ND		5.9 ± 5.6	-	0 - 32.1	121
	Nitrate+nitrite	NS	42.6 ± 20.7	-	10.3 - 93.6	101	ND	-	ND		37.8 ± 22.8	-	0 - 110.5	121
Algae (µg/L)	Chlorophyll	NS	4.9 ± 5.3	99.0	0.6 - 29.6	101	ND	-	ND		14.1 ± 14.1	84.3	0.8 - 96.6	121

NS: no applicable numerical standard or guideline. ND: No data.

¹ Summer (June-September), Winter (December-March).

² Median and standard error of the median are shown for pH, rather than arithmetic mean and standard deviation.

³ MADPH standard of ≥1.2 meters applies only to public bathing beaches; there are none in the Charles River Basin.

⁴ For bacterial data, 95% confidence intervals are provided in lieu of standard deviations. "Mean" = geometric mean for bacteria data.

⁵ First number is the all samples geometric mean limit - compare to the "Mean±SD" column; the second number is the single sample limit - compare to the "% meeting guideline" column

⁶ *E. coli* or *Enterococcus* is an acceptable indicator for EPA, MADEP, and MADPH to assess suitability for swimming in freshwater.

3.4 Trends in water quality, 2015

This section provides an analysis of trends for water quality parameters measured in the lower Charles in the 2015 monitoring year.

3.4.1 Physical measurements

Temperature. Summer (June to September) water temperatures for 2015 are shown for each sampling location in the top graph in Figure 3-2. Surface temperatures are relatively consistent upstream to downstream. Bottom-water temperatures are lower in the deeper waters downstream near the Longfellow Bridge, particularly station 009, where water depth exceeds 6 meters (20 to 23 feet). Station 166 is collected in a shallow location in the basin near the Science Museum, where differences in surface and bottom temperatures are small or nonexistent. Locations upstream of station 004 (upstream of the Eliot Bridge in Cambridge) are relatively shallow, with depths ranging from 1 to 3 meters.

Dissolved Oxygen. The spatial trend in summer dissolved oxygen (DO) is shown in the center graph of Figure 3-2. Average surface and bottom DO does meet the State standard of 5.0 mg/L at upstream locations in the Lower Charles, but mean bottom water DO failed to meet meets the standard at deeper water locations downstream, including stations 009 and 010, and, to a lesser extent, at 007, 008, and 011. Stratification due to salt water intrusion through the river locks during the summer months, as well as cooler bottom temperatures, results in extremely low bottom-water dissolved oxygen in the lower basin area near the Longfellow Bridge. Station 166, downstream of the lower basin, is collected at a relatively shallow near-shore location and does not reflect the low DO levels of deeper water in the lower basin.

Water clarity. Water clarity is indicated by Secchi disk depth. Summer Secchi readings are shown for individual sampling locations in the bottom graph in Figure 3-2. Stations 012 and 001 upstream are too shallow for Secchi measurements but are typically clear to the river bottom. All locations in the Lower Charles have relatively similar average Secchi depths, with values at or near the standard of 1.2 meters.

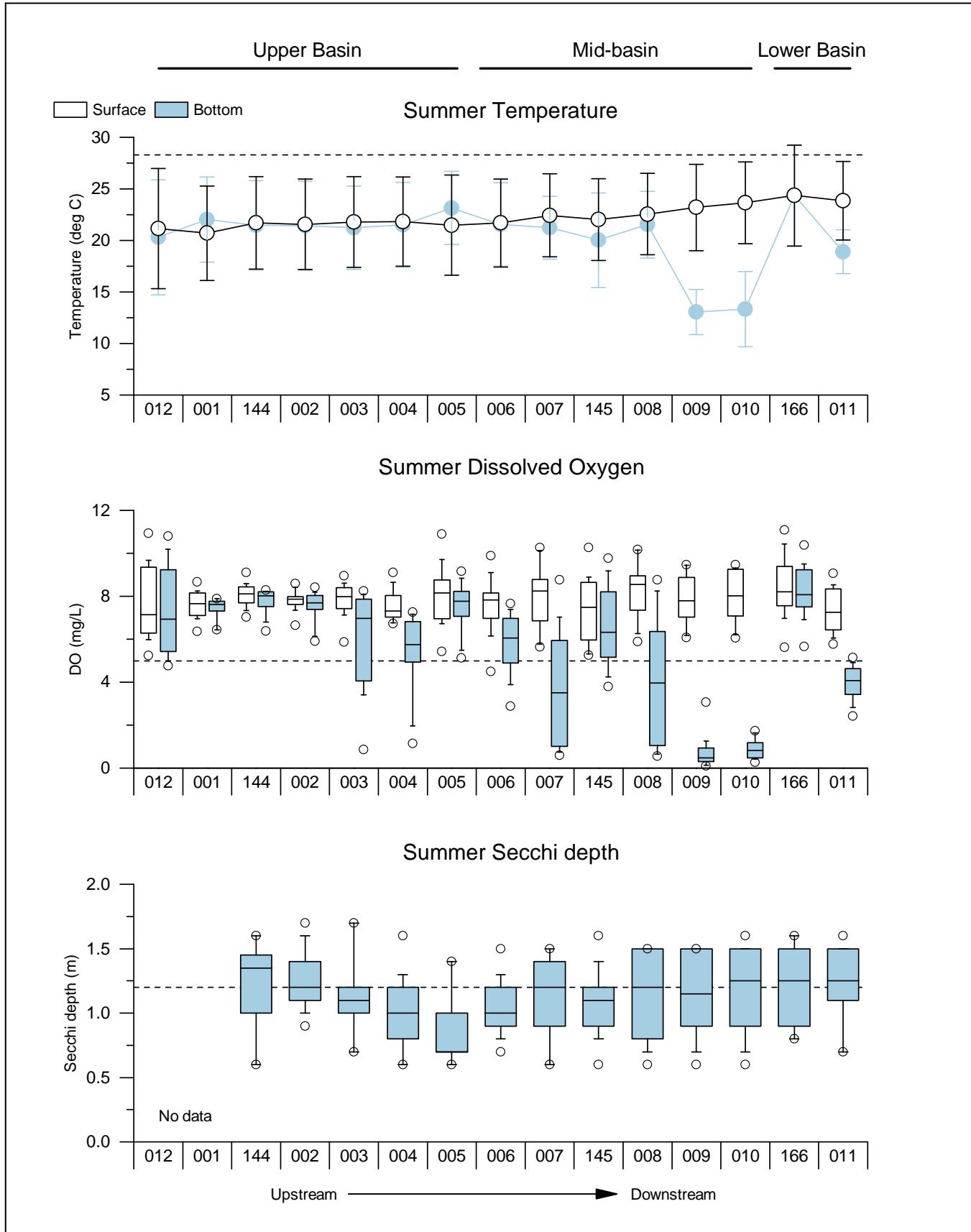


Figure 3-2. Summer temperature, dissolved oxygen and Secchi depth, Charles River Basin, 2015.

Dashed lines are State standards or guidelines (maximum for temperature, minima for DO and Secchi). No Secchi data are available for stations 012 and 001 because of shallow depth; the bottom is typically visible at these sites.

3.4.2 Nutrients, TSS and chlorophyll

Monthly means for total nitrogen, ammonium, nitrate/nitrite, total phosphorus, phosphate, total suspended solids (TSS), and chlorophyll *a* at the upstream (012) and downstream (166) locations in the lower Charles are shown in Figure 3-3 and Figure 3-4, respectively. 2015 averages are plotted with the average of the previous five years (2010 – 2014) for comparison. Some data may be missing for February 2015, due to icing over of the river.

Trends for the 2015 monitoring year are similar to the 2010 – 2014 averages for most parameters, though TSS at both stations was elevated in December, as was chlorophyll *a* at station 012. Chlorophyll *a* was also elevated at station 166 in September and November. Both stations showed elevated levels of the nitrogenous nutrients (total nitrogen, ammonium, and nitrate/nitrite) in March. Phosphate levels tended to be lower across the board in 2015 at both stations compared to the five year average.

Seasonal signals are most evident with nitrate/nitrite, total phosphorus/phosphate, and chlorophyll *a*. While the two locations show similar concentrations for most parameters, there are differences between the two stations for chlorophyll *a*. Historically, station 012 has the highest chlorophyll concentrations in spring, whereas the Lower Basin has highest concentrations in late summer. This was the case in 2015, but the late summer/early fall numbers at station 166 were higher than usual in September. There was also a late-year spike in chlorophyll *a* in November.

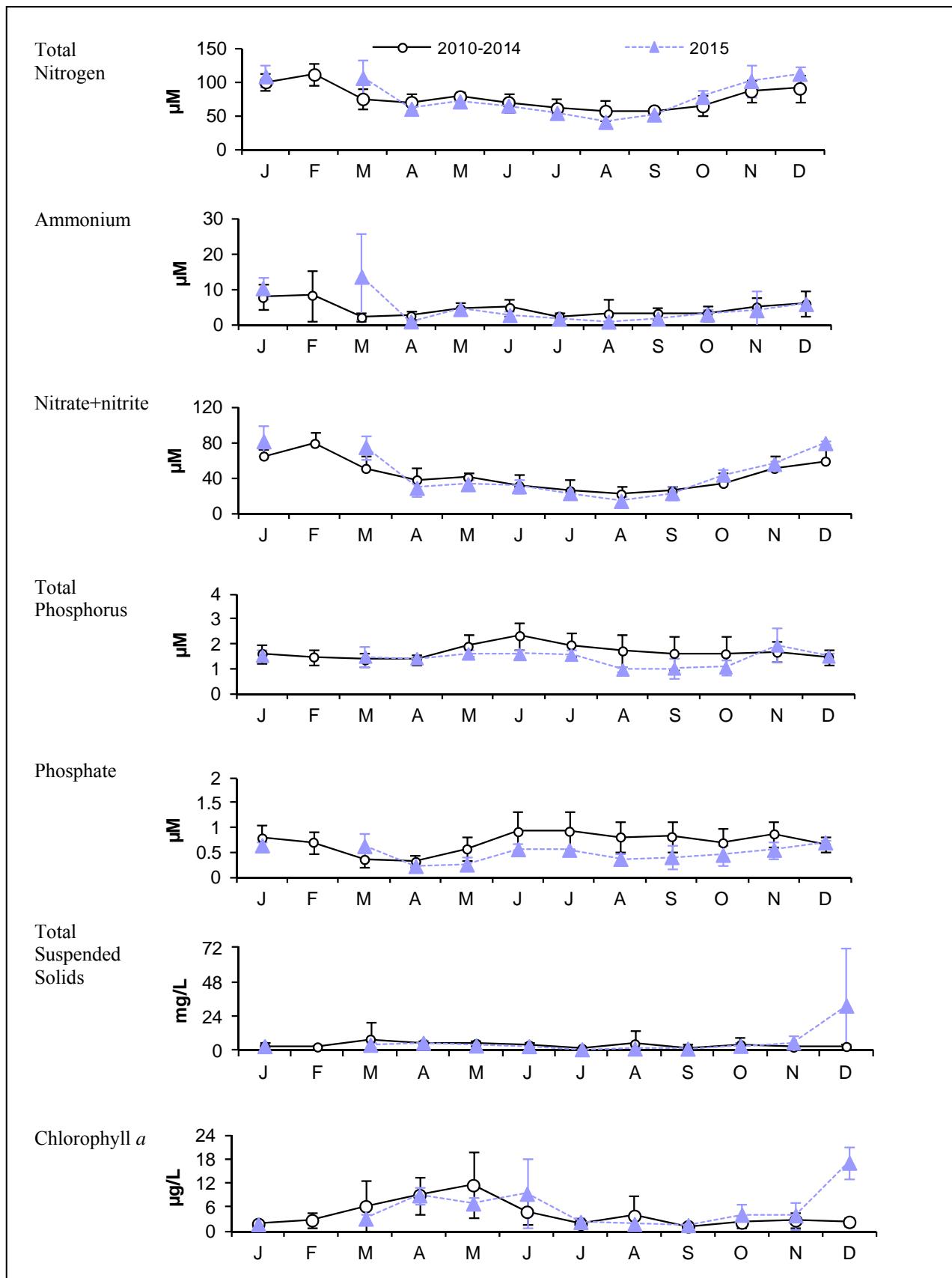


Figure 3-3. Monthly average nutrients, TSS and Chlorophyll 2010 – 2015, Station 012, Watertown Dam.
Error bars are ± 1 SD. Note different scales than Figure 3-4 for most parameters.

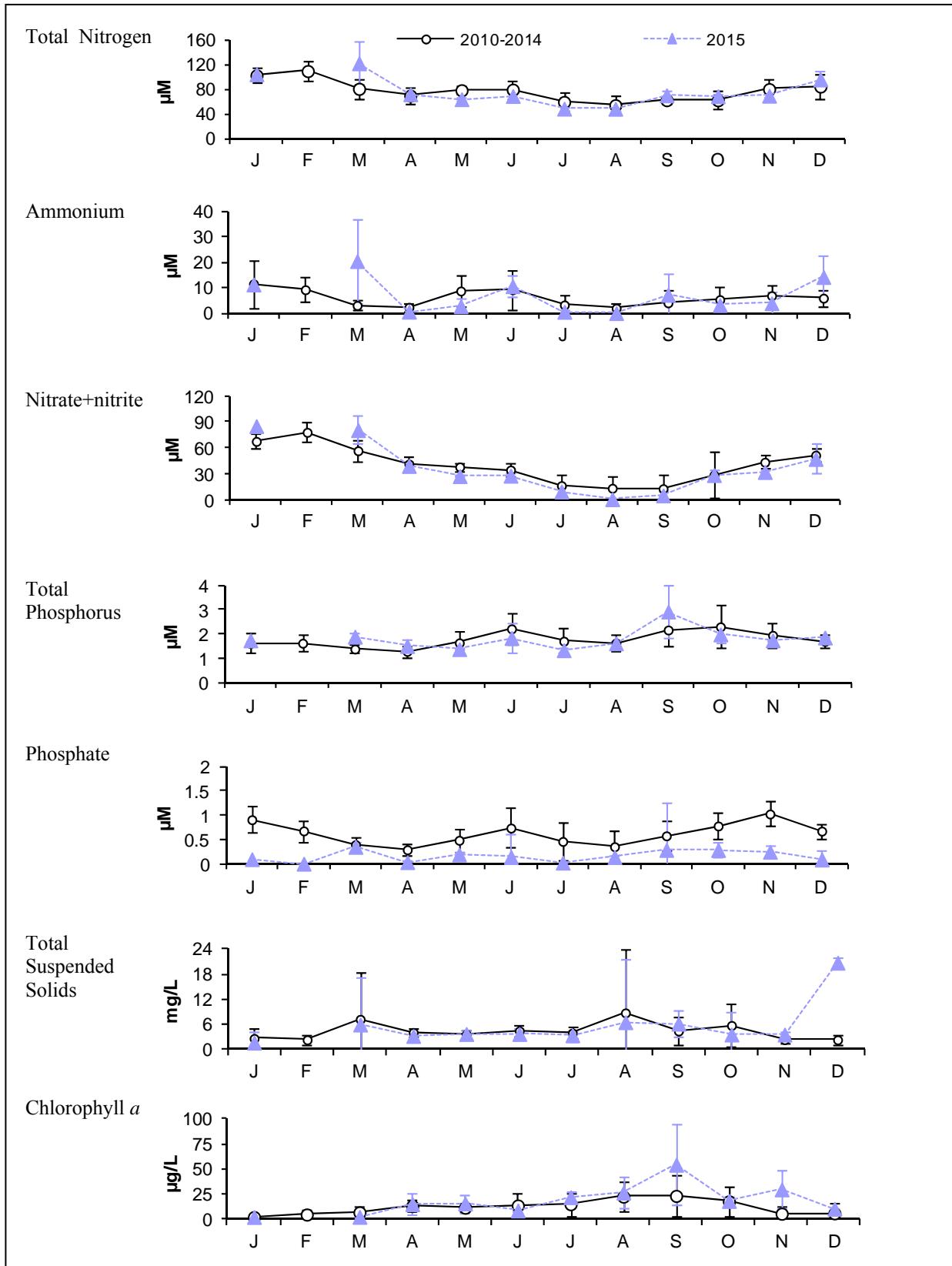


Figure 3-4. Monthly average nutrients, TSS and Chlorophyll 2010 – 2015, Station 166, Science Museum.
Error bars are $\pm 1 \text{ SD}$. Note different scales than Figure 3-3 for most parameters.

3.4.3 Bacterial water quality

Figure 3-5 shows the current bacterial water quality at each location sampled in the Charles for 2015 for dry, damp, and wet weather. Upstream reaches generally have more elevated bacteria counts than downstream locations, though this trend is less pronounced than in past years (especially for *Enterococcus*), with a continuing improvement in conditions at Watertown Dam in particular.

The top and bottoms graphs in Figure 3-5 show percentile plots of *Enterococcus* and *E. coli* counts arranged from upstream to downstream locations for 2015, respectively (note log scale). For 2015, *Enterococcus* shows little change from upstream to downstream in dry and damp weather. However, *E. coli* shows the historic spatial trend with more elevated bacteria counts upstream relative to downstream locations. For *Enterococcus*, upstream locations met geometric mean standards in dry and damp weather conditions, with many locations, primarily those in the Lower Basin and Mid-Basin, meeting standards in wet weather as well. For *E. coli*, most stations met standards in dry and damp weather with exceedences during wet weather only. All stations downstream of 003 in the Upper Basin met standards in dry and damp weather.

Annual geometric means for each location under all rain condition for 2010 - 2015 appear in Table 3-6. Geometric means for 2015 are shown in a separate column from the 5-year means. If confidence intervals for the two periods overlap, this *generally* indicates no statistically significant difference between the two means ($\alpha = 0.95$). For *Enterococcus*, 2015 counts are lower than the 5-year mean at all locations, except at station 006 (BU Bridge) and bottom samples from station 166 (Museum of Science), continuing a pattern from 2014. At both of those stations, the difference between 2015 and the 5-year mean is 1 MPN/100mL, a very small difference. All stations met DEP standards for *Enterococcus*, and most met for *E. coli*, with most of the stations not meeting being locations in the Upper Charles near the Watertown Dam.

Figure 3-6 shows the impact of rainfall on the three Lower Charles reaches on *Enterococcus* densities (upper figure), along with results for individual locations near CSO outfalls (lower figure). The upper figure shows that for 2015, bacterial concentrations in dry, damp, and light rain conditions met the geometric mean standard in all reaches. In heavy rain conditions, all but the Upper Basin meets the standard. The lower figure shows that stations 005, 006, and 008 had elevated *Enterococcus* levels in heavy rain conditions, but met standards in dry, damp, and light rain conditions. The other stations downstream of CSOs (009, 010, and 011) met standards in all conditions.

The change in *Enterococcus* concentrations since 1989 in the Upper Charles Basin (upstream of most CSO influences) and the lower Charles (including the Mid- and Lower-Basin locations) appear in Figure 3-7 and Figure 3-8. Results are grouped by phases of the LTCP improvements and include the geometric mean counts for all locations combined, in each rainfall condition. These figures show change over time in both regions, with statistically significant improvement in water quality in the latest phase. The Upper Basin shows improvement in both dry and wet conditions but meets the geometric mean swimming standard only in dry and damp weather. The most pronounced change is in the Middle and Lower Charles Basins, which both met the geometric mean swimming standard in all conditions.

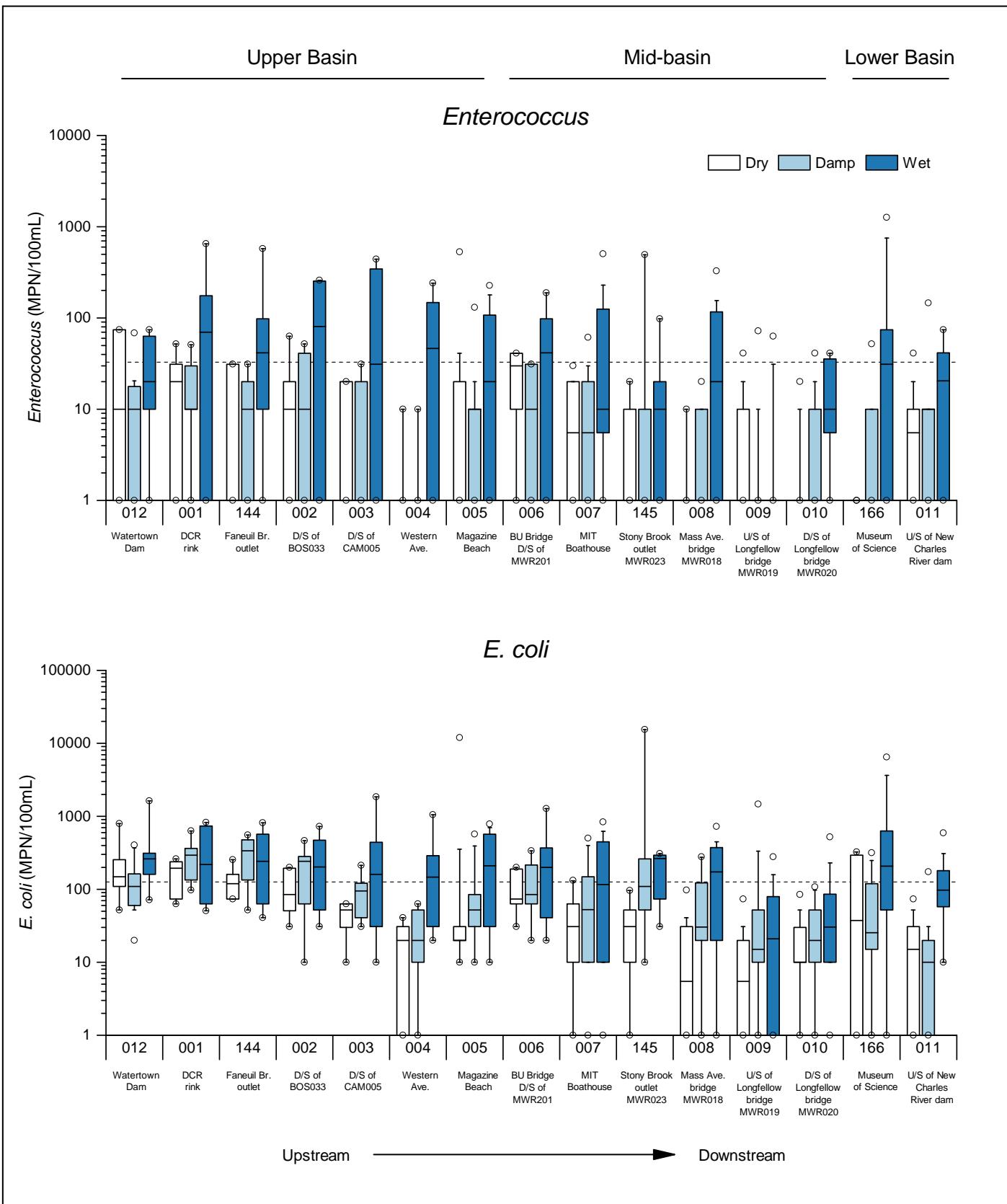


Figure 3-5. Indicator bacteria concentrations, Charles River Basin, 2015.

Dotted lines show MA DEP *Enterococcus* and *E. coli* standards. “Dry”: no rainfall for previous 3 days; “Wet”: at least 0.5 inches in previous 2 days; “Damp”: everything in between. “D/S” and “U/S”: downstream and upstream, respectively.

Table 3-6. Geometric mean indicator bacteria, Charles River Basin, 2010 – 2015.

Station	Location	Surface or Bottom	Number of samples		<i>Enterococcus</i> (95% CI) ¹ MPN/100 mL		<i>E. coli</i> (95% CI) ¹ MPN/100 mL	
			2010 – 14	2015	2010 – 2014	2015	2010 – 2014	2015
012	Newtown/Watertown, footbridge upstream of Watertown Dam	S	126	23	24 (17-34)	8 (3-16)	149 (123-180)	147 (99-219)
001	Newton, near Nonantum Rd., rear of DCR skating rink	S	99	20	22 (14-34)	13 (5-30)	276 (218-349)	196 (137-279)
144	Brighton, downstream of N. Beacon St. bridge, Faneuil Brook outlet, BOS032 (closed 1999)	S	99	20	19 (12-31)	8 (3-18)	233 (175-311)	174 (119-256)
002	Allston, downstream of Arsenal Street bridge, BOS033	S	92	20	15 (9-24)	9 (3-23)	193 (146-255)	120 (74-193)
003	Allston/Cambridge, midstream, near Mt. Auburn Street, between CAM005 and CAM006	S	95	20	13 (8-21)	5 (1-14)	163 (125-213)	71 (41-121)
004	Allston/Cambridge, midstream, between River Street and Western Avenue bridges	S	97	20	7 (4-11)	2 (0-6)	71 (50-100)	23 (10-52)
005	Cambridge, near Magazine Beach, upstream of Cottage Farm	S	220	40	7 (5-9)	6 (3-11)	89 (72-111)	63 (39-103)
006	Cambridge/Boston, midstream, downstream of Cottage Farm, BU bridge	S	106	20	10 (6-15)	11 (5-24)	140 (108-181)	101 (64-161)
007	Cambridge, near Memorial Dr., MIT Boathouse	S	106	20	6 (4-9)	3 (1-7)	72 (51-101)	17 (6-42)
145	Boston (Charlesgate), Muddy River/Stony Brook outlet	S	107	20	13 (8-19)	3 (1-8)	146 (104-203)	72 (30-169)
		B	106	20	4 (3-7)	2 (1-6)	64 (46-90)	14 (4-41)
008	Cambridge/Boston, midstream, downstream of Harvard Bridge	S	106	20	8 (5-12)	2 (1-7)	95 (70-130)	29 (11-72)
		B	106	20	3 (2-4)	2 (0-4)	9 (6-12)	4 (1-11)
009	Cambridge/Boston, midstream, upstream of Longfellow Bridge near Community Sailing	S	108	22	1 (1-2)	0 (0-1)	34 (25-47)	18 (6-46)
		B	106	20	3 (2-4)	2 (1-5)	17 (12-24)	13 (7-23)
010	Boston, downstream of Longfellow Bridge, MWR022	S	106	20	3 (2-4)	2 (1-5)	22 (15-32)	21 (10-44)
		B	106	20	3 (2-4)	2 (1-5)	47 (35-62)	49 (19-121)
166	Boston, old Charles River dam, rear of Science Museum	S	123	31	3 (2-5)	4 (1-9)	27 (19-37)	31 (15-63)
011	Boston, upstream of river locks (New Charles River Dam) and I-93, near Nashua St.	S	106	20	8 (6-12)	6 (3-15)	24 (17-33)	7 (2-16)
		B	106	20	3 (2-4)	2 (1-5)	1	

¹ The MADEP limits are geometric means for both *Enterococcus* and *E. coli*.

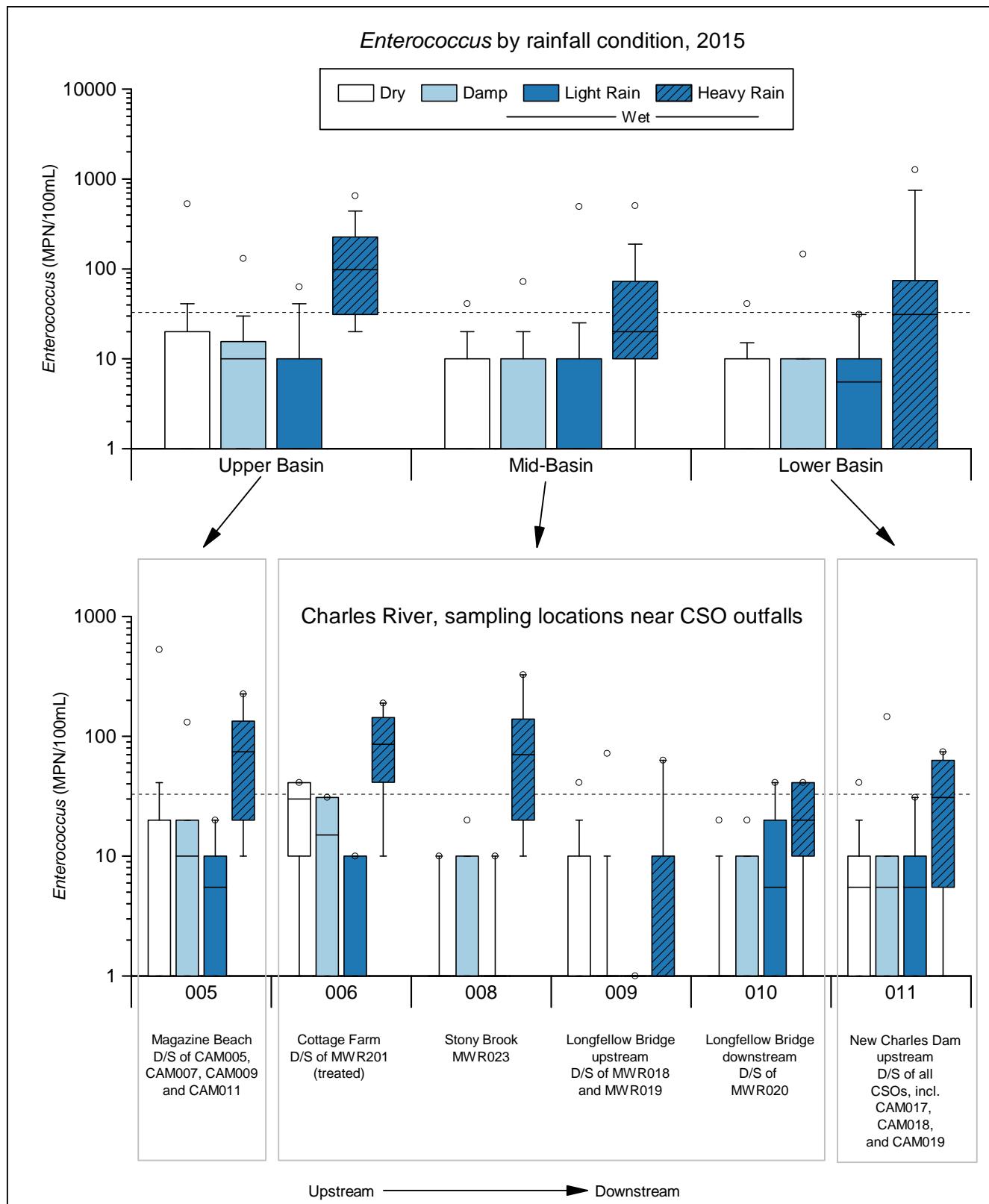


Figure 3-6. *Enterococcus by rainfall condition, Charles Basin, 2015.*

Dotted line shows MADEP freshwater standard of 33 MPN/100 mL for *Enterococcus*. Rainfall is NOAA rainfall from Logan airport. “Dry”: no rainfall for previous 3 days; “Damp”: any rain < 0.15 inches at least two or three days previous to sampling and/or 0.1 inches in previous day; “Light Rain”: between 0.1 and 0.5 inches in previous day and/or between 0.15 and 0.5 in two previous days; “Heavy Rain”: more than 0.5 inches in previous 3 days. “D/S”: downstream.

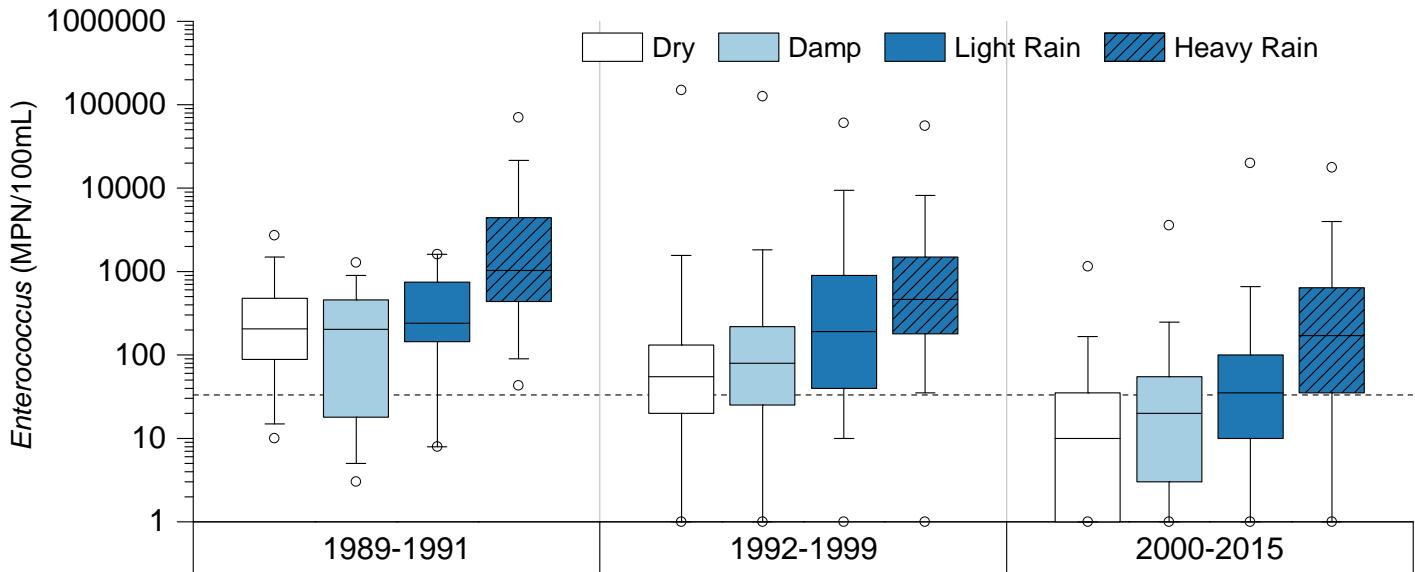


Figure 3-7. Enterococcus over time, Upper Charles Basin (upstream of most CSOs) by phase of Long Term CSO Plan and rainfall condition.

Dotted line shows State standard. Data includes results for stations 012, 001, 144, 002, 004, and 005. Rainfall is NOAA rainfall from Logan airport. “Dry”: No rainfall for previous 3 days; “Damp”: any rain < 0.15 inches at least two or three days previous to sampling and/or 0.1 inches in previous day; “Light Rain”: between 0.1 and 0.5 inches in previous day and/or between 0.15 and 0.5 in two previous days; “Heavy Rain”: more than 0.5 inches in previous 3 days.

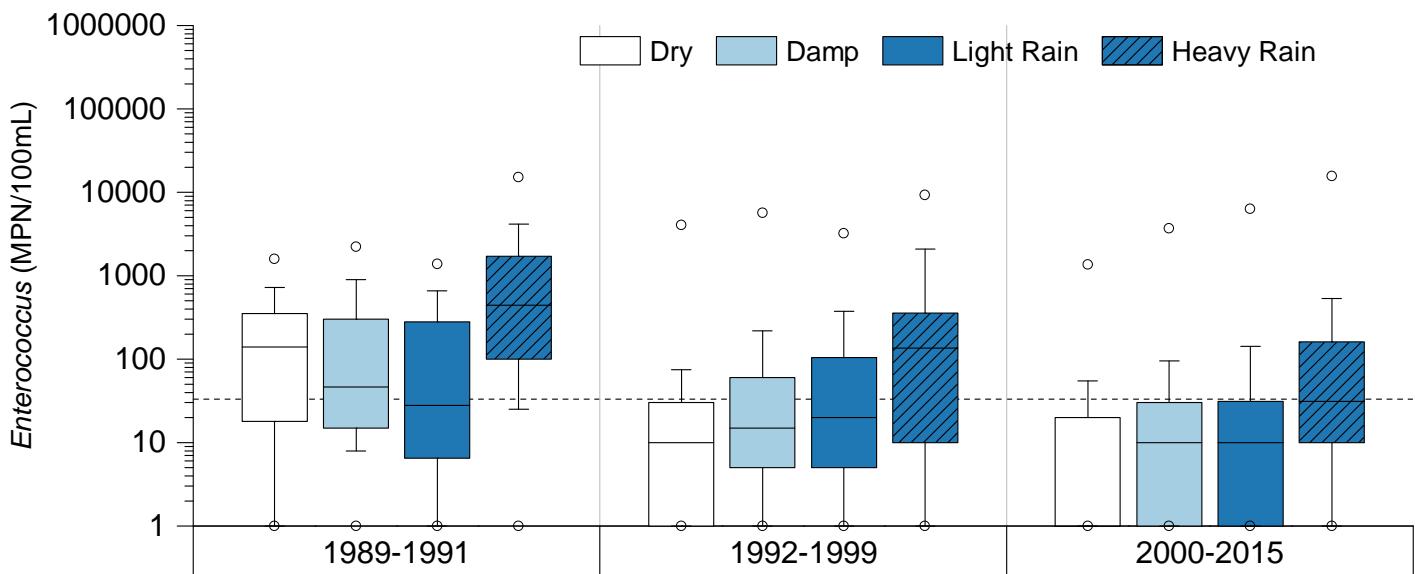


Figure 3-8. Enterococcus over time, Lower and Middle Charles Basin by phase of Long Term CSO Plan and rainfall condition.

Dotted line shows State standard. Data includes results for all stations from 006 (BU bridge) downstream. Rainfall is NOAA rainfall from Logan airport. “Dry”: No rainfall for previous 3 days; “Damp”: any rain < 0.15 inches at least two or three days previous to sampling and/or 0.1 inches in previous day; “Light Rain”: between 0.1 and 0.5 inches in previous day and/or between 0.15 and 0.5 in two previous days; “Heavy Rain”: more than 0.5 inches in previous 3 days.

3.5 Summary of Charles River Water Quality

2015 bacterial water quality in the Charles was generally consistent with and sometimes better than 5-year historical means, with all individual locations meeting geometric mean standards for *Enterococcus* and many locations meeting standards for *E. coli*, and nearly all individual locations having geometric mean bacteria counts below the 5-year mean. In heavy rain conditions, 2015 was better than past years, with both the Mid-Basin and Lower Basin meeting geometric mean standards.

Spatially, water quality was consistent with prior years, with more elevated concentrations at upstream locations (upstream of most CSOs) in wet weather, and improving moving downstream to the New Charles River Dam.

Bottom-water dissolved oxygen met standards in the Upper Charles Basin, but failed to meet standards in the lower reaches of the Mid-Basin and the Lower Charles Basin, a pattern consistent with prior years. Seawater entering through the Charles locks in summer contributes to stratification of the basin, limiting exchange with surface waters; this at least partially explains the lower bottom DO.

Nutrients and chlorophyll exhibited seasonal signals as expected, but matched long term averages overall in general. The exceptions were spikes in TSS and chlorophyll *a* seen late in the year and the March spike of nitrogenous nutrients at both stations 012 and 166. Phosphate also trended lower than the 5-year mean at both stations.

4 Results: Mystic River and Alewife Brook

4.1 Sampling area

Monitoring results of the Mystic River and tributaries are divided into four reaches. Sampling locations and CSO outfalls are shown on the map in Figure 4-1. Table 4-1 describes the reaches and the sampling locations within each reach.

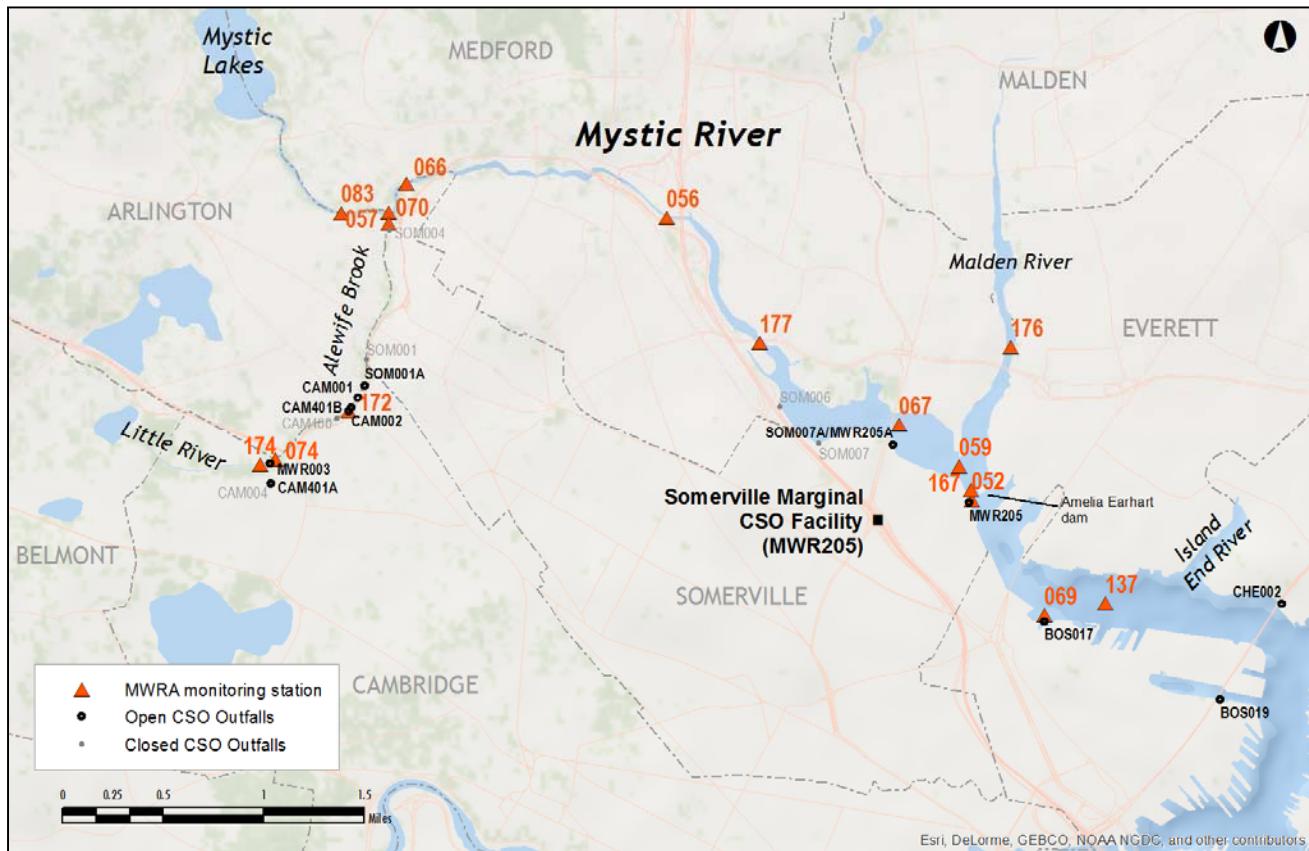


Figure 4-1. Map of Mystic River sampling locations.

4.2 Pollution sources

Known pollution sources to the Mystic River/Alewife Brook are shown in Table 4-2 and consist of stormwater, upstream inputs and CSOs. Nine CSOs are located in Cambridge and Somerville, including six active CSOs in Alewife Brook, and one treated CSO in the Lower Mystic basin (Somerville Marginal CSO, MWR205A/SOM007A), which discharges screened, chlorinated, and dechlorinated flow only during an activation occurring at high tide. At low tide, the Somerville Marginal CSO (MWR205) discharges downstream of the Amelia Earhart dam, screening, chlorinating, and dechlorinating CSO flow before discharge. It is the only source of treated CSO discharge to the Mystic River, although there is an untreated outfall (BOS017) as well. For calendar year 2015, Somerville Marginal 205A/SOM007A had three discharge events, and Somerville Marginal 205 had 19 activations resulting in discharge below the dam.

Table 4-3 shows the MWRA model simulation results for CSOs affecting the Mystic River and Alewife Brook in calendar year 2015. Metered CSO volumes and activation frequency are available for the Somerville Marginal CSO facility, while the remaining results are estimated using model results.

Table 4-4 summarizes the proportion of samples collected in dry, damp, and wet weather between 2010 and 2015.

Table 4-1. MWRA monitoring locations, Mystic River and Alewife Brook.

Reach	Description of Reach	Sampling location	Location Description
Alewife Brook (Class B/Variance, warm water fishery)	Tributary to Mystic River. From confluence at Little River in Cambridge/Arlington to confluence with Mystic River in Arlington/Somerville	174, Cambridge/Arlington 074, Cambridge/Arlington 172, Cambridge/Arlington 070, Arlington/Somerville	Little River, upstream of Rt. 2 and off ramp to Alewife T station. Upstream of all CSOs. Downstream of CAM401A, MWR003 Downstream of CAM001, CAM002, CAM401B, SOM001A Mystic Valley Parkway bridge. Downstream of all Alewife CSOs
Upper Mystic River (Class B/Variance, warm water fishery)	Downstream of Lower Mystic Lake in Arlington/Medford to Route 28 bridge in Medford	083, Arlington/Medford 057, Medford 066, Medford 056, Medford	Upstream of confluence of Mystic River and Alewife Brook Confluence of Mystic River and Alewife Brook Boston Ave bridge, downstream side Upstream of I-93 bridge, near Medford Square off ramp
Lower Mystic River basin (Class B/Variance, warm water fishery)	Route 28 bridge in Medford to Amelia Earhart Dam in Somerville/Everett	177, Medford 067, Medford 176, Medford/Everett 059, Somerville/Everett 167, Somerville/Everett	Downstream of Rt. 16 bridge Rt. 28 bridge, downstream side, near Somerville Marginal MWR205A outfall Malden River, upstream of Rt. 16 bridge Confluence of Mystic and Malden Rivers Amelia Earhart Dam, upstream side
Mystic River mouth (Class SB/CSO, marine)	Downstream of Amelia Earhart Dam in Somerville/Everett to Tobin Bridge, Chelsea R. confluence in Chelsea/East Boston	052, Somerville 069, Charlestown 137, Charlestown/Everett	Downstream of Amelia Earhart dam, near Somerville Marginal CSO facility outfall (MWR205) Rear of Schrafft's Center at BOS017 outfall Upstream of Tobin Bridge near confluence of Mystic, Chelsea Rivers and upper inner harbor

Sampling locations are midstream unless otherwise noted.

Table 4-2. Mystic River/Alewife Brook pollution sources.

Source	Alewife Brook	Upper Mystic River	Lower Mystic Basin	Mystic River mouth
CSOs (untreated)	6 active, 7 closed CAM401A, MWR003, CAM001, CAM002, CAM401B, SOM001A CAM004 closed 12/15 CAM400 closed 3/11 SOM001 closed 12/96 SOM002 closed 1994 SOM002A closed 8/95 SOM003 closed 8/95 SOM004 closed 12/95	2 closed SOM006 closed 12/96 SOM007 closed 12/96	None	1 active BOS017
CSO treatment facility (screened, chlorinated and dechlorinated CSO discharge)	No	No	Yes Somerville Marginal (MWR205A/SOM007A, high tide only) Activated 3 times in 2015	Yes Somerville Marginal (MWR205) Activated 19 times in 2015
Storm drains	Yes	Yes	Yes	Yes
Upstream inputs (elevated bacteria counts upstream)	Yes	Yes	Yes	Yes
Dry weather inputs (elevated bacteria counts in dry weather)	Yes	Yes	Yes	Yes
Tributary brook or stream flow	Yes	Yes	Yes	Yes

Table 4-3. Mystic River/Alewife Brook CSO activations, results of MWRA model simulations and facility records for 2015 system conditions and 2015 rainfall.¹

CSO Outfall	Activation Frequency	Total Discharge Duration (hr)	Total Discharge Volume (Million Gallons)
<i>Alewife Brook</i>			
CAM001	1	1.22	0.07
CAM002	1	4.83	0.41
MWR003	1	7.96	1.10
CAM004	5	13.42	4.35
CAM401A	1	4.94	0.75
CAM401B	1	7.95	0.59
SOM001A	2	8.98	5.35
TOTAL		49.30	12.62
<i>Mystic River (upstream of dam)</i>			
SOM007A/MWR205A (Somerville Marginal, high tide discharge only) ²	3	5.55	9.36
TOTAL		5.55	9.36 ⁴
<i>Mystic River mouth (downstream of dam, marine outfalls)</i>			
MWR205 (Somerville Marginal Facility) ³	19	67.10	79.38
BOS017	0	0.00	0.00
TOTAL		67.10	79.38 ⁵

¹ Activation frequency and volume are from MWRA model results, except where noted.

² Treated discharge. Activation frequency and volume are from MWRA depth sensor measurement and MWRA model results, respectively.

³ Treated discharge. Activation frequency and volume are from MWRA facility records (measurements).

⁴ In 2015, 100% of the volume discharged to the Mystic River (upstream of dam) was treated.

⁵ In 2015, 100% of the volume discharged to the Mystic River mouth was treated.

Table 4-4. Mystic River/Alewife Brook sample collection by rainfall condition.

Sampling period	Dry ¹	Damp ¹	Wet ¹	Total
2010 - 2014	34% 1448 samples	28% 1191 samples	38% 1635 samples	100% 4274 samples
2015	38% 307 samples	40% 325 samples	22% 180 samples	100% 812 samples

¹ Dry: no rainfall for previous 3 days; Wet: at least 0.5 inches in previous 2 days; Damp is everything in between. Sampling is random with respect to weather, though if needed wet weather sampling is added late in the year to maintain a representative annual distribution of weather conditions.

4.3 Summary of water quality, 2011-2015

A summary of water quality results collected from the last five years is shown in Table 4-5.

Table 4-5. Summary of water quality, Mystic River/Alewife Brook, 2011 - 2015.

Parameter		Water Quality Guideline or Standard	Alewife Brook				Upper Mystic				Lower Mystic Basin				Malden River				Mystic Mouth			
			Mean ± SD	% meeting guideline	Range	n	Mean ± SD	% meeting guideline	Range	n	Mean ± SD	% meeting guideline	Range	n	Mean ± SD	% meeting guideline	Range	n	Mean ± SD	% meeting guideline	Range	n
Surface Temperature (°C)	Summer	<28.3	18.9 ± 3.7	99.7	6.6 - 28.4	378	21.3 ± 3.8	99.4	8.3 - 28.5	632	20.9 ± 4.0	99.3	8.4 - 28.8	555	20.8 ± 3.4	100.0	9.2 - 27.3	125	17.8 ± 2.5	100.0	10.1 - 24.4	429
	Winter		4.9 ± 1.6	100.0	3.4 - 9.3	32	2.7 ± 2.4	100.0	0 - 15.5	80	3.2 ± 2.1	100.0	0.1 - 15.3	65	ND	-	ND		2.5 ± 1.6	100.0	-0.3 - 7.1	66
Bottom water dissolved oxygen (mg/L) ¹	Summer	5.0	5.3 ± 2.2	55.6	0.4 - 15.1	378	6.7 ± 1.6	86.4	0.6 - 10.5	632	7.2 ± 2.4	82.3	0.7 - 12.9	555	6.0 ± 3.2	66.4	0.5 - 12.8	125	7.4 ± 1.4	96.5	2.5 - 15.4	428
	Winter	5.0	10.7 ± 1.1	100.0	8.9 - 12.2	32	12.0 ± 1.1	100.0	8.1 - 14.6	78	11.2 ± 2.5	96.8	1.6 - 15	63	ND	-	ND		10.7 ± 0.9	100.0	7.9 - 13	66
pH ⁶ (S.U.)		6.5-8.3 (8.5 marine)	7.3 ± 0.4	98.6	6.1 - 9	585	7.5 ± 0.5	95.1	6.5 - 9	975	7.6 ± 0.6	87.7	6.0 - 9.2	904	7.6 ± 0.6	69.5	6.7 - 9.1	210	7.7 ± 0.3	99.6	6.5 - 8.5	716
Water clarity	Total Suspended Solids (mg/L)	NS	ND	-	ND		5.2 ± 5.2	-	0.3 - 53.4	240	6.2 ± 3.8	-	1.7 - 27.9	114	ND	-	ND		3.6 ± 2.2	-	1.2 - 19.6	238
	Secchi depth (m) ³	NS	0.5 ± 0.2	-	0.2 - 1	54	1.2 ± 0.4	-	0.5 - 2.6	104	1.0 ± 0.3	-	0.4 - 2.0	286	1.0 ± 0.3	-	0.5 - 1.6	104	2.0 ± 0.8	-	0.2 - 4.3	239
	Turbidity (NTU)	NS	13.5 ± 7.1	-	3.6 - 34.7	206	6.8 ± 4.2	-	0.5 - 40.4	676	8.3 ± 4.8	-	0.3 - 44.2	689	9.8 ± 7.4	-	0.6 - 95.2	205	6.3 ± 4.0	-	0.4 - 58.6	663

Table 4-5. Summary of water quality, Mystic River/Alewife Brook, 2011 - 2015, continued.

Parameter		Water Quality Guideline or Standard	Alewife Brook				Upper Mystic				Lower Mystic Basin				Malden River				Mystic Mouth			
			Mean ± SD (95% CI)	% meeting guideline	Range	n	Mean ± SD (95% CI)	% meeting guideline	Range	n	Mean ± SD (95% CI)	% meeting guideline	Range	n	Mean ± SD (95% CI)	% meeting guideline	Range	n	Mean ± SD (95% CI)	% meeting guideline	Range	n
Bacteria (counts/100mL) ⁴	Fecal coliform	200 / 400 ⁵	1691 (1374-2081)	1.4	144 - 63000	144	ND	-	ND		ND	-	ND		ND	-	ND		28 (23-34)	80.8	0 - 52000	640
	E. coli	126 / 235 ^{5,6}	1019 (908-1143)	11.1	0 - 727000	594	143 (128-160)	67.9	0 - >24200	573	89 (77-103)	70.6	0 - 13000	463	160 (110-231)	61.7	0 - 17300	107	ND	-	ND	
	Enterococcus	33 / 61 ⁵	288 (248-336)	18.2	0 - 45700	595	24 (20-29)	68.4	0 - >24200	573	6 (5-8)	86.8	0 - 3080	463	10 (6-17)	83.0	0 - 5480	106	6 (5-8)	86.8	0 - 5480	642
Nutrients (µmol/L)	Phosphate	NS	ND	-	ND		0.52 ± 0.53	-	0.04 - 4.63	243	0.31 ± 0.2	-	0.02 - 0.98	115	ND	-	ND		0.75 ± 0.36	-	0.01 - 2.13	238
	Ammonium	NS	ND	-	ND		13.7 ± 10.9	-	0.1 - 43.2	243	8.1 ± 8.8	-	0 - 33.2	122	ND	-	ND		4.2 ± 6.3	-	0 - 63.5	241
	Nitrate+nitrite	NS	ND	-	ND		51.2 ± 28.5	-	4.1 - 290	243	31.9 ± 23.2	-	0 - 82.0	119	ND	-	ND		7.0 ± 8.1	-	0 - 59.9	238
Algae (µg/L)	Chlorophyll a	NS	ND	-	ND		9 ± 5.7	97.9	1.7 - 42.2	242	17.6 ± 11.7	80.0	1.2 - 69.2	119	ND	-	ND		4.2 ± 4.8	99.6	0.2 - 34.9	237

NS: no applicable numerical standard or guideline. ND: No data.

¹ Summer (June-September), Winter (December-March).

² Median and standard error of the median are shown for pH, rather than arithmetic mean and standard deviation.

³ MADPH standard of ≥1.2 meters applies only to public bathing beaches; there are none in the Upper Mystic/Alewife Brook.

⁴ For bacterial data, 95% confidence intervals are provided rather than standard deviations

⁵ First number is the all samples geometric mean limit - compare to the "Mean±SD" column; the second number is the single sample limit - compare to the "% meeting guideline" column. For marine locations, fecal coliform replaced E. coli in marine waters in 2007 for methodological reasons.

⁶ E. coli or Enterococcus are acceptable indicators for EPA, MADEP, and MADPH to assess suitability for swimming in freshwater.

4.4 Trends in water quality, 2015

This section reports spatial trends for water quality parameters measured in the Mystic River/Alewife Brook in 2015.

4.4.1 Physical measurements

Temperature. Summer mean temperatures for 2015 are shown for each sampling location in the uppermost graph of Figure 4-2. Surface and bottom temperatures are similar, except in the downstream reach, on the marine side of the dam, where water depth is greater and harbor temperatures are lower. Unlike the Charles River, temperatures show more spatial variability upstream to downstream, but the Mystic River has warmer bottom temperatures than the Charles due to its shallower depth.

Dissolved Oxygen. Dissolved oxygen is shown in the center graph of Figure 4-2. Mean surface dissolved oxygen concentrations meet the State standard of 5.0 mg/L at all locations. Bottom water concentrations meet except in Alewife Brook, and the Malden River (Station 176). Station 176 has historically shown the lowest bottom water DO concentration of any location in the Alewife and Mystic. Unlike the Charles River, there is little evidence of stratification due to saltwater intrusion in the lower portion of the Mystic.

Water clarity. Water clarity is indicated by Secchi disk depth, which appears for each sampling location in the bottom graph of Figure 4-2. Water clarity for all but the Mystic River mouth is poor, with nearly all stations upstream of the Dam failing to meet the guideline of 1.2 meters except for Station 056 in Medford, which typically meets water clarity limits. Alewife Brook and several of the Upper Mystic locations are generally too shallow to measure Secchi depth. Station 057 was particularly clear in 2015 as the river bottom was visible for all visits to that station. Clarity on the marine side of the Amelia Earhart dam improves substantially in the marine portion of the river mouth.

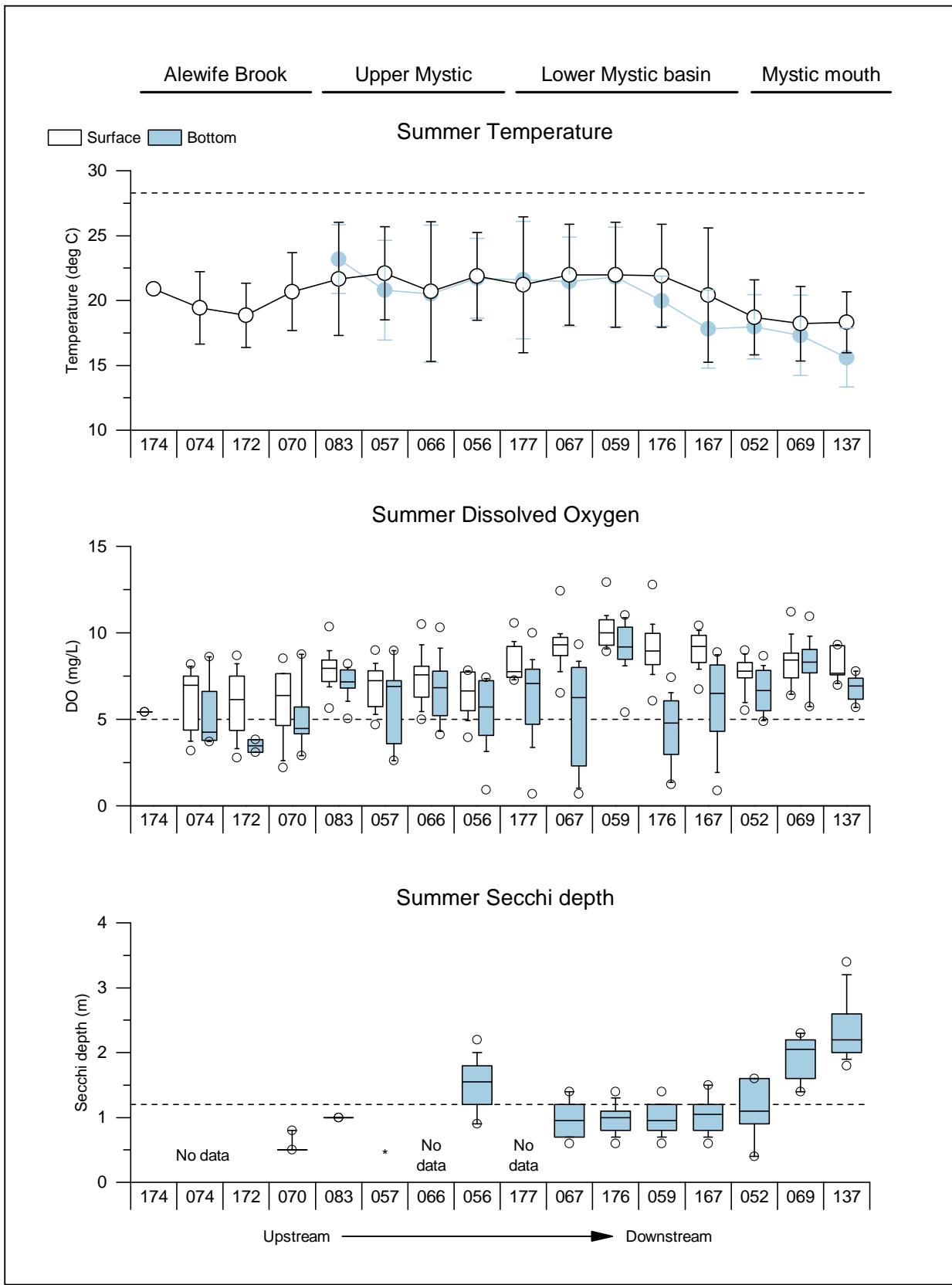


Figure 4-2. Summer temperature, dissolved oxygen, and Secchi depth, Mystic River, 2015.

Dashed lines are State standards or guideline (maximum for temperature, minima for DO and Secchi). Stations 174, 074, 172 are typically too shallow for Secchi measurements and accurate bottom temperature reads in the summer months. Station 070 is too shallow for accurate summer bottom temperature measurements. No Secchi data were collected at stations 066 and 177 in 2015. * denotes that station 057 was clear to the bottom during all visits in 2015.

4.4.2 Nutrients, TSS and chlorophyll

Figures 4-3 through 4-6 show monthly average total nitrogen, ammonium, nitrate/nitrite, total phosphorus, orthophosphate, total suspended solids, and chlorophyll *a* at the upstream Mystic locations (083 upstream of Alewife Brook and 066 at Boston Ave.), downstream (167 at Amelia Earhart Dam) and river mouth (137). Some monthly averages are missing from the plots for January and February 2015, as many portions of the Mystic River were inaccessible due to freezing.

Ammonium and phosphate results show relatively strong seasonal effects, as biological activity increases during the summer months. Station 167, immediately upstream of the dam, is more eutrophic than either upstream or at the mouth of the river. Chlorophyll concentrations at station 167 can be more than twice the concentrations of upstream locations, and concentrations in September and November were elevated above the five-year average. Monthly average chlorophyll upstream of the Mystic basin is most elevated in the spring as compared to later in the season, while concentrations are highest in late summer downstream of the basin. These trends continued in 2015.

In winter months, when biological nutrient uptake is low, ammonium concentrations in the Upper Mystic are nearly double the concentration in the Charles Basin. Nutrient concentrations on the marine side of the dam are much lower than upstream, particularly for nitrogen, chlorophyll, and total suspended solids. In general, 2015 results were similar to the five-year average for nutrient parameters, with one of the only major differences being a spike in ammonium concentrations in March at station 167.

One other notable difference between 2015 and the five-year averages was total suspended solids, where all stations except 137 showed large spikes in total suspended solids in December. Station 137 showed a large spike in April for TSS.

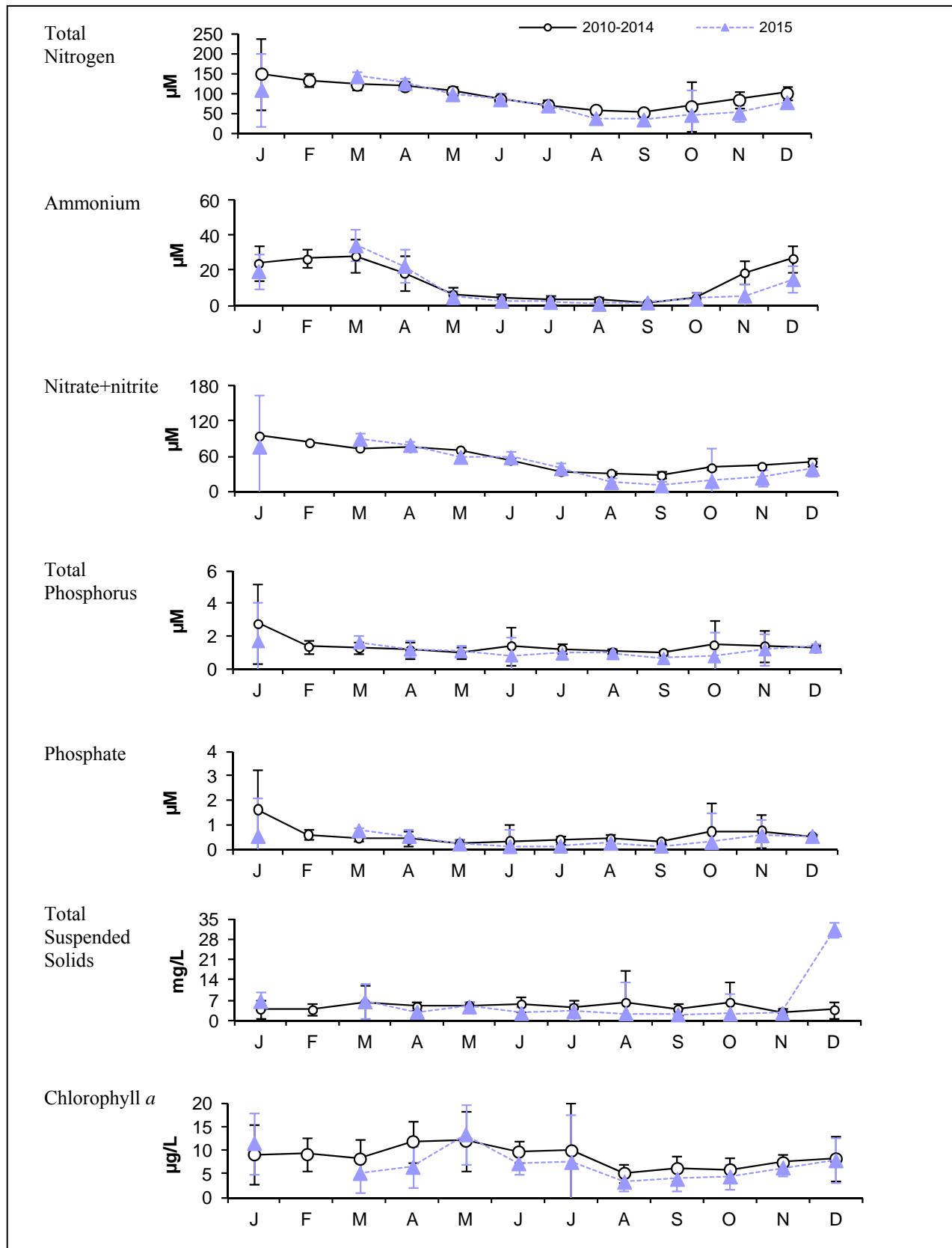


Figure 4-3. Monthly average nutrients, TSS and Chlorophyll 2010 – 2015, Station 083 (Mystic upstream of Alewife Br.)
Error bars are ± 1 SD. Note different scales than for Figures 4-4, 4-5 and 4-6 for most parameters.

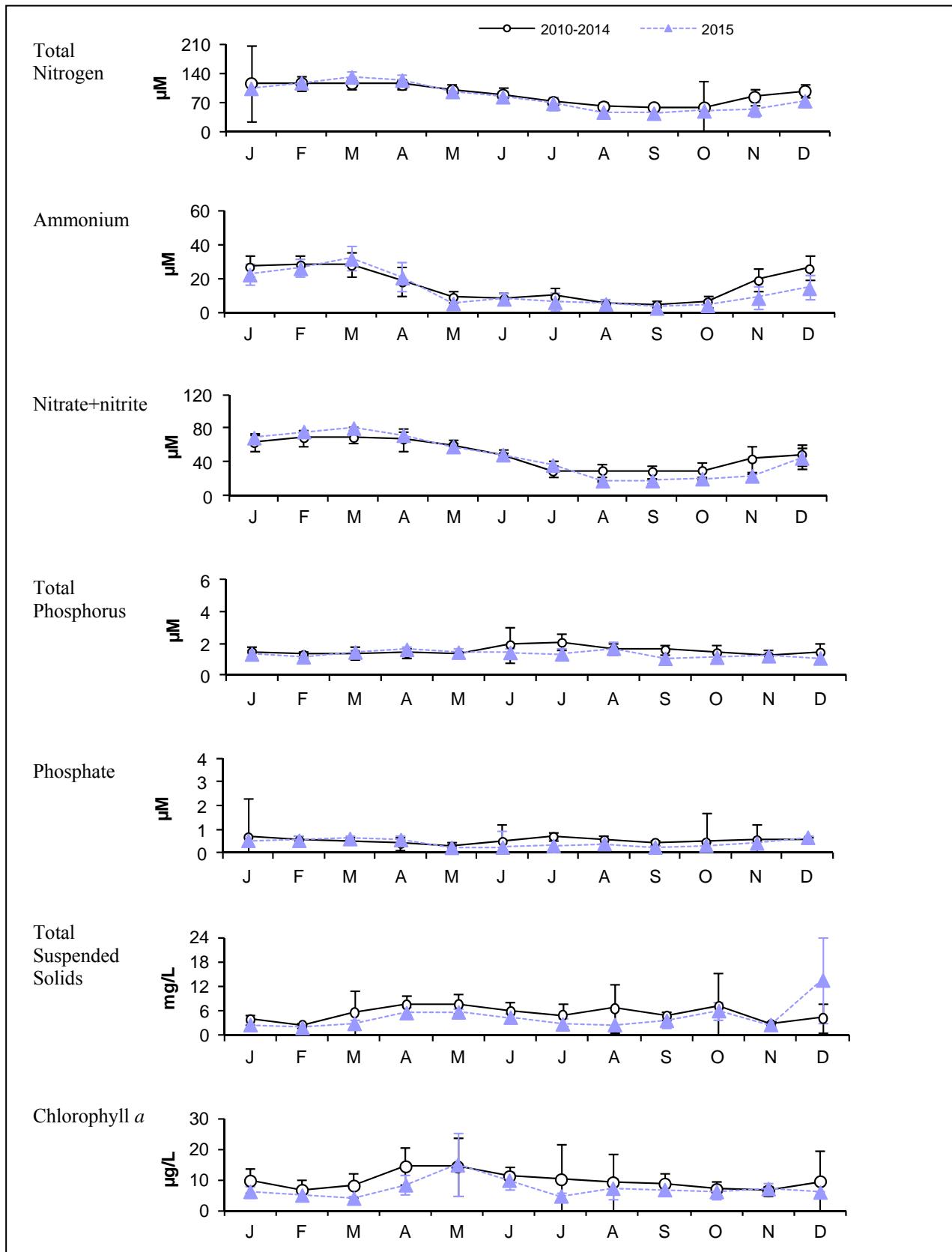


Figure 4-4. Monthly average nutrients, TSS and Chlorophyll 2010 – 2015, Station 066 (Boston Ave.)
 Error bars are ± 1 SD. Note different scales than Figures 4-3, 4-5 and 4-6 for most parameters.

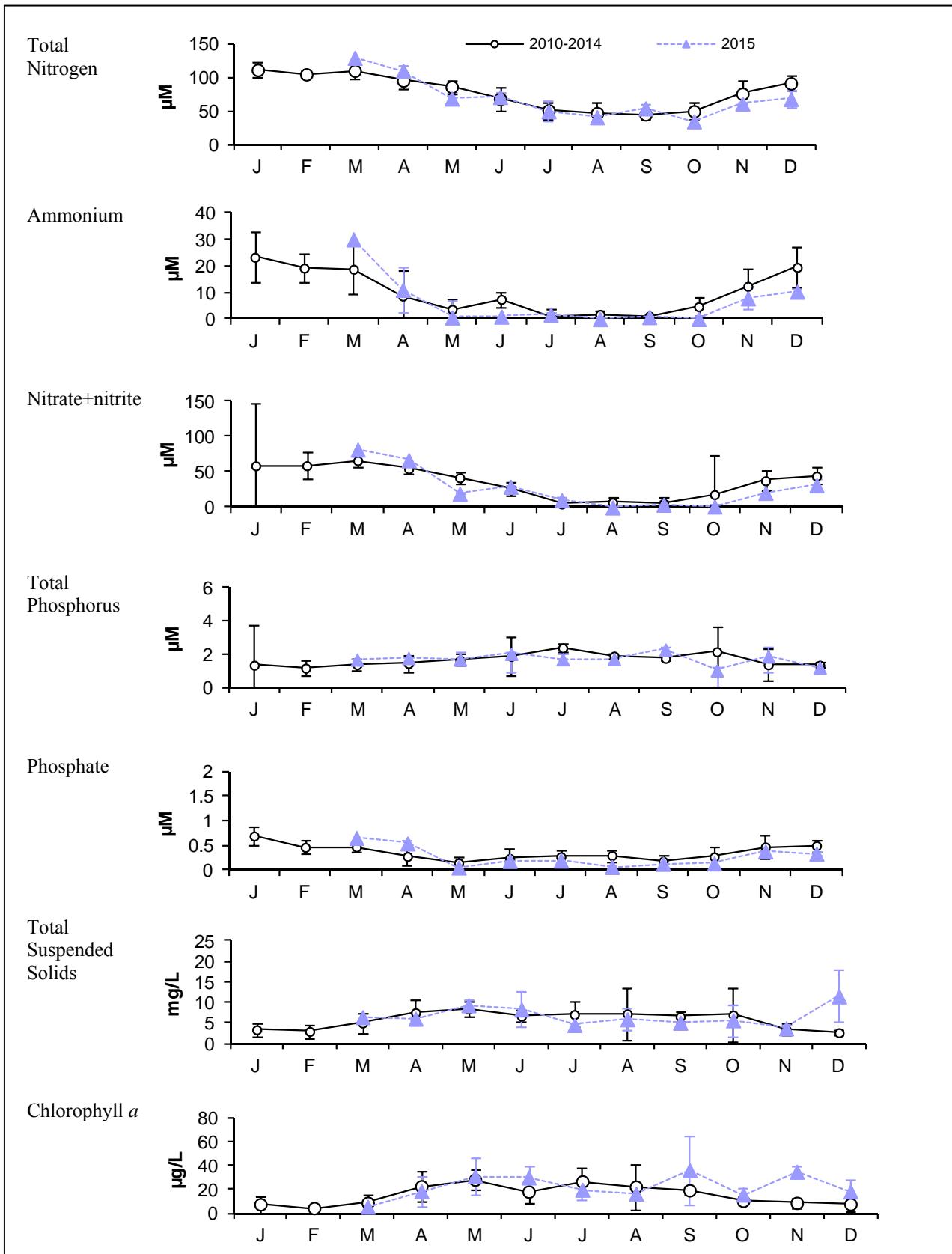
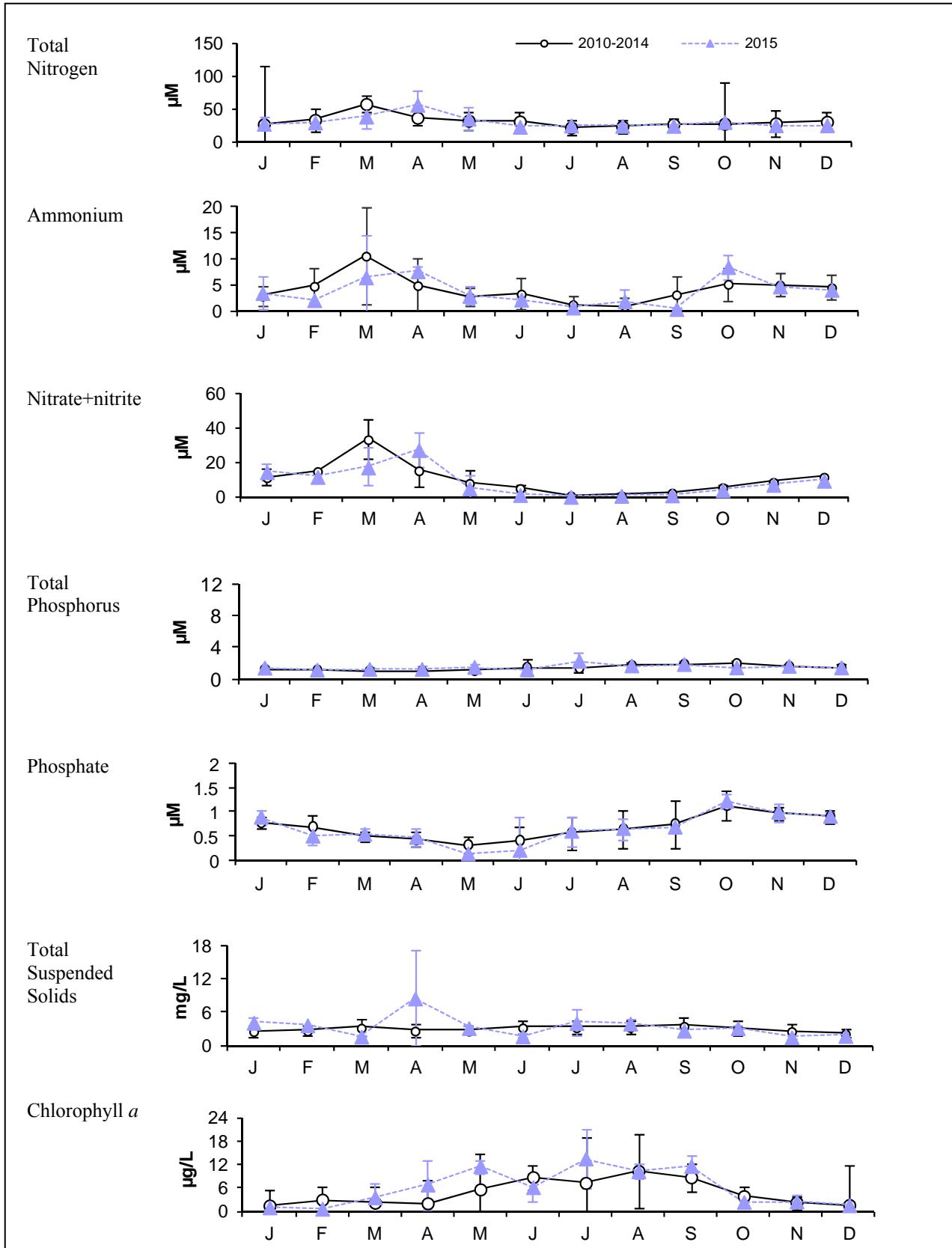


Figure 4-5. Monthly average nutrients, TSS and Chlorophyll 2010 – 2015, Station 167 (Amelia Earhart Dam (upstream/freshwater)).

Error bars are ± 1 SD. Note different scales than Figures 4-3, 4-4 and 4-6 for most parameters.



**Figure 4-6. Monthly average nutrients, TSS and Chlorophyll 2010 – 2015, Station 137
Mystic River mouth (marine).**

Error bars are $\pm 1 \text{ SD}$. Note different scales than Figures 4-3, 4-4 and 4-5 for most parameters.

4.4.3 Bacterial water quality

Figure 4-7 shows the current bacterial water quality at each location sampled in the Mystic River and Alewife Brook for 2015 for dry, damp, and wet weather. The uppermost graph in the figure shows percentile plots of *Enterococcus* counts for each location, arranged from upstream to downstream for 2015. The center graph shows percentile plots of *E. coli* and the bottom graph fecal coliform, which is only monitored in the marine portion of the Mystic River in place of *E. coli*.

In the Alewife Brook, all locations consistently failed to meet both *Enterococcus* and *E. coli* standards in both dry and wet weather in 2015. All stations downstream of the Mystic/Alewife confluence meet *Enterococcus* standards in dry and damp weather, but in wet weather most stations did not meet standards. Conditions tended to improve moving downstream to the river mouth. While station 057 at the confluence of the Alewife and Mystic tends to have relatively high counts, the stations downstream of the confluence show little effect from Alewife Brook, especially in dry and damp weather.

Geometric means for each indicator for 2010 - 2015 appear in Table 4-6, for all weather conditions combined. Annual geometric means met standards for more locations in 2015 than 2014. However, 46% of the samples were collected in wet weather in 2014, as opposed to 22% for 2015. Alewife Brook geometric means were substantially lower in 2015 compared to the five year historical average, in keeping with the larger number of dry weather samples in 2015.

Table 4-6 shows the annual, all-weather conditions geometric mean for station 052 (Somerville Marginal outfall MWR205) meets the former fecal coliform standard of 200 CFU/100 mL as well as the *Enterococcus* standard of 35 MPN/100 mL. Figure 4-7 (fecal coliform; bottom panel) shows geometric means at station 052 meet standards in dry and damp weather and are somewhat elevated in wet weather.

The spatial and temporal change in *Enterococcus* concentrations in Alewife Brook and the Mystic River appear in Figure 4-8 through Figure 4-10. Figure 4-8 shows the impact of rainfall on the three river reaches on *Enterococcus* densities in 2015, along with the change at locations near CSO outfalls. With the exception of Alewife Brook, which does not meet standards in any condition, the Mystic River reaches meet the *Enterococcus* standard in dry, damp and light rainfall conditions, and the Lower Mystic Basin meets in those conditions as well as heavy rainfall. In the Alewife, even the Little River location upstream of CSOs fails to meet standards in dry and both rainfall conditions, suggesting persistent contamination problems in the entire length of the Brook. Station 052 at the Amelia Earhart Dam and the treated Somerville Marginal CSO facility outfall does meet standards in dry, damp, and light rainfall conditions but not in heavy rain.

Results in Figures 4-9 (Alewife Brook) and 4-10 (remainder of the Mystic) are grouped by phases of the Long Term CSO Plan improvements and include the geometric mean counts in each rainfall condition. Figure 4-9 shows minimal changes in *Enterococcus* counts in the Alewife. *Enterococcus* results in Figure 4-10 show slight improvement over time in the Mystic River in dry and wet weather since the early 1990s, particularly in dry and light rain conditions.

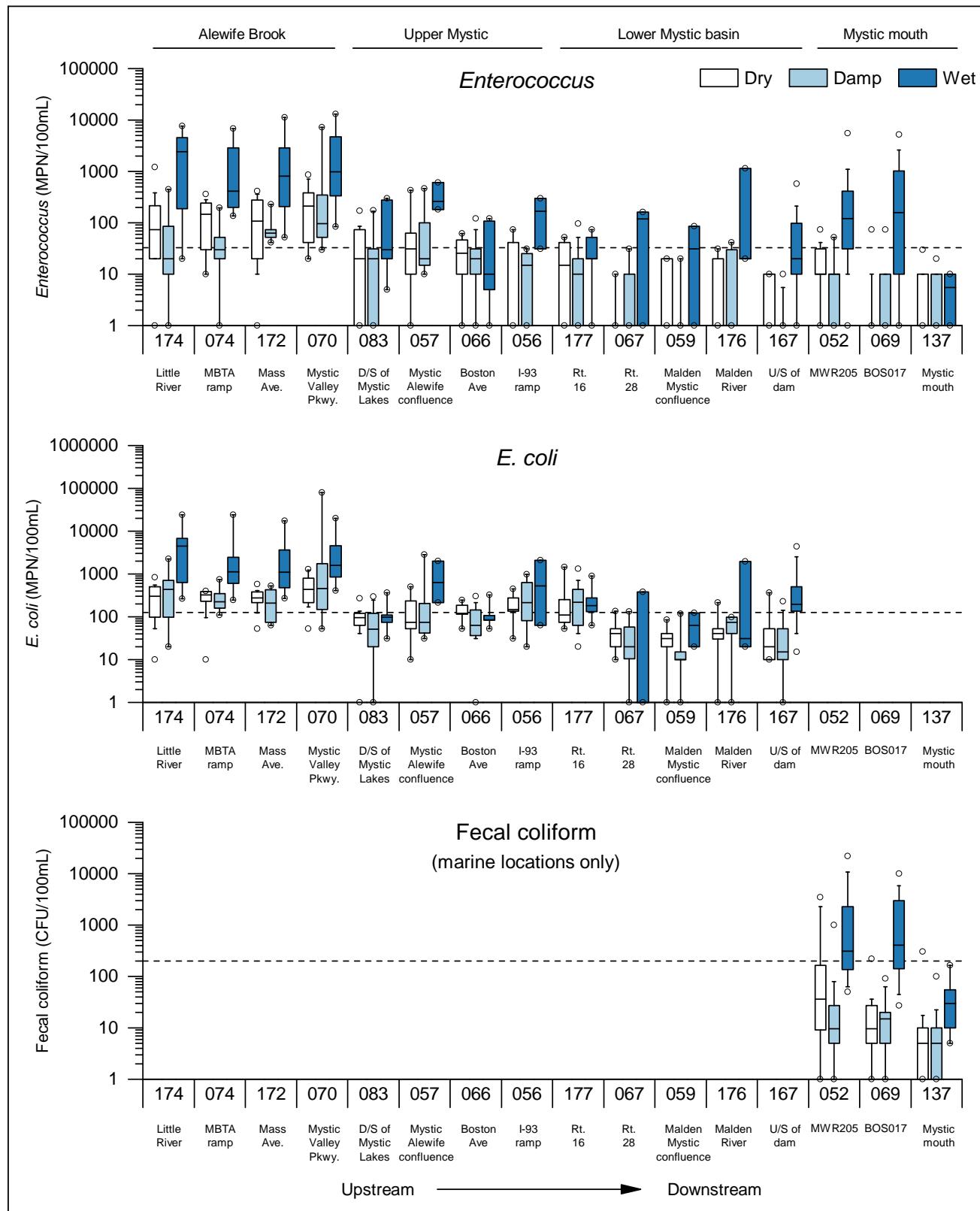


Figure 4-7. Indicator bacteria concentrations, Mystic River/Alewife Brook, 2015.

Dotted lines show MA DEP *Enterococcus* and *E. coli* standards and former fecal coliform standard. *E. coli* testing was discontinued in 2007 in marine waters for methodological reasons. Dry: no rainfall for previous 3 days; Wet: at least 0.5 inches in previous 2 days; damp is everything in between. “D/S”: downstream.

Table 4-6. Geometric mean indicator bacteria, Mystic River/Alewife Brook, 2010 - 2015.

Station	Location	Surface or Bottom	Number of samples		<i>Enterococcus</i> (95% CI) counts/100 mL DEP limit: 33 counts/100 mL ²		<i>E. coli</i> ¹ (95% CI) counts/100 mL DEP limit: 126 counts/100 mL	
			2010 – 2014	2015	2010 – 2014	2015	2010 – 2014	2015
174	Cambridge, Little River, upstream of Rt. 2 and off ramp to Alewife T station	S	148	26	265 (194-363)	108 (42-274)	1047 (831-1320)	486 (243-970)
074	Cambridge, Little River, at off ramp to Alewife T station	S	149	26	191 (141-258)	109 (53-226)	1015 (810-1272)	397 (236-669)
172	Arlington, Alewife Brook, upstream of Massachusetts Ave bridge, midchannel	S	149	26	364 (276-478)	142 (69-293)	1021 (818-1274)	396 (242-647)
070	Arlington, Alewife Brook, off Mystic Valley Parkway bridge	S	149	26	410 (315-534)	282 (144-554)	1049 (837-1313)	766 (411-1425)
083	Medford, upstream of confluence of Mystic River and Alewife Brook	S	230	41	19 (15-26)	13 (7-23)	80 (65-99)	52 (33-82)
057	Medford, confluence of Mystic River and Alewife Brook	S	105	20	35 (24-51)	38 (17-88)	166 (131-211)	124 (63-243)
066	Medford, Mystic River, Boston Ave bridge	S	140	25	43 (31-60)	12 (6-24)	207 (165-259)	78 (50-123)
056	Medford, Mystic River, upstream of I-93 bridge	S	106	20	18 (11-28)	8 (3-20)	251 (200-315)	190 (110-328)
177	Medford, Downstream of Rt. 16 bridge, mid-channel	S	137	22	21 (14-32)	8 (3-17)	313 (252-389)	168 (104-272)
067	Medford, Mystic River, Rt. 28 bridge	S	106	20	3 (2-5)	2 (0-5)	46 (33-64)	20 (9-45)
059	Everett, confluence of Mystic and Malden Rivers	S	104	20	4 (2-6)	2 (1-5)	35 (25-49)	19 (10-34)
176	Malden River, upstream of Rt. 16 bridge	S	106	19	9 (6-15)	4 (1-13)	119 (78-182)	39 (18-84)
167	Medford, Mystic River, upstream side of Amelia Earhart Dam	S	122	30	5 (3-7)	4 (1-9)	45 (32-61)	64 (30-133)
052 ²	Somerville, Mystic River, near Somerville Marginal CSO facility (MWR205) – marine	S	144	29	16 (10-24)	23 (9-55)	80 (52-123)	116 (44-299)
		B	65	13	5 (3-9)	6 (2-16)	22 (13-36)	10 (3-29)
069 ²	Charlestown, near Schrafft's Center at BOS-017 outfall - marine	S	140	29	11 (7-17)	10 (3-30)	56 (38-82)	66 (28-157)
		B	37	12	3 (1-5)	0 (0-1)	11 (6-20)	4 (2-9)
137 ²	Mystic River, upstream of Tobin Bridge – marine/Inner Harbor	S	120	23	4 (2-5)	3 (1-5)	18 (13-25)	10 (5-20)
		B	120	23	1 (1-1)	0 (0-1)	2 (2-3)	2 (1-4)

¹Results in italics are fecal coliform, not *E. coli*.

²Geometric mean limit for *Enterococcus* is 35 MPN/100 mL in marine water.

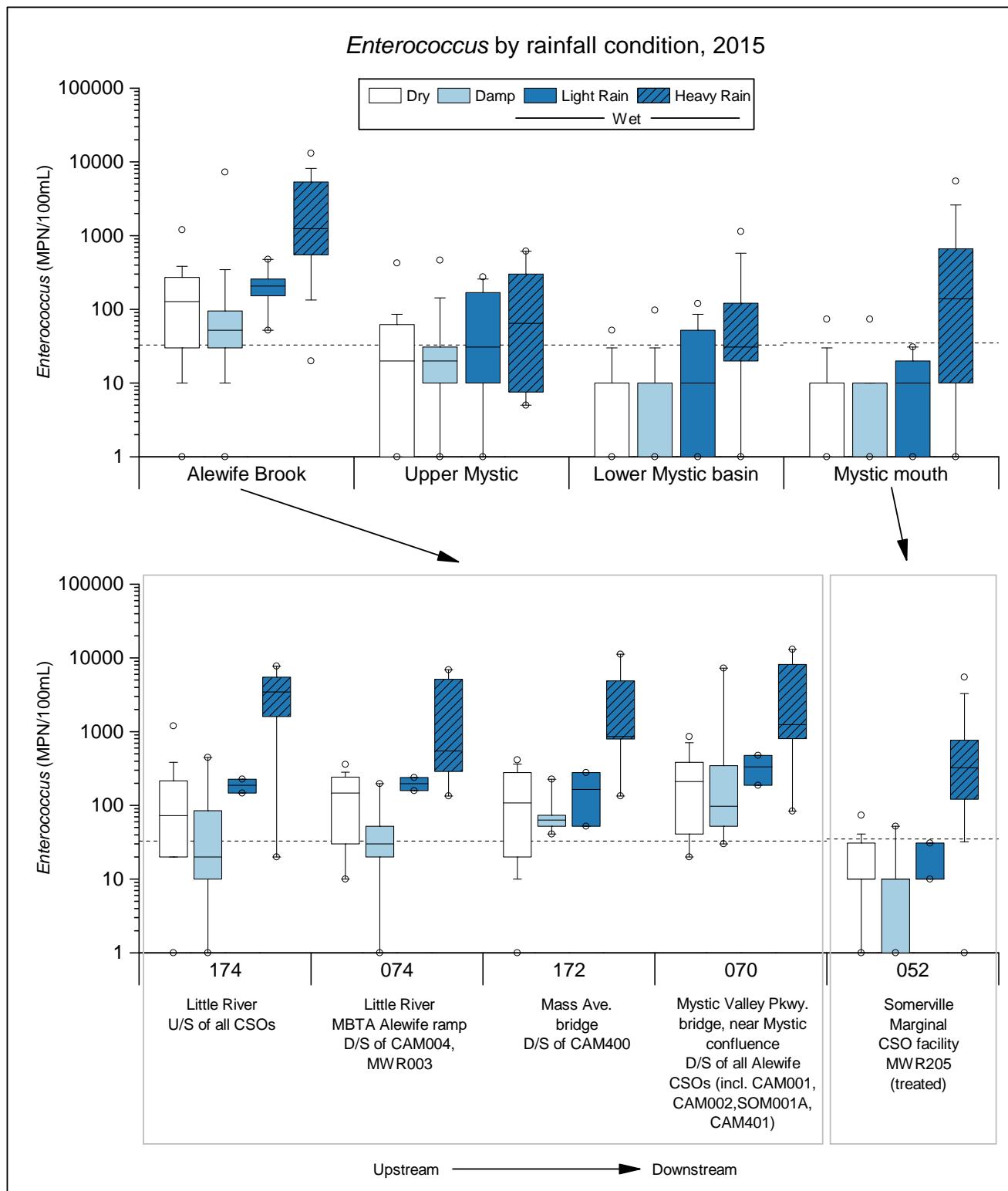


Figure 4-8. Enterococcus by rainfall condition, Mystic River/Alewife Brook, 2015.

Dotted line shows State standard of 33 MPN/100 mL for freshwater (Mystic mouth and station 052 show 35 MPN/100 mL State standard for saltwater). Rainfall is NOAA rainfall from Logan airport. “Dry”: no rainfall for previous 3 days; “Heavy”: more than 0.5 inches in previous 3 days; “Damp” and/or rain distant in time: any rain < 0.15 inches at least two or three days previous to sampling and/or 0.1 inches in previous day; “Light rain”: between 0.1 and 0.5 inches in previous day and/or between 0.15 and 0.5 in two previous days. “D/S”: downstream; “U/S”: upstream.

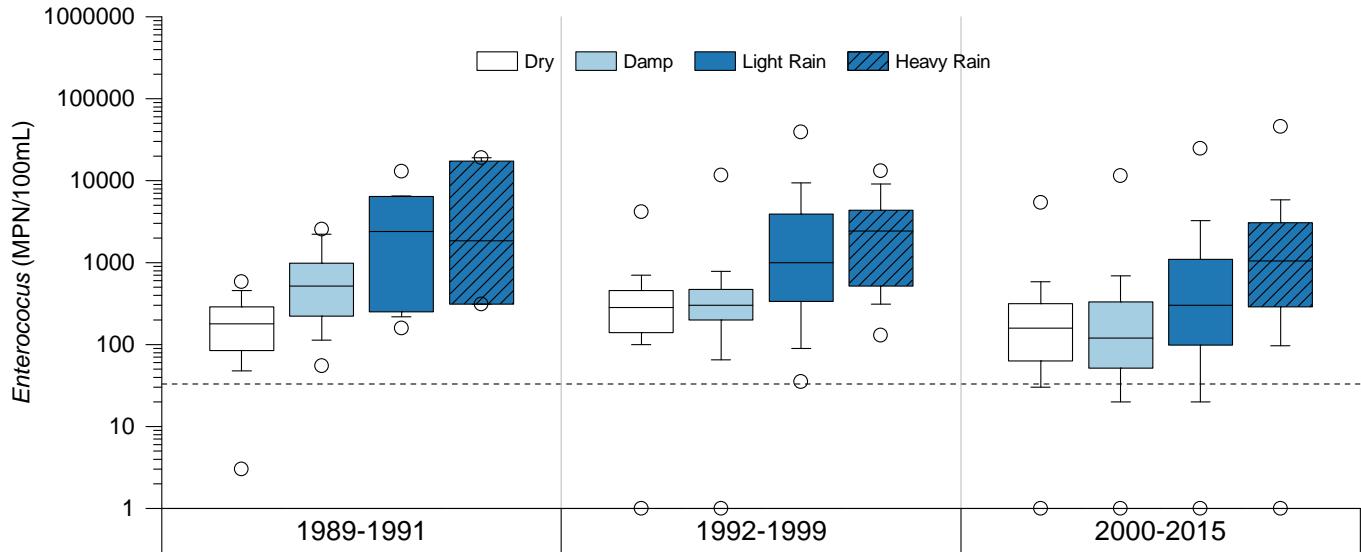


Figure 4-9. Enterococcus over time, Alewife Brook by phase of Long Term CSO Plan and rainfall condition.

Dotted line shows State standard. Data includes results for stations 174, 172, 074 and 070. Rainfall is NOAA rainfall from Logan airport. “Dry”: no rainfall for previous 3 days; “Heavy”: more than 0.5 inches in previous 3 days; “Damp” and/or rain distant in time: any rain < 0.15 inches at least two or three days previous to sampling and/or 0.1 inches in previous day; “Light rain”: between 0.1 and 0.5 inches in previous day and/or between 0.15 and 0.5 in two previous days.

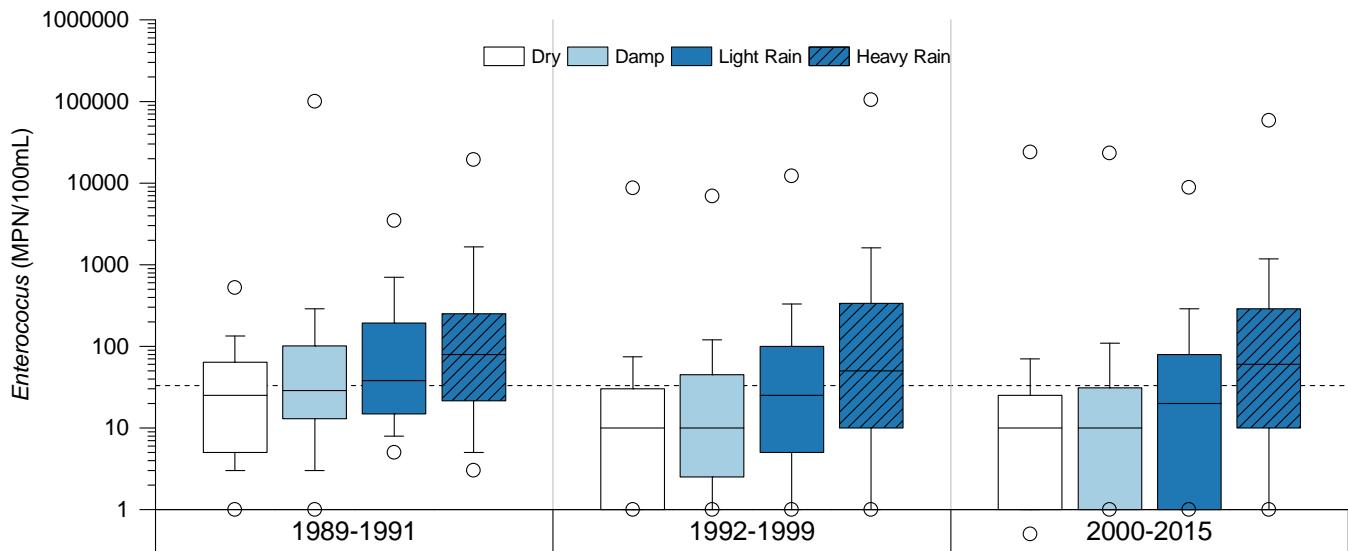


Figure 4-10. Enterococcus over time, Mystic River by phase of Long Term CSO Plan and rainfall condition.

Dotted line shows State standard. Data includes results for all Mystic River stations excepting Alewife Brook. Rainfall is NOAA rainfall from Logan airport. “Dry”: no rainfall for previous 3 days; “Heavy”: more than 0.5 inches in previous 3 days; “Damp” and/or rain distant in time: any rain < 0.15 inches at least two or three days previous to sampling and/or 0.1 inches in previous day; “Light rain”: between 0.1 and 0.5 inches in previous day and/or between 0.15 and 0.5 in two previous days.

4.5 Summary of Mystic River/Alewife Brook water quality

In December 2015, the City of Cambridge obtained substantial completion of the major sewer separation in the CAM004 (Alewife Brook) area. Water quality benefits of this CSO control project are expected to be seen in 2016.

In 2015, surface DO conditions met standards at all stations. Bottom water DO concentrations were an issue only in the Alewife Brook and Malden River. Clarity results were generally poor, except in the Mystic River mouth area and the marine portion downstream of the Amelia Earhart dam.

Overall, bacteria concentrations in the Mystic River met standards for much of the upper and lower Mystic Basin and Mystic River mouth in dry weather, but failed to meet limits in wet weather conditions. Bacteria concentrations fail to meet standards in nearly all weather conditions in the Alewife Brook. Since station 174 in the Little River, which is upstream of all Alewife CSOs, did not meet standards, this suggests a contamination problem that is affecting the entire length of the Brook. This problem persisted in 2015.

With the exception of Alewife Brook, most other locations in the Mystic River did meet *Enterococcus* geometric mean limits overall. While the Alewife did not meet *Enterococcus* or *E. coli* standards in dry or wet weather, conditions in the mainstem downstream of the Alewife/Mystic confluence suggest a limited influence of Alewife Brook on bacterial water quality in the river mainstem.

In general, *Enterococcus* and *E. coli* counts in 2015 were lower than those in 2014.

2015 nutrient levels were largely similar to previous years, with monthly concentrations near long term averages. The only standout difference was a spike in ammonium at station 167 in March. As in past years, the area upstream of the Amelia Earhart dam near Malden River confluence (station 167) was the most eutrophic, with consistently elevated chlorophyll *a* relative to upstream locations, and the most pronounced changes in seasonal nitrogen concentrations.

Stations 083, 066, and 167 also showed a large spike in total suspended solids in December. This spike in total suspended solids was also seen in the Charles River at stations 012 and 166.

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APPENDICES

Appendix I
2015 raw data, laboratory analyses

Appendix II
2015 raw data, physical profile results

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APPENDIX I
2015 raw data for laboratory results.

Non-detected results have been converted to detection limit for all results except for bacteria,
which are converted to 0.

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
012	1/7/15 10:12 AM	S	Charles River	Upstream of lower basin	0.1	15.5	57.5		7.915	69.25	97.25		0.596
012	1/20/15 11:22 AM	S	Charles River	Upstream of lower basin	0.1	20.5	404.5		12.6	93.55	119.5		0.6905
012	3/16/15 9:54 AM	S	Charles River	Upstream of lower basin	0.1	20	160		22.2	84.5	124		0.806
012	3/30/15 10:11 AM	S	Charles River	Upstream of lower basin	0.1	10	367.5		4.855	65.35	87.8		0.4515
012	4/16/15 10:02 AM	S	Charles River	Upstream of lower basin	0.1	15.5	52		1.065	35.95	66.3		0.2435
012	4/30/15 10:33 AM	S	Charles River	Upstream of lower basin	0.1	0	20		0.757	21.5	54		0.211
012	5/12/15 10:46 AM	S	Charles River	Upstream of lower basin	0.1	10	97		4.67	29.5	72.4		0.161
012	5/28/15 10:51 AM	S	Charles River	Upstream of lower basin	0.1	74	798		4.12	36.3	69.6		0.354
012	6/8/15 10:55 AM	S	Charles River	Upstream of lower basin	0.1	68.5	180.5		1.86	35.45	70.25		0.4955
012	6/23/15 10:43 AM	S	Charles River	Upstream of lower basin	0.1	74	1620		3.45	25.6	59.5		0.636
012	7/8/15 10:25 AM	S	Charles River	Upstream of lower basin	0.1	20	63		1.73	23.2	55.2		0.541
012	7/20/15 10:28 AM	S	Charles River	Upstream of lower basin	0.1	0	98		1.58	22.5	52.5		0.563
012	8/3/15 10:35 AM	S	Charles River	Upstream of lower basin	0.1	10	256		0.938	17	41		0.44
012	8/18/15 10:22 AM	S	Charles River	Upstream of lower basin	0.1	0	146		0.74	10.9	40.3		0.301
012	9/3/15 10:48 AM	S	Charles River	Upstream of lower basin	0.1	0	121		0.751	17.2	48.8		0.369
012	9/14/15 9:59 AM	S	Charles River	Upstream of lower basin	0.1	10	262		3.11	30.8	57.5		0.675
012	9/28/15 9:59 AM	S	Charles River	Upstream of lower basin	0.1	0	52		1.16	20.5	48.4		0.176
012	10/16/15 9:16 AM	S	Charles River	Upstream of lower basin	0.1	74	109		1.95	47.8	84.5		0.595
012	10/27/15 9:45 AM	S	Charles River	Upstream of lower basin	0.1	10	135		3.79	39.6	71.1		0.307
012	11/10/15 11:00 AM	S	Charles River	Upstream of lower basin	0.1	0	72		0.233	58.4	118		0.427
012	11/23/15 11:48 AM	S	Charles River	Upstream of lower basin	0.1	63	313		7.83	53.4	84.6		0.677
012	12/8/15 11:20 AM	S	Charles River	Upstream of lower basin	0.1	10	122		5.95	80.6	105		0.656
012	12/21/15 11:07 AM	S	Charles River	Upstream of lower basin	0.1	0	175		5.66	78	119		0.744
001	4/21/15 8:37 AM	S	Charles River	Upstream of lower basin	0.1	650	826						
001	4/23/15 8:50 AM	S	Charles River	Upstream of lower basin	0.1	20	160						
001	5/11/15 8:57 AM	S	Charles River	Upstream of lower basin	0.1	20	63						
001	5/13/15 8:23 AM	S	Charles River	Upstream of lower basin	0.1	30	134						
001	5/18/15 8:47 AM	S	Charles River	Upstream of lower basin	0.1	52	262						
001	5/22/15 9:42 AM	S	Charles River	Upstream of lower basin	0.1	31	195						
001	6/3/15 9:05 AM	S	Charles River	Upstream of lower basin	0.1	175	738						
001	6/4/15 9:21 AM	S	Charles River	Upstream of lower basin	0.1	120	275						
001	6/17/15 8:54 AM	S	Charles River	Upstream of lower basin	0.1	10	181						
001	6/18/15 8:51 AM	S	Charles River	Upstream of lower basin	0.1	10	199						
001	7/16/15 8:59 AM	S	Charles River	Upstream of lower basin	0.1	20	336						
001	7/17/15 8:35 AM	S	Charles River	Upstream of lower basin	0.1	20	240						
001	8/17/15 9:08 AM	S	Charles River	Upstream of lower basin	0.1	10	364						
001	8/20/15 8:58 AM	S	Charles River	Upstream of lower basin	0.1	0	97						
001	9/8/15 8:40 AM	S	Charles River	Upstream of lower basin	0.1	0	63						
001	9/9/15 8:52 AM	S	Charles River	Upstream of lower basin	0.1	0	51						
001	9/21/15 9:15 AM	S	Charles River	Upstream of lower basin	0.1	0	143						
001	9/22/15 8:41 AM	S	Charles River	Upstream of lower basin	0.1	0	74						
001	10/14/15 8:54 AM	S	Charles River	Upstream of lower basin	0.1	51	631						
001	10/15/15 8:40 AM	S	Charles River	Upstream of lower basin	0.1	10	292						
144	4/21/15 8:26 AM	S	Charles River	Upstream of lower basin	0.1	576	813						
144	4/23/15 8:38 AM	S	Charles River	Upstream of lower basin	0.1	20	158						
144	5/11/15 8:47 AM	S	Charles River	Upstream of lower basin	0.1	0	119						
144	5/13/15 8:13 AM	S	Charles River	Upstream of lower basin	0.1	10	134						
144	5/18/15 8:36 AM	S	Charles River	Upstream of lower basin	0.1	31	161						
144	5/22/15 9:30 AM	S	Charles River	Upstream of lower basin	0.1	0	135						
144	6/3/15 8:54 AM	S	Charles River	Upstream of lower basin	0.1	98	573						
144	6/4/15 8:54 AM	S	Charles River	Upstream of lower basin	0.1	63	323						
144	6/17/15 8:42 AM	S	Charles River	Upstream of lower basin	0.1	31	474						
144	6/18/15 8:40 AM	S	Charles River	Upstream of lower basin	0.1	10	256						
144	7/16/15 8:47 AM	S	Charles River	Upstream of lower basin	0.1	10	158						
144	7/17/15 8:23 AM	S	Charles River	Upstream of lower basin	0.1	31	97						
144	8/17/15 8:57 AM	S	Charles River	Upstream of lower basin	0.1	0	364						
144	8/20/15 8:43 AM	S	Charles River	Upstream of lower basin	0.1	0	52						
144	9/8/15 8:28 AM	S	Charles River	Upstream of lower basin	0.1	10	63						
144	9/9/15 8:41 AM	S	Charles River	Upstream of lower basin	0.1	0	41						
144	9/21/15 9:03 AM	S	Charles River	Upstream of lower basin	0.1	0	74						
144	9/22/15 8:32 AM	S	Charles River	Upstream of lower basin	0.1	0	74						
144	10/14/15 8:44 AM	S	Charles River	Upstream of lower basin	0.1	20	336						

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY RAIN	Logan Rainfall TWO_DAY RAIN	Logan Rainfall THREE_DAY RAIN
012	1/7/15 10:12 AM	S	1.53	1.96					1.385	2.895	0	0.02	0.02
012	1/20/15 11:22 AM	S	1.915	1.875					1.675	3.71	0	0	0.15
012	3/16/15 9:54 AM	S	2.41	1.55					1.77	5.25	0	0.27	1.07
012	3/30/15 10:11 AM	S	3.86	2.205					1.209	3.265	0	0	0.12
012	4/16/15 10:02 AM	S	7.45	4.675					1.415	6.36	0	0	0.01
012	4/30/15 10:33 AM	S	10.41	5.97					1.43	4.83	0	0	0.07
012	5/12/15 10:46 AM	S	8.02	4.58					1.7	4.45	0.02	0.02	0.02
012	5/28/15 10:51 AM	S	5.82	5.79					1.53	3.01	0	0	0
012	6/8/15 10:55 AM	S	15.45	7.115					1.71	4.14	0	0	0.09
012	6/23/15 10:43 AM	S	3.21	3.58					1.48	2.43	0.01	0.01	1.73
012	7/8/15 10:25 AM	S	2.98	3.24					1.44	1.53	0	0.02	0.02
012	7/20/15 10:28 AM	S	1.62	2.75					1.69	0.65	0	0	0.14
012	8/3/15 10:35 AM	S	1.73	1.36					0.887	1.21	0	0	0
012	8/18/15 10:22 AM	S	1.85	2.25					1.05	2.01	0.14	0.14	0.14
012	9/3/15 10:48 AM	S	2.06	1.94					1.11	1.24	0.01	0.01	0.01
012	9/14/15 9:59 AM	S	0.95	2.2					1.36	1.23	0	0.38	0.39
012	9/28/15 9:59 AM	S	1.51	2.13					0.575	2.21	0	0	0
012	10/16/15 9:16 AM	S	5.94	3.35					1.28	4.91	0	0	0
012	10/27/15 9:45 AM	S	2.24	2.84					0.834	2.03	0	0	0.03
012	11/10/15 11:00 AM	S	1.58	1.99					2.43	9.03	0.54	0.61	0.61
012	11/23/15 11:48 AM	S	6.32	3.71					1.46	2.62	0.04	0.34	0.34
012	12/8/15 11:20 AM	S	19.9	5.34					1.42	60.1	0	0	0
012	12/21/15 11:07 AM	S	14.3	5.95					1.57	3.25	0	0	0
001	4/21/15 8:37 AM	S								0.54	1.15	1.15	
001	4/23/15 8:50 AM	S								0	0	0.54	
001	5/11/15 8:57 AM	S								0	0	0	
001	5/13/15 8:23 AM	S								0	0.02	0.02	
001	5/18/15 8:47 AM	S								0	0	0	
001	5/22/15 9:42 AM	S								0	0	0	
001	6/3/15 9:05 AM	S								0	0.74	1.12	
001	6/4/15 9:21 AM	S								0	0	0.74	
001	6/17/15 8:54 AM	S								0	0	0.4	
001	6/18/15 8:51 AM	S								0	0	0	
001	7/16/15 8:59 AM	S								0	0	0.03	
001	7/17/15 8:35 AM	S								0	0	0	
001	8/17/15 9:08 AM	S								0	0	0.08	
001	8/20/15 8:58 AM	S								0	0	0.14	
001	9/8/15 8:40 AM	S								0.2	0.2	0.2	
001	9/9/15 8:52 AM	S								0	0.2	0.2	
001	9/21/15 9:15 AM	S								0	0	0	
001	9/22/15 8:41 AM	S								0	0	0	
001	10/14/15 8:54 AM	S								0	0.12	0.12	
001	10/15/15 8:40 AM	S								0	0	0.12	
144	4/21/15 8:26 AM	S								0.54	1.15	1.15	
144	4/23/15 8:38 AM	S								0	0	0.54	
144	5/11/15 8:47 AM	S								0	0	0	
144	5/13/15 8:13 AM	S								0	0.02	0.02	
144	5/18/15 8:36 AM	S								0	0	0	
144	5/22/15 9:30 AM	S								0	0	0	
144	6/3/15 8:54 AM	S								0	0.74	1.12	
144	6/4/15 8:54 AM	S								0	0	0.74	
144	6/17/15 8:42 AM	S								0	0	0.4	
144	6/18/15 8:40 AM	S								0	0	0	
144	7/16/15 8:47 AM	S								0	0	0.03	
144	7/17/15 8:23 AM	S								0	0	0	
144	8/17/15 8:57 AM	S								0	0	0.08	
144	8/20/15 8:43 AM	S								0	0	0.14	
144	9/8/15 8:28 AM	S								0.2	0.2	0.2	
144	9/9/15 8:41 AM	S								0	0.2	0.2	
144	9/21/15 9:03 AM	S								0	0	0	
144	9/22/15 8:32 AM	S								0	0	0	
144	10/14/15 8:44 AM	S								0	0.12	0.12	

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrite (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
144	10/15/15 8:30 AM	S	Charles River	Upstream of lower basin	0.1	10	554						
002	4/21/15 8:19 AM	S	Charles River	Upstream of lower basin	0.1	259	727						
002	4/23/15 8:30 AM	S	Charles River	Upstream of lower basin	0.1	41	132						
002	5/11/15 8:40 AM	S	Charles River	Upstream of lower basin	0.1	20	85						
002	5/13/15 8:06 AM	S	Charles River	Upstream of lower basin	0.1	10	109						
002	5/18/15 8:29 AM	S	Charles River	Upstream of lower basin	0.1	63	199						
002	5/22/15 9:24 AM	S	Charles River	Upstream of lower basin	0.1	10	195						
002	6/3/15 8:46 AM	S	Charles River	Upstream of lower basin	0.1	253	472						
002	6/4/15 8:46 AM	S	Charles River	Upstream of lower basin	0.1	121	272						
002	6/17/15 8:34 AM	S	Charles River	Upstream of lower basin	0.1	52	243						
002	6/18/15 8:34 AM	S	Charles River	Upstream of lower basin	0.1	10	122						
002	7/16/15 8:39 AM	S	Charles River	Upstream of lower basin	0.1	0	63						
002	7/17/15 8:16 AM	S	Charles River	Upstream of lower basin	0.1	10	51						
002	8/17/15 8:49 AM	S	Charles River	Upstream of lower basin	0.1	0	464						
002	8/20/15 8:36 AM	S	Charles River	Upstream of lower basin	0.1	10	10						
002	9/8/15 8:21 AM	S	Charles River	Upstream of lower basin	0.1	0	52						
002	9/9/15 8:33 AM	S	Charles River	Upstream of lower basin	0.1	0	31						
002	9/21/15 8:55 AM	S	Charles River	Upstream of lower basin	0.1	0	31						
002	9/22/15 8:25 AM	S	Charles River	Upstream of lower basin	0.1	0	63						
002	10/14/15 8:36 AM	S	Charles River	Upstream of lower basin	0.1	41	265						
002	10/15/15 8:26 AM	S	Charles River	Upstream of lower basin	0.1	0	282						
003	4/21/15 8:04 AM	S	Charles River	Upstream of lower basin	0.1	345	441						
003	4/23/15 8:13 AM	S	Charles River	Upstream of lower basin	0.1	31	110						
003	5/11/15 8:25 AM	S	Charles River	Upstream of lower basin	0.1	0	63						
003	5/13/15 7:50 AM	S	Charles River	Upstream of lower basin	0.1	0	31						
003	5/18/15 8:15 AM	S	Charles River	Upstream of lower basin	0.1	20	52						
003	5/22/15 9:09 AM	S	Charles River	Upstream of lower basin	0.1	0	30						
003	6/3/15 8:30 AM	S	Charles River	Upstream of lower basin	0.1	443	1840						
003	6/4/15 8:30 AM	S	Charles River	Upstream of lower basin	0.1	31	213						
003	6/17/15 8:17 AM	S	Charles River	Upstream of lower basin	0.1	10	52						
003	6/18/15 8:18 AM	S	Charles River	Upstream of lower basin	0.1	10	63						
003	7/16/15 8:22 AM	S	Charles River	Upstream of lower basin	0.1	20	95						
003	7/17/15 8:00 AM	S	Charles River	Upstream of lower basin	0.1	20	41						
003	8/17/15 8:33 AM	S	Charles River	Upstream of lower basin	0.1	0	121						
003	8/20/15 8:22 AM	S	Charles River	Upstream of lower basin	0.1	0	41						
003	9/8/15 8:06 AM	S	Charles River	Upstream of lower basin	0.1	0	31						
003	9/9/15 8:17 AM	S	Charles River	Upstream of lower basin	0.1	0	10						
003	9/21/15 8:38 AM	S	Charles River	Upstream of lower basin	0.1	0	52						
003	9/22/15 8:11 AM	S	Charles River	Upstream of lower basin	0.1	0	10						
003	10/14/15 8:21 AM	S	Charles River	Upstream of lower basin	0.1	0	213						
003	10/15/15 8:11 AM	S	Charles River	Upstream of lower basin	0.1	31	108						
004	4/21/15 7:48 AM	S	Charles River	Upstream of lower basin	0.1	148	288						
004	4/23/15 7:57 AM	S	Charles River	Upstream of lower basin	0.1	41	120						
004	5/11/15 8:10 AM	S	Charles River	Upstream of lower basin	0.1	0	0						
004	5/13/15 7:35 AM	S	Charles River	Upstream of lower basin	0.1	0	0						
004	5/18/15 8:01 AM	S	Charles River	Upstream of lower basin	0.1	10	31						
004	5/22/15 8:54 AM	S	Charles River	Upstream of lower basin	0.1	0	10						
004	6/3/15 8:15 AM	S	Charles River	Upstream of lower basin	0.1	240	1050						
004	6/4/15 8:14 AM	S	Charles River	Upstream of lower basin	0.1	52	175						
004	6/17/15 8:02 AM	S	Charles River	Upstream of lower basin	0.1	0	52						
004	6/18/15 8:02 AM	S	Charles River	Upstream of lower basin	0.1	0	20						
004	7/16/15 8:05 AM	S	Charles River	Upstream of lower basin	0.1	0	30						
004	7/17/15 7:43 AM	S	Charles River	Upstream of lower basin	0.1	0	41						
004	8/17/15 8:17 AM	S	Charles River	Upstream of lower basin	0.1	0	20						
004	8/20/15 8:03 AM	S	Charles River	Upstream of lower basin	0.1	0	10						
004	9/8/15 7:51 AM	S	Charles River	Upstream of lower basin	0.1	0	20						
004	9/9/15 8:00 AM	S	Charles River	Upstream of lower basin	0.1	0	31						
004	9/21/15 8:22 AM	S	Charles River	Upstream of lower basin	0.1	0	20						
004	9/22/15 7:58 AM	S	Charles River	Upstream of lower basin	0.1	0	0						
004	10/14/15 8:05 AM	S	Charles River	Upstream of lower basin	0.1	10	10						
004	10/15/15 7:57 AM	S	Charles River	Upstream of lower basin	0.1	0	63						
005	3/30/15 9:52 AM	S	Charles River	Upstream of lower basin	0.1	10	63						

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
144	10/15/15 8:30 AM	S								0	0	0	0.12
002	4/21/15 8:19 AM	S								0.54	1.15	1.15	
002	4/23/15 8:30 AM	S								0	0	0.54	
002	5/11/15 8:40 AM	S								0	0	0	
002	5/13/15 8:06 AM	S								0	0.02	0.02	
002	5/18/15 8:29 AM	S								0	0	0	
002	5/22/15 9:24 AM	S								0	0	0	
002	6/3/15 8:46 AM	S								0	0.74	1.12	
002	6/4/15 8:46 AM	S								0	0	0.74	
002	6/17/15 8:34 AM	S								0	0	0.4	
002	6/18/15 8:34 AM	S								0	0	0	
002	7/16/15 8:39 AM	S								0	0	0.03	
002	7/17/15 8:16 AM	S								0	0	0	
002	8/17/15 8:49 AM	S								0	0	0.08	
002	8/20/15 8:36 AM	S								0	0	0.14	
002	9/8/15 8:21 AM	S								0.2	0.2	0.2	
002	9/9/15 8:33 AM	S								0	0.2	0.2	
002	9/21/15 8:55 AM	S								0	0	0	
002	9/22/15 8:25 AM	S								0	0	0	
002	10/14/15 8:36 AM	S								0	0.12	0.12	
002	10/15/15 8:26 AM	S								0	0	0.12	
003	4/21/15 8:04 AM	S								0.54	1.15	1.15	
003	4/23/15 8:13 AM	S								0	0	0.54	
003	5/11/15 8:25 AM	S								0	0	0	
003	5/13/15 7:50 AM	S								0	0.02	0.02	
003	5/18/15 8:15 AM	S								0	0	0	
003	5/22/15 9:09 AM	S								0	0	0	
003	6/3/15 8:30 AM	S								0	0.74	1.12	
003	6/4/15 8:30 AM	S								0	0	0.74	
003	6/17/15 8:17 AM	S								0	0	0.4	
003	6/18/15 8:18 AM	S								0	0	0	
003	7/16/15 8:22 AM	S								0	0	0.03	
003	7/17/15 8:00 AM	S								0	0	0	
003	8/17/15 8:33 AM	S								0	0	0.08	
003	8/20/15 8:22 AM	S								0	0	0.14	
003	9/8/15 8:06 AM	S								0.2	0.2	0.2	
003	9/9/15 8:17 AM	S								0	0.2	0.2	
003	9/21/15 8:38 AM	S								0	0	0	
003	9/22/15 8:11 AM	S								0	0	0	
003	10/14/15 8:21 AM	S								0	0.12	0.12	
003	10/15/15 8:11 AM	S								0	0	0.12	
004	4/21/15 7:48 AM	S								0.54	1.15	1.15	
004	4/23/15 7:57 AM	S								0	0	0.54	
004	5/11/15 8:10 AM	S								0	0	0	
004	5/13/15 7:35 AM	S								0	0.02	0.02	
004	5/18/15 8:01 AM	S								0	0	0	
004	5/22/15 8:54 AM	S								0	0	0	
004	6/3/15 8:15 AM	S								0	0.74	1.12	
004	6/4/15 8:14 AM	S								0	0	0.74	
004	6/17/15 8:02 AM	S								0	0	0.4	
004	6/18/15 8:02 AM	S								0	0	0	
004	7/16/15 8:05 AM	S								0	0	0.03	
004	7/17/15 7:43 AM	S								0	0	0	
004	8/17/15 8:17 AM	S								0	0	0.08	
004	8/20/15 8:03 AM	S								0	0	0.14	
004	9/8/15 7:51 AM	S								0.2	0.2	0.2	
004	9/9/15 8:00 AM	S								0	0.2	0.2	
004	9/21/15 8:22 AM	S								0	0	0	
004	9/22/15 7:58 AM	S								0	0	0	
004	10/14/15 8:05 AM	S								0	0.12	0.12	
004	10/15/15 7:57 AM	S								0	0	0.12	
005	3/30/15 9:52 AM	S								0	0	0	0.12

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
005	4/16/15 9:40 AM	S	Charles River	Upstream of lower basin	0.1	10	30						
005	4/21/15 7:40 AM	S	Charles River	Upstream of lower basin	0.1	134	298						
005	4/23/15 7:50 AM	S	Charles River	Upstream of lower basin	0.1	10	95						
005	4/30/15 9:57 AM	S	Charles River	Upstream of lower basin	0.1	0	41						
005	5/11/15 8:03 AM	S	Charles River	Upstream of lower basin	0.1	0	20						
005	5/12/15 10:21 AM	S	Charles River	Upstream of lower basin	0.1	0	10						
005	5/13/15 7:29 AM	S	Charles River	Upstream of lower basin	0.1	0	31						
005	5/18/15 7:52 AM	S	Charles River	Upstream of lower basin	0.1	10	30						
005	5/22/15 8:47 AM	S	Charles River	Upstream of lower basin	0.1	0	20						
005	5/28/15 10:19 AM	S	Charles River	Upstream of lower basin	0.1	41	20						
005	6/3/15 8:06 AM	S	Charles River	Upstream of lower basin	0.1	41	789						
005	6/4/15 8:05 AM	S	Charles River	Upstream of lower basin	0.1	107	323						
005	6/8/15 10:34 AM	S	Charles River	Upstream of lower basin	0.1	20	20						
005	6/17/15 7:54 AM	S	Charles River	Upstream of lower basin	0.1	10	395						
005	6/18/15 7:52 AM	S	Charles River	Upstream of lower basin	0.1	0	20						
005	6/23/15 9:56 AM	S	Charles River	Upstream of lower basin	0.1	226	617						
005	7/8/15 9:50 AM	S	Charles River	Upstream of lower basin	0.1	131	134						
005	7/16/15 7:55 AM	S	Charles River	Upstream of lower basin	0.1	0	51						
005	7/17/15 7:35 AM	S	Charles River	Upstream of lower basin	0.1	0	20						
005	7/20/15 9:55 AM	S	Charles River	Upstream of lower basin	0.1	10	85						
005	8/3/15 9:56 AM	S	Charles River	Upstream of lower basin	0.1	0	10						
005	8/17/15 8:09 AM	S	Charles River	Upstream of lower basin	0.1	0	52						
005	8/18/15 9:37 AM	S	Charles River	Upstream of lower basin	0.1	10	10						
005	8/20/15 7:54 AM	S	Charles River	Upstream of lower basin	0.1	20	41						
005	9/3/15 9:56 AM	S	Charles River	Upstream of lower basin	0.1	0	571						
005	9/8/15 7:43 AM	S	Charles River	Upstream of lower basin	0.1	0	10						
005	9/9/15 7:52 AM	S	Charles River	Upstream of lower basin	0.1	0	10						
005	9/14/15 9:36 AM	S	Charles River	Upstream of lower basin	0.1	0	31						
005	9/21/15 8:12 AM	S	Charles River	Upstream of lower basin	0.1	0	31						
005	9/22/15 7:51 AM	S	Charles River	Upstream of lower basin	0.1	0	30						
005	9/28/15 9:36 AM	S	Charles River	Upstream of lower basin	0.1	0	10						
005	10/14/15 7:56 AM	S	Charles River	Upstream of lower basin	0.1	10	52						
005	10/15/15 7:49 AM	S	Charles River	Upstream of lower basin	0.1	10	121						
005	10/16/15 8:50 AM	S	Charles River	Upstream of lower basin	0.1	20	146						
005	10/27/15 9:26 AM	S	Charles River	Upstream of lower basin	0.1	20	52						
005	11/10/15 10:24 AM	S	Charles River	Upstream of lower basin	0.1	20	121						
005	11/23/15 11:11 AM	S	Charles River	Upstream of lower basin	0.1	20	571						
005	12/8/15 10:42 AM	S	Charles River	Upstream of lower basin	0.1	528	12000						
005	12/21/15 10:44 AM	S	Charles River	Upstream of lower basin	0.1	20	354						
006	4/21/15 7:33 AM	S	Charles River	Lower basin	0.1	189	368						
006	4/23/15 7:43 AM	S	Charles River	Lower basin	0.1	10	63						
006	5/11/15 7:56 AM	S	Charles River	Lower basin	0.1	0	31						
006	5/13/15 7:23 AM	S	Charles River	Lower basin	0.1	0	20						
006	5/18/15 7:46 AM	S	Charles River	Lower basin	0.1	41	74						
006	5/22/15 8:40 AM	S	Charles River	Lower basin	0.1	30	74						
006	6/3/15 7:59 AM	S	Charles River	Lower basin	0.1	73	1270						
006	6/4/15 7:58 AM	S	Charles River	Lower basin	0.1	98	336						
006	6/17/15 7:47 AM	S	Charles River	Lower basin	0.1	31	63						
006	6/18/15 7:48 AM	S	Charles River	Lower basin	0.1	41	63						
006	7/16/15 7:48 AM	S	Charles River	Lower basin	0.1	20	85						
006	7/17/15 7:29 AM	S	Charles River	Lower basin	0.1	10	97						
006	8/17/15 8:01 AM	S	Charles River	Lower basin	0.1	10	74						
006	8/20/15 7:47 AM	S	Charles River	Lower basin	0.1	0	86						
006	9/8/15 7:35 AM	S	Charles River	Lower basin	0.1	0	41						
006	9/9/15 7:44 AM	S	Charles River	Lower basin	0.1	0	20						
006	9/21/15 8:04 AM	S	Charles River	Lower basin	0.1	10	199						
006	9/22/15 7:45 AM	S	Charles River	Lower basin	0.1	30	189						
006	10/14/15 7:49 AM	S	Charles River	Lower basin	0.1	10	216						
006	10/15/15 7:42 AM	S	Charles River	Lower basin	0.1	31	335						
007	4/21/15 7:19 AM	B	Charles River	Lower basin	4.1	199	620						
007	4/21/15 7:19 AM	S	Charles River	Lower basin	0.1	52	175						
007	4/23/15 7:28 AM	B	Charles River	Lower basin	3.8	10	110						

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
005	4/16/15 9:40 AM	S								0	0	0	0.01
005	4/21/15 7:40 AM	S								0.54	1.15	1.15	
005	4/23/15 7:50 AM	S								0	0	0.54	
005	4/30/15 9:57 AM	S								0	0	0.07	
005	5/11/15 8:03 AM	S								0	0	0	
005	5/12/15 10:21 AM	S								0.02	0.02	0.02	
005	5/13/15 7:29 AM	S								0	0.02	0.02	
005	5/18/15 7:52 AM	S								0	0	0	
005	5/22/15 8:47 AM	S								0	0	0	
005	5/28/15 10:19 AM	S								0	0	0	
005	6/3/15 8:06 AM	S								0	0.74	1.12	
005	6/4/15 8:05 AM	S								0	0	0.74	
005	6/8/15 10:34 AM	S								0	0	0.09	
005	6/17/15 7:54 AM	S								0	0	0.4	
005	6/18/15 7:52 AM	S								0	0	0	
005	6/23/15 9:56 AM	S								0.01	0.01	1.73	
005	7/8/15 9:50 AM	S								0	0.02	0.02	
005	7/16/15 7:55 AM	S								0	0	0.03	
005	7/17/15 7:35 AM	S								0	0	0	
005	7/20/15 9:55 AM	S								0	0	0.14	
005	8/3/15 9:56 AM	S								0	0	0	
005	8/17/15 8:09 AM	S								0	0	0.08	
005	8/18/15 9:37 AM	S								0.14	0.14	0.14	
005	8/20/15 7:54 AM	S								0	0	0.14	
005	9/3/15 9:56 AM	S								0.01	0.01	0.01	
005	9/8/15 7:43 AM	S								0.2	0.2	0.2	
005	9/9/15 7:52 AM	S								0	0.2	0.2	
005	9/14/15 9:36 AM	S								0	0.38	0.39	
005	9/21/15 8:12 AM	S								0	0	0	
005	9/22/15 7:51 AM	S								0	0	0	
005	9/28/15 9:36 AM	S								0	0	0	
005	10/14/15 7:56 AM	S								0	0.12	0.12	
005	10/15/15 7:49 AM	S								0	0	0.12	
005	10/16/15 8:50 AM	S								0	0	0	
005	10/27/15 9:26 AM	S								0	0	0.03	
005	11/10/15 10:24 AM	S								0.54	0.61	0.61	
005	11/23/15 11:11 AM	S								0.04	0.34	0.34	
005	12/8/15 10:42 AM	S								0	0	0	
005	12/21/15 10:44 AM	S								0	0	0	
006	4/21/15 7:33 AM	S								0.54	1.15	1.15	
006	4/23/15 7:43 AM	S								0	0	0.54	
006	5/11/15 7:56 AM	S								0	0	0	
006	5/13/15 7:23 AM	S								0	0.02	0.02	
006	5/18/15 7:46 AM	S								0	0	0	
006	5/22/15 8:40 AM	S								0	0	0	
006	6/3/15 7:59 AM	S								0	0.74	1.12	
006	6/4/15 7:58 AM	S								0	0	0.74	
006	6/17/15 7:47 AM	S								0	0	0.4	
006	6/18/15 7:48 AM	S								0	0	0	
006	7/16/15 7:48 AM	S								0	0	0.03	
006	7/17/15 7:29 AM	S								0	0	0	
006	8/17/15 8:01 AM	S								0	0	0.08	
006	8/20/15 7:47 AM	S								0	0	0.14	
006	9/8/15 7:35 AM	S								0.2	0.2	0.2	
006	9/9/15 7:44 AM	S								0	0.2	0.2	
006	9/21/15 8:04 AM	S								0	0	0	
006	9/22/15 7:45 AM	S								0	0	0	
006	10/14/15 7:49 AM	S								0	0.12	0.12	
006	10/15/15 7:42 AM	S								0	0	0.12	
007	4/21/15 7:19 AM	B								0.54	1.15	1.15	
007	4/21/15 7:19 AM	S								0.54	1.15	1.15	
007	4/23/15 7:28 AM	B								0	0	0.54	

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
007	4/23/15 7:28 AM	S	Charles River	Lower basin	0.1	10	110						
007	5/11/15 7:39 AM	B	Charles River	Lower basin	4.4	10	30						
007	5/11/15 7:39 AM	S	Charles River	Lower basin	0.1	10	20						
007	5/13/15 7:09 AM	B	Charles River	Lower basin	4.1	0	31						
007	5/13/15 7:09 AM	S	Charles River	Lower basin	0.1	0	10						
007	5/18/15 7:33 AM	B	Charles River	Lower basin	4	20	63						
007	5/18/15 7:33 AM	S	Charles River	Lower basin	0.1	0	31						
007	5/22/15 8:27 AM	B	Charles River	Lower basin	3.9	30	63						
007	5/22/15 8:27 AM	S	Charles River	Lower basin	0.1	0	131						
007	6/3/15 7:43 AM	B	Charles River	Lower basin	3.7	504	839						
007	6/3/15 7:43 AM	S	Charles River	Lower basin	0.1	228	529						
007	6/4/15 7:45 AM	B	Charles River	Lower basin	3.7	30	359						
007	6/4/15 7:45 AM	S	Charles River	Lower basin	0.1	10	122						
007	6/17/15 7:35 AM	B	Charles River	Lower basin	4	61	74						
007	6/17/15 7:35 AM	S	Charles River	Lower basin	0.1	20	20						
007	6/18/15 7:32 AM	B	Charles River	Lower basin	3.9	20	31						
007	6/18/15 7:32 AM	S	Charles River	Lower basin	0.1	0	0						
007	7/16/15 7:33 AM	B	Charles River	Lower basin	3.9	0	399						
007	7/16/15 7:33 AM	S	Charles River	Lower basin	0.1	0	0						
007	7/17/15 7:14 AM	B	Charles River	Lower basin	4.2	0	132						
007	7/17/15 7:14 AM	S	Charles River	Lower basin	0.1	0	0						
007	8/17/15 7:43 AM	B	Charles River	Lower basin	4.4	0	134						
007	8/17/15 7:43 AM	S	Charles River	Lower basin	0.1	0	20						
007	8/20/15 7:32 AM	B	Charles River	Lower basin	4	10	10						
007	8/20/15 7:32 AM	S	Charles River	Lower basin	0.1	0	10						
007	9/8/15 7:18 AM	B	Charles River	Lower basin	4.5	0	10						
007	9/8/15 7:18 AM	S	Charles River	Lower basin	0.1	0	10						
007	9/9/15 7:26 AM	B	Charles River	Lower basin	4.2	10	10						
007	9/9/15 7:26 AM	S	Charles River	Lower basin	0.1	0	0						
007	9/21/15 7:46 AM	B	Charles River	Lower basin	4.2	0	31						
007	9/21/15 7:46 AM	S	Charles River	Lower basin	0.1	10	10						
007	9/22/15 7:29 AM	B	Charles River	Lower basin	3.8	20	63						
007	9/22/15 7:29 AM	S	Charles River	Lower basin	0.1	0	0						
007	10/14/15 7:34 AM	B	Charles River	Lower basin	4.2	30	504						
007	10/14/15 7:34 AM	S	Charles River	Lower basin	0.1	20	148						
007	10/15/15 7:29 AM	B	Charles River	Lower basin	4.2	20	173						
007	10/15/15 7:29 AM	S	Charles River	Lower basin	0.1	20	131						
145	4/21/15 7:24 AM	S	Charles River	Lower basin	0.1	10	309						
145	4/23/15 7:33 AM	S	Charles River	Lower basin	0.1	20	278						
145	5/11/15 7:46 AM	S	Charles River	Lower basin	0.1	0	0						
145	5/13/15 7:14 AM	S	Charles River	Lower basin	0.1	0	52						
145	5/18/15 7:38 AM	S	Charles River	Lower basin	0.1	10	52						
145	5/22/15 8:31 AM	S	Charles River	Lower basin	0.1	20	96						
145	6/3/15 7:48 AM	S	Charles River	Lower basin	0.1	98	250						
145	6/4/15 7:50 AM	S	Charles River	Lower basin	0.1	10	292						
145	6/17/15 7:40 AM	S	Charles River	Lower basin	0.1	0	160						
145	6/18/15 7:38 AM	S	Charles River	Lower basin	0.1	0	41						
145	7/16/15 7:39 AM	S	Charles River	Lower basin	0.1	10	109						
145	7/17/15 7:20 AM	S	Charles River	Lower basin	0.1	0	10						
145	8/17/15 7:49 AM	S	Charles River	Lower basin	0.1	0	10						
145	8/20/15 7:38 AM	S	Charles River	Lower basin	0.1	0	52						
145	9/8/15 7:25 AM	S	Charles River	Lower basin	0.1	0	31						
145	9/9/15 7:33 AM	S	Charles River	Lower basin	0.1	0	74						
145	9/21/15 7:53 AM	S	Charles River	Lower basin	0.1	0	31						
145	9/22/15 7:34 AM	S	Charles River	Lower basin	0.1	0	10						
145	10/14/15 7:39 AM	S	Charles River	Lower basin	0.1	496	15500						
145	10/15/15 7:34 AM	S	Charles River	Lower basin	0.1	10	262						
008	4/21/15 7:12 AM	B	Charles River	Lower basin	4.3	327	727						
008	4/21/15 7:12 AM	S	Charles River	Lower basin	0.1	110	448						
008	4/23/15 7:22 AM	B	Charles River	Lower basin	4	20	97						
008	4/23/15 7:22 AM	S	Charles River	Lower basin	0.1	10	216						
008	5/11/15 7:34 AM	B	Charles River	Lower basin	3.9	0	10						

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
007	4/23/15 7:28 AM	S								0	0	0	0.54
007	5/11/15 7:39 AM	B								0	0	0	0
007	5/11/15 7:39 AM	S								0	0	0	0
007	5/13/15 7:09 AM	B								0	0.02	0.02	0.02
007	5/13/15 7:09 AM	S								0	0.02	0.02	0.02
007	5/18/15 7:33 AM	B								0	0	0	0
007	5/18/15 7:33 AM	S								0	0	0	0
007	5/22/15 8:27 AM	B								0	0	0	0
007	5/22/15 8:27 AM	S								0	0	0	0
007	6/3/15 7:43 AM	B								0	0.74	1.12	1.12
007	6/3/15 7:43 AM	S								0	0.74	1.12	1.12
007	6/4/15 7:45 AM	B								0	0	0.74	0.74
007	6/4/15 7:45 AM	S								0	0	0.74	0.74
007	6/17/15 7:35 AM	B								0	0	0.4	0.4
007	6/17/15 7:35 AM	S								0	0	0.4	0.4
007	6/18/15 7:32 AM	B								0	0	0	0
007	6/18/15 7:32 AM	S								0	0	0	0
007	7/16/15 7:33 AM	B								0	0	0.03	0.03
007	7/16/15 7:33 AM	S								0	0	0.03	0.03
007	7/17/15 7:14 AM	B								0	0	0	0
007	7/17/15 7:14 AM	S								0	0	0	0
007	8/17/15 7:43 AM	B								0	0	0.08	0.08
007	8/17/15 7:43 AM	S								0	0	0.08	0.08
007	8/20/15 7:32 AM	B								0	0	0.14	0.14
007	8/20/15 7:32 AM	S								0	0	0.14	0.14
007	9/8/15 7:18 AM	B								0.2	0.2	0.2	0.2
007	9/8/15 7:18 AM	S								0.2	0.2	0.2	0.2
007	9/9/15 7:26 AM	B								0	0.2	0.2	0.2
007	9/9/15 7:26 AM	S								0	0.2	0.2	0.2
007	9/21/15 7:46 AM	B								0	0	0	0
007	9/21/15 7:46 AM	S								0	0	0	0
007	9/22/15 7:29 AM	B								0	0	0	0
007	9/22/15 7:29 AM	S								0	0	0	0
007	10/14/15 7:34 AM	B								0	0.12	0.12	0.12
007	10/14/15 7:34 AM	S								0	0.12	0.12	0.12
007	10/15/15 7:29 AM	B								0	0	0.12	0.12
007	10/15/15 7:29 AM	S								0	0	0.12	0.12
145	4/21/15 7:24 AM	S								0.54	1.15	1.15	1.15
145	4/23/15 7:33 AM	S								0	0	0.54	0.54
145	5/11/15 7:46 AM	S								0	0	0	0
145	5/13/15 7:14 AM	S								0	0.02	0.02	0.02
145	5/18/15 7:38 AM	S								0	0	0	0
145	5/22/15 8:31 AM	S								0	0	0	0
145	6/3/15 7:48 AM	S								0	0.74	1.12	1.12
145	6/4/15 7:50 AM	S								0	0	0.74	0.74
145	6/17/15 7:40 AM	S								0	0	0.4	0.4
145	6/18/15 7:38 AM	S								0	0	0	0
145	7/16/15 7:39 AM	S								0	0	0.03	0.03
145	7/17/15 7:20 AM	S								0	0	0	0
145	8/17/15 7:49 AM	S								0	0	0.08	0.08
145	8/20/15 7:38 AM	S								0	0	0.14	0.14
145	9/8/15 7:25 AM	S								0.2	0.2	0.2	0.2
145	9/9/15 7:33 AM	S								0	0.2	0.2	0.2
145	9/21/15 7:53 AM	S								0	0	0	0
145	9/22/15 7:34 AM	S								0	0	0	0
145	10/14/15 7:39 AM	S								0	0.12	0.12	0.12
145	10/15/15 7:34 AM	S								0	0	0.12	0.12
008	4/21/15 7:12 AM	B								0.54	1.15	1.15	1.15
008	4/21/15 7:12 AM	S								0.54	1.15	1.15	1.15
008	4/23/15 7:22 AM	B								0	0	0.54	0.54
008	4/23/15 7:22 AM	S								0	0	0.54	0.54
008	5/11/15 7:34 AM	B								0	0	0	0

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
008	5/11/15 7:34 AM	S	Charles River	Lower basin	0.1	0	20						
008	5/13/15 7:03 AM	B	Charles River	Lower basin	3.4	20	0						
008	5/13/15 7:03 AM	S	Charles River	Lower basin	0.1	10	20						
008	5/18/15 7:27 AM	B	Charles River	Lower basin	3.8	10	31						
008	5/18/15 7:27 AM	S	Charles River	Lower basin	0.1	0	0						
008	5/22/15 8:19 AM	B	Charles River	Lower basin	3.9	0	98						
008	5/22/15 8:19 AM	S	Charles River	Lower basin	0.1	0	41						
008	6/3/15 7:36 AM	B	Charles River	Lower basin	3.7	156	379						
008	6/3/15 7:36 AM	S	Charles River	Lower basin	0.1	122	369						
008	6/4/15 7:38 AM	B	Charles River	Lower basin	4	30	175						
008	6/4/15 7:38 AM	S	Charles River	Lower basin	0.1	20	173						
008	6/17/15 7:29 AM	B	Charles River	Lower basin	3.4	10	98						
008	6/17/15 7:29 AM	S	Charles River	Lower basin	0.1	0	20						
008	6/18/15 7:26 AM	B	Charles River	Lower basin	4.1	0	10						
008	6/18/15 7:26 AM	S	Charles River	Lower basin	0.1	0	0						
008	7/16/15 7:27 AM	B	Charles River	Lower basin	3.5	0	31						
008	7/16/15 7:27 AM	S	Charles River	Lower basin	0.1	10	10						
008	7/17/15 7:07 AM	B	Charles River	Lower basin	4.1	0	31						
008	7/17/15 7:07 AM	S	Charles River	Lower basin	0.1	0	0						
008	8/17/15 7:36 AM	B	Charles River	Lower basin	3.7	0	122						
008	8/17/15 7:36 AM	S	Charles River	Lower basin	0.1	0	20						
008	8/20/15 7:26 AM	B	Charles River	Lower basin	4.3	0	30						
008	8/20/15 7:26 AM	S	Charles River	Lower basin	0.1	0	0						
008	9/8/15 7:12 AM	B	Charles River	Lower basin	4.3	0	30						
008	9/8/15 7:12 AM	S	Charles River	Lower basin	0.1	0	0						
008	9/9/15 7:20 AM	B	Charles River	Lower basin	4.2	0	0						
008	9/9/15 7:20 AM	S	Charles River	Lower basin	0.1	0	10						
008	9/21/15 7:39 AM	B	Charles River	Lower basin	4	0	0						
008	9/21/15 7:39 AM	S	Charles River	Lower basin	0.1	0	0						
008	9/22/15 7:23 AM	B	Charles River	Lower basin	4.1	0	0						
008	9/22/15 7:23 AM	S	Charles River	Lower basin	0.1	10	0						
008	10/14/15 7:27 AM	B	Charles River	Lower basin	4	0	187						
008	10/14/15 7:27 AM	S	Charles River	Lower basin	0.1	10	275						
008	10/15/15 7:23 AM	B	Charles River	Lower basin	3.9	0	110						
008	10/15/15 7:23 AM	S	Charles River	Lower basin	0.1	0	278						
009	4/21/15 7:02 AM	B	Charles River	Lower basin	8.5	0	0						
009	4/21/15 7:02 AM	S	Charles River	Lower basin	0.1	10	74						
009	4/23/15 7:14 AM	B	Charles River	Lower basin	8.5	0	0						
009	4/23/15 7:14 AM	S	Charles River	Lower basin	0.1	0	84						
009	5/11/15 7:24 AM	B	Charles River	Lower basin	8.7	10	0						
009	5/11/15 7:24 AM	S	Charles River	Lower basin	0.1	0	0						
009	5/13/15 6:56 AM	B	Charles River	Lower basin	7.9	0	0						
009	5/13/15 6:56 AM	S	Charles River	Lower basin	0.1	10	20						
009	5/18/15 7:19 AM	B	Charles River	Lower basin	9	0	10						
009	5/18/15 7:19 AM	S	Charles River	Lower basin	0.1	20	31						
009	5/22/15 8:06 AM	B	Charles River	Lower basin	8.7	41	0						
009	5/22/15 8:06 AM	S	Charles River	Lower basin	0.1	20	31						
009	6/3/15 7:26 AM	B	Charles River	Lower basin	8.3	0	41						
009	6/3/15 7:26 AM	S	Charles River	Lower basin	0.1	63	278						
009	6/4/15 7:32 AM	B	Charles River	Lower basin	8.4	0	74						
009	6/4/15 7:32 AM	S	Charles River	Lower basin	0.1	31	158						
009	6/17/15 7:19 AM	B	Charles River	Lower basin	8.8	0	10						
009	6/17/15 7:19 AM	S	Charles River	Lower basin	0.1	0	20						
009	6/18/15 7:16 AM	B	Charles River	Lower basin	8.7	0	20						
009	6/18/15 7:16 AM	S	Charles River	Lower basin	0.1	0	0						
009	7/12/15 7:21 AM	S	Charles River	Lower basin	0.1	0	0						
009	7/16/15 7:19 AM	B	Charles River	Lower basin	8.7	0	30						
009	7/16/15 7:19 AM	S	Charles River	Lower basin	0.1	0	10						
009	7/17/15 6:57 AM	B	Charles River	Lower basin	8.3	0	0						
009	7/17/15 6:57 AM	S	Charles River	Lower basin	0.1	0	20						
009	7/23/15 6:47 AM	S	Charles River	Lower basin	0.1	0	0						
009	8/17/15 7:24 AM	B	Charles River	Lower basin	8.6	0	0						

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
008	5/11/15 7:34 AM	S								0	0	0	0
008	5/13/15 7:03 AM	B								0	0.02	0.02	0.02
008	5/13/15 7:03 AM	S								0	0.02	0.02	0.02
008	5/18/15 7:27 AM	B								0	0	0	0
008	5/18/15 7:27 AM	S								0	0	0	0
008	5/22/15 8:19 AM	B								0	0	0	0
008	5/22/15 8:19 AM	S								0	0	0	0
008	6/3/15 7:36 AM	B								0	0.74	1.12	1.12
008	6/3/15 7:36 AM	S								0	0.74	1.12	1.12
008	6/4/15 7:38 AM	B								0	0	0.74	0.74
008	6/4/15 7:38 AM	S								0	0	0.74	0.74
008	6/17/15 7:29 AM	B								0	0	0.4	0.4
008	6/17/15 7:29 AM	S								0	0	0.4	0.4
008	6/18/15 7:26 AM	B								0	0	0	0
008	6/18/15 7:26 AM	S								0	0	0	0
008	7/16/15 7:27 AM	B								0	0	0.03	0.03
008	7/16/15 7:27 AM	S								0	0	0.03	0.03
008	7/17/15 7:07 AM	B								0	0	0	0
008	7/17/15 7:07 AM	S								0	0	0	0
008	8/17/15 7:36 AM	B								0	0	0.08	0.08
008	8/17/15 7:36 AM	S								0	0	0.08	0.08
008	8/20/15 7:26 AM	B								0	0	0.14	0.14
008	8/20/15 7:26 AM	S								0	0	0.14	0.14
008	9/8/15 7:12 AM	B								0.2	0.2	0.2	0.2
008	9/8/15 7:12 AM	S								0.2	0.2	0.2	0.2
008	9/9/15 7:20 AM	B								0	0.2	0.2	0.2
008	9/9/15 7:20 AM	S								0	0.2	0.2	0.2
008	9/21/15 7:39 AM	B								0	0	0	0
008	9/21/15 7:39 AM	S								0	0	0	0
008	9/22/15 7:23 AM	B								0	0	0	0
008	9/22/15 7:23 AM	S								0	0	0	0
008	10/14/15 7:27 AM	B								0	0.12	0.12	0.12
008	10/14/15 7:27 AM	S								0	0.12	0.12	0.12
008	10/15/15 7:23 AM	B								0	0	0.12	0.12
008	10/15/15 7:23 AM	S								0	0	0.12	0.12
009	4/21/15 7:02 AM	B								0.54	1.15	1.15	1.15
009	4/21/15 7:02 AM	S								0.54	1.15	1.15	1.15
009	4/23/15 7:14 AM	B								0	0	0.54	0.54
009	4/23/15 7:14 AM	S								0	0	0.54	0.54
009	5/11/15 7:24 AM	B								0	0	0	0
009	5/11/15 7:24 AM	S								0	0	0	0
009	5/13/15 6:56 AM	B								0	0.02	0.02	0.02
009	5/13/15 6:56 AM	S								0	0.02	0.02	0.02
009	5/18/15 7:19 AM	B								0	0	0	0
009	5/18/15 7:19 AM	S								0	0	0	0
009	5/22/15 8:06 AM	B								0	0	0	0
009	5/22/15 8:06 AM	S								0	0	0	0
009	6/3/15 7:26 AM	B								0	0.74	1.12	1.12
009	6/3/15 7:26 AM	S								0	0.74	1.12	1.12
009	6/4/15 7:32 AM	B								0	0	0.74	0.74
009	6/4/15 7:32 AM	S								0	0	0.74	0.74
009	6/17/15 7:19 AM	B								0	0	0.4	0.4
009	6/17/15 7:19 AM	S								0	0	0.4	0.4
009	6/18/15 7:16 AM	B								0	0	0	0
009	6/18/15 7:16 AM	S								0	0	0	0
009	7/12/15 7:21 AM	S								0	0	0	1.12
009	7/16/15 7:19 AM	B								0	0	0.03	0.03
009	7/16/15 7:19 AM	S								0	0	0.03	0.03
009	7/17/15 6:57 AM	B								0	0	0	0
009	7/17/15 6:57 AM	S								0	0	0	0
009	7/23/15 6:47 AM	S								0	0	0	0
009	8/17/15 7:24 AM	B								0	0	0.08	0.08

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
009	8/17/15 7:24 AM	S	Charles River	Lower basin	0.1	0	52						
009	8/20/15 7:16 AM	B	Charles River	Lower basin	8.8	0	10						
009	8/20/15 7:16 AM	S	Charles River	Lower basin	0.1	0	10						
009	9/8/15 7:02 AM	B	Charles River	Lower basin	9	0	0						
009	9/8/15 7:02 AM	S	Charles River	Lower basin	0.1	0	0						
009	9/9/15 7:10 AM	B	Charles River	Lower basin	8.8	0	0						
009	9/9/15 7:10 AM	S	Charles River	Lower basin	0.1	0	0						
009	9/21/15 7:29 AM	B	Charles River	Lower basin	8.4	0	74						
009	9/21/15 7:29 AM	S	Charles River	Lower basin	0.1	0	0						
009	9/22/15 7:14 AM	B	Charles River	Lower basin	8.7	0	0						
009	9/22/15 7:14 AM	S	Charles River	Lower basin	0.1	0	10						
009	10/14/15 7:19 AM	B	Charles River	Lower basin	8.5	0	10						
009	10/14/15 7:19 AM	S	Charles River	Lower basin	0.1	0	171						
009	10/15/15 7:16 AM	B	Charles River	Lower basin	8.4	0	331						
009	10/15/15 7:16 AM	S	Charles River	Lower basin	0.1	72	1470						
010	4/21/15 6:54 AM	B	Charles River	Lower basin	8.8	0	10						
010	4/21/15 6:54 AM	S	Charles River	Lower basin	0.1	30	52						
010	4/23/15 7:08 AM	B	Charles River	Lower basin	7.5	10	0						
010	4/23/15 7:08 AM	S	Charles River	Lower basin	0.1	10	108						
010	5/11/15 7:12 AM	B	Charles River	Lower basin	8.5	0	10						
010	5/11/15 7:12 AM	S	Charles River	Lower basin	0.1	0	10						
010	5/13/15 6:49 AM	B	Charles River	Lower basin	7.7	0	10						
010	5/13/15 6:49 AM	S	Charles River	Lower basin	0.1	20	0						
010	5/18/15 7:11 AM	B	Charles River	Lower basin	8.6	0	0						
010	5/18/15 7:11 AM	S	Charles River	Lower basin	0.1	10	10						
010	5/22/15 7:55 AM	B	Charles River	Lower basin	8	0	20						
010	5/22/15 7:55 AM	S	Charles River	Lower basin	0.1	0	30						
010	6/3/15 7:18 AM	B	Charles River	Lower basin	7.7	41	63						
010	6/3/15 7:18 AM	S	Charles River	Lower basin	0.1	41	520						
010	6/4/15 7:25 AM	B	Charles River	Lower basin	7.9	10	51						
010	6/4/15 7:25 AM	S	Charles River	Lower basin	0.1	41	231						
010	6/17/15 7:11 AM	B	Charles River	Lower basin	8.8	0	10						
010	6/17/15 7:11 AM	S	Charles River	Lower basin	0.1	0	10						
010	6/18/15 7:09 AM	B	Charles River	Lower basin	8.8	0	0						
010	6/18/15 7:09 AM	S	Charles River	Lower basin	0.1	0	31						
010	7/16/15 7:12 AM	B	Charles River	Lower basin	8.2	0	41						
010	7/16/15 7:12 AM	S	Charles River	Lower basin	0.1	0	0						
010	7/17/15 6:48 AM	B	Charles River	Lower basin	8	0	52						
010	7/17/15 6:48 AM	S	Charles River	Lower basin	0.1	0	10						
010	8/17/15 7:15 AM	B	Charles River	Lower basin	8.2	10	10						
010	8/17/15 7:15 AM	S	Charles River	Lower basin	0.1	10	31						
010	8/20/15 7:08 AM	B	Charles River	Lower basin	8.7	0	20						
010	8/20/15 7:08 AM	S	Charles River	Lower basin	0.1	0	52						
010	9/8/15 6:55 AM	B	Charles River	Lower basin	7.4	20	10						
010	9/8/15 6:55 AM	S	Charles River	Lower basin	0.1	10	10						
010	9/9/15 7:01 AM	B	Charles River	Lower basin	8.9	0	10						
010	9/9/15 7:01 AM	S	Charles River	Lower basin	0.1	0	10						
010	9/21/15 7:20 AM	B	Charles River	Lower basin	7.9	0	20						
010	9/21/15 7:20 AM	S	Charles River	Lower basin	0.1	0	10						
010	9/22/15 7:08 AM	B	Charles River	Lower basin	8.4	20	85						
010	9/22/15 7:08 AM	S	Charles River	Lower basin	0.1	0	10						
010	10/14/15 7:13 AM	B	Charles River	Lower basin	8.3	41	52						
010	10/14/15 7:13 AM	S	Charles River	Lower basin	0.1	0	98						
010	10/15/15 7:10 AM	B	Charles River	Lower basin	7.7	10	20						
010	10/15/15 7:10 AM	S	Charles River	Lower basin	0.1	0	108						
166	1/20/15 10:32 AM	S	Charles River	Downstream of lower basin	0.1	10	120		11.3	84.8	104		0.845
166	3/16/15 9:23 AM	S	Charles River	Downstream of lower basin	0.1	31	345		32.1	91.6	146		0.748
166	3/30/15 9:21 AM	S	Charles River	Downstream of lower basin	0.1	52	318		8.74	68.8	97.7		0.618
166	4/10/15 7:36 AM	S	Charles River	Downstream of lower basin	0.1	31	240						
166	4/16/15 9:23 AM	S	Charles River	Downstream of lower basin	0.1	0	0		0.707	42.7	74.2		0.341
166	4/30/15 9:38 AM	S	Charles River	Downstream of lower basin	0.1	0	63		0.57	34.9	69.2		0.268
166	5/12/15 9:41 AM	S	Charles River	Downstream of lower basin	0.1	0	0		4.96	27.8	65.5		0.155

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
009	8/17/15 7:24 AM	S								0	0	0	0.08
009	8/20/15 7:16 AM	B								0	0	0	0.14
009	8/20/15 7:16 AM	S								0	0	0	0.14
009	9/8/15 7:02 AM	B								0.2	0.2	0.2	
009	9/8/15 7:02 AM	S								0.2	0.2	0.2	
009	9/9/15 7:10 AM	B								0	0.2	0.2	
009	9/9/15 7:10 AM	S								0	0.2	0.2	
009	9/21/15 7:29 AM	B								0	0	0	
009	9/21/15 7:29 AM	S								0	0	0	
009	9/22/15 7:14 AM	B								0	0	0	
009	9/22/15 7:14 AM	S								0	0	0	
009	10/14/15 7:19 AM	B								0	0.12	0.12	
009	10/14/15 7:19 AM	S								0	0.12	0.12	
009	10/15/15 7:16 AM	B								0	0	0.12	
009	10/15/15 7:16 AM	S								0	0	0.12	
010	4/21/15 6:54 AM	B								0.54	1.15	1.15	
010	4/21/15 6:54 AM	S								0.54	1.15	1.15	
010	4/23/15 7:08 AM	B								0	0	0.54	
010	4/23/15 7:08 AM	S								0	0	0.54	
010	5/11/15 7:12 AM	B								0	0	0	
010	5/11/15 7:12 AM	S								0	0	0	
010	5/13/15 6:49 AM	B								0	0.02	0.02	
010	5/13/15 6:49 AM	S								0	0.02	0.02	
010	5/18/15 7:11 AM	B								0	0	0	
010	5/18/15 7:11 AM	S								0	0	0	
010	5/22/15 7:55 AM	B								0	0	0	
010	5/22/15 7:55 AM	S								0	0	0	
010	6/3/15 7:18 AM	B								0	0.74	1.12	
010	6/3/15 7:18 AM	S								0	0.74	1.12	
010	6/4/15 7:25 AM	B								0	0	0.74	
010	6/4/15 7:25 AM	S								0	0	0.74	
010	6/17/15 7:11 AM	B								0	0	0.4	
010	6/17/15 7:11 AM	S								0	0	0.4	
010	6/18/15 7:09 AM	B								0	0	0	
010	6/18/15 7:09 AM	S								0	0	0	
010	7/16/15 7:12 AM	B								0	0	0.03	
010	7/16/15 7:12 AM	S								0	0	0.03	
010	7/17/15 6:48 AM	B								0	0	0	
010	7/17/15 6:48 AM	S								0	0	0	
010	8/17/15 7:15 AM	B								0	0	0.08	
010	8/17/15 7:15 AM	S								0	0	0.08	
010	8/20/15 7:08 AM	B								0	0	0.14	
010	8/20/15 7:08 AM	S								0	0	0.14	
010	9/8/15 6:55 AM	B								0.2	0.2	0.2	
010	9/8/15 6:55 AM	S								0.2	0.2	0.2	
010	9/9/15 7:01 AM	B								0	0.2	0.2	
010	9/9/15 7:01 AM	S								0	0.2	0.2	
010	9/21/15 7:20 AM	B								0	0	0	
010	9/21/15 7:20 AM	S								0	0	0	
010	9/22/15 7:08 AM	B								0	0	0	
010	9/22/15 7:08 AM	S								0	0	0	
010	10/14/15 7:13 AM	B								0	0.12	0.12	
010	10/14/15 7:13 AM	S								0	0.12	0.12	
010	10/15/15 7:10 AM	B								0	0	0.12	
010	10/15/15 7:10 AM	S								0	0	0.12	
166	1/20/15 10:32 AM	S	2.66	1.72						1.73	1.74	0	0.15
166	3/16/15 9:23 AM	S	2.53	1.24						1.99	6.45	0	0.27
166	3/30/15 9:21 AM	S	3.07	1.48						1.78	5.66	0	0.12
166	4/10/15 7:36 AM	S									0.09	0.18	0.44
166	4/16/15 9:23 AM	S	8.23	2.93						1.3	3.34	0	0.01
166	4/30/15 9:38 AM	S	22.69	5.18						1.7	3.31	0	0.07
166	5/12/15 9:41 AM	S	9.8	4.33						1.4	4.19	0.02	0.02

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
166	5/28/15 9:54 AM	S	Charles River	Downstream of lower basin	0.1	0	0		0.55	26.3	62		0.0758
166	6/2/15 8:10 AM	S	Charles River	Downstream of lower basin	0.1	143	627						
166	6/8/15 10:13 AM	S	Charles River	Downstream of lower basin	0.1	10	41		13.6	29.6	73		0.911
166	6/23/15 9:33 AM	S	Charles River	Downstream of lower basin	0.1	0	63		7.65	25.5	64.9		0.231
166	6/29/15 9:20 AM	S	Charles River	Downstream of lower basin	0.1	0	52						
166	7/8/15 9:26 AM	S	Charles River	Downstream of lower basin	0.1	0	20		1.03	13.4	50.3		0.215
166	7/10/15 7:10 AM	S	Charles River	Downstream of lower basin	0.1	41	41						
166	7/20/15 9:27 AM	S	Charles River	Downstream of lower basin	0.1	0	25.5		0.1515	5.215	46.55		0.196
166	8/3/15 9:18 AM	S	Charles River	Downstream of lower basin	0.1	0	0		0.156	0.261	50.9		0.242
166	8/12/15 7:25 AM	S	Charles River	Downstream of lower basin	0.1	41	0						
166	8/18/15 9:10 AM	S	Charles River	Downstream of lower basin	0.1	0	20.5		0	0.3485	45.85		0.1895
166	9/3/15 9:29 AM	S	Charles River	Downstream of lower basin	0.1	0	15		0.149	0.2305	60.5		0.1665
166	9/14/15 8:52 AM	S	Charles River	Downstream of lower basin	0.1	0	0		5.08	4.38	73.8		0.264
166	9/28/15 8:55 AM	S	Charles River	Downstream of lower basin	0.1	0	0		16.4	9.52	76		1.88
166	9/30/15 8:19 AM	S	Charles River	Downstream of lower basin	0.1	1270	6490						
166	10/1/15 8:05 AM	S	Charles River	Downstream of lower basin	0.1	754	3650						
166	10/2/15 7:35 AM	S	Charles River	Downstream of lower basin	0.1	74	1200						
166	10/16/15 8:28 AM	S	Charles River	Downstream of lower basin	0.1	0	74		3.2	23.8	66.7		0.723
166	10/27/15 9:09 AM	S	Charles River	Downstream of lower basin	0.1	0	249		3.26	32.6	70.7		0.496
166	11/10/15 10:02 AM	S	Charles River	Downstream of lower basin	0.1	0	110		0.663	29.7	67.7		0.308
166	11/12/15 10:41 AM	S	Charles River	Downstream of lower basin	0.1	0	175						
166	11/23/15 10:44 AM	S	Charles River	Downstream of lower basin	0.1	10	408		7.1	33.9	71.2		0.482
166	12/8/15 10:22 AM	S	Charles River	Downstream of lower basin	0.1	0	292		20.2	34.7	86.9		0.567
166	12/21/15 10:27 AM	S	Charles River	Downstream of lower basin	0.1	0	324.5		8.21	59.15	104.5		0.8265
011	4/21/15 6:46 AM	B	Charles River	Downstream of lower basin	5.8	31	98						
011	4/21/15 6:46 AM	S	Charles River	Downstream of lower basin	0.1	10	74						
011	4/23/15 6:58 AM	B	Charles River	Downstream of lower basin	5.3	0	52						
011	4/23/15 6:58 AM	S	Charles River	Downstream of lower basin	0.1	0	97						
011	5/11/15 7:02 AM	B	Charles River	Downstream of lower basin	6.5	10	20						
011	5/11/15 7:02 AM	S	Charles River	Downstream of lower basin	0.1	20	0						
011	5/13/15 6:40 AM	B	Charles River	Downstream of lower basin	6.3	10	31						
011	5/13/15 6:40 AM	S	Charles River	Downstream of lower basin	0.1	0	10						
011	5/18/15 7:03 AM	B	Charles River	Downstream of lower basin	6.4	10	31						
011	5/18/15 7:03 AM	S	Charles River	Downstream of lower basin	0.1	0	31						
011	5/22/15 7:42 AM	B	Charles River	Downstream of lower basin	6.2	0	30						
011	5/22/15 7:42 AM	S	Charles River	Downstream of lower basin	0.1	0	0						
011	6/3/15 7:08 AM	B	Charles River	Downstream of lower basin	6.1	74	199						
011	6/3/15 7:08 AM	S	Charles River	Downstream of lower basin	0.1	31	309						
011	6/4/15 7:14 AM	B	Charles River	Downstream of lower basin	6.3	74	160						
011	6/4/15 7:14 AM	S	Charles River	Downstream of lower basin	0.1	52	120						
011	6/17/15 6:59 AM	B	Charles River	Downstream of lower basin	6.3	146	173						
011	6/17/15 6:59 AM	S	Charles River	Downstream of lower basin	0.1	0	10						
011	6/18/15 7:00 AM	B	Charles River	Downstream of lower basin	6.8	0	10						
011	6/18/15 7:00 AM	S	Charles River	Downstream of lower basin	0.1	0	20						
011	7/16/15 6:52 AM	B	Charles River	Downstream of lower basin	6.3	10	20						
011	7/16/15 6:52 AM	S	Charles River	Downstream of lower basin	0.1	10	0						
011	7/17/15 6:38 AM	B	Charles River	Downstream of lower basin	6	10	0						
011	7/17/15 6:38 AM	S	Charles River	Downstream of lower basin	0.1	10	0						
011	8/17/15 6:48 AM	B	Charles River	Downstream of lower basin	6.5	10	0						
011	8/17/15 6:48 AM	S	Charles River	Downstream of lower basin	0.1	10	0						
011	8/20/15 6:58 AM	B	Charles River	Downstream of lower basin	6.2	0	10						
011	8/20/15 6:58 AM	S	Charles River	Downstream of lower basin	0.1	0	0						
011	9/8/15 6:45 AM	B	Charles River	Downstream of lower basin	6.2	31	594						
011	9/8/15 6:45 AM	S	Charles River	Downstream of lower basin	0.1	0	10						
011	9/9/15 6:33 AM	B	Charles River	Downstream of lower basin	6.7	0	63						
011	9/9/15 6:33 AM	S	Charles River	Downstream of lower basin	0.1	0	10						
011	9/21/15 7:10 AM	B	Charles River	Downstream of lower basin	6.5	41	52						
011	9/21/15 7:10 AM	S	Charles River	Downstream of lower basin	0.1	0	0						
011	9/22/15 7:00 AM	B	Charles River	Downstream of lower basin	5.9	0	74						
011	9/22/15 7:00 AM	S	Charles River	Downstream of lower basin	0.1	10	0						
011	10/14/15 7:04 AM	B	Charles River	Downstream of lower basin	6.3	10	20						
011	10/14/15 7:04 AM	S	Charles River	Downstream of lower basin	0.1	10	20						

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
166	5/28/15 9:54 AM	S	22.5	12.3					1.34	3.42	0	0	0
166	6/2/15 8:10 AM	S									0.74	1.12	2.03
166	6/8/15 10:13 AM	S	8.27	6.85					2.26	3.81	0	0	0.09
166	6/23/15 9:33 AM	S	10.1	12.4					1.4	3.79	0.01	0.01	1.73
166	6/29/15 9:20 AM	S								0	1.43	1.63	
166	7/8/15 9:26 AM	S	18.7	9.24					1.27	2.65	0	0.02	0.02
166	7/10/15 7:10 AM	S							1.38	4.33	0	0	0.14
166	7/20/15 9:27 AM	S	26.15	6.67					1.54	7.04	0	0	0
166	8/3/15 9:18 AM	S	38.3	8.63						0	0.83	0.83	
166	8/12/15 7:25 AM	S								1.685	6.195	0.14	0.14
166	8/18/15 9:10 AM	S	15.55	10.565						1.71	7.755	0.01	0.01
166	9/3/15 9:29 AM	S	96.55	15.885						3.18	6.18	0	0.38
166	9/14/15 8:52 AM	S	50.7	10.7						3.855	4.895	0	0.39
166	9/28/15 8:55 AM	S	16.6	5.99						2.21	3.78	0	0
166	9/30/15 8:19 AM	S								1.74	3.57	0	0.03
166	10/1/15 8:05 AM	S								1.75	4.69	0.54	0.61
166	10/2/15 7:35 AM	S									0.01	0.05	0.59
166	10/16/15 8:28 AM	S	21.2	15.3						1.71	2.65	0.04	0.34
166	10/27/15 9:09 AM	S	16.1	11						1.82	36	0	0
166	11/10/15 10:02 AM	S	43.3	16.2						1.875	5.66	0	0
166	11/12/15 10:41 AM	S									0.54	1.15	1.15
166	11/23/15 10:44 AM	S	16.8	8.7							0.54	1.15	1.15
166	12/8/15 10:22 AM	S	10.8	8.53							0	0	0
166	12/21/15 10:27 AM	S	10.95	8.095							0	0	0
011	4/21/15 6:46 AM	B									0.54	1.15	1.15
011	4/21/15 6:46 AM	S									0.54	1.15	1.15
011	4/23/15 6:58 AM	B									0	0	0.54
011	4/23/15 6:58 AM	S									0	0	0.54
011	5/11/15 7:02 AM	B									0	0	0
011	5/11/15 7:02 AM	S									0	0	0
011	5/13/15 6:40 AM	B									0	0.02	0.02
011	5/13/15 6:40 AM	S									0	0.02	0.02
011	5/18/15 7:03 AM	B									0	0	0
011	5/18/15 7:03 AM	S									0	0	0
011	5/22/15 7:42 AM	B									0	0	0
011	5/22/15 7:42 AM	S									0	0	0
011	6/3/15 7:08 AM	B									0	0.74	1.12
011	6/3/15 7:08 AM	S									0	0.74	1.12
011	6/4/15 7:14 AM	B									0	0	0.74
011	6/4/15 7:14 AM	S									0	0	0.74
011	6/17/15 6:59 AM	B									0	0	0.4
011	6/17/15 6:59 AM	S									0	0	0.4
011	6/18/15 7:00 AM	B									0	0	0
011	6/18/15 7:00 AM	S									0	0	0
011	7/16/15 6:52 AM	B									0	0	0.03
011	7/16/15 6:52 AM	S									0	0	0.03
011	7/17/15 6:38 AM	B									0	0	0
011	7/17/15 6:38 AM	S									0	0	0
011	8/17/15 6:48 AM	B									0	0	0.08
011	8/17/15 6:48 AM	S									0	0	0.08
011	8/20/15 6:58 AM	B									0	0	0.14
011	8/20/15 6:58 AM	S									0	0	0.14
011	9/8/15 6:45 AM	B									0.2	0.2	0.2
011	9/8/15 6:45 AM	S									0.2	0.2	0.2
011	9/9/15 6:33 AM	B									0	0.2	0.2
011	9/9/15 6:33 AM	S									0	0.2	0.2
011	9/21/15 7:10 AM	B									0	0	0
011	9/21/15 7:10 AM	S									0	0	0
011	9/22/15 7:00 AM	B									0	0	0
011	9/22/15 7:00 AM	S									0	0	0
011	10/14/15 7:04 AM	B									0	0.12	0.12
011	10/14/15 7:04 AM	S									0	0.12	0.12

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
011	10/15/15 7:00 AM	B	Charles River	Downstream of lower basin	6.3	0	10						
011	10/15/15 7:00 AM	S	Charles River	Downstream of lower basin	0.1	0	10						
174	4/13/15 8:31 AM	S	Mystic/Alewife	Alewife Brook	0.1	0	10						
174	4/15/15 8:28 AM	S	Mystic/Alewife	Alewife Brook	0.1	0	20						
174	5/4/15 9:45 AM	S	Mystic/Alewife	Alewife Brook	0.1	20	52						
174	5/5/15 9:54 AM	S	Mystic/Alewife	Alewife Brook	0.1	10	97						
174	5/19/15 8:30 AM	S	Mystic/Alewife	Alewife Brook	0.1	146	262						
174	5/20/15 8:04 AM	S	Mystic/Alewife	Alewife Brook	0.1	228	341						
174	6/1/15 8:04 AM	S	Mystic/Alewife	Alewife Brook	0.1	7700	24200						
174	6/2/15 8:36 AM	S	Mystic/Alewife	Alewife Brook	0.1	5480	4880						
174	6/9/15 10:22 AM	S	Mystic/Alewife	Alewife Brook	0.1	384	836						
174	6/11/15 8:15 AM	S	Mystic/Alewife	Alewife Brook	0.1	160	496						
174	6/12/15 7:25 AM	S	Mystic/Alewife	Alewife Brook	0.1	216	98						
174	6/22/15 8:15 AM	S	Mystic/Alewife	Alewife Brook	0.1	3650	5480						
174	6/26/15 7:52 AM	S	Mystic/Alewife	Alewife Brook	0.1	1200	160						
174	6/29/15 8:06 AM	S	Mystic/Alewife	Alewife Brook	0.1	3260	4110						
174	7/13/15 8:25 AM	S	Mystic/Alewife	Alewife Brook	0.1	74	305						
174	7/27/15 8:00 AM	S	Mystic/Alewife	Alewife Brook	0.1	448	2250						
174	7/31/15 7:35 AM	S	Mystic/Alewife	Alewife Brook	0.1	20	583						
174	8/12/15 8:08 AM	S	Mystic/Alewife	Alewife Brook	0.1	1610	8160						
174	8/26/15 8:26 AM	S	Mystic/Alewife	Alewife Brook	0.1	31	265						
174	8/28/15 7:40 AM	S	Mystic/Alewife	Alewife Brook	0.1	20	547						
174	9/15/15 8:15 AM	S	Mystic/Alewife	Alewife Brook	0.1	52	199						
174	9/18/15 8:38 AM	S	Mystic/Alewife	Alewife Brook	0.1	41	408						
174	9/25/15 7:46 AM	S	Mystic/Alewife	Alewife Brook	0.1	73	419						
174	9/29/15 9:02 AM	S	Mystic/Alewife	Alewife Brook	0.1	10	441						
174	10/5/15 7:26 AM	S	Mystic/Alewife	Alewife Brook	0.1	85	712						
174	11/12/15 9:45 AM	S	Mystic/Alewife	Alewife Brook	0.1	20	933						
074	4/13/15 8:40 AM	S	Mystic/Alewife	Alewife Brook	0.1	10	10						
074	4/15/15 8:38 AM	S	Mystic/Alewife	Alewife Brook	0.1	0	160						
074	5/4/15 9:58 AM	S	Mystic/Alewife	Alewife Brook	0.1	10	95						
074	5/5/15 10:04 AM	S	Mystic/Alewife	Alewife Brook	0.1	52	110						
074	5/19/15 8:40 AM	S	Mystic/Alewife	Alewife Brook	0.1	158	404						
074	5/20/15 8:20 AM	S	Mystic/Alewife	Alewife Brook	0.1	238	1040						
074	6/1/15 8:10 AM	S	Mystic/Alewife	Alewife Brook	0.1	6870	24200						
074	6/2/15 8:45 AM	S	Mystic/Alewife	Alewife Brook	0.1	5170	3650						
074	6/9/15 10:32 AM	S	Mystic/Alewife	Alewife Brook	0.1	228	364						
074	6/11/15 8:34 AM	S	Mystic/Alewife	Alewife Brook	0.1	195	389						
074	6/12/15 7:39 AM	S	Mystic/Alewife	Alewife Brook	0.1	359	393						
074	6/22/15 8:32 AM	S	Mystic/Alewife	Alewife Brook	0.1	537	789						
074	6/26/15 8:09 AM	S	Mystic/Alewife	Alewife Brook	0.1	282	368						
074	6/29/15 8:18 AM	S	Mystic/Alewife	Alewife Brook	0.1	563	1220						
074	7/13/15 8:37 AM	S	Mystic/Alewife	Alewife Brook	0.1	146	327						
074	7/27/15 8:09 AM	S	Mystic/Alewife	Alewife Brook	0.1	197	749						
074	7/31/15 7:48 AM	S	Mystic/Alewife	Alewife Brook	0.1	20	350						
074	8/12/15 8:17 AM	S	Mystic/Alewife	Alewife Brook	0.1	288	1270						
074	8/26/15 8:35 AM	S	Mystic/Alewife	Alewife Brook	0.1	243	399						
074	8/28/15 7:45 AM	S	Mystic/Alewife	Alewife Brook	0.1	73	323						
074	9/15/15 8:23 AM	S	Mystic/Alewife	Alewife Brook	0.1	41	226						
074	9/18/15 8:46 AM	S	Mystic/Alewife	Alewife Brook	0.1	30	278						
074	9/25/15 8:01 AM	S	Mystic/Alewife	Alewife Brook	0.1	30	228						
074	9/29/15 9:22 AM	S	Mystic/Alewife	Alewife Brook	0.1	30	216						
074	10/5/15 7:36 AM	S	Mystic/Alewife	Alewife Brook	0.1	30	309						
074	11/12/15 9:57 AM	S	Mystic/Alewife	Alewife Brook	0.1	135	243						
172	4/13/15 8:02 AM	S	Mystic/Alewife	Alewife Brook	0.1	0	52						
172	4/15/15 8:17 AM	S	Mystic/Alewife	Alewife Brook	0.1	41	63						
172	5/4/15 9:34 AM	S	Mystic/Alewife	Alewife Brook	0.1	10	122						
172	5/5/15 9:35 AM	S	Mystic/Alewife	Alewife Brook	0.1	63	74						
172	5/19/15 8:16 AM	S	Mystic/Alewife	Alewife Brook	0.1	52	389						
172	5/20/15 7:49 AM	S	Mystic/Alewife	Alewife Brook	0.1	278	576						
172	6/1/15 7:49 AM	S	Mystic/Alewife	Alewife Brook	0.1	11200	17300						
172	6/2/15 8:26 AM	S	Mystic/Alewife	Alewife Brook	0.1	4880	3870						

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
011	10/15/15 7:00 AM	B								0	0		0.12
011	10/15/15 7:00 AM	S								0	0		0.12
174	4/13/15 8:31 AM	S								0	0		0
174	4/15/15 8:28 AM	S								0	0.01		0.01
174	5/4/15 9:45 AM	S								0	0		0
174	5/5/15 9:54 AM	S								0.02	0.02		0.02
174	5/19/15 8:30 AM	S								0.27	0.27		0.27
174	5/20/15 8:04 AM	S								0	0.27		0.27
174	6/1/15 8:04 AM	S								0.38	1.29		1.29
174	6/2/15 8:36 AM	S								0.74	1.12		2.03
174	6/9/15 10:22 AM	S								0	0		0
174	6/11/15 8:15 AM	S								0	0		0
174	6/12/15 7:25 AM	S								0	0		0
174	6/22/15 8:15 AM	S								0	1.72		1.76
174	6/26/15 7:52 AM	S								0	0		0
174	6/29/15 8:06 AM	S								0	1.43		1.63
174	7/13/15 8:25 AM	S								0	0		0
174	7/27/15 8:00 AM	S								0.06	0.06		0.06
174	7/31/15 7:35 AM	S								0	0.02		0.02
174	8/12/15 8:08 AM	S								0	0.83		0.83
174	8/26/15 8:26 AM	S								0	0		0
174	8/28/15 7:40 AM	S								0	0		0
174	9/15/15 8:15 AM	S								0	0		0.38
174	9/18/15 8:38 AM	S								0	0		0
174	9/25/15 7:46 AM	S								0	0		0
174	9/29/15 9:02 AM	S								0.04	0.04		0.04
174	10/5/15 7:26 AM	S								0	0		0.01
174	11/12/15 9:45 AM	S								0.01	0.05		0.59
074	4/13/15 8:40 AM	S								0	0		0
074	4/15/15 8:38 AM	S								0	0.01		0.01
074	5/4/15 9:58 AM	S								0	0		0
074	5/5/15 10:04 AM	S								0.02	0.02		0.02
074	5/19/15 8:40 AM	S								0.27	0.27		0.27
074	5/20/15 8:20 AM	S								0	0.27		0.27
074	6/1/15 8:10 AM	S								0.38	1.29		1.29
074	6/2/15 8:45 AM	S								0.74	1.12		2.03
074	6/9/15 10:32 AM	S								0	0		0
074	6/11/15 8:34 AM	S								0	0		0
074	6/12/15 7:39 AM	S								0	0		0
074	6/22/15 8:32 AM	S								0	1.72		1.76
074	6/26/15 8:09 AM	S								0	0		0
074	6/29/15 8:18 AM	S								0	1.43		1.63
074	7/13/15 8:37 AM	S								0	0		0
074	7/27/15 8:09 AM	S								0.06	0.06		0.06
074	7/31/15 7:48 AM	S								0	0.02		0.02
074	8/12/15 8:17 AM	S								0	0.83		0.83
074	8/26/15 8:35 AM	S								0	0		0
074	8/28/15 7:45 AM	S								0	0		0
074	9/15/15 8:23 AM	S								0	0		0.38
074	9/18/15 8:46 AM	S								0	0		0
074	9/25/15 8:01 AM	S								0	0		0
074	9/29/15 9:22 AM	S								0.04	0.04		0.04
074	10/5/15 7:36 AM	S								0	0		0.01
074	11/12/15 9:57 AM	S								0.01	0.05		0.59
172	4/13/15 8:02 AM	S								0	0		0
172	4/15/15 8:17 AM	S								0	0.01		0.01
172	5/4/15 9:34 AM	S								0	0		0
172	5/5/15 9:35 AM	S								0.02	0.02		0.02
172	5/19/15 8:16 AM	S								0.27	0.27		0.27
172	5/20/15 7:49 AM	S								0	0.27		0.27
172	6/1/15 7:49 AM	S								0.38	1.29		1.29
172	6/2/15 8:26 AM	S								0.74	1.12		2.03

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
172	6/9/15 10:12 AM	S	Mystic/Alewife	Alewife Brook	0.1	413	573						
172	6/11/15 8:05 AM	S	Mystic/Alewife	Alewife Brook	0.1	262	404						
172	6/12/15 7:14 AM	S	Mystic/Alewife	Alewife Brook	0.1	364	384						
172	6/22/15 8:03 AM	S	Mystic/Alewife	Alewife Brook	0.1	882	1270						
172	6/26/15 7:41 AM	S	Mystic/Alewife	Alewife Brook	0.1	278	226						
172	6/29/15 7:50 AM	S	Mystic/Alewife	Alewife Brook	0.1	836	933						
172	7/13/15 8:08 AM	S	Mystic/Alewife	Alewife Brook	0.1	97	278						
172	7/27/15 7:41 AM	S	Mystic/Alewife	Alewife Brook	0.1	228	426						
172	7/31/15 7:25 AM	S	Mystic/Alewife	Alewife Brook	0.1	52	211						
172	8/12/15 7:54 AM	S	Mystic/Alewife	Alewife Brook	0.1	794	3450						
172	8/26/15 8:04 AM	S	Mystic/Alewife	Alewife Brook	0.1	199	278						
172	8/28/15 7:23 AM	S	Mystic/Alewife	Alewife Brook	0.1	20	294						
172	9/15/15 7:53 AM	S	Mystic/Alewife	Alewife Brook	0.1	52	187						
172	9/18/15 8:22 AM	S	Mystic/Alewife	Alewife Brook	0.1	51	262						
172	9/25/15 7:36 AM	S	Mystic/Alewife	Alewife Brook	0.1	108	213						
172	9/29/15 8:52 AM	S	Mystic/Alewife	Alewife Brook	0.1	63	323						
172	10/5/15 7:12 AM	S	Mystic/Alewife	Alewife Brook	0.1	74	529						
172	11/12/15 9:30 AM	S	Mystic/Alewife	Alewife Brook	0.1	135	272						
070	4/13/15 7:45 AM	S	Mystic/Alewife	Alewife Brook	0.1	20	52						
070	4/15/15 7:54 AM	S	Mystic/Alewife	Alewife Brook	0.1	52	52						
070	5/4/15 9:15 AM	S	Mystic/Alewife	Alewife Brook	0.1	20	171						
070	5/5/15 9:18 AM	S	Mystic/Alewife	Alewife Brook	0.1	97	331						
070	5/19/15 8:01 AM	S	Mystic/Alewife	Alewife Brook	0.1	187	457						
070	5/20/15 7:28 AM	S	Mystic/Alewife	Alewife Brook	0.1	479	1660						
070	6/1/15 7:27 AM	S	Mystic/Alewife	Alewife Brook	0.1	13000	19900						
070	6/2/15 8:16 AM	S	Mystic/Alewife	Alewife Brook	0.1	8160	6490						
070	6/9/15 9:42 AM	S	Mystic/Alewife	Alewife Brook	0.1	259	794						
070	6/11/15 7:39 AM	S	Mystic/Alewife	Alewife Brook	0.1	708	794						
070	6/12/15 6:48 AM	S	Mystic/Alewife	Alewife Brook	0.1	384	413						
070	6/22/15 7:47 AM	S	Mystic/Alewife	Alewife Brook	0.1	1320	1530						
070	6/26/15 7:22 AM	S	Mystic/Alewife	Alewife Brook	0.1	855	1220						
070	6/29/15 7:40 AM	S	Mystic/Alewife	Alewife Brook	0.1	1150	1260						
070	7/13/15 7:50 AM	S	Mystic/Alewife	Alewife Brook	0.1	369	576						
070	7/27/15 7:16 AM	S	Mystic/Alewife	Alewife Brook	0.1	7270	79800						
070	7/31/15 7:07 AM	S	Mystic/Alewife	Alewife Brook	0.1	345	1720						
070	8/12/15 7:35 AM	S	Mystic/Alewife	Alewife Brook	0.1	805	2610						
070	8/26/15 7:36 AM	S	Mystic/Alewife	Alewife Brook	0.1	211	1290						
070	8/28/15 7:03 AM	S	Mystic/Alewife	Alewife Brook	0.1	171	432						
070	9/15/15 7:34 AM	S	Mystic/Alewife	Alewife Brook	0.1	171	455						
070	9/18/15 8:04 AM	S	Mystic/Alewife	Alewife Brook	0.1	74	327						
070	9/25/15 7:20 AM	S	Mystic/Alewife	Alewife Brook	0.1	41	213						
070	9/29/15 8:41 AM	S	Mystic/Alewife	Alewife Brook	0.1	30	148						
070	10/5/15 6:47 AM	S	Mystic/Alewife	Alewife Brook	0.1	94	496						
070	11/12/15 9:15 AM	S	Mystic/Alewife	Alewife Brook	0.1	84	408						
083	1/20/15 9:38 AM	S	Mystic/Alewife	Upper Mystic	0.1	40	20		19.8	76.9	109		0.529
083	3/30/15 8:57 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	52		34.6	90.4	143		0.761
083	4/13/15 9:41 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	0						
083	4/15/15 9:53 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	0						
083	4/16/15 8:40 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	0		28.6	80	128		0.555
083	4/30/15 9:04 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	0		16.9	79.5	124		0.512
083	5/4/15 9:17 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	73						
083	5/5/15 9:11 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	20						
083	5/12/15 9:03 AM	S	Mystic/Alewife	Upper Mystic	0.1	5	52.5		9.395	58.5	105.5		0.368
083	5/19/15 7:41 AM	S	Mystic/Alewife	Upper Mystic	0.1	30	109						
083	5/20/15 8:53 AM	S	Mystic/Alewife	Upper Mystic	0.1	86	84						
083	5/28/15 8:46 AM	S	Mystic/Alewife	Upper Mystic	0.1	41	121		0.632	60.1	90.6		0.0768
083	6/8/15 9:42 AM	S	Mystic/Alewife	Upper Mystic	0.1	173	51		2.74	60.5	89.9		0.0747
083	6/9/15 9:20 AM	S	Mystic/Alewife	Upper Mystic	0.1	171	63						
083	6/11/15 9:09 AM	S	Mystic/Alewife	Upper Mystic	0.1	85	272						
083	6/22/15 7:20 AM	S	Mystic/Alewife	Upper Mystic	0.1	301	364						
083	6/23/15 8:49 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	31		2.65	57	80.7		0.159
083	6/24/15 9:17 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	121						

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
172	6/9/15 10:12 AM	S								0	0	0	0
172	6/11/15 8:05 AM	S								0	0	0	0
172	6/12/15 7:14 AM	S								0	0	0	0
172	6/22/15 8:03 AM	S								0	1.72	1.76	
172	6/26/15 7:41 AM	S								0	0	0	0
172	6/29/15 7:50 AM	S								0	1.43	1.63	
172	7/13/15 8:08 AM	S								0	0	0	0
172	7/27/15 7:41 AM	S								0.06	0.06	0.06	
172	7/31/15 7:25 AM	S								0	0.02	0.02	
172	8/12/15 7:54 AM	S								0	0.83	0.83	
172	8/26/15 8:04 AM	S								0	0	0	0
172	8/28/15 7:23 AM	S								0	0	0	0
172	9/15/15 7:53 AM	S								0	0	0.38	
172	9/18/15 8:22 AM	S								0	0	0	
172	9/25/15 7:36 AM	S								0	0	0	
172	9/29/15 8:52 AM	S								0.04	0.04	0.04	
172	10/5/15 7:12 AM	S								0	0	0.01	
172	11/12/15 9:30 AM	S								0.01	0.05	0.59	
070	4/13/15 7:45 AM	S								0	0	0	
070	4/15/15 7:54 AM	S								0	0.01	0.01	
070	5/4/15 9:15 AM	S								0	0	0	
070	5/5/15 9:18 AM	S								0.02	0.02	0.02	
070	5/19/15 8:01 AM	S								0.27	0.27	0.27	
070	5/20/15 7:28 AM	S								0	0.27	0.27	
070	6/1/15 7:27 AM	S								0.38	1.29	1.29	
070	6/2/15 8:16 AM	S								0.74	1.12	2.03	
070	6/9/15 9:42 AM	S								0	0	0	
070	6/11/15 7:39 AM	S								0	0	0	
070	6/12/15 6:48 AM	S								0	0	0	
070	6/22/15 7:47 AM	S								0	1.72	1.76	
070	6/26/15 7:22 AM	S								0	0	0	
070	6/29/15 7:40 AM	S								0	1.43	1.63	
070	7/13/15 7:50 AM	S								0	0	0	
070	7/27/15 7:16 AM	S								0.06	0.06	0.06	
070	7/31/15 7:07 AM	S								0	0.02	0.02	
070	8/12/15 7:35 AM	S								0	0.83	0.83	
070	8/26/15 7:36 AM	S								0	0	0	
070	8/28/15 7:03 AM	S								0	0	0	
070	9/15/15 7:34 AM	S								0	0	0.38	
070	9/18/15 8:04 AM	S								0	0	0	
070	9/25/15 7:20 AM	S								0	0	0	
070	9/29/15 8:41 AM	S								0.04	0.04	0.04	
070	10/5/15 6:47 AM	S								0	0	0.01	
070	11/12/15 9:15 AM	S								0.01	0.05	0.59	
083	1/20/15 9:38 AM	S	11.5	3.42						1.7	6.65	0	0.15
083	3/30/15 8:57 AM	S	5.15	2.18						1.63	6.56	0	0.12
083	4/13/15 9:41 AM	S								0	0	0	
083	4/15/15 9:53 AM	S								0	0	0.01	0.01
083	4/16/15 8:40 AM	S	5.49	1.69						1.24	2.98	0	0.01
083	4/30/15 9:04 AM	S	7.37	2.4						1.15	2.96	0	0.07
083	5/4/15 9:17 AM	S								0	0	0	
083	5/5/15 9:11 AM	S								0.02	0.02	0.02	
083	5/12/15 9:03 AM	S	8.07	3.35						1.39	6.01	0.02	0.02
083	5/19/15 7:41 AM	S								0.27	0.27	0.27	
083	5/20/15 8:53 AM	S								0	0.27	0.27	
083	5/28/15 8:46 AM	S	18.6	4.24						0.782	3.61	0	0
083	6/8/15 9:42 AM	S	9.34	5.15						0.921	3.39	0	0.09
083	6/9/15 9:20 AM	S								0	0	0	
083	6/11/15 9:09 AM	S								0	0	0	
083	6/22/15 7:20 AM	S								0	1.72	1.76	
083	6/23/15 8:49 AM	S	5.05	2.76						0.75	1.76	0.01	0.01
083	6/24/15 9:17 AM	S								0	0.01	0.01	0.01

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
083	7/8/15 8:45 AM	S	Mystic/Alewife	Upper Mystic	0.1	169	145		2.8	42	76.8		0.137
083	7/13/15 7:53 AM	S	Mystic/Alewife	Upper Mystic	0.1	41	83						
083	7/14/15 7:26 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	41						
083	7/20/15 8:54 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	63		1.46	37.6	62.4		0.127
083	7/27/15 8:26 AM	S	Mystic/Alewife	Upper Mystic	0.1	143	295						
083	7/28/15 7:30 AM	S	Mystic/Alewife	Upper Mystic	0.1	31	41						
083	8/3/15 8:39 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	63		1.84	16.9	39.2		0.363
083	8/18/15 8:19 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	85		0.13	14.4	37		0.137
083	8/26/15 8:33 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	97						
083	8/27/15 8:38 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	97						
083	9/3/15 8:48 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	246		1.37	11.9	37.3		0.179
083	9/14/15 8:17 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	98		3.21	15.1	39.4		0.175
083	9/15/15 9:12 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	31						
083	9/16/15 8:57 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	134						
083	9/28/15 8:20 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	121		0.961	4.06	27.5		0.0422
083	10/5/15 7:50 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	41						
083	10/6/15 8:52 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	121						
083	10/16/15 7:50 AM	S	Mystic/Alewife	Upper Mystic	0.1	15	96		3.235	16.1	42.65		0.35
083	10/27/15 8:33 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	143		4.64	19.2	49.4		0.215
083	11/10/15 9:29 AM	S	Mystic/Alewife	Upper Mystic	0.1	5	74		2.75	23.2	50.3		0.307
083	11/23/15 10:06 AM	S	Mystic/Alewife	Upper Mystic	0.1	275	98		8.71	23.9	52.5		0.813
083	12/8/15 9:39 AM	S	Mystic/Alewife	Upper Mystic	0.1	74	41		14.7	33.2	67.9		0.455
083	12/21/15 9:55 AM	S	Mystic/Alewife	Upper Mystic	0.1	86	86		15.7	44.8	88.4		0.607
057	4/13/15 9:35 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	10						
057	4/15/15 9:48 AM	S	Mystic/Alewife	Upper Mystic	0.1	41	63						
057	5/4/15 9:11 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	52						
057	5/5/15 9:06 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	31						
057	5/19/15 7:49 AM	S	Mystic/Alewife	Upper Mystic	0.1	183	213						
057	5/20/15 8:48 AM	S	Mystic/Alewife	Upper Mystic	0.1	259	2010						
057	6/9/15 9:29 AM	S	Mystic/Alewife	Upper Mystic	0.1	31	10						
057	6/11/15 9:04 AM	S	Mystic/Alewife	Upper Mystic	0.1	426	504						
057	6/22/15 7:34 AM	S	Mystic/Alewife	Upper Mystic	0.1	613	631						
057	6/24/15 9:11 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	52						
057	7/13/15 7:59 AM	S	Mystic/Alewife	Upper Mystic	0.1	228	233						
057	7/14/15 7:33 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	86						
057	7/27/15 8:46 AM	S	Mystic/Alewife	Upper Mystic	0.1	158	327						
057	7/28/15 7:38 AM	S	Mystic/Alewife	Upper Mystic	0.1	465	2850						
057	8/26/15 8:28 AM	S	Mystic/Alewife	Upper Mystic	0.1	63	327						
057	8/27/15 8:33 AM	S	Mystic/Alewife	Upper Mystic	0.1	31	135						
057	9/15/15 9:05 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	31						
057	9/16/15 8:53 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	74						
057	10/5/15 8:03 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	85						
057	10/6/15 8:46 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	74						
066	1/7/15 8:58 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	41		23.4	65.1	106		0.492
066	1/20/15 9:26 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	63		22.8	72.4	104		0.581
066	2/19/15 9:23 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	41		26.75	76	118.5		0.5385
066	3/3/15 8:59 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	52		28.35	78.3	127		0.5805
066	3/16/15 8:30 AM	S	Mystic/Alewife	Upper Mystic	0.1	5	86.5		33.45	79.8	127.5		0.5975
066	3/30/15 8:46 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	213		35.4	82.4	142		0.655
066	4/16/15 8:29 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	0		27	75	134		0.654
066	4/30/15 8:47 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	36		15.75	68.4	115.5		0.484
066	5/12/15 8:50 AM	S	Mystic/Alewife	Upper Mystic	0.1	61	31		8.3	62	107		0.363
066	5/28/15 8:32 AM	S	Mystic/Alewife	Upper Mystic	0.1	46.5	115.5		4.06	54.45	88.15		0.123
066	6/8/15 9:35 AM	S	Mystic/Alewife	Upper Mystic	0.1	121	299		11.3	47.3	89.8		0.244
066	6/23/15 8:37 AM	S	Mystic/Alewife	Upper Mystic	0.1	109	108		6.37	50	79.9		0.255
066	7/8/15 8:23 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	31		4.56	40.1	74.8		0.197
066	7/20/15 8:36 AM	S	Mystic/Alewife	Upper Mystic	0.1	74	131		9.14	32.5	63.6		0.444
066	8/3/15 8:26 AM	S	Mystic/Alewife	Upper Mystic	0.1	62	243		7.29	19	50.7		0.502
066	8/18/15 8:07 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	185		4.41	16.5	46.3		0.301
066	9/3/15 8:39 AM	S	Mystic/Alewife	Upper Mystic	0.1	31	146		2.99	15.4	42.7		0.261
066	9/14/15 8:09 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	84		5.63	18.6	46.3		0.262
066	9/28/15 8:09 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	187		1.89	19.7	48.5		0.237

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY RAIN	Logan Rainfall TWO_DAY RAIN	Logan Rainfall THREE_DAY RAIN
083	7/8/15 8:45 AM	S	10.6	7.01					1.15	5.17	0	0.02	0.02
083	7/13/15 7:53 AM	S								0	0	0	0
083	7/14/15 7:26 AM	S								0.03	0.03	0.03	0.03
083	7/20/15 8:54 AM	S	4.35	2.68					0.741	1.21	0	0	0.14
083	7/27/15 8:26 AM	S								0.06	0.06	0.06	0.06
083	7/28/15 7:30 AM	S								0	0.06	0.06	0.06
083	8/3/15 8:39 AM	S	2.63	2.3					1.15	2.14	0	0	0
083	8/18/15 8:19 AM	S	3.95	2.85					0.798	2.73	0.14	0.14	0.14
083	8/26/15 8:33 AM	S								0	0	0	0
083	8/27/15 8:38 AM	S								0	0	0	0
083	9/3/15 8:48 AM	S	2.8	3.68					0.744	1.61	0.01	0.01	0.01
083	9/14/15 8:17 AM	S	3.22	4.23					0.743	0.8	0	0.38	0.39
083	9/15/15 9:12 AM	S								0	0	0	0.38
083	9/16/15 8:57 AM	S								0	0	0	0
083	9/28/15 8:20 AM	S	5.68	4.28					0.534	3.74	0	0	0
083	10/5/15 7:50 AM	S								0	0	0	0.01
083	10/6/15 8:52 AM	S								0	0	0	0
083	10/16/15 7:50 AM	S	5.01	4.295					0.885	2.3	0	0	0
083	10/27/15 8:33 AM	S	3.81	3.2					0.674	2.33	0	0	0.03
083	11/10/15 9:29 AM	S	5.345	3.675					0.842	2.255	0.54	0.61	0.61
083	11/23/15 10:06 AM	S	7.29	3.17					1.57	2.84	0.04	0.34	0.34
083	12/8/15 9:39 AM	S	8.12	5.82					1.47	53.4	0	0	0
083	12/21/15 9:55 AM	S	7.57	4.81					1.28	9.4	0	0	0
057	4/13/15 9:35 AM	S								0	0	0	0
057	4/15/15 9:48 AM	S								0	0.01	0.01	0.01
057	5/4/15 9:11 AM	S								0	0	0	0
057	5/5/15 9:06 AM	S								0.02	0.02	0.02	0.02
057	5/19/15 7:49 AM	S								0.27	0.27	0.27	0.27
057	5/20/15 8:48 AM	S								0	0.27	0.27	0.27
057	6/9/15 9:29 AM	S								0	0	0	0
057	6/11/15 9:04 AM	S								0	0	0	0
057	6/22/15 7:34 AM	S								0	1.72	1.72	1.76
057	6/24/15 9:11 AM	S								0	0.01	0.01	0.01
057	7/13/15 7:59 AM	S								0	0	0	0
057	7/14/15 7:33 AM	S								0.03	0.03	0.03	0.03
057	7/27/15 8:46 AM	S								0.06	0.06	0.06	0.06
057	7/28/15 7:38 AM	S								0	0.06	0.06	0.06
057	8/26/15 8:28 AM	S								0	0	0	0
057	8/27/15 8:33 AM	S								0	0	0	0
057	9/15/15 9:05 AM	S								0	0	0	0.38
057	9/16/15 8:53 AM	S								0	0	0	0
057	10/5/15 8:03 AM	S								0	0	0	0.01
057	10/6/15 8:46 AM	S								0	0	0	0
066	1/7/15 8:58 AM	S	4.94	1.73						1.17	2.58	0	0.02
066	1/20/15 9:26 AM	S	7.41	1.95						1.53	2.77	0	0.15
066	2/19/15 9:23 AM	S	4.97	1.44						1.17	1.955	0.06	0.09
066	3/3/15 8:59 AM	S	4.89	1.405						1.61	2.09	0.26	0.27
066	3/16/15 8:30 AM	S	3.645	1.21						1.4	3.49	0	0.27
066	3/30/15 8:46 AM	S	3.34	1.3						1.4	3.31	0	0.12
066	4/16/15 8:29 AM	S	6.06	2.51						1.51	4.68	0	0.01
066	4/30/15 8:47 AM	S	10.58	4.725						1.775	6.515	0	0.07
066	5/12/15 8:50 AM	S	7.58	3.6						1.66	6.3	0.02	0.02
066	5/28/15 8:32 AM	S	22.1	5.755						1.265	5.26	0	0
066	6/8/15 9:35 AM	S	11.9	6.67						1.61	5.08	0	0.09
066	6/23/15 8:37 AM	S	7.78	4.36						1.28	3.92	0.01	0.01
066	7/8/15 8:23 AM	S	5.39	2.92						1.1	3.86	0	0.02
066	7/20/15 8:36 AM	S	3.95	6.59						1.61	1.84	0	0.14
066	8/3/15 8:26 AM	S	4.75	5.38						2	2.7	0	0
066	8/18/15 8:07 AM	S	9.65	6.16						1.42	2.69	0.14	0.14
066	9/3/15 8:39 AM	S	6.41	5.91						1.04	2.56	0.01	0.01
066	9/14/15 8:09 AM	S	6.2	5.35						1.15	2.69	0	0.38
066	9/28/15 8:09 AM	S	7.62	5.09						1.03	5.87	0	0

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
066	10/16/15 7:40 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	122		5.39	19	52		0.399
066	10/27/15 8:25 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	84		4.7	21.5	50.6		0.269
066	11/10/15 9:22 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	84		6.07	21.2	53.2		0.355
066	11/23/15 9:50 AM	S	Mystic/Alewife	Upper Mystic	0.1	121	320		12.55	25.85	58.35		0.4875
066	12/8/15 9:30 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	121		10.8	53.6	70.2		0.794
066	12/21/15 9:48 AM	S	Mystic/Alewife	Upper Mystic	0.1	41	52		19.4	36	80.8		0.538
056	4/13/15 9:12 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	31						
056	4/15/15 9:26 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	31						
056	5/4/15 8:49 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	52						
056	5/5/15 8:45 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	20						
056	5/19/15 9:03 AM	S	Mystic/Alewife	Upper Mystic	0.1	31	63						
056	5/20/15 8:29 AM	S	Mystic/Alewife	Upper Mystic	0.1	169	2100						
056	6/9/15 8:36 AM	S	Mystic/Alewife	Upper Mystic	0.1	41	148						
056	6/11/15 8:40 AM	S	Mystic/Alewife	Upper Mystic	0.1	73	187						
056	6/22/15 8:55 AM	S	Mystic/Alewife	Upper Mystic	0.1	301	521						
056	6/24/15 8:50 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	132						
056	7/13/15 8:37 AM	S	Mystic/Alewife	Upper Mystic	0.1	63	135						
056	7/14/15 8:07 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	201						
056	7/27/15 9:08 AM	S	Mystic/Alewife	Upper Mystic	0.1	31	987						
056	7/28/15 8:23 AM	S	Mystic/Alewife	Upper Mystic	0.1	30	384						
056	8/26/15 8:06 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	148						
056	8/27/15 8:10 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	450						
056	9/15/15 8:26 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	886						
056	9/16/15 8:14 AM	S	Mystic/Alewife	Upper Mystic	0.1	0	278						
056	10/5/15 8:48 AM	S	Mystic/Alewife	Upper Mystic	0.1	20	226						
056	10/6/15 8:25 AM	S	Mystic/Alewife	Upper Mystic	0.1	10	450						
177	1/20/15 8:48 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	97	1330						
177	3/16/15 7:52 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	132						
177	3/30/15 8:07 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	441						
177	4/16/15 7:36 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	52	712						
177	4/30/15 8:03 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	86						
177	5/12/15 7:54 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	20						
177	5/28/15 7:57 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	41	86						
177	6/8/15 7:43 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	262						
177	6/23/15 8:14 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	52	181						
177	7/8/15 7:34 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	63						
177	7/20/15 7:53 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	231						
177	8/3/15 7:47 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	52						
177	8/18/15 7:28 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	74						
177	9/3/15 7:54 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	41						
177	9/14/15 7:27 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	275						
177	9/28/15 7:36 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	74						
177	10/16/15 7:15 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	250						
177	10/27/15 7:54 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	218						
177	11/10/15 9:04 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	63						
177	11/23/15 9:18 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	74	888						
177	12/8/15 8:55 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	134						
177	12/21/15 9:12 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	52	1450						
067	4/13/15 8:58 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	110						
067	4/15/15 9:15 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	63						
067	5/4/15 8:34 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	20						
067	5/5/15 8:34 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	20						
067	5/19/15 8:44 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	0						
067	5/20/15 8:15 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	119	0						
067	6/9/15 8:19 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	20						
067	6/11/15 8:24 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	52						
067	6/22/15 8:35 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	161	384						
067	6/24/15 8:31 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	20						
067	7/13/15 8:52 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	10						
067	7/14/15 8:27 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	31	0						
067	7/27/15 8:51 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	0						
067	7/28/15 8:41 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	20						

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY RAIN	Logan Rainfall TWO_DAY RAIN	Logan Rainfall THREE_DAY RAIN
066	10/16/15 7:40 AM	S	7.88	5.96					1.35	7.74	0	0	0
066	10/27/15 8:25 AM	S	4.33	3.89					0.936	4.45	0	0	0.03
066	11/10/15 9:22 AM	S	5.81	4.62					1.37	2.52	0.54	0.61	0.61
066	11/23/15 9:50 AM	S	8.335	4.815					1.1	2.865	0.04	0.34	0.34
066	12/8/15 9:30 AM	S	5.52	3.77					1.07	21	0	0	0
066	12/21/15 9:48 AM	S	6.39	4.8					1.12	6.14	0	0	0
056	4/13/15 9:12 AM	S								0	0	0	0
056	4/15/15 9:26 AM	S								0	0.01	0.01	
056	5/4/15 8:49 AM	S								0	0	0	
056	5/5/15 8:45 AM	S								0.02	0.02	0.02	
056	5/19/15 9:03 AM	S								0.27	0.27	0.27	
056	5/20/15 8:29 AM	S								0	0.27	0.27	
056	6/9/15 8:36 AM	S								0	0	0	
056	6/11/15 8:40 AM	S								0	0	0	
056	6/22/15 8:55 AM	S								0	1.72	1.76	
056	6/24/15 8:50 AM	S								0	0.01	0.01	
056	7/13/15 8:37 AM	S								0	0	0	
056	7/14/15 8:07 AM	S								0.03	0.03	0.03	
056	7/27/15 9:08 AM	S								0.06	0.06	0.06	
056	7/28/15 8:23 AM	S								0	0.06	0.06	
056	8/26/15 8:06 AM	S								0	0	0	
056	8/27/15 8:10 AM	S								0	0	0	
056	9/15/15 8:26 AM	S								0	0	0.38	
056	9/16/15 8:14 AM	S								0	0	0	
056	10/5/15 8:48 AM	S								0	0	0.01	
056	10/6/15 8:25 AM	S								0	0	0	
177	1/20/15 8:48 AM	S								0	0	0.15	
177	3/16/15 7:52 AM	S								0	0.27	0.27	
177	3/30/15 8:07 AM	S								0	0	0.12	
177	4/16/15 7:36 AM	S								0	0	0.01	
177	4/30/15 8:03 AM	S								0	0	0.07	
177	5/12/15 7:54 AM	S								0.02	0.02	0.02	
177	5/28/15 7:57 AM	S								0	0	0	
177	6/8/15 7:43 AM	S								0	0	0.09	
177	6/23/15 8:14 AM	S								0.01	0.01	1.73	
177	7/8/15 7:34 AM	S								0	0.02	0.02	
177	7/20/15 7:53 AM	S								0	0	0.14	
177	8/3/15 7:47 AM	S								0	0	0	
177	8/18/15 7:28 AM	S								0.14	0.14	0.14	
177	9/3/15 7:54 AM	S								0.01	0.01	0.01	
177	9/14/15 7:27 AM	S								0	0.38	0.39	
177	9/28/15 7:36 AM	S								0	0	0	
177	10/16/15 7:15 AM	S								0	0	0	
177	10/27/15 7:54 AM	S								0	0	0.03	
177	11/10/15 9:04 AM	S								0.54	0.61	0.61	
177	11/23/15 9:18 AM	S								0.04	0.34	0.34	
177	12/8/15 8:55 AM	S								0	0	0	
177	12/21/15 9:12 AM	S								0	0	0	
067	4/13/15 8:58 AM	S								0	0	0	
067	4/15/15 9:15 AM	S								0	0.01	0.01	
067	5/4/15 8:34 AM	S								0	0	0	
067	5/5/15 8:34 AM	S								0.02	0.02	0.02	
067	5/19/15 8:44 AM	S								0.27	0.27	0.27	
067	5/20/15 8:15 AM	S								0	0.27	0.27	
067	6/9/15 8:19 AM	S								0	0	0	
067	6/11/15 8:24 AM	S								0	0	0	
067	6/22/15 8:35 AM	S								0	1.72	1.76	
067	6/24/15 8:31 AM	S								0	0.01	0.01	
067	7/13/15 8:52 AM	S								0	0	0	
067	7/14/15 8:27 AM	S								0.03	0.03	0.03	
067	7/27/15 8:51 AM	S								0.06	0.06	0.06	
067	7/28/15 8:41 AM	S								0	0.06	0.06	

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
067	8/26/15 7:52 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	52						
067	8/27/15 7:58 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	31						
067	9/15/15 8:14 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	52						
067	9/16/15 8:02 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	41						
067	10/5/15 8:31 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	132						
067	10/6/15 8:14 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	134						
059	4/13/15 8:44 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	31						
059	4/15/15 9:04 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	10						
059	5/4/15 8:20 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	20						
059	5/5/15 8:19 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	10						
059	5/19/15 8:23 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	20						
059	5/20/15 8:01 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	86	63						
059	6/9/15 8:06 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	31						
059	6/11/15 8:12 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	30						
059	6/22/15 8:12 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	31	122						
059	6/24/15 8:11 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	20						
059	7/13/15 9:06 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	0						
059	7/14/15 8:47 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	0						
059	7/27/15 8:28 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	10						
059	7/28/15 8:56 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	10						
059	8/26/15 7:38 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	20						
059	8/27/15 7:48 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	52						
059	9/15/15 8:02 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	10						
059	9/16/15 7:49 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	41						
059	10/5/15 8:13 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	118						
059	10/6/15 7:58 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	86						
176	4/13/15 8:49 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	30						
176	4/13/15 8:49 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	30						
176	4/15/15 9:08 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	41						
176	4/15/15 9:08 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	41						
176	5/4/15 8:25 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	41						
176	5/4/15 8:25 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	41						
176	5/5/15 8:24 AM	S	Mystic/Alewife	Lower Mystic basin	0.1								
176	5/5/15 8:24 AM	S	Mystic/Alewife	Lower Mystic basin	0.1								
176	5/19/15 8:31 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	20						
176	5/19/15 8:31 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	20						
176	5/20/15 8:07 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	31						
176	5/20/15 8:07 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	31						
176	6/9/15 8:11 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	30	52						
176	6/9/15 8:11 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	30	52						
176	6/11/15 8:17 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	31	213						
176	6/11/15 8:17 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	31	213						
176	6/22/15 8:21 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	1140	1970						
176	6/22/15 8:21 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	1140	1970						
176	6/24/15 8:16 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	30	98						
176	6/24/15 8:16 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	30	98						
176	7/13/15 9:02 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	10						
176	7/13/15 9:02 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	10						
176	7/14/15 8:41 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	0						
176	7/14/15 8:41 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	0						
176	7/27/15 8:35 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	41	41						
176	7/27/15 8:35 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	41	41						
176	7/28/15 8:51 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	74						
176	7/28/15 8:51 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	74						
176	8/26/15 7:44 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	0						
176	8/26/15 7:44 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	0						
176	8/27/15 7:51 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	41						
176	8/27/15 7:51 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	41						
176	9/15/15 8:07 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	86						
176	9/15/15 8:07 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	86						
176	9/16/15 7:55 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	41						
176	9/16/15 7:55 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	41						

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
067	8/26/15 7:52 AM	S								0	0	0	0
067	8/27/15 7:58 AM	S								0	0	0	0
067	9/15/15 8:14 AM	S								0	0	0.38	
067	9/16/15 8:02 AM	S								0	0	0	
067	10/5/15 8:31 AM	S								0	0	0.01	
067	10/6/15 8:14 AM	S								0	0	0	
059	4/13/15 8:44 AM	S								0	0	0	
059	4/15/15 9:04 AM	S								0	0.01	0.01	
059	5/4/15 8:20 AM	S								0	0	0	
059	5/5/15 8:19 AM	S								0.02	0.02	0.02	
059	5/19/15 8:23 AM	S								0.27	0.27	0.27	
059	5/20/15 8:01 AM	S								0	0.27	0.27	
059	6/9/15 8:06 AM	S								0	0	0	
059	6/11/15 8:12 AM	S								0	0	0	
059	6/22/15 8:12 AM	S								0	1.72	1.76	
059	6/24/15 8:11 AM	S								0	0.01	0.01	
059	7/13/15 9:06 AM	S								0	0	0	
059	7/14/15 8:47 AM	S								0.03	0.03	0.03	
059	7/27/15 8:28 AM	S								0.06	0.06	0.06	
059	7/28/15 8:56 AM	S								0	0.06	0.06	
059	8/26/15 7:38 AM	S								0	0	0	
059	8/27/15 7:48 AM	S								0	0	0	
059	9/15/15 8:02 AM	S								0	0	0.38	
059	9/16/15 7:49 AM	S								0	0	0	
059	10/5/15 8:13 AM	S								0	0	0.01	
059	10/6/15 7:58 AM	S								0	0	0	
176	4/13/15 8:49 AM	S								0	0	0	
176	4/13/15 8:49 AM	S								0	0	0	
176	4/15/15 9:08 AM	S								0	0.01	0.01	
176	4/15/15 9:08 AM	S								0	0.01	0.01	
176	5/4/15 8:25 AM	S								0	0	0	
176	5/4/15 8:25 AM	S								0	0	0	
176	5/5/15 8:24 AM	S								0.02	0.02	0.02	
176	5/5/15 8:24 AM	S								0.02	0.02	0.02	
176	5/19/15 8:31 AM	S								0.27	0.27	0.27	
176	5/19/15 8:31 AM	S								0.27	0.27	0.27	
176	5/20/15 8:07 AM	S								0	0.27	0.27	
176	5/20/15 8:07 AM	S								0	0.27	0.27	
176	6/9/15 8:11 AM	S								0	0	0	
176	6/9/15 8:11 AM	S								0	0	0	
176	6/11/15 8:17 AM	S								0	0	0	
176	6/11/15 8:17 AM	S								0	0	0	
176	6/22/15 8:21 AM	S								0	1.72	1.76	
176	6/22/15 8:21 AM	S								0	1.72	1.76	
176	6/24/15 8:16 AM	S								0	0.01	0.01	
176	6/24/15 8:16 AM	S								0	0.01	0.01	
176	7/13/15 9:02 AM	S								0	0	0	
176	7/13/15 9:02 AM	S								0	0	0	
176	7/14/15 8:41 AM	S								0.03	0.03	0.03	
176	7/14/15 8:41 AM	S								0.03	0.03	0.03	
176	7/27/15 8:35 AM	S								0.06	0.06	0.06	
176	7/27/15 8:35 AM	S								0.06	0.06	0.06	
176	7/28/15 8:51 AM	S								0	0.06	0.06	
176	7/28/15 8:51 AM	S								0	0.06	0.06	
176	8/26/15 7:44 AM	S								0	0	0	
176	8/26/15 7:44 AM	S								0	0	0	
176	8/27/15 7:51 AM	S								0	0	0	
176	8/27/15 7:51 AM	S								0	0	0	
176	9/15/15 8:07 AM	S								0	0	0.38	
176	9/15/15 8:07 AM	S								0	0	0.38	
176	9/16/15 7:55 AM	S								0	0	0	
176	9/16/15 7:55 AM	S								0	0	0	

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
176	10/5/15 8:20 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	97						
176	10/5/15 8:20 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	97						
176	10/6/15 8:04 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	86						
176	10/6/15 8:04 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	86						
167	3/30/15 7:37 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	231		30.2	82	129		0.65
167	4/10/15 7:04 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	143						
167	4/16/15 7:08 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	52		17.8	71.3	116		0.577
167	4/30/15 7:29 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	31		4.39	62.7	104		0.5
167	5/12/15 7:25 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	0		1.1	30	74.9		0.0153
167	5/28/15 7:29 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	10		0.329	8.94	62.5		0.0868
167	6/2/15 7:59 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	576	4350						
167	6/8/15 7:16 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	10		1.47	34	76.4		0.202
167	6/23/15 7:35 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	15		0.626	24.95	65.55		0.1685
167	6/29/15 8:41 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	98	134						
167	7/2/15 7:23 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	121						
167	7/8/15 7:04 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	0		3.15	19.85	60.2		0.192
167	7/10/15 6:45 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	41						
167	7/20/15 7:19 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	20		0.403	0.967	39.5		0.192
167	8/3/15 7:15 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	10		0.1557	0.03905	42.8		0.08525
167	8/12/15 9:02 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	259						
167	8/18/15 6:58 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	52		0	0.482	39.1		0.0382
167	9/3/15 7:25 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	10		0.0775	0.196	45.9		0.14
167	9/14/15 7:01 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	146.5		2.245	4.21	58.75		0.18
167	9/28/15 6:55 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	20		0.301	7.83	57.6		0.0588
167	9/30/15 7:44 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	121	1470						
167	10/2/15 6:57 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	213	2500						
167	10/16/15 6:47 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	52		0.232	0.769	34.8		0.247
167	10/27/15 7:30 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	10		0.0505	2.28	34.75		0.01895
167	10/29/15 9:12 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	20	216						
167	11/10/15 8:40 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	31	173		9.47	17.1	62		0.403
167	11/12/15 8:36 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	496						
167	11/23/15 8:47 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	52	504		6.31	24.7	60.2		0.351
167	12/8/15 8:34 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	0	20		6.91	30.4	58.8		0.312
167	12/21/15 8:42 AM	S	Mystic/Alewife	Lower Mystic basin	0.1	10	359		14	32.6	77.1		0.346
052	3/27/15 8:05 AM	S	Mystic/Alewife	Mystic mouth	0.1	121		182					
052	4/13/15 10:47 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		9.09					
052	4/15/15 8:55 AM	B	Mystic/Alewife	Mystic mouth	2.8	52		80					
052	4/15/15 8:55 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		0					
052	5/4/15 8:08 AM	B	Mystic/Alewife	Mystic mouth	1.4	10		5					
052	5/4/15 8:08 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		9.09					
052	5/5/15 8:06 AM	B	Mystic/Alewife	Mystic mouth	0.8	10		20					
052	5/5/15 8:06 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		9.09					
052	5/19/15 8:14 AM	B	Mystic/Alewife	Mystic mouth	1	10		50					
052	5/19/15 8:14 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		136					
052	5/20/15 7:49 AM	S	Mystic/Alewife	Mystic mouth	0.1	31		63.6					
052	6/1/15 7:10 AM	S	Mystic/Alewife	Mystic mouth	0.1	122		320					
052	6/2/15 7:26 AM	S	Mystic/Alewife	Mystic mouth	0.1	766		10900					
052	6/9/15 7:57 AM	S	Mystic/Alewife	Mystic mouth	0.1	31		45.5					
052	6/11/15 8:01 AM	B	Mystic/Alewife	Mystic mouth	2.3	10		10					
052	6/11/15 8:01 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		36.4					
052	6/22/15 8:03 AM	S	Mystic/Alewife	Mystic mouth	0.1	416		2300					
052	6/24/15 8:03 AM	B	Mystic/Alewife	Mystic mouth	1.3	0		5					
052	6/24/15 8:03 AM	S	Mystic/Alewife	Mystic mouth	0.1	52		0					
052	6/29/15 8:11 AM	S	Mystic/Alewife	Mystic mouth	0.1	63		270					
052	7/2/15 7:28 AM	S	Mystic/Alewife	Mystic mouth	0.1	364		811					
052	7/10/15 7:18 AM	S	Mystic/Alewife	Mystic mouth	0.1	1110		3500					
052	7/13/15 9:15 AM	B	Mystic/Alewife	Mystic mouth	2.7	74		0					
052	7/13/15 9:15 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		36.4					
052	7/14/15 8:55 AM	B	Mystic/Alewife	Mystic mouth	2.4	10		15					
052	7/14/15 8:55 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		27.3					
052	7/27/15 8:18 AM	B	Mystic/Alewife	Mystic mouth	2.5	0		0					
052	7/27/15 8:18 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		9.09					

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
176	10/5/15 8:20 AM	S								0	0	0	0.01
176	10/5/15 8:20 AM	S								0	0	0	0.01
176	10/6/15 8:04 AM	S								0	0	0	0
176	10/6/15 8:04 AM	S								0	0	0	0
167	3/30/15 7:37 AM	S	5.28	2.49					1.7	6.48	0	0	0.12
167	4/10/15 7:04 AM	S								0.09	0.18	0.44	
167	4/16/15 7:08 AM	S	9.47	4.01					1.75	5.79	0	0	0.01
167	4/30/15 7:29 AM	S	27.22	6.9					1.83	6.41	0	0	0.07
167	5/12/15 7:25 AM	S	20.3	4.59					1.22	8.45	0.02	0.02	0.02
167	5/28/15 7:29 AM	S	41.5	14.7					2.2	10.3	0	0	0
167	6/2/15 7:59 AM	S								0.74	1.12	2.03	
167	6/8/15 7:16 AM	S	37	20.1					2.48	11.4	0	0	0.09
167	6/23/15 7:35 AM	S	22.55	9.03					1.61	5.29	0.01	0.01	1.73
167	6/29/15 8:41 AM	S								0	1.43	1.63	
167	7/2/15 7:23 AM	S								0	0.54	0.54	
167	7/8/15 7:04 AM	S	13.95	9.765					1.4	4.735	0	0.02	0.02
167	7/10/15 6:45 AM	S								1.12	1.27	1.27	
167	7/20/15 7:19 AM	S	25.1	15					2.04	4.39	0	0	0.14
167	8/3/15 7:15 AM	S	19.9	13.1					2.05	7.79	0	0	0
167	8/12/15 9:02 AM	S								0	0.83	0.83	
167	8/18/15 6:58 AM	S	12.6	4.62					1.4	4.11	0.14	0.14	0.14
167	9/3/15 7:25 AM	S	20.4	3.6					1.78	5.09	0.01	0.01	0.01
167	9/14/15 7:01 AM	S	69.2	15.8					3.22	5.245	0	0.38	0.39
167	9/28/15 6:55 AM	S	18.1	4.31					1.9	5.04	0	0	0
167	9/30/15 7:44 AM	S								2.46	2.5	2.5	
167	10/2/15 6:57 AM	S								0.08	0.08	0.08	2.54
167	10/16/15 6:47 AM	S	19.2	6.18					1.22	8.44	0	0	0
167	10/27/15 7:30 AM	S	11.75	5.35					0.879	2.995	0	0	0.03
167	10/29/15 9:12 AM	S								0.73	1.09	1.09	
167	11/10/15 8:40 AM	S	31.2	13.9					2.22	3.26	0.54	0.61	0.61
167	11/12/15 8:36 AM	S								0.01	0.05	0.59	
167	11/23/15 8:47 AM	S	38	11.1					1.55	4.23	0.04	0.34	0.34
167	12/8/15 8:34 AM	S	25.4	7.14					1.07	16	0	0	0
167	12/21/15 8:42 AM	S	10.9	9.4					1.36	7.09	0	0	0
052	3/27/15 8:05 AM	S								0.21	1.01	1.05	
052	4/13/15 10:47 AM	S								0	0	0	
052	4/15/15 8:55 AM	B								0	0.01	0.01	
052	4/15/15 8:55 AM	S								0	0.01	0.01	
052	5/4/15 8:08 AM	B								0	0	0	
052	5/4/15 8:08 AM	S								0	0	0	
052	5/5/15 8:06 AM	B								0.02	0.02	0.02	
052	5/5/15 8:06 AM	S								0.02	0.02	0.02	
052	5/19/15 8:14 AM	B								0.27	0.27	0.27	
052	5/19/15 8:14 AM	S								0.27	0.27	0.27	
052	5/20/15 7:49 AM	S								0	0.27	0.27	
052	6/1/15 7:10 AM	S								0.38	1.29	1.29	
052	6/2/15 7:26 AM	S								0.74	1.12	2.03	
052	6/9/15 7:57 AM	S								0	0	0	
052	6/11/15 8:01 AM	B								0	0	0	
052	6/11/15 8:01 AM	S								0	0	0	
052	6/22/15 8:03 AM	S								0	1.72	1.76	
052	6/24/15 8:03 AM	B								0	0.01	0.01	
052	6/24/15 8:03 AM	S								0	0.01	0.01	
052	6/29/15 8:11 AM	S								0	1.43	1.63	
052	7/2/15 7:28 AM	S								0	0.54	0.54	
052	7/10/15 7:18 AM	S								1.12	1.27	1.27	
052	7/13/15 9:15 AM	B								0	0	0	
052	7/13/15 9:15 AM	S								0	0	0	
052	7/14/15 8:55 AM	B								0.03	0.03	0.03	
052	7/14/15 8:55 AM	S								0.03	0.03	0.03	
052	7/27/15 8:18 AM	B								0.06	0.06	0.06	
052	7/27/15 8:18 AM	S								0.06	0.06	0.06	

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
052	7/28/15 9:05 AM	B	Mystic/Alewife	Mystic mouth	2.4	0		5					
052	7/28/15 9:05 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		10					
052	8/12/15 9:06 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		135					
052	8/26/15 7:28 AM	B	Mystic/Alewife	Mystic mouth	1.8	0		100					
052	8/26/15 7:28 AM	S	Mystic/Alewife	Mystic mouth	0.1	41		3500					
052	8/27/15 7:40 AM	B	Mystic/Alewife	Mystic mouth	2.1	41		230					
052	8/27/15 7:40 AM	S	Mystic/Alewife	Mystic mouth	0.1	20		164					
052	9/15/15 7:55 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		991					
052	9/16/15 7:42 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		2300					
052	10/1/15 7:30 AM	S	Mystic/Alewife	Mystic mouth	0.1	5480		22000					
052	10/5/15 8:06 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		36.4					
052	10/6/15 9:57 AM	B	Mystic/Alewife	Mystic mouth	1.2	10		0					
052	10/6/15 9:57 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		18.2					
052	10/29/15 9:05 AM	S	Mystic/Alewife	Mystic mouth	0.1	288		310					
069	3/27/15 8:00 AM	S	Mystic/Alewife	Mystic mouth	0.1	160		270					
069	4/13/15 8:25 AM	B	Mystic/Alewife	Mystic mouth	1.4	0		0					
069	4/13/15 8:25 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		0					
069	4/15/15 8:45 AM	B	Mystic/Alewife	Mystic mouth	2.3	0		0					
069	4/15/15 8:45 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		9.09					
069	5/4/15 7:58 AM	B	Mystic/Alewife	Mystic mouth	1.1	10		10					
069	5/4/15 7:58 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		9.09					
069	5/5/15 7:58 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		18.2					
069	5/19/15 8:05 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		81.8					
069	5/20/15 7:42 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		27.3					
069	6/1/15 7:18 AM	S	Mystic/Alewife	Mystic mouth	0.1	1370		2700					
069	6/2/15 7:36 AM	S	Mystic/Alewife	Mystic mouth	0.1	2600		5800					
069	6/9/15 7:50 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		27.3					
069	6/11/15 7:52 AM	B	Mystic/Alewife	Mystic mouth	2	0		5					
069	6/11/15 7:52 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		9.09					
069	6/22/15 7:52 AM	S	Mystic/Alewife	Mystic mouth	0.1	158		580					
069	6/24/15 7:54 AM	B	Mystic/Alewife	Mystic mouth	1.2	10		5					
069	6/24/15 7:54 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		0					
069	6/29/15 8:04 AM	S	Mystic/Alewife	Mystic mouth	0.1	20		200					
069	7/2/15 7:17 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		420					
069	7/10/15 7:09 AM	S	Mystic/Alewife	Mystic mouth	0.1	521		3300					
069	7/13/15 9:25 AM	B	Mystic/Alewife	Mystic mouth	2.4	0		5					
069	7/13/15 9:25 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		36.4					
069	7/14/15 9:06 AM	B	Mystic/Alewife	Mystic mouth	2.2	0		15					
069	7/14/15 9:06 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		63.6					
069	7/27/15 8:08 AM	B	Mystic/Alewife	Mystic mouth	2.1	0		0					
069	7/27/15 8:08 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		9.09					
069	7/28/15 9:24 AM	B	Mystic/Alewife	Mystic mouth	2.1	0		20					
069	7/28/15 9:24 AM	S	Mystic/Alewife	Mystic mouth	0.1	74		20					
069	8/12/15 8:45 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		45					
069	8/26/15 7:20 AM	B	Mystic/Alewife	Mystic mouth	2.7	0		20					
069	8/26/15 7:20 AM	S	Mystic/Alewife	Mystic mouth	0.1	74		220					
069	8/27/15 7:32 AM	B	Mystic/Alewife	Mystic mouth	2.1	0		15					
069	8/27/15 7:32 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		9.09					
069	9/15/15 7:49 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		18.2					
069	9/16/15 7:35 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		27.3					
069	10/1/15 7:22 AM	S	Mystic/Alewife	Mystic mouth	0.1	5170		9910					
069	10/5/15 7:57 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		90.9					
069	10/6/15 7:45 AM	B	Mystic/Alewife	Mystic mouth	1.8	0		5					
069	10/6/15 7:45 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		27.3					
069	10/29/15 8:47 AM	S	Mystic/Alewife	Mystic mouth	0.1	663		390					
137	1/6/15 8:22 AM	B	Mystic/Alewife	Mystic mouth	12.9	0		10	2.71	11.6			0.952
137	1/6/15 8:22 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		165	5.65	18.2		0.425	0.896
137	1/21/15 7:56 AM	B	Mystic/Alewife	Mystic mouth	11.4	0		5	0.476	10.7			0.861
137	1/21/15 7:56 AM	S	Mystic/Alewife	Mystic mouth	0.1	30		50	1.25	11.4		0.276	0.867
137	2/12/15 8:45 AM	B	Mystic/Alewife	Mystic mouth	15.5	0		10	0	7.42			0.523
137	2/12/15 8:45 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		15	2.09	12		0.425	0.49
137	3/11/15 8:48 AM	B	Mystic/Alewife	Mystic mouth	10.7	0		5	0.698	10.8			0.713

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
052	7/28/15 9:05 AM	B								0	0.06		0.06
052	7/28/15 9:05 AM	S								0	0.06		0.06
052	8/12/15 9:06 AM	S								0	0.83		0.83
052	8/26/15 7:28 AM	B								0	0		0
052	8/26/15 7:28 AM	S								0	0		0
052	8/27/15 7:40 AM	B								0	0		0
052	8/27/15 7:40 AM	S								0	0		0
052	9/15/15 7:55 AM	S								0	0		0.38
052	9/16/15 7:42 AM	S								0	0		0
052	10/1/15 7:30 AM	S								0	2.46		2.5
052	10/5/15 8:06 AM	S								0	0		0.01
052	10/6/15 9:57 AM	B								0	0		0
052	10/6/15 9:57 AM	S								0	0		0
052	10/29/15 9:05 AM	S								0.73	1.09		1.09
069	3/27/15 8:00 AM	S								0.21	1.01		1.05
069	4/13/15 8:25 AM	B								0	0		0
069	4/13/15 8:25 AM	S								0	0		0
069	4/15/15 8:45 AM	B								0	0.01		0.01
069	4/15/15 8:45 AM	S								0	0.01		0.01
069	5/4/15 7:58 AM	B								0	0		0
069	5/4/15 7:58 AM	S								0	0		0
069	5/5/15 7:58 AM	S								0.02	0.02		0.02
069	5/19/15 8:05 AM	S								0.27	0.27		0.27
069	5/20/15 7:42 AM	S								0	0.27		0.27
069	6/1/15 7:18 AM	S								0.38	1.29		1.29
069	6/2/15 7:36 AM	S								0.74	1.12		2.03
069	6/9/15 7:50 AM	S								0	0		0
069	6/11/15 7:52 AM	B								0	0		0
069	6/11/15 7:52 AM	S								0	0		0
069	6/22/15 7:52 AM	S								0	1.72		1.76
069	6/24/15 7:54 AM	B								0	0.01		0.01
069	6/24/15 7:54 AM	S								0	0.01		0.01
069	6/29/15 8:04 AM	S								0	1.43		1.63
069	7/2/15 7:17 AM	S								0	0.54		0.54
069	7/10/15 7:09 AM	S								1.12	1.27		1.27
069	7/13/15 9:25 AM	B								0	0		0
069	7/13/15 9:25 AM	S								0	0		0
069	7/14/15 9:06 AM	B								0.03	0.03		0.03
069	7/14/15 9:06 AM	S								0.03	0.03		0.03
069	7/27/15 8:08 AM	B								0.06	0.06		0.06
069	7/27/15 8:08 AM	S								0.06	0.06		0.06
069	7/28/15 9:24 AM	B								0	0.06		0.06
069	7/28/15 9:24 AM	S								0	0.06		0.06
069	8/12/15 8:45 AM	S								0	0.83		0.83
069	8/26/15 7:20 AM	B								0	0		0
069	8/26/15 7:20 AM	S								0	0		0
069	8/27/15 7:32 AM	B								0	0		0
069	8/27/15 7:32 AM	S								0	0		0
069	9/15/15 7:49 AM	S								0	0		0.38
069	9/16/15 7:35 AM	S								0	0		0
069	10/1/15 7:22 AM	S								0	2.46		2.5
069	10/5/15 7:57 AM	S								0	0		0.01
069	10/6/15 7:45 AM	B								0	0		0
069	10/6/15 7:45 AM	S								0	0		0
069	10/29/15 8:47 AM	S								0.73	1.09		1.09
137	1/6/15 8:22 AM	B	1.11	0.94						3.64	0.02	0.02	0.59
137	1/6/15 8:22 AM	S	1.13	1.2	29.6	2.52	31.9	1.11		3.82	0.02	0.02	0.59
137	1/21/15 7:56 AM	B	1.3	0.85						2.96	0	0	0
137	1/21/15 7:56 AM	S	0.78	0.67	46.9	1.64	19	0.955		4.77	0	0	0
137	2/12/15 8:45 AM	B	1.6	1.39						6.9	0.03	0.04	0.09
137	2/12/15 8:45 AM	S	0.62	0.93	32.5	4.64	24.9	0.698		3.84	0.03	0.04	0.09
137	3/11/15 8:48 AM	B	1.6	0.94						2.17	0.01	0.07	0.07

Station	Day/Time (EST)	Surface or Bottom	Region	Subregion	Sample depth (m)	Enterococcus (col/100 mL)	E coli (col/100 mL)	Fecal coliform (col/100 mL)	Ammonium (uM)	Nitrate+nitrate (uM)	Total Nitrogen (uM)	Particulate P (uM)	Phosphate (uM)
137	3/11/15 8:48 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		5	12.3	25.4		0.377	0.699
137	3/24/15 7:09 AM	B	Mystic/Alewife	Mystic mouth	11.1	0		5	0	7.48		0.391	
137	3/24/15 7:09 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		10	0.669	9.67		0.414	0.357
137	4/2/15 10:37 AM	B	Mystic/Alewife	Mystic mouth	12.9	0		0	0.285	0.939		0.17	
137	4/2/15 10:37 AM	S	Mystic/Alewife	Mystic mouth	0.1	5		12.5	7.105	20.6		0.4935	0.316
137	4/22/15 10:16 AM	B	Mystic/Alewife	Mystic mouth	11.3	0		5	0.197	1.1		0.225	
137	4/22/15 10:16 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		55	8.24	34.7		0.763	0.613
137	5/7/15 9:22 AM	B	Mystic/Alewife	Mystic mouth	10.7	0		5	3.94	1.05		0.131	
137	5/7/15 9:22 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		10	4.15	10.6		1.02	0.132
137	5/21/15 10:16 AM	B	Mystic/Alewife	Mystic mouth	11.2	0		0	6.02	0.999		0.48	
137	5/21/15 10:16 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		0	1.65	0.1678		0.81	0.1152
137	6/10/15 9:40 AM	B	Mystic/Alewife	Mystic mouth	11.5	0		5	2.96	0.859		0.457	
137	6/10/15 9:40 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		0	1.97	2.67		0.615	0.205
137	6/25/15 9:58 AM	B	Mystic/Alewife	Mystic mouth	10.8	0		0	9	0.785		0.885	
137	6/25/15 9:58 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		2.5	2.41	0.346		0.536	0.187
137	7/7/15 9:53 AM	B	Mystic/Alewife	Mystic mouth	10.1	0		0	1.14	0.171		0.683	
137	7/7/15 9:53 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		100	1.08	0.681		0.785	0.198
137	7/23/15 9:14 AM	B	Mystic/Alewife	Mystic mouth	11.4	0		0	0.0455	0.164		0.755	
137	7/23/15 9:14 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		2.5	0.2535	0.198		1.585	0.983
137	8/6/15 9:26 AM	B	Mystic/Alewife	Mystic mouth	9.7	10		5	4.57	1.19		0.871	
137	8/6/15 9:26 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		10	3.4	1.68		0.68	0.763
137	8/19/15 6:47 AM	B	Mystic/Alewife	Mystic mouth	11	0		5	5.85	1.02		1.04	
137	8/19/15 6:47 AM	S	Mystic/Alewife	Mystic mouth	0.1	20		0	0.365	0.382		0.469	0.535
137	9/1/15 9:49 AM	B	Mystic/Alewife	Mystic mouth	11.7	0		0	1.19	0.449		0.767	
137	9/1/15 9:49 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		305	0.244	1.24		0.62	0.631
137	9/17/15 7:13 AM	B	Mystic/Alewife	Mystic mouth	11.4	0		0	4.87	1.93		1.04	
137	9/17/15 7:13 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		10	0.509	1.27		0.821	0.721
137	10/8/15 9:28 AM	B	Mystic/Alewife	Mystic mouth	13	10		5	9.7	3.4		1.24	
137	10/8/15 9:28 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		17.5	10.2	3.845		0.4165	1.28
137	10/20/15 7:25 AM	B	Mystic/Alewife	Mystic mouth	13.7	0		10	5.36	4.02		1	
137	10/20/15 7:25 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		10	6.73	4.71		0.339	1.14
137	11/5/15 11:00 AM	B	Mystic/Alewife	Mystic mouth	13.9	0		0	5.17	5.14		1.08	
137	11/5/15 11:00 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		0	4.53	6.33		0.34	0.9325
137	11/18/15 10:52 AM	B	Mystic/Alewife	Mystic mouth	10.9	10		5	4.12	6.63		1.04	
137	11/18/15 10:52 AM	S	Mystic/Alewife	Mystic mouth	0.1	0		5	5.02	7.54		0.225	1.09
137	11/30/15 11:01 AM	B	Mystic/Alewife	Mystic mouth	11.2	0		5	3.38	7.65		0.216	0.98
137	11/30/15 11:01 AM	S	Mystic/Alewife	Mystic mouth	0.1	5		22.5	4.68	8.39		0.216	0.936
137	12/16/15 8:27 AM	B	Mystic/Alewife	Mystic mouth	10.4	0		20	2.93	8.08		0.903	
137	12/16/15 8:27 AM	S	Mystic/Alewife	Mystic mouth	0.1	10		40	4.08	9.79		0.24	0.897

Station	Day/Time (EST)	Surface or Bottom	Chlorophyll a (ug/L)	Phaeophytin (ug/L)	Particulate carbon (uM)	Particulate nitrogen (uM)	Total dissolved N (uM)	Total dissolved P (uM)	Total phosphorus (uM)	Total suspended solids (mg/L)	Logan Rainfall ONE_DAY RAIN	Logan Rainfall TWO_DAY RAIN	Logan Rainfall THREE_DAY RAIN
137	3/11/15 8:48 AM	S	0.99	0.73	28.7	2.88	47.6	1.03		1.68	0.01	0.07	0.07
137	3/24/15 7:09 AM	B	15.9	4.79						3.06	0	0	0
137	3/24/15 7:09 AM	S	6.09	1.91	33	5.2	21.2	0.628		1.94	0	0	0
137	4/2/15 10:37 AM	B	10.94	7.09						2.53	0	0	0
137	4/2/15 10:37 AM	S	2.23	2.185	30.5	3.435	36.55	0.4645		2.52	0	0	0
137	4/22/15 10:16 AM	B	15.7	9.24						2.29	0	0.54	1.15
137	4/22/15 10:16 AM	S	11.4	5.74	82.6	10.5	61.7	0.727		14.8	0	0.54	1.15
137	5/7/15 9:22 AM	B	1.21	1.44						1.88	0	0	0.02
137	5/7/15 9:22 AM	S	10.4	3.02	104	17.4	31	0.715		3.46	0	0	0.02
137	5/21/15 10:16 AM	B	8.13	3.12						2.97	0	0	0.27
137	5/21/15 10:16 AM	S	12.7	7.47	88.5	11.15	11.05	0.4095		3.23	0	0	0.27
137	6/10/15 9:40 AM	B	4.08	2.21						2.24	0	0	0
137	6/10/15 9:40 AM	S	3.48	1.95	45.7	6.7	19.1	0.607		1.62	0	0	0
137	6/25/15 9:58 AM	B	2.76	3.3						10.1	0	0	0.01
137	6/25/15 9:58 AM	S	8.825	2.985	59.7	7.755	12.35	0.595		2.065	0	0	0.01
137	7/7/15 9:53 AM	B								2.13	0.02	0.02	0.02
137	7/7/15 9:53 AM	S	8.14	3.85	57.8	8.27	14.2	0.641		2.56	0.02	0.02	0.02
137	7/23/15 9:14 AM	B	3.55	2.5						5	0	0	0
137	7/23/15 9:14 AM	S	18.85	5.175	129.1	16.4	10.95	1.465		5.91	0	0	0
137	8/6/15 9:26 AM	B	2.43	2.97						6.14	0	0	0.49
137	8/6/15 9:26 AM	S	8.88	3.37	53.7	8.68	20.3	1.11		4.55	0	0	0.49
137	8/19/15 6:47 AM	B	2.39	3.77						5.97	0	0.14	0.14
137	8/19/15 6:47 AM	S	11.6	4.32	42.4	6.06	13.6	1.07		3.72	0	0.14	0.14
137	9/1/15 9:49 AM	B	4.4	2.09						3.55	0	0	0
137	9/1/15 9:49 AM	S	9.63	2.72	47	6.74	16	0.931		2.18	0	0	0
137	9/17/15 7:13 AM	B	5.84	2.8						4.44	0	0	0
137	9/17/15 7:13 AM	S	13.5	4.45	65.5	11.2	14.7	1.31		3.56	0	0	0
137	10/8/15 9:28 AM	B	1.17	1.64						4.77	0	0	0
137	10/8/15 9:28 AM	S	2.78	1.87	33.8	4.56	27.4	1.19		3.585	0	0	0
137	10/20/15 7:25 AM	B	2.04	1.67						4.06	0	0	0
137	10/20/15 7:25 AM	S	1.89	1.74	32.8	3.21	25.2	0.881		3.07	0	0	0
137	11/5/15 11:00 AM	B	1.76	1.14						2.77	0	0	0
137	11/5/15 11:00 AM	S	4.21	1.29	26.2	3.725	25.35	1.23		1.345	0	0	0
137	11/18/15 10:52 AM	B	1.62	1.16						2.72	0	0	0
137	11/18/15 10:52 AM	S	0.96	0.74	18.4	1.83	21.5	1.47		1.97	0	0	0
137	11/30/15 11:01 AM	B	1.64	1.15						4.56	0	0	0.21
137	11/30/15 11:01 AM	S	2.24	1.06	18.4	2.215	21.15	1.34		1.68	0	0	0.21
137	12/16/15 8:27 AM	B	2.33	1.45						3.26	0	0.19	0.61
137	12/16/15 8:27 AM	S	1.51	1.15	18.8	2.82	22.5	1.17		1.92	0	0.19	0.61

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APPENDIX II
2015 raw data for physical profile results.

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall		
														TWO_DAY_RAIN	THREE_DAY_RAIN	
012	Charles River	Upstream of lower basin	1/7/15 10:12 AM	B		0.12	0.32	14.24	98	0.672	2.5	7.33		0	0.02	0.02
012	Charles River	Upstream of lower basin	1/7/15 10:12 AM	S	0.1	0.12	0.32	14.01	96.3	0.672	2.2	7.4		0	0.02	0.02
012	Charles River	Upstream of lower basin	1/20/15 11:22 AM	B		0.72	0.39	14.26	99.8	0.803	4.3	7.26		0	0	0.15
012	Charles River	Upstream of lower basin	1/20/15 11:22 AM	S	0.1	0.73	0.39	14.26	99.8	0.804	4	7.3		0	0	0.15
012	Charles River	Upstream of lower basin	3/16/15 9:54 AM	B		0.9	0.48	14.09	99.2	0.981	5.5	7.33		0	0.27	1.07
012	Charles River	Upstream of lower basin	3/16/15 9:54 AM	S	0.1	0.92	0.48	14	98.6	0.982	5.6	7.38		0	0.27	1.07
012	Charles River	Upstream of lower basin	3/30/15 10:11 AM	B		2.94	0.29	13.06	97	0.605		7.15		0	0	0.12
012	Charles River	Upstream of lower basin	3/30/15 10:11 AM	S	0.1	2.95	0.29	12.97	96.4	0.605		7.21		0	0	0.12
012	Charles River	Upstream of lower basin	4/16/15 10:02 AM	B		12.99	0.26	11.1	105.5	0.528	4.7	7.3		0	0	0.01
012	Charles River	Upstream of lower basin	4/16/15 10:02 AM	S	0.1	12.99	0.26	11.11	105.6	0.529	4.9	7.32		0	0	0.01
012	Charles River	Upstream of lower basin	4/30/15 10:33 AM	B		14.38	0.26	10.75	105.3	0.54		7.42		0	0	0.07
012	Charles River	Upstream of lower basin	4/30/15 10:33 AM	S	0.1	14.41	0.26	10.87	106.6	0.54		7.48		0	0	0.07
012	Charles River	Upstream of lower basin	5/12/15 10:46 AM	B		21.88	0.32	8.23	94.1	0.658	4	7.46		0.02	0.02	0.02
012	Charles River	Upstream of lower basin	5/12/15 10:46 AM	S	0.1	21.92	0.32	8.29	94.9	0.657	4	7.54		0.02	0.02	0.02
012	Charles River	Upstream of lower basin	5/28/15 10:51 AM	B		22.58	0.38	9.06	105	0.783		7.62		0	0	0
012	Charles River	Upstream of lower basin	5/28/15 10:51 AM	S	0.1	23.43	0.38	8.6	101.3	0.782		7.84		0	0	0
012	Charles River	Upstream of lower basin	6/8/15 10:55 AM	B		19.67	0.32	9.23	101.1	0.658	4.9	7.62		0	0	0.09
012	Charles River	Upstream of lower basin	6/8/15 10:55 AM	S	0.1	19.68	0.32	9.35	102.4	0.658	3.8	7.66		0	0	0.09
012	Charles River	Upstream of lower basin	6/23/15 10:43 AM	B		23.44	0.35	6.68	78.6	0.717		7.49		0.01	0.01	1.73
012	Charles River	Upstream of lower basin	6/23/15 10:43 AM	S	0.1	23.43	0.35	6.65	78.3	0.717		7.7		0.01	0.01	1.73
012	Charles River	Upstream of lower basin	7/8/15 10:25 AM	B		25.14	0.37	7.17	87.1	0.751	2	7.44		0	0.02	0.02
012	Charles River	Upstream of lower basin	7/8/15 10:25 AM	S	0.1	25.21	0.37	7.25	88.2	0.751	2	7.51		0	0.02	0.02
012	Charles River	Upstream of lower basin	7/20/15 10:28 AM	B		25.63	0.34	5.23	64.2	0.705		7.43		0	0	0.14
012	Charles River	Upstream of lower basin	7/20/15 10:28 AM	S	0.1	26.69	0.34	5.24	65.5	0.706		7.53		0	0	0.14
012	Charles River	Upstream of lower basin	8/3/15 10:35 AM	B		24.94	0.43	4.77	57.8	0.872	1.6	7.65		0	0	0
012	Charles River	Upstream of lower basin	8/3/15 10:35 AM	S	0.1	26.02	0.43	6.33	78.3	0.873	1.2	7.85		0	0	0
012	Charles River	Upstream of lower basin	8/18/15 10:22 AM	B		26.84	0.42	6.28	78.8	0.863		7.74		0.14	0.14	0.14
012	Charles River	Upstream of lower basin	9/3/15 10:48 AM	B		24.41	0.39	5.43	65.2	0.807	1.4	7.64		0.01	0.01	0.01
012	Charles River	Upstream of lower basin	9/3/15 10:48 AM	S	0.1	24.73	0.39	5.98	72.2	0.808	1.2	7.77		0.01	0.01	0.01
012	Charles River	Upstream of lower basin	9/14/15 9:59 AM	B		20.02	0.39	8.15	89.8	0.795		7.78		0	0.38	0.39
012	Charles River	Upstream of lower basin	9/14/15 9:59 AM	S	0.1	20.1	0.39	8.23	90.9	0.794		7.98		0	0.38	0.39
012	Charles River	Upstream of lower basin	9/28/15 9:59 AM	B		16.97	0.47	6.48	67.2	0.951	0.7	7.71		0	0	0
012	Charles River	Upstream of lower basin	9/28/15 9:59 AM	S	0.1	17.28	0.47	7.15	74.7	0.952	1	7.8		0	0	0
012	Charles River	Upstream of lower basin	10/16/15 9:16 AM	B		13.81	0.37	9.57	92.7	0.753		7.72		0	0	0
012	Charles River	Upstream of lower basin	10/16/15 9:16 AM	S	0.1	13.79	0.37	9.67	93.6	0.75		7.75		0	0	0
012	Charles River	Upstream of lower basin	10/27/15 9:45 AM	B		9.04	0.4	10.8	93.7	0.819		7.78		0	0	0.03
012	Charles River	Upstream of lower basin	10/27/15 9:45 AM	S	0.1	9.05	0.4	10.93	94.9	0.818		7.81		0	0	0.03
012	Charles River	Upstream of lower basin	11/10/15 11:00 AM	B		10.98	0.36	10.33	93.9	0.731	5.5	7.56		0.54	0.61	0.61
012	Charles River	Upstream of lower basin	11/10/15 11:00 AM	S	0.1	11.04	0.36	10.65	96.9	0.73	4.9	7.65		0.54	0.61	0.61
012	Charles River	Upstream of lower basin	11/23/15 11:48 AM	B		6.87	0.33	11.67	96	0.682	3.5	7.28		0.04	0.34	0.34
012	Charles River	Upstream of lower basin	11/23/15 11:48 AM	S	0.1	6.88	0.33	11.65	95.9	0.681	3	7.32		0.04	0.34	0.34
012	Charles River	Upstream of lower basin	12/8/15 11:20 AM	B		5.19	0.34	11.83	93.3	0.705	2.7	7.54		0	0	0
012	Charles River	Upstream of lower basin	12/8/15 11:20 AM	S	0.1	5.18	0.34	11.87	93.6	0.705	2.1	7.6		0	0	0
012	Charles River	Upstream of lower basin	12/21/15 11:07 AM	B		4.57	0.31	12.06	93.5	0.647	4.1	7.41		0	0	0
012	Charles River	Upstream of lower basin	12/21/15 11:07 AM	S	0.1	4.57	0.31	12.15	94.3	0.646	4	7.57		0	0	0
001	Charles River	Upstream of lower basin	4/21/15 8:37 AM	B		12.21	0.26	10.52	98.3	0.533	17.9	7.31		0.54	1.15	1.15
001	Charles River	Upstream of lower basin	4/21/15 8:37 AM	S	0.1	12.23	0.26	10.52	98.3	0.533	18.3	7.43	0.4	0.54	1.15	1.15
001	Charles River	Upstream of lower basin	4/23/15 8:50 AM	B		13.2	0.3	10.08	96.2	0.617	8	7.48		0	0	0.54
001	Charles River	Upstream of lower basin	5/11/15 8:57 AM	B		21.97	0.33	7.54	86.4	0.686		7.54		0	0	0
001	Charles River	Upstream of lower basin	5/13/15 8:23 AM	B		20.43	0.34	7.25	80.6	0.699	4.3	7.36		0.02	0.02	0.02
001	Charles River	Upstream of lower basin	5/18/15 8:47 AM	B		18.59	0.36	8.23	88.2	0.731	13.4	7.53	0.7	0	0	0
001	Charles River	Upstream of lower basin	5/22/15 9:42 AM	B		18.61	0.38	7.99	85.7	0.766	8.8	7.46		0	0	0
001	Charles River	Upstream of lower basin	6/3/15 9:05 AM	B		15.34	0.32	8.67	86.8	0.657	6	7.37		0	0.74	1.12
001	Charles River	Upstream of lower basin	6/4/15 9:21 AM	B		15.69	0.34	8.25	83.2	0.695	5.3	7.51		0	0	0.74
001	Charles River	Upstream of lower basin	6/17/15 8:54 AM	B		21.52	0.38	7.11	80.8	0.769	7.3	7.36		0	0	0.4
001	Charles River	Upstream of lower basin	6/18/15 8:51 AM	B		21.62	0.38	7.17	81.6	0.782	7.6	7.31		0	0	0
001	Charles River	Upstream of lower basin	7/16/15 8:59 AM	B		24.96	0.34	7.7	93.3	0.694	2.6	7.61		0	0	0.03
001	Charles River	Upstream of lower basin	7/17/15 8:35 AM	B		24.61	0.35	7.16	86.2	0.713	3.6	7.47		0	0	0
001	Charles River	Upstream of lower basin	8/17/15 9:08 AM	B		25.98	0.4	6.95	85.8	0.812	3.4	8.19		0	0	0.08
001	Charles River	Upstream of lower basin	8/20/15 8:58 AM	B		26.66	0.44	6.44	80.5	0.905	4.7	7.4		0	0	0.14
001	Charles River	Upstream of lower basin	8/20/15 8:58 AM	S	0.1	26.69	0.44	6.36	79.6	0.905	2.7	7.47		0	0	0.14
001	Charles River	Upstream of lower basin	9/8/15 8:40 AM	B		24.05	0.35	7.32	87.2	0.722	7	8.22		0.2	0.2	0.2
001	Charles River	Upstream of lower basin	9/9/15 8:52 AM	B		25.69	0.39	7.78	95.6	0.807	5.2	7.91		0	0.2	0.2
001	Charles River	Upstream of lower basin	9/21/15 9:15 AM	B		20.31	0.47	7.55	83.8	0.957	5	7.83		0	0	0
001	Charles River	Upstream of lower basin	9/21/15 9:15 AM	S	0.1	20.4	0.47	7.66	85.2	0.957	4.7	7.98		0	0	0
001	Charles River	Upstream of lower basin	9/22/15 8:41 AM	B		19.39	0.5	7.68	83.7	1.005	3	7.77		0	0	0
001	Charles River	Upstream of lower basin	10/14/15 8:54 AM	B		15.98	0.39	7.88	80	0.784	5	7.58		0	0.12	0.12

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall		
														TWO_DAY_RAIN	THREE_DAY_RAIN	
001	Charles River	Upstream of lower basin	10/14/15 8:54 AM	S	0.1	16.03	0.39	8.1	82.3	0.785	4.4	7.69		0	0.12	0.12
001	Charles River	Upstream of lower basin	10/15/15 8:40 AM	S	0.1	14.82	0.39	8.16	80.8	0.783	3.3	7.58		0	0	0.12
144	Charles River	Upstream of lower basin	4/21/15 8:26 AM	B		12.09	0.28	10.38	96.7	0.576	23.6	7.25		0.54	1.15	1.15
144	Charles River	Upstream of lower basin	4/21/15 8:26 AM	S	0.1	12.21	0.25	10.47	97.8	0.507	22.8	7.36	0.4	0.54	1.15	1.15
144	Charles River	Upstream of lower basin	4/23/15 8:38 AM	B		13.01	0.31	9.79	93.1	0.624	7.1	7.37		0	0	0.54
144	Charles River	Upstream of lower basin	4/23/15 8:38 AM	S	0.1	13.04	0.29	9.96	94.8	0.602	6.5	7.44	0.8	0	0	0.54
144	Charles River	Upstream of lower basin	5/11/15 8:47 AM	S	0.1	22.14	0.34	7.42	85.3	0.694	7.49			0	0	0
144	Charles River	Upstream of lower basin	5/13/15 8:13 AM	B		20.38	0.37	6.96	77.3	0.755	6.8	7.27		0	0.02	0.02
144	Charles River	Upstream of lower basin	5/13/15 8:13 AM	S	0.1	20.78	0.34	7.15	80	0.696	4.5	7.35		0	0.02	0.02
144	Charles River	Upstream of lower basin	5/18/15 8:36 AM	B		20.25	0.36	7.04	78	0.743	5.7	7.37		0	0	0
144	Charles River	Upstream of lower basin	5/18/15 8:36 AM	S	0.1	20.28	0.36	7.93	87.9	0.742	5.8	7.51	0.8	0	0	0
144	Charles River	Upstream of lower basin	5/22/15 9:30 AM	B		18.16	0.4	8.14	86.4	0.811	7.5	7.37		0	0	0
144	Charles River	Upstream of lower basin	5/22/15 9:30 AM	S	0.1	18.62	0.38	8.86	95	0.774	5.7	7.56	1	0	0	0
144	Charles River	Upstream of lower basin	6/3/15 8:54 AM	B		15.35	0.34	8.07	80.8	0.688	7	7.32		0	0.74	1.12
144	Charles River	Upstream of lower basin	6/3/15 8:54 AM	S	0.1	15.48	0.33	8.04	80.7	0.675	6.3	7.42	0.8	0	0.74	1.12
144	Charles River	Upstream of lower basin	6/4/15 8:54 AM	B		15.34	0.35	8.22	82.2	0.709	5.9	7.22		0	0	0.74
144	Charles River	Upstream of lower basin	6/4/15 8:54 AM	S	0.1	15.4	0.34	8.15	81.7	0.685	5.3	7.41	1.3	0	0	0.74
144	Charles River	Upstream of lower basin	6/17/15 8:42 AM	B		20.87	0.38	6.8	76.2	0.767	5.7	7.22		0	0	0.4
144	Charles River	Upstream of lower basin	6/17/15 8:42 AM	S	0.1	21	0.37	7.03	79.1	0.754	9.8	7.34	0.6	0	0	0.4
144	Charles River	Upstream of lower basin	6/18/15 8:40 AM	B		21.72	0.4	8.28	94.4	0.816	9.6	7.32		0	0	0
144	Charles River	Upstream of lower basin	6/18/15 8:40 AM	S	0.1	22.07	0.39	8.43	96.8	0.789	5	7.37		0	0	0
144	Charles River	Upstream of lower basin	7/16/15 8:47 AM	B		25.6	0.33	8.14	99.8	0.689	5.4	7.51		0	0	0.03
144	Charles River	Upstream of lower basin	7/16/15 8:47 AM	S	0.1	25.77	0.33	8.09	99.5	0.689	4.4	7.59		0	0	0.03
144	Charles River	Upstream of lower basin	7/17/15 8:23 AM	B		25.14	0.35	8.22	99.9	0.714	5.8	7.54		0	0	0
144	Charles River	Upstream of lower basin	7/17/15 8:23 AM	S	0.1	25.52	0.35	8.48	103.8	0.711	4.5	7.61	1.5	0	0	0
144	Charles River	Upstream of lower basin	8/17/15 8:57 AM	B		26.35	0.45	7.5	93.2	0.914	6	7.74		0	0	0.08
144	Charles River	Upstream of lower basin	8/17/15 8:57 AM	S	0.1	27.24	0.44	7.79	98.4	0.905	5.9	7.85		0	0	0.08
144	Charles River	Upstream of lower basin	8/20/15 8:43 AM	B		26.93	0.45	6.38	80.2	0.915	9.3	7.41		0	0	0.14
144	Charles River	Upstream of lower basin	8/20/15 8:43 AM	S	0.1	27.25	0.45	7.33	92.6	0.915	3	7.66		0	0	0.14
144	Charles River	Upstream of lower basin	9/8/15 8:28 AM	B		24.04	0.35	7.52	89.6	0.715	5.5	8.09		0.2	0.2	0.2
144	Charles River	Upstream of lower basin	9/8/15 8:28 AM	S	0.1	24.23	0.35	7.67	91.7	0.712	5.2	8.3	1.2	0.2	0.2	0.2
144	Charles River	Upstream of lower basin	9/9/15 8:41 AM	B		24.78	0.37	8.21	99.1	0.75	9.3	7.83		0	0.2	0.2
144	Charles River	Upstream of lower basin	9/9/15 8:41 AM	S	0.1	25.24	0.37	9.11	110.9	0.753	8.8	8.19	1.4	0	0.2	0.2
144	Charles River	Upstream of lower basin	9/21/15 9:03 AM	B		21.89	0.48	8.13	93.1	0.967	8.3	7.8		0	0	0
144	Charles River	Upstream of lower basin	9/21/15 9:03 AM	S	0.1	22.01	0.48	8.24	94.5	0.968	6	8.05		0	0	0
144	Charles River	Upstream of lower basin	9/22/15 8:32 AM	B		20.93	0.49	7.86	88.2	0.997	6.2	7.72		0	0	0
144	Charles River	Upstream of lower basin	9/22/15 8:32 AM	S	0.1	20.96	0.49	7.7	86.5	0.997	4	7.88	1.6	0	0	0
144	Charles River	Upstream of lower basin	10/14/15 8:44 AM	B		16	0.4	7.95	80.7	0.803	5.1	7.53		0	0.12	0.12
144	Charles River	Upstream of lower basin	10/14/15 8:44 AM	S	0.1	16.17	0.39	8.59	87.6	0.79	4.1	7.69	1.4	0	0.12	0.12
144	Charles River	Upstream of lower basin	10/15/15 8:30 AM	B		15.44	0.4	7.94	79.6	0.812	4.1	7.43		0	0	0.12
144	Charles River	Upstream of lower basin	10/15/15 8:30 AM	S	0.1	15.52	0.4	8.27	83.1	0.808	3.4	7.54		0	0	0.12
002	Charles River	Upstream of lower basin	4/21/15 8:19 AM	B		12.14	0.25	10.42	97.1	0.508	23.1	7.29		0.54	1.15	1.15
002	Charles River	Upstream of lower basin	4/21/15 8:19 AM	S	0.1	12.15	0.25	10.47	97.6	0.508	20.7	7.38	0.4	0.54	1.15	1.15
002	Charles River	Upstream of lower basin	4/23/15 8:30 AM	B		12.95	0.29	9.64	91.5	0.594	6.6	7.41		0	0	0.54
002	Charles River	Upstream of lower basin	4/23/15 8:30 AM	S	0.1	12.95	0.29	9.84	93.5	0.594	7.1	7.49	0.9	0	0	0.54
002	Charles River	Upstream of lower basin	5/11/15 8:40 AM	B		22.37	0.34	7.56	87.3	0.694	7.45			0	0	0
002	Charles River	Upstream of lower basin	5/11/15 8:40 AM	S	0.1	22.64	0.34	7.79	90.4	0.692	7.49	1	0	0	0	0
002	Charles River	Upstream of lower basin	5/13/15 8:06 AM	B		21.14	0.35	7.13	80.4	0.707	7.7	7.29		0	0.02	0.02
002	Charles River	Upstream of lower basin	5/13/15 8:06 AM	S	0.1	21.24	0.34	7.42	83.8	0.706	4.9	7.35	1	0	0.02	0.02
002	Charles River	Upstream of lower basin	5/18/15 8:29 AM	B		20.65	0.37	7.36	82.2	0.752	5.8	7.38		0	0	0
002	Charles River	Upstream of lower basin	5/18/15 8:29 AM	S	0.1	20.68	0.37	7.8	87.1	0.747	5.3	7.49	0.8	0	0	0
002	Charles River	Upstream of lower basin	5/22/15 9:24 AM	B		18.26	0.38	7.57	80.6	0.783	6.2	7.28		0	0	0
002	Charles River	Upstream of lower basin	5/22/15 9:24 AM	S	0.1	19.09	0.38	8.46	91.6	0.782	5.1	7.47	0.8	0	0	0
002	Charles River	Upstream of lower basin	6/3/15 8:46 AM	B		15.33	0.33	7.81	78.2	0.68	7.2	7.34		0	0.74	1.12
002	Charles River	Upstream of lower basin	6/3/15 8:46 AM	S	0.1	15.37	0.33	7.75	77.6	0.679	6.4	7.46	0.9	0	0.74	1.12
002	Charles River	Upstream of lower basin	6/4/15 8:46 AM	B		15.31	0.33	8.19	81.9	0.668	6.5	7.24		0	0.74	1.12
002	Charles River	Upstream of lower basin	6/4/15 8:46 AM	S	0.1	15.51	0.33	7.98	80.2	0.668	5.5	7.4	1.2	0	0	0.74
002	Charles River	Upstream of lower basin	6/17/15 8:34 AM	B		20.71	0.37	6.14	68.6	0.751	9	7.2		0	0	0.4
002	Charles River	Upstream of lower basin	6/17/15 8:34 AM	S	0.1	20.88	0.37	6.65	74.6	0.75	5.5	7.33	1.1	0	0	0.4
002	Charles River	Upstream of lower basin	6/18/15 8:34 AM	B		21.34	0.38	7.66	86.7	0.774	7.1	7.27		0	0	0
002	Charles River	Upstream of lower basin	6/18/15 8:34 AM	S	0.1	21.55	0.38	7.91	89.9	0.777	5.4	7.31	1	0	0	0
002	Charles River	Upstream of lower basin	7/16/15 8:39 AM	B		25.69	0.34	7.71	94.6	0.697	5	7.47		0	0	0.03
002	Charles River	Upstream of lower basin	7/16/15 8:39 AM	S	0.1	25.72	0.34	7.81	95.9	0.697	3.9	7.53	1.3	0	0	0.03
002	Charles River	Upstream of lower basin	7/17/15 8:16 AM	B		25.19	0.35	7.71	93.7	0.714	5.4	7.46		0	0	0
002	Charles River	Upstream of lower basin	7/17/15 8:16 AM	S	0.1	25.27	0.35	7.97	97.1	0.713	4.8	7.56	1.2	0	0	0
002	Charles River	Upstream of lower basin	8/17/15 8:49 AM	B		25.97	0.44	7.14	88.1	0.904	6.3	7.78		0	0	0.08
002	Charles River	Upstream of lower basin	8/17/15 8:49 AM	S	0.1	26.61	0.45	7.93	99	0.912	4.8	8.03	1.4	0	0	0.08

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall		
														TWO_DAY_RAIN	THREE_DAY_RAIN	
002	Charles River	Upstream of lower basin	8/20/15 8:36 AM	B		26.91	0.45	5.9	74	0.923	4	7.47		0	0	0.14
002	Charles River	Upstream of lower basin	8/20/15 8:36 AM	S	0.1	27.11	0.45	7.35	92.7	0.923	3.4	7.68	1.7	0	0	0.14
002	Charles River	Upstream of lower basin	9/8/15 8:21 AM	B		24.18	0.39	7.39	88.2	0.796	6.3	8.14		0.2	0.2	0.2
002	Charles River	Upstream of lower basin	9/8/15 8:21 AM	S	0.1	24.28	0.39	7.62	91.2	0.8	5.8	8.31	1	0.2	0.2	0.2
002	Charles River	Upstream of lower basin	9/9/15 8:33 AM	B		24.99	0.37	8.41	102	0.766	13.1	7.74		0	0.2	0.2
002	Charles River	Upstream of lower basin	9/9/15 8:33 AM	S	0.1	25.02	0.37	8.59	104.2	0.764	12.8	7.91	1.3	0	0.2	0.2
002	Charles River	Upstream of lower basin	9/21/15 8:55 AM	B		21.75	0.46	7.68	87.7	0.935	7.3	7.75		0	0	0
002	Charles River	Upstream of lower basin	9/21/15 8:55 AM	S	0.1	21.81	0.46	7.74	88.5	0.935	6.7	7.93	1.1	0	0	0
002	Charles River	Upstream of lower basin	9/22/15 8:25 AM	B		21.18	0.48	7.45	84.1	0.97	9.3	7.65		0	0	0
002	Charles River	Upstream of lower basin	9/22/15 8:25 AM	S	0.1	21.19	0.48	7.42	83.8	0.97	5.1	7.77	1.1	0	0	0
002	Charles River	Upstream of lower basin	10/14/15 8:36 AM	B		15.92	0.39	8.06	81.7	0.786	7.3	7.59		0	0.12	0.12
002	Charles River	Upstream of lower basin	10/14/15 8:36 AM	S	0.1	15.92	0.39	8.38	85	0.786	4.2	7.7	1.4	0	0.12	0.12
002	Charles River	Upstream of lower basin	10/15/15 8:26 AM	B		15.55	0.4	8.04	80.9	0.81	3.6	7.56		0	0	0.12
002	Charles River	Upstream of lower basin	10/15/15 8:26 AM	S	0.1	15.54	0.4	8.41	84.6	0.81	3.7	7.74	1.6	0	0	0.12
003	Charles River	Upstream of lower basin	4/21/15 8:04 AM	B		12.05	0.26	10.25	95.4	0.525	17.1	7.34		0.54	1.15	1.15
003	Charles River	Upstream of lower basin	4/21/15 8:04 AM	S	0.1	12.09	0.25	10.33	96.2	0.524	15.5	7.45	0.5	0.54	1.15	1.15
003	Charles River	Upstream of lower basin	4/23/15 8:13 AM	B		13.18	0.3	9.38	89.6	0.605	7	7.4		0	0	0.54
003	Charles River	Upstream of lower basin	4/23/15 8:13 AM	S	0.1	13.21	0.3	9.63	92	0.604	6.5	7.47	0.9	0	0	0.54
003	Charles River	Upstream of lower basin	5/11/15 8:25 AM	B		21.04	0.34	7.35	82.7	0.692		7.42		0	0	0
003	Charles River	Upstream of lower basin	5/11/15 8:25 AM	S	0.1	21.75	0.34	8.16	93.1	0.69		7.51	1	0	0	0
003	Charles River	Upstream of lower basin	5/13/15 7:50 AM	B		20.85	0.35	6.27	70.3	0.708	4.8	7.22		0	0.02	0.02
003	Charles River	Upstream of lower basin	5/13/15 7:50 AM	S	0.1	20.99	0.35	7.06	79.3	0.708	4.1	7.31	1.1	0	0.02	0.02
003	Charles River	Upstream of lower basin	5/18/15 8:15 AM	B		19.96	0.37	7.57	83.4	0.756	6.6	7.37		0	0	0
003	Charles River	Upstream of lower basin	5/18/15 8:15 AM	S	0.1	19.96	0.37	7.89	86.9	0.756	4.6	7.46	0.9	0	0	0
003	Charles River	Upstream of lower basin	5/22/15 9:09 AM	B		18.33	0.38	6.46	68.9	0.78	5.6	7.29		0	0	0
003	Charles River	Upstream of lower basin	5/22/15 9:09 AM	S	0.1	18.75	0.38	7.81	83.9	0.781	4.7	7.54	0.8	0	0	0
003	Charles River	Upstream of lower basin	6/3/15 8:30 AM	B		14.69	0.26	7.63	75.3	0.54	10.8	7.25		0	0.74	1.12
003	Charles River	Upstream of lower basin	6/3/15 8:30 AM	S	0.1	15.05	0.27	7.9	78.5	0.556	7.4	7.43	0.7	0	0.74	1.12
003	Charles River	Upstream of lower basin	6/4/15 8:30 AM	B		16.04	0.33	7.88	80.1	0.683	7.3	7.17		0	0	0.74
003	Charles River	Upstream of lower basin	6/4/15 8:30 AM	S	0.1	16.25	0.33	7.98	81.4	0.682	5.6	7.28	1.1	0	0	0.74
003	Charles River	Upstream of lower basin	6/17/15 8:17 AM	B		21.26	0.38	3.41	38.5	0.781	7.1	7.11		0	0	0.4
003	Charles River	Upstream of lower basin	6/17/15 8:17 AM	S	0.1	22.16	0.38	5.86	67.4	0.78	5.3	7.29	0.7	0	0	0.4
003	Charles River	Upstream of lower basin	6/18/15 8:18 AM	B		20.84	0.38	4.06	45.5	0.781	7.1	7.04		0	0	0
003	Charles River	Upstream of lower basin	6/18/15 8:18 AM	S	0.1	21.67	0.38	7.49	85.3	0.781	5.9	7.28	0.9	0	0	0
003	Charles River	Upstream of lower basin	7/16/15 8:22 AM	B		25	0.33	5.57	67.5	0.685	6.5	7.31		0	0	0.03
003	Charles River	Upstream of lower basin	7/16/15 8:22 AM	S	0.1	25.24	0.33	7.42	90.3	0.68	4.8	7.54	1	0	0	0.03
003	Charles River	Upstream of lower basin	7/17/15 8:00 AM	B		25.06	0.34	8.09	98.2	0.698	7.3	7.52		0	0	0
003	Charles River	Upstream of lower basin	7/17/15 8:00 AM	S	0.1	25.25	0.34	8.31	101.2	0.698	5.5	7.62	1.2	0	0	0
003	Charles River	Upstream of lower basin	8/17/15 8:33 AM	B		24.34	0.55	3.82	45.8	1.12	10	7.76		0	0	0.08
003	Charles River	Upstream of lower basin	8/17/15 8:33 AM	S	0.1	26.42	0.42	8.4	104.5	0.858	4.3	8.23	1.1	0	0	0.08
003	Charles River	Upstream of lower basin	8/20/15 8:22 AM	B		25.42	0.61	0.86	10.6	1.224	5.8	7.23		0	0	0.14
003	Charles River	Upstream of lower basin	8/20/15 8:22 AM	S	0.1	27.79	0.44	8.96	114.3	0.901	3.3	7.75	1.7	0	0	0.14
003	Charles River	Upstream of lower basin	9/8/15 8:06 AM	B		24.44	0.44	5.16	62	0.89	10.3	7.9		0.2	0.2	0.2
003	Charles River	Upstream of lower basin	9/8/15 8:06 AM	S	0.1	24.96	0.43	8	96.9	0.878	5.8	8.19	1	0.2	0.2	0.2
003	Charles River	Upstream of lower basin	9/9/15 8:17 AM	B		25.11	0.44	7.85	95.4	0.891	10	7.82		0	0.2	0.2
003	Charles River	Upstream of lower basin	9/9/15 8:17 AM	S	0.1	25.4	0.44	8.61	105.2	0.892	9.5	8.13	1.4	0	0.2	0.2
003	Charles River	Upstream of lower basin	9/21/15 8:38 AM	B		22.02	0.47	7	80.3	0.952	8	7.76		0	0	0
003	Charles River	Upstream of lower basin	9/21/15 8:38 AM	S	0.1	22.03	0.47	7.23	82.9	0.952	7	7.97	1.1	0	0	0
003	Charles River	Upstream of lower basin	9/22/15 8:11 AM	B		21.32	0.48	6.95	78.6	0.966	8.6	7.62		0	0	0
003	Charles River	Upstream of lower basin	9/22/15 8:11 AM	S	0.1	21.35	0.48	7.13	80.8	0.963	6.1	7.86	1	0	0	0
003	Charles River	Upstream of lower basin	10/14/15 8:21 AM	B		15.95	0.36	7.87	79.9	0.741	5	7.56		0	0.12	0.12
003	Charles River	Upstream of lower basin	10/14/15 8:21 AM	S	0.1	16	0.36	8.27	84	0.742	4.4	7.73	1.2	0	0.12	0.12
003	Charles River	Upstream of lower basin	10/15/15 8:11 AM	B		15.49	0.38	8.24	82.8	0.764	4.3	7.51		0	0	0.12
003	Charles River	Upstream of lower basin	10/15/15 8:11 AM	S	0.1	15.57	0.38	8.48	85.3	0.765	3.8	7.63	1.7	0	0	0.12
004	Charles River	Upstream of lower basin	4/21/15 7:48 AM	B		12.3	0.28	10.07	94.3	0.567	12.3	7.28		0.54	1.15	1.15
004	Charles River	Upstream of lower basin	4/21/15 7:48 AM	S	0.1	12.33	0.28	10.16	95.1	0.567	10.4	7.35	0.6	0.54	1.15	1.15
004	Charles River	Upstream of lower basin	4/23/15 7:57 AM	B		13.98	0.29	9.68	94	0.6	7.6	7.41		0	0	0.54
004	Charles River	Upstream of lower basin	4/23/15 7:57 AM	S	0.1	14.04	0.29	9.85	95.8	0.6	6.4	7.46	1	0	0	0.54
004	Charles River	Upstream of lower basin	5/11/15 8:10 AM	B		19.96	0.34	8.7	95.7	0.7	7.5			0	0	0
004	Charles River	Upstream of lower basin	5/11/15 8:10 AM	S	0.1	21.92	0.34	8.95	102.4	0.692		7.53	0.8	0	0	0
004	Charles River	Upstream of lower basin	5/13/15 7:35 AM	B		21.35	0.35	6.99	79.1	0.708	6.9	7.31		0	0.02	0.02
004	Charles River	Upstream of lower basin	5/13/15 7:35 AM	S	0.1	21.46	0.35	7.71	87.4	0.708	4.4	7.4	1	0	0.02	0.02
004	Charles River	Upstream of lower basin	5/18/15 8:01 AM	B		20.02	0.37	7.53	83.1	0.757	5.7	7.35		0	0	0
004	Charles River	Upstream of lower basin	5/18/15 8:01 AM	S	0.1	20.04	0.37	7.75	85.5	0.757	4.8	7.43	1	0	0	0
004	Charles River	Upstream of lower basin	5/22/15 8:54 AM	B		18.65	0.38	8.07	86.6	0.781	6.7	7.4		0	0	0
004	Charles River	Upstream of lower basin	5/22/15 8:54 AM	S	0.1	19	0.38	9.01	97.3	0.781	5.3	7.55	0.9	0	0	0
004	Charles River	Upstream of lower basin	6/3/15 8:15 AM	B		15.08	0.28	6.63	66	0.566	8.9	7.23		0	0.74	1.12

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall		Logan Rainfall THREE_DAY_RAIN
															TWO_DAY_RAIN	THREE_DAY_RAIN	
004	Charles River	Upstream of lower basin	6/3/15 8:15 AM	S	0.1	15.19	0.28	6.77	67.5	0.568	8.1	7.33	0.6	0	0.74	0.74	1.12
004	Charles River	Upstream of lower basin	6/4/15 8:14 AM	B		15.58	0.33	7.25	73	0.671	8.6	7.17		0	0	0	0.74
004	Charles River	Upstream of lower basin	6/4/15 8:14 AM	S	0.1	15.71	0.33	7.39	74.6	0.667	6.4	7.28	0.9	0	0	0	0.74
004	Charles River	Upstream of lower basin	6/17/15 8:02 AM	B		21.45	0.36	5.33	60.4	0.74	7.4	7.25		0	0	0	0.4
004	Charles River	Upstream of lower basin	6/17/15 8:02 AM	S	0.1	22.3	0.37	7.02	80.9	0.753	5.4	7.39	1	0	0	0	0.4
004	Charles River	Upstream of lower basin	6/18/15 8:02 AM	B		21.94	0.38	4.79	54.8	0.773	9.7	7.11		0	0	0	0
004	Charles River	Upstream of lower basin	6/18/15 8:02 AM	S	0.1	22.13	0.38	6.94	79.7	0.772	5.5	7.22	0.9	0	0	0	0
004	Charles River	Upstream of lower basin	7/16/15 8:05 AM	B		25.12	0.33	7.03	85.5	0.679	5.1	7.4		0	0	0	0.03
004	Charles River	Upstream of lower basin	7/16/15 8:05 AM	S	0.1	25.13	0.33	7.13	86.6	0.679	5.2	7.51	1	0	0	0	0.03
004	Charles River	Upstream of lower basin	7/17/15 7:43 AM	B		25	0.33	5.68	68.9	0.687	9.7	7.32		0	0	0	0
004	Charles River	Upstream of lower basin	7/17/15 7:43 AM	S	0.1	25.15	0.33	7.23	87.9	0.685	5.6	7.58	1	0	0	0	0
004	Charles River	Upstream of lower basin	8/17/15 8:17 AM	B		25.25	0.7	5.04	61.5	1.398	8.8	7.73		0	0	0	0.08
004	Charles River	Upstream of lower basin	8/17/15 8:17 AM	S	0.1	26.18	0.55	7.94	98.4	1.121	9.4	7.93	1.1	0	0	0	0.08
004	Charles River	Upstream of lower basin	8/20/15 8:03 AM	B		26.24	0.7	1.14	14.2	1.403	7.5	7.32		0	0	0	0.14
004	Charles River	Upstream of lower basin	8/20/15 8:03 AM	S	0.1	27.16	0.51	8.03	101.4	1.041	4	7.97	1.6	0	0	0	0.14
004	Charles River	Upstream of lower basin	9/8/15 7:51 AM	B		24.89	1.01	4.93	59.8	1.994	14	7.84		0.2	0.2	0.2	0.2
004	Charles River	Upstream of lower basin	9/8/15 7:51 AM	S	0.1	25.28	0.45	7.99	97.5	0.915	5.2	8.21	0.8	0.2	0.2	0.2	0.2
004	Charles River	Upstream of lower basin	9/9/15 8:00 AM	B		24.66	0.94	1.97	23.8	1.847	11.4	7.54		0	0.2	0.2	0.2
004	Charles River	Upstream of lower basin	9/9/15 8:00 AM	S	0.1	25.43	0.5	8.47	103.6	1.009	14.1	8.21	1.2	0	0.2	0.2	0.2
004	Charles River	Upstream of lower basin	9/21/15 8:22 AM	B		22.4	0.69	7.17	83	1.379	11	7.69		0	0	0	0
004	Charles River	Upstream of lower basin	9/21/15 8:22 AM	S	0.1	22.43	0.69	7.24	83.9	1.377	10.6	7.86	0.7	0	0	0	0
004	Charles River	Upstream of lower basin	9/22/15 7:58 AM	B		21.52	0.71	6.55	74.6	1.409	10	7.57		0	0	0	0
004	Charles River	Upstream of lower basin	9/22/15 7:58 AM	S	0.1	21.52	0.71	6.73	76.6	1.406	9.3	7.77	0.6	0	0	0	0
004	Charles River	Upstream of lower basin	10/14/15 8:05 AM	B		16.08	0.69	6.81	69.5	1.37	8.3	7.41		0	0.12	0.12	0.12
004	Charles River	Upstream of lower basin	10/14/15 8:05 AM	S	0.1	16.33	0.35	9.1	93	0.719	4.7	7.74	1.2	0	0.12	0.12	0.12
004	Charles River	Upstream of lower basin	10/15/15 7:57 AM	B		16.15	0.73	5.83	59.5	1.453	7.7	7.34		0	0	0.12	0.12
004	Charles River	Upstream of lower basin	10/15/15 7:57 AM	S	0.1	15.74	0.42	8.65	87.4	0.855	4.2	7.64	1.3	0	0	0	0.12
005	Charles River	Upstream of lower basin	3/30/15 9:52 AM	S	0.1	3.07	0.3	12.82	95.6	0.623		7.34		0	0	0	0.12
005	Charles River	Upstream of lower basin	4/16/15 9:40 AM	S	0.1	13.21	0.18	11.53	110.1	0.369	4.2	7.52		0	0	0	0.01
005	Charles River	Upstream of lower basin	4/21/15 7:40 AM	B		12.63	0.29	9.98	94.1	0.598	17.9	7.28		0.54	1.15	1.15	1.15
005	Charles River	Upstream of lower basin	4/21/15 7:40 AM	S	0.1	12.67	0.29	10.03	94.6	0.6	8.5	7.35	0.7	0.54	1.15	1.15	1.15
005	Charles River	Upstream of lower basin	4/23/15 7:50 AM	B		13.74	0.29	9.73	94	0.599	6.3	7.41		0	0	0	0.54
005	Charles River	Upstream of lower basin	4/23/15 7:50 AM	S	0.1	13.73	0.29	9.86	95.3	0.598	5.4	7.48	0.9	0	0	0	0.54
005	Charles River	Upstream of lower basin	4/30/15 9:57 AM	B		13.34	0.28	10.16	97.3	0.569		7.35		0	0	0.07	0.07
005	Charles River	Upstream of lower basin	4/30/15 9:57 AM	S	0.1	13.53	0.28	10.16	97.7	0.57		7.4		0	0	0	0.07
005	Charles River	Upstream of lower basin	5/11/15 8:03 AM	B		21.66	0.33	9.19	104.6	0.685		7.54		0	0	0	0
005	Charles River	Upstream of lower basin	5/11/15 8:03 AM	S	0.1	21.91	0.33	9.32	106.6	0.685		7.56	0.8	0	0	0	0
005	Charles River	Upstream of lower basin	5/12/15 10:21 AM	B		21.15	0.34	7.52	84.8	0.701	9.7	7.48		0.02	0.02	0.02	0.02
005	Charles River	Upstream of lower basin	5/12/15 10:21 AM	S	0.1	21.92	0.34	9.03	103.3	0.7	4.3	7.6		0.02	0.02	0.02	0.02
005	Charles River	Upstream of lower basin	5/13/15 7:29 AM	B		21.18	0.35	8.04	90.7	0.707	12.2	7.4		0	0.02	0.02	0.02
005	Charles River	Upstream of lower basin	5/13/15 7:29 AM	S	0.1	21.18	0.35	8.25	93.1	0.707	4.8	7.44	1	0	0.02	0.02	0.02
005	Charles River	Upstream of lower basin	5/18/15 7:52 AM	B		20.29	0.37	7.63	84.5	0.756	5.5	7.35		0	0	0	0
005	Charles River	Upstream of lower basin	5/18/15 7:52 AM	S	0.1	20.36	0.37	8	88.8	0.756	5.1	7.42	0.9	0	0	0	0
005	Charles River	Upstream of lower basin	5/22/15 8:47 AM	B		18.81	0.38	9.06	97.5	0.777	6.4	7.46		0	0	0	0
005	Charles River	Upstream of lower basin	5/22/15 8:47 AM	S	0.1	18.99	0.38	9.23	99.7	0.778	6.1	7.54	0.7	0	0	0	0
005	Charles River	Upstream of lower basin	5/28/15 10:19 AM	S	0.1	22.99	0.39	8.73	102	0.788		7.98		0	0	0	0
005	Charles River	Upstream of lower basin	6/3/15 8:06 AM	B		15.67	0.3	5.13	51.7	0.608	7.3	7.16		0	0.74	1.12	1.12
005	Charles River	Upstream of lower basin	6/3/15 8:06 AM	S	0.1	15.74	0.3	5.45	55	0.608	6.9	7.3	0.7	0	0.74	1.12	1.12
005	Charles River	Upstream of lower basin	6/4/15 8:05 AM	B		15.44	0.27	7.51	75.3	0.564	8.9	7.16		0	0	0.74	0.74
005	Charles River	Upstream of lower basin	6/4/15 8:05 AM	S	0.1	15.63	0.29	7.51	75.6	0.59	5.9	7.44		0	0	0	0.74
005	Charles River	Upstream of lower basin	6/8/15 10:34 AM	S	0.1	19.38	0.36	10.23	111.4	0.726	7.2	7.78		0	0	0.09	0.09
005	Charles River	Upstream of lower basin	6/17/15 7:54 AM	B		21.81	0.37	7.2	82.2	0.749	7.4	7.31		0	0	0.4	0.4
005	Charles River	Upstream of lower basin	6/17/15 7:54 AM	S	0.1	22.09	0.37	7.2	82.7	0.754	6.5	7.4	0.9	0	0	0.4	0.4
005	Charles River	Upstream of lower basin	6/18/15 7:52 AM	S	0.1	21.87	0.37	7.97	91.1	0.764	5.6	7.38		0	0	0	0
005	Charles River	Upstream of lower basin	6/23/15 9:56 AM	B		24.47	0.38	7.8	93.7	0.781		8.15		0.01	0.01	1.73	
005	Charles River	Upstream of lower basin	6/23/15 9:56 AM	S	0.1	24.37	0.38	6.93	83.1	0.785		8.01		0.01	0.01	1.73	
005	Charles River	Upstream of lower basin	7/8/15 9:50 AM	S	0.1	25.05	0.36	8.31	100.9	0.741	6.2	7.76		0	0.02	0.02	
005	Charles River	Upstream of lower basin	7/16/15 7:55 AM	B		25.23	0.33	8.22	100.1	0.68	9.9	7.53		0	0	0.03	
005	Charles River	Upstream of lower basin	7/16/15 7:55 AM	S	0.1	25.28	0.33	8.21	100	0.68	6.8	7.59	1	0	0	0.03	
005	Charles River	Upstream of lower basin	7/17/15 7:35 AM	B		24.88	0.33	7.98	96.6	0.687	8.3	7.57		0	0	0	
005	Charles River	Upstream of lower basin	7/17/15 7:35 AM	S	0.1	25.01	0.33	8.16	99	0.687	5.8	7.64	1	0	0	0	
005	Charles River	Upstream of lower basin	7/20/15 9:55 AM	B		26.22	0.34	5.49	68	0.705		7.77		0	0	0.14	
005	Charles River	Upstream of lower basin	7/20/15 9:55 AM	S	0.1	26.28	0.34	5.43	68	0.702		7.96		0	0	0.14	
005	Charles River	Upstream of lower basin	8/3/15 9:56 AM	B		26.04	0.53	8.37	103.6	1.067	7.5	8.15		0	0	0	
005	Charles River	Upstream of lower basin	8/3/15 9:56 AM	S	0.1	25.77	0.51	8.4	103.4	1.031	11.8	8.49		0	0	0	
005	Charles River	Upstream of lower basin	8/17/15 8:09 AM	S	0.1	26.29	0.6	8.83	109.7	1.205	5.9	8.22		0	0	0.08	
005	Charles River	Upstream of lower basin	8/18/15 9:37 AM	B		26.79	0.56	7.17	89.9	1.13		8.02		0.14	0.14	0.14	

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall		
														TWO_DAY_RAIN	THREE_DAY_RAIN	
005	Charles River	Upstream of lower basin	8/18/15 9:37 AM	S	0.1	27.22	0.53	6.73	85.1	1.08	8.33			0.14	0.14	0.14
005	Charles River	Upstream of lower basin	8/20/15 7:54 AM	B		26.35	0.6	6.47	80.5	1.203	5.8	7.53		0	0	0.14
005	Charles River	Upstream of lower basin	8/20/15 7:54 AM	S	0.1	26.61	0.6	6.88	86	1.216	4.8	7.68	1.4	0	0	0.14
005	Charles River	Upstream of lower basin	9/3/15 9:56 AM	B		25.7	0.51	8.83	108.5	1.044				0.01	0.01	0.01
005	Charles River	Upstream of lower basin	9/3/15 9:56 AM	S	0.1	25.84	0.51	8.43	103.9	1.038	4.7	8.09		0.01	0.01	0.01
005	Charles River	Upstream of lower basin	9/8/15 7:43 AM	B		24.62	0.5	7.77	93.6	1.018	7.1	8.32		0.2	0.2	0.2
005	Charles River	Upstream of lower basin	9/8/15 7:43 AM	S	0.1								0.7	0.2	0.2	0.2
005	Charles River	Upstream of lower basin	9/9/15 7:52 AM	B		25.54	0.55	9.16	112.3	1.104		8.1		0	0.2	0.2
005	Charles River	Upstream of lower basin	9/9/15 7:52 AM	S	0.1								0.6	0	0.2	0.2
005	Charles River	Upstream of lower basin	9/14/15 9:36 AM	B		22.27	0.56	8.09	93.3	1.132		7.9		0	0.38	0.39
005	Charles River	Upstream of lower basin	9/14/15 9:36 AM	S	0.1	22.26	0.56	8.16	94.1	1.133		8.02		0	0.38	0.39
005	Charles River	Upstream of lower basin	9/21/15 8:12 AM	B		21.62	0.79	7.07	80.7	1.572	10.2	7.72		0	0	0
005	Charles River	Upstream of lower basin	9/21/15 8:12 AM	S	0.1	21.78	0.81	6.95	79.5	1.599	11.4	7.9	0.7	0	0	0
005	Charles River	Upstream of lower basin	9/22/15 7:51 AM	B		21.24	0.78	7.03	79.6	1.54		7.8		0	0	0
005	Charles River	Upstream of lower basin	9/22/15 7:51 AM	S	0.1	21.24	0.78	7	79.3	1.542	8.9	7.96	0.6	0	0	0
005	Charles River	Upstream of lower basin	9/28/15 9:36 AM	B		19.49	0.68	8.37	91.5	1.354		7.77		0	0	0
005	Charles River	Upstream of lower basin	9/28/15 9:36 AM	S	0.1	20.23	0.67	9.19	101.9	1.344	8.3	7.92		0	0	0
005	Charles River	Upstream of lower basin	10/14/15 7:56 AM	S	0.1	15.86	0.37	8.76	88.7	0.756	5.7	7.73		0	0.12	0.12
005	Charles River	Upstream of lower basin	10/15/15 7:49 AM	S	0.1	15.37	0.43	8.62	86.4	0.863	5	7.6		0	0	0.12
005	Charles River	Upstream of lower basin	10/16/15 8:50 AM	S	0.1	14.3	0.47	9.71	95.1	0.955		7.93		0	0	0
005	Charles River	Upstream of lower basin	10/27/15 9:26 AM	S	0.1	10.09	0.51	10.9	97.1	1.02		7.87		0	0.03	0.03
005	Charles River	Upstream of lower basin	11/10/15 10:24 AM	S	0.1	11.82	0.4	10.86	100.6	0.809	5.2	7.73		0.54	0.61	0.61
005	Charles River	Upstream of lower basin	11/23/15 11:11 AM	S	0.1	7.58	0.33	11.24	94.2	0.684	5	7.51		0.04	0.34	0.34
005	Charles River	Upstream of lower basin	12/8/15 10:42 AM	S	0.1	5.89	0.35	11.42	91.7	0.726	4.1	7.63		0	0	0
005	Charles River	Upstream of lower basin	12/21/15 10:44 AM	S	0.1	5.31	0.34	11.95	94.5	0.7	8.1	7.62		0	0	0
006	Charles River	Lower basin	4/21/15 7:33 AM	B		12.62	0.29	10	94.2	0.601	10.6	7.31		0.54	1.15	1.15
006	Charles River	Lower basin	4/21/15 7:33 AM	S	0.1	12.67	0.29	10.1	95.3	0.603	9.4	7.4	0.6	0.54	1.15	1.15
006	Charles River	Lower basin	4/23/15 7:43 AM	B		13.38	0.29	9.55	91.5	0.595	7.8	7.4		0	0	0.54
006	Charles River	Lower basin	4/23/15 7:43 AM	S	0.1	13.37	0.29	9.84	94.3	0.595	5.8	7.51	0.9	0	0	0.54
006	Charles River	Lower basin	5/11/15 7:56 AM	B		18.61	0.42	7.81	83.7	0.86		7.39		0	0	0
006	Charles River	Lower basin	5/11/15 7:56 AM	S	0.1	20.79	0.35	8.54	95.6	0.725		7.49	1.1	0	0	0
006	Charles River	Lower basin	5/13/15 7:23 AM	B		19.8	0.38	6.89	75.6	0.782	7.6	7.28		0	0.02	0.02
006	Charles River	Lower basin	5/13/15 7:23 AM	S	0.1	20.39	0.36	7.69	85.4	0.741	4.8	7.39	1	0	0.02	0.02
006	Charles River	Lower basin	5/18/15 7:46 AM	B		20.34	0.37	7.49	83.2	0.764	5.9	7.36		0	0	0
006	Charles River	Lower basin	5/18/15 7:46 AM	S	0.1	20.36	0.37	7.85	87.1	0.76	5.2	7.42	0.9	0	0	0
006	Charles River	Lower basin	5/22/15 8:40 AM	B		18.38	0.42	6.74	72	0.852	9	7.28		0	0	0
006	Charles River	Lower basin	5/22/15 8:40 AM	S	0.1	18.88	0.39	8.74	94.2	0.8	6.2	7.62	0.8	0	0	0
006	Charles River	Lower basin	6/3/15 7:59 AM	B		15.88	0.3	3.88	39.3	0.608	7.1	7.24		0	0.74	1.12
006	Charles River	Lower basin	6/3/15 7:59 AM	S	0.1	16.11	0.3	4.5	45.8	0.607	6	7.41	0.7	0	0.74	1.12
006	Charles River	Lower basin	6/4/15 7:58 AM	B		15.15	0.27	6.97	69.4	0.556	7.6	7.15		0	0	0.74
006	Charles River	Lower basin	6/4/15 7:58 AM	S	0.1	15.27	0.27	6.98	69.7	0.555	6.3	7.31	0.9	0	0	0.74
006	Charles River	Lower basin	6/17/15 7:47 AM	B		21.42	0.5	4.37	49.6	1.011	7.5	7.2		0	0	0.4
006	Charles River	Lower basin	6/17/15 7:47 AM	S	0.1	21.64	0.4	6.16	70.1	0.824	5.6	7.34	1	0	0	0.4
006	Charles River	Lower basin	6/18/15 7:48 AM	B		21.64	0.4	5.87	66.9	0.817	9.7	7.25		0	0	0
006	Charles River	Lower basin	6/18/15 7:48 AM	S	0.1	21.78	0.37	7.47	85.2	0.76	5.7	7.4	1	0	0	0
006	Charles River	Lower basin	7/16/15 7:48 AM	B		25.46	0.33	7.65	93.6	0.674	5	7.52		0	0	0.03
006	Charles River	Lower basin	7/16/15 7:48 AM	S	0.1	25.56	0.33	8.09	99	0.674	4.9	7.63	1.3	0	0	0.03
006	Charles River	Lower basin	7/17/15 7:29 AM	B		24.96	0.33	7.39	89.6	0.685	9.5	7.54		0	0	0
006	Charles River	Lower basin	7/17/15 7:29 AM	S	0.1	25.12	0.33	7.81	94.9	0.684	5.1	7.65	1.2	0	0	0
006	Charles River	Lower basin	8/17/15 8:01 AM	B		24.71	0.9	6.08	73.6	1.776	8.4	8.01		0	0	0.08
006	Charles River	Lower basin	8/17/15 8:01 AM	S	0.1	26.14	0.67	9.1	112.8	1.346	7.6	8.29	1.2	0	0	0.08
006	Charles River	Lower basin	8/20/15 7:47 AM	B		26.28	0.84	4.89	60.9	1.671	6.1	7.62		0	0	0.14
006	Charles River	Lower basin	8/20/15 7:47 AM	S	0.1	26.53	0.81	7.84	98	1.608	6.3	8	1.5	0	0	0.14
006	Charles River	Lower basin	9/8/15 7:35 AM	B		25.03	1.51	2.88	35.2	2.908	10.4	7.92		0.2	0.2	0.2
006	Charles River	Lower basin	9/8/15 7:35 AM	S	0.1	24.66	0.75	7.86	94.9	1.49	8.8	8.37	0.9	0.2	0.2	0.2
006	Charles River	Lower basin	9/9/15 7:44 AM	B		25.09	1.18	4.91	59.9	2.311	8.9	7.96		0	0.2	0.2
006	Charles River	Lower basin	9/9/15 7:44 AM	S	0.1	25.76	0.68	9.88	121.7	1.365	12	8.47	0.9	0	0.2	0.2
006	Charles River	Lower basin	9/21/15 8:04 AM	B		22.16	1.08	6.2	71.6	2.112		7.78		0	0	0
006	Charles River	Lower basin	9/21/15 8:04 AM	S	0.1	22.22	1.07	6.52	75.3	2.097	10.9	7.91	0.8	0	0	0
006	Charles River	Lower basin	9/22/15 7:45 AM	B		21.55	1.17	6.89	78.7	2.272	12.7	7.82		0	0	0
006	Charles River	Lower basin	9/22/15 7:45 AM	S	0.1	21.33	1.03	7.14	81	2.008	8.5	7.85	0.8	0	0	0
006	Charles River	Lower basin	10/14/15 7:49 AM	B		16.22	0.82	7.04	72	1.623	9.1	7.39		0	0.12	0.12
006	Charles River	Lower basin	10/14/15 7:49 AM	S	0.1	15.97	0.49	8.41	85.4	0.993	5.1	7.64	1.1	0	0.12	0.12
006	Charles River	Lower basin	10/15/15 7:42 AM	B		16.3	0.86	6.04	61.9	1.698	7.9	7.38		0	0	0.12
006	Charles River	Lower basin	10/15/15 7:42 AM	S	0.1	15.59	0.59	8.15	82.1	1.17	5.1	7.62	1.1	0	0	0.12
007	Charles River	Lower basin	4/21/15 7:19 AM	B	4.1	12.24	0.38	9.62	90	0.774	9.8	7.25		0.54	1.15	1.15
007	Charles River	Lower basin	4/21/15 7:19 AM	S	0.1	13.29	0.3	10.18	97.4	0.612	5.6	7.4	1	0.54	1.15	1.15

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN	
007	Charles River	Lower basin	4/23/15 7:28 AM	B	3.8	13.22	0.34	9.28	88.7	0.7	9.2	7.39		0	0	0	0.54
007	Charles River	Lower basin	4/23/15 7:28 AM	S	0.1	13.26	0.33	9.48	90.7	0.679	6.5	7.47	1	0	0	0	0.54
007	Charles River	Lower basin	5/11/15 7:39 AM	B	4.4	16.75	0.48	7.1	73.3	0.963		7.4		0	0	0	0
007	Charles River	Lower basin	5/11/15 7:39 AM	S	0.1	20.07	0.38	9.03	99.7	0.78		7.56	1.2	0	0	0	0
007	Charles River	Lower basin	5/13/15 7:09 AM	B	4.1	19.94	0.47	7.59	83.6	0.957	7.7	7.34		0	0.02	0.02	0.02
007	Charles River	Lower basin	5/13/15 7:09 AM	S	0.1	20.16	0.42	8.42	93.1	0.846	3.9	7.45	1.1	0	0.02	0.02	0.02
007	Charles River	Lower basin	5/18/15 7:33 AM	B	4	19.81	0.46	5.82	64	0.926	6.5	7.36		0	0	0	0
007	Charles River	Lower basin	5/18/15 7:33 AM	S	0.1	20.86	0.42	8.21	92.1	0.851	4.6	7.51	1	0	0	0	0
007	Charles River	Lower basin	5/22/15 8:27 AM	B	3.9	18.76	0.51	8.1	87.2	1.031	7.2	7.41		0	0	0	0
007	Charles River	Lower basin	5/22/15 8:27 AM	S	0.1	19.19	0.51	8.93	96.9	1.032	5.2	7.57	1	0	0	0	0
007	Charles River	Lower basin	6/3/15 7:43 AM	B	3.7	17.68	0.59	5.44	57.3	1.175	8.7	7.32		0	0.74	0.74	1.12
007	Charles River	Lower basin	6/3/15 7:43 AM	S	0.1	17.59	0.52	5.63	59.1	1.046	6.3	7.44	1	0	0.74	0.74	1.12
007	Charles River	Lower basin	6/4/15 7:45 AM	B	3.7	17.33	0.54	4.14	43.2	1.091	8.4	7.12		0	0	0	0.74
007	Charles River	Lower basin	6/4/15 7:45 AM	S	0.1	18.25	0.67	5.77	61.5	1.338	5.4	7.22	1.3	0	0	0	0.74
007	Charles River	Lower basin	6/17/15 7:35 AM	B	4	20.77	0.56	2.47	27.6	1.129	7.1	7.22		0	0	0	0.4
007	Charles River	Lower basin	6/17/15 7:35 AM	S	0.1	22.07	0.54	6.86	78.8	1.088	4.8	7.45	1.3	0	0	0	0.4
007	Charles River	Lower basin	6/18/15 7:32 AM	B	3.9	21.39	0.55	3.65	41.4	1.104	7.1	7.16		0	0	0	0
007	Charles River	Lower basin	6/18/15 7:32 AM	S	0.1	22.14	0.53	6.61	76	1.064	6.3	7.35	1.4	0	0	0	0
007	Charles River	Lower basin	7/16/15 7:33 AM	B	3.9	24.42	0.49	5.94	71.3	0.988	6.6	7.51		0	0	0	0.03
007	Charles River	Lower basin	7/16/15 7:33 AM	S	0.1	25.77	0.44	8.18	100.6	0.899	4	7.67	1.5	0	0	0	0.03
007	Charles River	Lower basin	7/17/15 7:14 AM	B	4.2	23.93	0.7	3.35	39.9	1.395	4.3	7.36		0	0	0	0
007	Charles River	Lower basin	7/17/15 7:14 AM	S	0.1	25.61	0.5	8.44	103.6	1.024	5.3	7.86	1.5	0	0	0	0
007	Charles River	Lower basin	8/17/15 7:43 AM	B	4.4	23.09	5.56	2.47	29.8	9.863	7.9	7.52		0	0	0	0.08
007	Charles River	Lower basin	8/17/15 7:43 AM	S	0.1	27.19	1.01	10.27	130.1	1.999	6	8.76	1.2	0	0	0	0.08
007	Charles River	Lower basin	8/20/15 7:32 AM	B	4	23.53	1.97	0.83	9.9	3.73	6.6	7.36		0	0	0	0.14
007	Charles River	Lower basin	8/20/15 7:32 AM	S	0.1	27.49	1.02	8.31	105.8	2.016	6.2	8.48	1.5	0	0	0	0.14
007	Charles River	Lower basin	9/8/15 7:18 AM	B	4.5	23.91	7.35	0.74	9.1	12.79	5.9	7.4		0.2	0.2	0.2	0.2
007	Charles River	Lower basin	9/8/15 7:18 AM	S	0.1	25.46	1.12	9.48	116.4	2.191	12.9	8.89	0.6	0.2	0.2	0.2	0.2
007	Charles River	Lower basin	9/9/15 7:26 AM	B	4.2	24.07	6.25	1.01	12.5	11.01	11.2	7.21		0	0.2	0.2	0.2
007	Charles River	Lower basin	9/9/15 7:26 AM	S	0.1	25.94	1.1	10.14	125.6	2.15	8	9.02	0.6	0	0.2	0.2	0.2
007	Charles River	Lower basin	9/21/15 7:46 AM	B	4.2	22.76	7.39	0.6	7.3	12.84	7.4	7.13		0	0	0	0
007	Charles River	Lower basin	9/21/15 7:46 AM	S	0.1	22.41	1.16	7.55	87.7	2.263	10.3	8.08	0.9	0	0	0	0
007	Charles River	Lower basin	9/22/15 7:29 AM	B	3.8	21.7	1.21	6.87	78.7	2.347	10.8	8.02		0	0	0	0
007	Charles River	Lower basin	9/22/15 7:29 AM	S	0.1	21.79	1.22	7.63	87.5	2.367	9.7	8.21	0.9	0	0	0	0
007	Charles River	Lower basin	10/14/15 7:34 AM	B	4.2	16.26	0.88	7.03	72	1.734	6.3	7.55		0	0.12	0.12	0.12
007	Charles River	Lower basin	10/14/15 7:34 AM	S	0.1	16.13	0.72	8.66	88.3	1.417	5.3	7.65	1.2	0	0.12	0.12	0.12
007	Charles River	Lower basin	10/15/15 7:29 AM	B	4.2	16.28	0.83	8.77	89.8	1.629	5.2	7.57		0	0	0	0.12
007	Charles River	Lower basin	10/15/15 7:29 AM	S	0.1	16.28	0.83	8.78	89.9	1.628	5	7.59	1.2	0	0	0	0.12
145	Charles River	Lower basin	4/21/15 7:24 AM	B		11.87	0.62	8.71	80.9	1.23	12.2	7.15		0.54	1.15	1.15	
145	Charles River	Lower basin	4/21/15 7:24 AM	S	0.1	13.14	0.31	10.09	96.2	0.631	5.8	7.36	0.9	0.54	1.15	1.15	
145	Charles River	Lower basin	4/23/15 7:33 AM	B		12.96	0.31	9.32	88.5	0.629	7.1	7.38		0	0	0.54	
145	Charles River	Lower basin	4/23/15 7:33 AM	S	0.1	13.04	0.3	9.7	92.3	0.617	6.8	7.45	0.9	0	0	0.54	
145	Charles River	Lower basin	5/11/15 7:46 AM	B		19.66	0.41	8.35	91.4	0.841	7.44			0	0	0	
145	Charles River	Lower basin	5/11/15 7:46 AM	S	0.1	20.02	0.38	8.93	98.5	0.771	7.5	1		0	0	0	
145	Charles River	Lower basin	5/13/15 7:14 AM	B		19.38	0.4	6.9	75.1	0.813	5.6	7.3		0	0.02	0.02	
145	Charles River	Lower basin	5/13/15 7:14 AM	S	0.1	19.58	0.39	8.14	88.9	0.795	4.1	7.43	1	0	0.02	0.02	
145	Charles River	Lower basin	5/18/15 7:38 AM	B		19.84	0.55	7.76	85.4	1.108	6	7.38		0	0	0	
145	Charles River	Lower basin	5/18/15 7:38 AM	S	0.1	20.37	0.45	8.3	92.2	0.92	3.8	7.48	1.2	0	0	0	
145	Charles River	Lower basin	5/22/15 8:31 AM	B		18.54	0.58	7.72	82.7	1.158	5.6	7.34		0	0	0	
145	Charles River	Lower basin	5/22/15 8:31 AM	S	0.1	18.85	0.5	8.69	93.7	0.999	5.4	7.5	0.9	0	0	0	
145	Charles River	Lower basin	6/3/15 7:48 AM	B		13.93	0.27	6.43	62.3	0.557	10.2	7.37		0	0.74	1.12	
145	Charles River	Lower basin	6/3/15 7:48 AM	S	0.1	17.36	0.42	5.25	54.9	0.846	6	7.39	1	0	0.74	1.12	
145	Charles River	Lower basin	6/4/15 7:50 AM	B		14	0.48	6.23	60.6	0.968	6.1	7.05		0	0	0.74	
145	Charles River	Lower basin	6/4/15 7:50 AM	S	0.1	16.84	0.35	5.44	56.2	0.713	4.8	7.28	1	0	0	0	0.74
145	Charles River	Lower basin	6/17/15 7:40 AM	B		18.88	0.51	3.79	40.9	1.02	6.8	7.2		0	0	0.4	
145	Charles River	Lower basin	6/17/15 7:40 AM	S	0.1	21.53	0.46	6.71	76.2	0.929	5.3	7.35	1.1	0	0	0	0.4
145	Charles River	Lower basin	6/18/15 7:38 AM	B		17.39	0.65	4.24	44.4	1.302	7.7	7.08		0	0	0	
145	Charles River	Lower basin	6/18/15 7:38 AM	S	0.1	21.88	0.51	6.91	79.1	1.027	5.2	7.35	1.3	0	0	0	
145	Charles River	Lower basin	7/16/15 7:39 AM	B		25.24	0.48	8.21	100.1	0.973	5.6	7.68		0	0	0.03	
145	Charles River	Lower basin	7/16/15 7:39 AM	S	0.1	25.25	0.48	8.32	101.4	0.98	4.6	7.67	1.4	0	0	0.03	
145	Charles River	Lower basin	7/17/15 7:20 AM	B		19.08	0.72	5.11	55.4	1.436	6.6	7.34		0	0	0	
145	Charles River	Lower basin	7/17/15 7:20 AM	S	0.1	25.23	0.46	8.69	105.8	0.947	5.4	7.91	1.2	0	0	0	
145	Charles River	Lower basin	8/17/15 7:49 AM	B		26.45	0.88	9.77	122	1.749	8.8	8.74		0	0	0.08	
145	Charles River	Lower basin	8/17/15 7:49 AM	S	0.1	26.84	0.99	10.26	129	1.951	6.6	8.75	1.1	0	0	0.08	
145	Charles River	Lower basin	8/20/15 7:38 AM	B		27.09	0.95	6.77	85.5	1.872	7.4	7.78		0	0	0.14	
145	Charles River	Lower basin	8/20/15 7:38 AM	S	0.1	26.66	0.55	5.31	66.5	1.122	3	7.67	1.6	0	0	0	0.14
145	Charles River	Lower basin	8/8/15 7:25 AM	B		19.97	0.91	5.35	59.2	1.794	7.6	8.07		0.2	0.2	0.2	

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall		
														TWO_DAY_RAIN	THREE_DAY_RAIN	
145	Charles River	Lower basin	9/8/15 7:25 AM	S	0.1	24.97	1	8.89	108.1	1.967	11.6	8.68	0.6	0.2	0.2	0.2
145	Charles River	Lower basin	9/9/15 7:33 AM	B		25.57	0.98	9.18	112.9	1.937	9.5	8.74	0	0	0.2	0.2
145	Charles River	Lower basin	9/9/15 7:33 AM	S	0.1	25.16	0.73	7.54	91.9	1.458	4.5	8.21	0.8	0	0.2	0.2
145	Charles River	Lower basin	9/21/15 7:53 AM	B		22.54	1.29	7.6	88.5	2.492	11	8.36	0	0	0	0
145	Charles River	Lower basin	9/21/15 7:53 AM	S	0.1	22.82	1.3	8.41	98.4	2.515	11.2	8.44	0.8	0	0	0
145	Charles River	Lower basin	9/22/15 7:34 AM	B		18.25	1.07	5.16	55.2	2.09	7.1	7.85	0	0	0	0
145	Charles River	Lower basin	9/22/15 7:34 AM	S	0.1	21.7	1.19	7.45	85.3	2.314	9.6	8.12	0.9	0	0	0
145	Charles River	Lower basin	10/14/15 7:39 AM	B		16.32	0.72	5.72	58.6	1.434	6	7.43	0	0	0.12	0.12
145	Charles River	Lower basin	10/14/15 7:39 AM	S	0.1	16.17	0.66	5.97	60.9	1.304	5.2	7.54	1.2	0	0.12	0.12
145	Charles River	Lower basin	10/15/15 7:34 AM	B		15.74	0.77	8.51	86.1	1.528	6.6	7.53	0	0	0	0.12
145	Charles River	Lower basin	10/15/15 7:34 AM	S	0.1	15.91	0.79	8.64	87.8	1.556	5.5	7.57	1.1	0	0	0.12
008	Charles River	Lower basin	4/21/15 7:12 AM	B	4.3	12.36	0.33	9.85	92.3	0.669	10.1	7.27		0.54	1.15	1.15
008	Charles River	Lower basin	4/21/15 7:12 AM	S	0.1	12.99	0.31	10.19	96.9	0.641	6.2	7.45	1	0.54	1.15	1.15
008	Charles River	Lower basin	4/23/15 7:22 AM	B	4	13.05	0.33	9.2	87.6	0.669	6.8	7.45		0	0	0.54
008	Charles River	Lower basin	4/23/15 7:22 AM	S	0.1	13.14	0.32	9.58	91.4	0.655	6.4	7.58	1	0	0	0.54
008	Charles River	Lower basin	5/11/15 7:34 AM	B	3.9	18.9	0.51	8.32	89.8	1.028	7.51		0	0	0	0
008	Charles River	Lower basin	5/11/15 7:34 AM	S	0.1	20.07	0.38	8.88	98	0.772	7.63	1.2		0	0	0
008	Charles River	Lower basin	5/13/15 7:03 AM	B	3.4	19.85	0.4	8.32	91.4	0.809	5.8	7.46		0	0.02	0.02
008	Charles River	Lower basin	5/13/15 7:03 AM	S	0.1	19.93	0.4	8.6	94.6	0.814	3.6	7.52	1.1	0	0.02	0.02
008	Charles River	Lower basin	5/18/15 7:27 AM	B	3.8	20.57	0.46	8.31	92.7	0.935	3.9	7.52		0	0	0
008	Charles River	Lower basin	5/18/15 7:27 AM	S	0.1	20.57	0.46	8.26	92.2	0.933	3.6	7.55	1.2	0	0	0
008	Charles River	Lower basin	5/22/15 8:19 AM	B	3.9	18.98	0.57	7.87	85.1	1.152	6.2	7.42		0	0	0
008	Charles River	Lower basin	5/22/15 8:19 AM	S	0.1	19.43	0.56	8.95	97.7	1.115	4.5	7.59	1.1	0	0	0
008	Charles River	Lower basin	6/3/15 7:36 AM	B	3.7	17.87	0.67	6.05	64	1.343	7.2	7.46		0	0.74	1.12
008	Charles River	Lower basin	6/3/15 7:36 AM	S	0.1	17.95	0.66	6.26	66.3	1.309	6.4	7.63	1.1	0	0.74	1.12
008	Charles River	Lower basin	6/4/15 7:38 AM	B	4	17.42	0.55	5.23	54.8	1.106	5.7	7.18		0	0	0.74
008	Charles River	Lower basin	6/4/15 7:38 AM	S	0.1	18.1	0.65	5.89	62.5	1.304	5.2	7.28	1.3	0	0	0.74
008	Charles River	Lower basin	6/17/15 7:29 AM	B	3.4	21.76	0.48	7.18	82	0.967	5.6	7.46		0	0	0.4
008	Charles River	Lower basin	6/17/15 7:29 AM	S	0.1	22.11	0.52	7.35	84.5	1.054	4.9	7.49	1.3	0	0	0.4
008	Charles River	Lower basin	6/18/15 7:26 AM	B	4.1	21.67	0.55	5.57	63.5	1.104	6.2	7.29		0	0	0
008	Charles River	Lower basin	6/18/15 7:26 AM	S	0.1	22.18	0.55	6.53	75.1	1.099	4.4	7.35	1.5	0	0	0
008	Charles River	Lower basin	7/16/15 7:27 AM	B	3.5	25.67	0.5	8.24	101.2	1.019	6.5	7.71		0	0	0.03
008	Charles River	Lower basin	7/16/15 7:27 AM	S	0.1	25.68	0.5	8.21	100.9	1.019	4.4	7.68	1.5	0	0	0.03
008	Charles River	Lower basin	7/17/15 7:07 AM	B	4.1	24.15	1.09	2.7	32.3	2.14	5	7.27		0	0	0
008	Charles River	Lower basin	7/17/15 7:07 AM	S	0.1	25.43	0.49	8.56	104.7	1.006	5.2	7.88	1.5	0	0	0
008	Charles River	Lower basin	8/17/15 7:36 AM	B	3.7	24.28	2.44	1.35	16.4	4.566	14.8	7.89		0	0	0.08
008	Charles River	Lower basin	8/17/15 7:36 AM	S	0.1	27.06	1	10.17	128.4	1.968	6.8	8.71	1.1	0	0	0.08
008	Charles River	Lower basin	8/20/15 7:26 AM	B	4.3	22.02	11.86	0.67	8.3	19.86	5.4	7.09		0	0	0.14
008	Charles River	Lower basin	8/20/15 7:26 AM	S	0.1	27.61	1.02	8.55	109.1	2.021	6	8.57	1.5	0	0	0.14
008	Charles River	Lower basin	9/8/15 7:12 AM	B	4.3	24.63	5.36	1.72	21.3	9.554	8.1	7.79		0.2	0.2	0.2
008	Charles River	Lower basin	9/8/15 7:12 AM	S	0.1	25.56	1.13	9.81	120.7	2.207	13.3	8.92	0.6	0.2	0.2	0.2
008	Charles River	Lower basin	9/9/15 7:20 AM	B	4.2	24.51	5.97	1.04	12.8	10.56	8.6	7.39		0	0.2	0.2
008	Charles River	Lower basin	9/9/15 7:20 AM	S	0.1	26.1	1.13	10.16	126.3	2.21	9.4	9.06	0.7	0	0.2	0.2
008	Charles River	Lower basin	9/21/15 7:39 AM	B	4	22.5	10.13	0.64	7.8	17.19	8.2	7.28		0	0	0
008	Charles River	Lower basin	9/21/15 7:39 AM	S	0.1	23.02	1.27	8.8	103.4	2.461	11.1	8.52	0.8	0	0	0
008	Charles River	Lower basin	9/22/15 7:23 AM	B	4.1	22.3	12.02	0.55	6.8	20.11	8.7	7.13		0	0	0
008	Charles River	Lower basin	9/22/15 7:23 AM	S	0.1	22.25	1.32	8.05	93.2	2.559	10.3	8.51	0.8	0	0	0
008	Charles River	Lower basin	10/14/15 7:27 AM	B	4	16.66	1.29	6.37	66	2.486	6.1	7.47		0	0.12	0.12
008	Charles River	Lower basin	10/14/15 7:27 AM	S	0.1	16.74	0.81	8.96	92.7	1.596	5.3	7.76	1.1	0	0.12	0.12
008	Charles River	Lower basin	10/15/15 7:23 AM	B	3.9	16.01	0.81	8.77	89.3	1.596	6.1	7.62		0	0	0.12
008	Charles River	Lower basin	10/15/15 7:23 AM	S	0.1	15.99	0.81	8.74	88.9	1.594	4.4	7.66	1.5	0	0	0.12
009	Charles River	Lower basin	4/21/15 7:02 AM	B	8.5	10.91	22.39	0.15	1.6	35.6	4.9	7.05		0.54	1.15	1.15
009	Charles River	Lower basin	4/21/15 7:02 AM	S	0.1	12.89	0.33	10.55	100.1	0.668	4.2	7.42	1.3	0.54	1.15	1.15
009	Charles River	Lower basin	4/23/15 7:14 AM	B	8.5	10.94	22.55	3.58	37.4	35.82	5.8	7.01		0	0	0.54
009	Charles River	Lower basin	4/23/15 7:14 AM	S	0.1	13.22	0.35	9.52	91	0.716	5.9	7.51	1	0	0	0.54
009	Charles River	Lower basin	5/11/15 7:24 AM	B	8.7	10.89	22.56	1.68	17.5	35.84	7.1		0	0	0	0
009	Charles River	Lower basin	5/11/15 7:24 AM	S	0.1	20.36	0.38	9.09	100.9	0.776	7.82	1.3	0	0	0	0
009	Charles River	Lower basin	5/13/15 6:56 AM	B	7.9	10.77	22.2	0.24	2.5	35.32	5.9	7.07		0	0.02	0.02
009	Charles River	Lower basin	5/13/15 6:56 AM	S	0.1	20.32	0.39	8.82	97.8	0.8	3.9	7.54	1	0	0.02	0.02
009	Charles River	Lower basin	5/18/15 7:19 AM	B	9	10.93	22.58	0.8	8.4	35.86	6.5	7.08		0	0	0
009	Charles River	Lower basin	5/18/15 7:19 AM	S	0.1	20.35	0.46	8.07	89.6	0.929	3.9	7.56	1.1	0	0	0
009	Charles River	Lower basin	5/22/15 8:06 AM	B	8.7	10.9	22.35	3.86	40.2	35.54	6.5	7.04		0	0	0
009	Charles River	Lower basin	5/22/15 8:06 AM	S	0.1	20.95	0.58	9.24	103.9	1.164	4.5	7.61	1.1	0	0	0
009	Charles River	Lower basin	6/3/15 7:26 AM	B	8.3	11.01	22.02	0.44	4.5	35.04	5.6	7.02		0	0.74	1.12
009	Charles River	Lower basin	6/3/15 7:26 AM	S	0.1	19.12	0.77	6.18	67	1.53	6.6	7.51	1.1	0	0.74	1.12
009	Charles River	Lower basin	6/4/15 7:32 AM	B	8.4	10.99	22.09	0.53	5.5	35.15	3.6	7.07		0	0	0.74
009	Charles River	Lower basin	6/4/15 7:32 AM	S	0.1	18.01	0.68	6.07	64.3	1.351	5.7	7.27	1.4	0	0	0.74

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
009	Charles River	Lower basin	6/17/15 7:19 AM	B	8.8	11.16	22.04	0.13	1.4	35.07	4.8	7.03		0	0	0.4
009	Charles River	Lower basin	6/17/15 7:19 AM	S	0.1	23.11	0.58	7.03	82.4	1.159	4.7	7.54	1.4	0	0	0.4
009	Charles River	Lower basin	6/18/15 7:16 AM	B	8.7	11.13	21.94	0.09	1	34.93	7	7.05		0	0	0
009	Charles River	Lower basin	6/18/15 7:16 AM	S	0.1	22.74	0.6	6.35	73.9	1.206	4.2	7.36	1.5	0	0	0
009	Charles River	Lower basin	7/16/15 7:19 AM	B	8.7	12.08	22.35	3.06	32.7	35.49	8.9	6.88		0	0	0.03
009	Charles River	Lower basin	7/16/15 7:19 AM	S	0.1	26.29	0.55	7.56	94	1.113	3.8	7.6	1.5	0	0	0.03
009	Charles River	Lower basin	7/17/15 6:57 AM	B	8.3	12.25	22.16	0.43	4.6	35.2	3.3	7.06		0	0	0
009	Charles River	Lower basin	7/17/15 6:57 AM	S	0.1	26.01	0.56	7.84	97	1.124	5.3	7.67	1.5	0	0	0
009	Charles River	Lower basin	8/17/15 7:24 AM	B	8.6	12.78	22.38	0.58	6.2	35.5	4.6	7.11		0	0	0.08
009	Charles River	Lower basin	8/17/15 7:24 AM	S	0.1	27.58	1.08	8.87	113.2	2.13	7.5	8.45	1.1	0	0	0.08
009	Charles River	Lower basin	8/20/15 7:16 AM	B	8.8	12.64	22.13	1.26	13.6	35.14	3.8	7.03		0	0	0.14
009	Charles River	Lower basin	8/20/15 7:16 AM	S	0.1	28.25	1.07	7.93	102.3	2.113	5.7	8.36	1.5	0	0	0.14
009	Charles River	Lower basin	9/8/15 7:02 AM	B	9	13.04	22.02	0.18	1.9	34.98	5.3	7.09		0.2	0.2	0.2
009	Charles River	Lower basin	9/8/15 7:02 AM	S	0.1	27.05	1.23	9.07	114.7	2.404	13	8.78	0.6	0.2	0.2	0.2
009	Charles River	Lower basin	9/9/15 7:10 AM	B	8.8	13.16	22.16	0.94	10.3	35.17	13.9	7.06		0	0.2	0.2
009	Charles River	Lower basin	9/9/15 7:10 AM	S	0.1	26.76	1.2	9.45	118.9	2.354	8	8.95	0.7	0	0.2	0.2
009	Charles River	Lower basin	9/21/15 7:29 AM	B	8.4	13.94	21.88	0.31	3.4	34.74	8.5	7.01		0	0	0
009	Charles River	Lower basin	9/21/15 7:29 AM	S	0.1	23.99	1.34	7.75	92.7	2.599	10.6	8.27	0.9	0	0	0
009	Charles River	Lower basin	9/22/15 7:14 AM	B	8.7	13.24	22.22	0.35	3.8	35.26	9.4	7.01		0	0	0
009	Charles River	Lower basin	9/22/15 7:14 AM	S	0.1	23.16	1.41	7.56	89.1	2.73	9.1	8.4	0.8	0	0	0
009	Charles River	Lower basin	10/14/15 7:19 AM	B	8.5	17.67	24.08	0.64	7.8	37.85	5.6	6.89		0	0.12	0.12
009	Charles River	Lower basin	10/14/15 7:19 AM	S	0.1	17.05	0.83	9.47	98.6	1.635	5.2	7.77	1.1	0	0.12	0.12
009	Charles River	Lower basin	10/15/15 7:16 AM	B	8.4	17.82	23.9	0.95	11.6	37.59	2.6	6.95		0	0	0.12
009	Charles River	Lower basin	10/15/15 7:16 AM	S	0.1	15.63	0.72	8.2	82.8	1.434	4.7	7.69	1.2	0	0	0.12
010	Charles River	Lower basin	4/21/15 6:54 AM	B	8.8	6.96	25.3	0.55	5.4	40.1	6.8	6.96		0.54	1.15	1.15
010	Charles River	Lower basin	4/21/15 6:54 AM	S	0.1	13.71	0.33	10.43	100.8	0.678	4.2	7.38	1.2	0.54	1.15	1.15
010	Charles River	Lower basin	4/23/15 7:08 AM	B	7.5	6.4	25.13	0.7	6.7	39.91	13	6.93		0	0	0.54
010	Charles River	Lower basin	4/23/15 7:08 AM	S	0.1	13.75	0.35	9.71	93.9	0.714	5.2	7.18	1.2	0	0	0.54
010	Charles River	Lower basin	5/11/15 7:12 AM	B	8.5	7.23	25.46	3.06	30	40.29	9.7	7		0	0	0
010	Charles River	Lower basin	5/11/15 7:12 AM	S	0.1	21.44	0.4	8.94	101.4	0.82	4.6	7.34	1.2	0	0	0
010	Charles River	Lower basin	5/13/15 6:49 AM	B	7.7	7.52	24.27	0.92	9	38.55	8.9	7.12		0	0.02	0.02
010	Charles River	Lower basin	5/13/15 6:49 AM	S	0.1	21.6	0.42	8.86	100.8	0.847	3.4	7.37	1.3	0	0.02	0.02
010	Charles River	Lower basin	5/18/15 7:11 AM	B	8.6	7.4	25.47	0.29	2.9	40.3	10.7	7.01		0	0	0
010	Charles River	Lower basin	5/18/15 7:11 AM	S	0.1	20.82	0.5	7.92	88.8	1.005	3.7	7.22	1.1	0	0	0
010	Charles River	Lower basin	5/22/15 7:55 AM	B	8	7.76	24.87	0.3	3	39.39	20.7	7.12		0	0	0
010	Charles River	Lower basin	5/22/15 7:55 AM	S	0.1	20.72	0.57	9.47	106	1.14	4.4	7.59	1.1	0	0	0
010	Charles River	Lower basin	6/3/15 7:18 AM	B	7.7	9	24.04	0.26	2.6	38.09	7.22			0	0.74	1.12
010	Charles River	Lower basin	6/3/15 7:18 AM	S	0.1	19.47	0.78	6.21	67.9	1.539	6.4	7.28	1.1	0	0.74	1.12
010	Charles River	Lower basin	6/4/15 7:25 AM	B	7.9	8.26	24.67	0.8	8	39.06	7.13			0	0	0.74
010	Charles River	Lower basin	6/4/15 7:25 AM	S	0.1	18.86	0.74	6.05	65.3	1.468	5	7.22	1.3	0	0	0.74
010	Charles River	Lower basin	6/17/15 7:11 AM	B	8.8	8.67	24.71	0.68	6.8	39.08	7.09			0	0	0.4
010	Charles River	Lower basin	6/17/15 7:11 AM	S	0.1	23.58	0.58	7.09	83.8	1.177	4.5	7.61	1.3	0	0	0.4
010	Charles River	Lower basin	6/18/15 7:09 AM	B	8.8	8.68	24.59	0.46	4.6	38.9	7.09			0	0	0
010	Charles River	Lower basin	6/18/15 7:09 AM	S	0.1	22.83	0.6	6.39	74.5	1.201	4.3	7.28	1.6	0	0	0
010	Charles River	Lower basin	7/16/15 7:12 AM	B	8.2	11.33	24.17	1.18	12.6	38.14	14.5	7.05		0	0	0.03
010	Charles River	Lower basin	7/16/15 7:12 AM	S	0.1	26.29	0.54	7.84	97.4	1.097	4.2	7.41	1.5	0	0	0.03
010	Charles River	Lower basin	7/17/15 6:48 AM	B	8	12.74	23.29	0.59	6.4	36.81	13	7.42		0	0	0
010	Charles River	Lower basin	7/17/15 6:48 AM	S	0.1	26.39	0.55	8.12	101	1.116	5.2	7.67	1.5	0	0	0
010	Charles River	Lower basin	8/17/15 7:15 AM	B	8.2	14.02	24.28	0.41	4.7	38.19	9.9	7.24		0	0	0.08
010	Charles River	Lower basin	8/17/15 7:15 AM	S	0.1	27.62	1.07	9.27	118.3	2.115	6.6	8.51	1	0	0	0.08
010	Charles River	Lower basin	8/20/15 7:08 AM	B	8.7	13.06	23.93	1.64	18.1	37.71	8.2	7.13		0	0	0.14
010	Charles River	Lower basin	8/20/15 7:08 AM	S	0.1	28.73	1.08	8.02	104.4	2.132	6.1	8.37	1.5	0	0	0.14
010	Charles River	Lower basin	9/8/15 6:55 AM	B	7.4	17.23	24.39	0.9	10.9	38.29	4	7.28		0.2	0.2	0.2
010	Charles River	Lower basin	9/8/15 6:55 AM	S	0.1	27.28	1.21	9.26	117.6	2.374	12.9	8.76	0.6	0.2	0.2	0.2
010	Charles River	Lower basin	9/9/15 7:01 AM	B	8.9	15.32	24.61	1.35	15.6	38.62		7.16		0	0.2	0.2
010	Charles River	Lower basin	9/9/15 7:01 AM	S	0.1	26.93	1.21	9.47	119.5	2.37	7.7	8.93	0.7	0	0.2	0.2
010	Charles River	Lower basin	9/21/15 7:20 AM	B	7.9	15.81	24.87	0.48	5.6	39	6.8	7.06		0	0	0
010	Charles River	Lower basin	9/21/15 7:20 AM	S	0.1	24.42	1.36	8.03	96.8	2.642	11	8.2	0.9	0	0	0
010	Charles River	Lower basin	9/22/15 7:08 AM	B	8.4	16.09	25.27	0.82	9.7	39.55	7.08			0	0	0
010	Charles River	Lower basin	9/22/15 7:08 AM	S	0.1	24.03	1.46	7.32	87.7	2.817	8.6	8.26	0.8	0	0	0
010	Charles River	Lower basin	10/14/15 7:13 AM	B	8.3	18.04	26.75	0.96	11.9	41.63	4.3	6.91		0	0.12	0.12
010	Charles River	Lower basin	10/14/15 7:13 AM	S	0.1	17.56	0.89	9.32	98.1	1.745	5.4	7.79	1.2	0	0.12	0.12
010	Charles River	Lower basin	10/15/15 7:10 AM	B	7.7	18.32	26.49	1.74	21.7	41.26	0.2	6.88		0	0	0.12
010	Charles River	Lower basin	10/15/15 7:10 AM	S	0.1	16.91	0.91	8.95	93	1.787	4.6	7.45	1.4	0	0	0.12
166	Charles River	Downstream of lower basin	1/20/15 10:32 AM	B	1.72	0.44	13.69	98.5	0.898	3.8	7.22		0	0	0.15	
166	Charles River	Downstream of lower basin	1/20/15 10:32 AM	S	0.1	1.72	0.43	13.7	98.6	0.888	1.9	7.28		0	0	0.15
166	Charles River	Downstream of lower basin	3/16/15 9:23 AM	B	2.13	0.94	12.58	91.8	1.876	7.9	7.16		0	0.27	1.07	

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall		Logan Rainfall THREE_DAY_RAIN
															TWO_DAY_RAIN	THREE_DAY_RAIN	
166	Charles River	Downstream of lower basin	3/16/15 9:23 AM	S	0.1	1.3	0.87	12.73	90.8	1.742	7.9	7.22		0	0.27		1.07
166	Charles River	Downstream of lower basin	3/30/15 9:21 AM	B		3.47	0.4	12.23	92.3	0.826		7.26		0	0		0.12
166	Charles River	Downstream of lower basin	3/30/15 9:21 AM	S	0.1	3.44	0.4	12.39	93.4	0.827		7.38		0	0		0.12
166	Charles River	Downstream of lower basin	4/10/15 7:36 AM	B		7.92	0.34	12.29	103.8	0.689	5	7.42		0.09	0.18		0.44
166	Charles River	Downstream of lower basin	4/10/15 7:36 AM	S	0.1	7.97	0.34	12.3	104	0.689	3.8	7.62		0.09	0.18		0.44
166	Charles River	Downstream of lower basin	4/16/15 9:23 AM	B		12.91	0.31	11.08	105.1	0.626	7.9	7.5		0	0		0.01
166	Charles River	Downstream of lower basin	4/16/15 9:23 AM	S	0.1	13.2	0.31	11.18	106.8	0.627	3.5	7.6		0	0		0.01
166	Charles River	Downstream of lower basin	4/21/15 6:51 AM	S									1.3	0.54	1.15		1.15
166	Charles River	Downstream of lower basin	4/23/15 7:01 AM	S									1.2	0	0		0.54
166	Charles River	Downstream of lower basin	4/30/15 9:38 AM	B		13.53	0.34	10.55	101.5	0.689		7.51		0	0		0.07
166	Charles River	Downstream of lower basin	4/30/15 9:38 AM	S	0.1	13.6	0.34	10.93	105.3	0.689		7.65		0	0		0.07
166	Charles River	Downstream of lower basin	5/11/15 7:07 AM	S									1.3	0	0		0
166	Charles River	Downstream of lower basin	5/12/15 9:41 AM	B		22.37	0.44	8.58	99.1	0.888	3.2	7.57		0.02	0.02		0.02
166	Charles River	Downstream of lower basin	5/12/15 9:41 AM	S	0.1	22.44	0.44	8.67	100.3	0.888	2.7	7.63		0.02	0.02		0.02
166	Charles River	Downstream of lower basin	5/13/15 6:43 AM	S									1.4	0	0.02		0.02
166	Charles River	Downstream of lower basin	5/18/15 7:04 AM	S									1.1	0	0		0
166	Charles River	Downstream of lower basin	5/22/15 7:51 AM	S									1.1	0	0		0
166	Charles River	Downstream of lower basin	5/28/15 9:54 AM	B		24.29	0.75	8.82	105.8	1.494		7.98		0	0		0
166	Charles River	Downstream of lower basin	5/28/15 9:54 AM	S	0.1	24.28	0.75	8.75	104.9	1.495		7.99		0	0		0
166	Charles River	Downstream of lower basin	6/8/15 10:13 AM	B		19.77	0.61	7.72	84.8	1.218	7.2	7.57		0	0		0.09
166	Charles River	Downstream of lower basin	6/8/15 10:13 AM	S	0.1	19.77	0.61	8.05	88.5	1.216	4	7.64		0	0		0.09
166	Charles River	Downstream of lower basin	6/23/15 9:33 AM	B		25.22	0.59	6.92	84.4	1.192		7.41		0.01	0.01		1.73
166	Charles River	Downstream of lower basin	6/23/15 9:33 AM	S	0.1	25.23	0.59	6.98	85.2	1.192		7.51		0.01	0.01		1.73
166	Charles River	Downstream of lower basin	7/8/15 9:26 AM	B		27.22	0.62	8.65	109.3	1.246	10.2	7.75		0	0.02		0.02
166	Charles River	Downstream of lower basin	7/8/15 9:26 AM	S	0.1	27.22	0.62	8.9	112.5	1.247	3.7	7.75		0	0.02		0.02
166	Charles River	Downstream of lower basin	7/16/15 6:53 AM	S									1.6	0	0		0.03
166	Charles River	Downstream of lower basin	7/17/15 6:43 AM	S									1.5	0	0		0
166	Charles River	Downstream of lower basin	7/20/15 9:27 AM	B		29.05	0.59	5.65	73.8	1.202		8.58		0	0		0.14
166	Charles River	Downstream of lower basin	7/20/15 9:27 AM	S	0.1	29.08	0.59	5.62	73.4	1.202		8.57		0	0		0.14
166	Charles River	Downstream of lower basin	8/3/15 9:18 AM	B		29.06	0.92	9.24	120.9	1.822	7	8.84		0	0		0
166	Charles River	Downstream of lower basin	8/3/15 9:18 AM	S	0.1	29	0.92	9.39	122.7	1.821	6	8.63		0	0		0
166	Charles River	Downstream of lower basin	8/12/15 7:25 AM	B		26.76	1.19	8.04	101.2	2.323	7.1	8.25		0	0.83		0.83
166	Charles River	Downstream of lower basin	8/12/15 7:25 AM	S	0.1	26.67	1.19	8.36	105	2.323	6.2	8.2		0	0.83		0.83
166	Charles River	Downstream of lower basin	8/17/15 6:58 AM	S									1.1	0	0		0.08
166	Charles River	Downstream of lower basin	8/18/15 9:10 AM	B		30.01	1.14	7.13	94.9	2.238		8.34		0.14	0.14		0.14
166	Charles River	Downstream of lower basin	8/18/15 9:10 AM	S	0.1	29.99	1.14	6.99	93	2.237		8.32		0.14	0.14		0.14
166	Charles River	Downstream of lower basin	8/20/15 6:58 AM	S									1.6	0	0		0.14
166	Charles River	Downstream of lower basin	9/3/15 9:29 AM	B		28.59	1.11	9.36	121.6	2.178	9.8	8.74		0.01	0.01		0.01
166	Charles River	Downstream of lower basin	9/3/15 9:29 AM	S	0.1	28.8	1.11	11.08	144.4	2.179	8.6	8.78		0.01	0.01		0.01
166	Charles River	Downstream of lower basin	9/8/15 6:50 AM	S									0.8	0.2	0.2		0.2
166	Charles River	Downstream of lower basin	9/9/15 6:40 AM	S									0.8	0	0.2		0.2
166	Charles River	Downstream of lower basin	9/14/15 8:52 AM	B		24.97	1.35	8.13	99.1	2.614		8.31		0	0.38		0.39
166	Charles River	Downstream of lower basin	9/14/15 8:52 AM	S	0.1	24.9	1.35	7.95	96.7	2.616		8.18		0	0.38		0.39
166	Charles River	Downstream of lower basin	9/21/15 7:15 AM	S									1	0	0		0
166	Charles River	Downstream of lower basin	9/22/15 7:06 AM	S									0.9	0	0		0
166	Charles River	Downstream of lower basin	9/28/15 8:55 AM	B		23.69	1.81	7.51	89.6	3.454		7.64		0	0		0
166	Charles River	Downstream of lower basin	9/28/15 8:55 AM	S	0.1	23.66	1.81	7.57	90.3	3.45	4.6	7.58		0	0		0
166	Charles River	Downstream of lower basin	9/30/15 8:19 AM	B		24.98	1.73	7.83	95.7	3.318	5.9	7.81		2.46	2.5		2.5
166	Charles River	Downstream of lower basin	9/30/15 8:19 AM	S	0.1	24.98	1.73	7.91	96.6	3.313	8.5	7.86		2.46	2.5		2.5
166	Charles River	Downstream of lower basin	10/2/15 7:35 AM	B		21.23	1.2	8.58	97.4	2.328		7.38		0.08	0.08		2.54
166	Charles River	Downstream of lower basin	10/2/15 7:35 AM	S	0.1	21.17	1.2	8.76	99.3	2.332		7.39		0.08	0.08		2.54
166	Charles River	Downstream of lower basin	10/14/15 7:08 AM	S									1.4	0	0.12		0.12
166	Charles River	Downstream of lower basin	10/15/15 7:07 AM	S									1.5	0	0		0.12
166	Charles River	Downstream of lower basin	10/16/15 8:28 AM	B		16.43	0.94	9.51	97.8	1.84		7.7		0	0		0
166	Charles River	Downstream of lower basin	10/16/15 8:28 AM	S	0.1	16.41	0.94	9.42	96.8	1.848		7.61		0	0		0
166	Charles River	Downstream of lower basin	10/27/15 9:09 AM	B		14.12	1.01	10.39	101.7	1.963		7.4		0	0		0.03
166	Charles River	Downstream of lower basin	10/27/15 9:09 AM	S	0.1	14.07	1.01	10.44	102.1	1.963		7.47		0	0		0.03
166	Charles River	Downstream of lower basin	11/10/15 10:02 AM	B		15.19	0.8	10.3	103.1	1.584	4.5	7.69		0.54	0.61		0.61
166	Charles River	Downstream of lower basin	11/10/15 10:02 AM	S	0.1	15.19	0.8	10.15	101.5	1.585	4.1	7.6		0.54	0.61		0.61
166	Charles River	Downstream of lower basin	11/12/15 10:41 AM	B		14.33	0.81	9.32	91.6	1.594	3.4	7.56		0.01	0.05		0.59
166	Charles River	Downstream of lower basin	11/12/15 10:41 AM	S	0.1	14.3	0.81	9.4	92.2	1.592	3.5	7.59		0.01	0.05		0.59
166	Charles River	Downstream of lower basin	11/23/15 10:44 AM	B		10.5	0.76	10.76	96.9	1.502	5	7.18		0.04	0.34		0.34
166	Charles River	Downstream of lower basin	11/23/15 10:44 AM	S	0.1	10.42	0.76	10.75	96.6	1.498	3.1	7.04		0.04	0.34		0.34
166	Charles River	Downstream of lower basin	12/8/15 10:22 AM	B		8.45	0.56	9.99	85.6	1.13	12.3	7.51		0	0		0
166	Charles River	Downstream of lower basin	12/8/15 10:22 AM	S	0.1	8.47	0.56	10.35	88.7	1.13	2.5	7.57		0	0		0
166	Charles River	Downstream of lower basin	12/21/15 10:27 AM	S	0.1	7.77	0.57	11.22	94.6	1.133	3.5	7.35		0	0		0
011	Charles River	Downstream of lower basin	4/21/15 6:46 AM	B	5.8	12.6	2.44	10.01	95.6	4.536	4.7	7.14		0.54	1.15		1.15

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
011	Charles River	Downstream of lower basin	4/21/15 6:46 AM	S	0.1	13.5	0.64	10.29	99.1	1.27	4.4	6.88	1.1	0.54	1.15	1.15
011	Charles River	Downstream of lower basin	4/23/15 6:58 AM	B	5.3	13.64	3.29	9.57	94	6.017	5.9	6.96		0	0	0.54
011	Charles River	Downstream of lower basin	4/23/15 6:58:AM	S	0.1	14.35	0.44	9.82	96.3	0.898	4.6	6.8	1.2	0	0	0.54
011	Charles River	Downstream of lower basin	5/11/15 7:02 AM	B	6.5	13.87	15.8	6.41	68.3	25.82	7.2	6.58		0	0	0
011	Charles River	Downstream of lower basin	5/11/15 7:02:AM	S	0.1	21.44	0.52	8.44	95.7	1.04	4.3	6.91	1.4	0	0	0
011	Charles River	Downstream of lower basin	5/13/15 6:40 AM	B	6.3	14.89	14.7	5.98	64.7	24.14	4.9	7.13		0	0.02	0.02
011	Charles River	Downstream of lower basin	5/13/15 6:40:AM	S	0.1	21.56	0.5	8.43	95.9	1.003	3.2	7.05	1.5	0	0.02	0.02
011	Charles River	Downstream of lower basin	5/18/15 7:03 AM	B	6.4	16.01	17.21	5.38	60.5	27.89	6.2	6.59		0	0	0
011	Charles River	Downstream of lower basin	5/18/15 7:03:AM	S	0.1	21.11	0.57	7.76	87.5	1.139	3.5	6.89	1.2	0	0	0
011	Charles River	Downstream of lower basin	5/22/15 7:42 AM	B	6.2	16.97	15.02	6.15	69.7	24.62	5.3	7.03		0	0	0
011	Charles River	Downstream of lower basin	5/22/15 7:42:AM	S	0.1	21.07	0.66	9.15	103.1	1.319	3.8	7.13	1.2	0	0	0
011	Charles River	Downstream of lower basin	6/3/15 7:08 AM	B	6.1	16.87	14.47	4.92	55.4	23.8	7.3	6.9		0	0.74	1.12
011	Charles River	Downstream of lower basin	6/3/15 7:08:AM	S	0.1	19.87	0.89	6.06	66.8	1.75	6	7.39	1.2	0	0.74	1.12
011	Charles River	Downstream of lower basin	6/4/15 7:14 AM	B	6.3	16.99	12.94	4.3	48.1	21.47	8.8	7.04		0	0	0.74
011	Charles River	Downstream of lower basin	6/4/15 7:14:AM	S	0.1	19.27	1.01	5.78	63	1.977	5.3	7.22	1.2	0	0	0.74
011	Charles River	Downstream of lower basin	6/17/15 6:59 AM	B	6.3	16.28	21.32	4.62	53.6	33.9	4.7	7.37		0	0	0.4
011	Charles River	Downstream of lower basin	6/17/15 6:59:AM	S	0.1	23.94	0.65	6.43	76.6	1.296	4.4	7.65	1.3	0	0	0.4
011	Charles River	Downstream of lower basin	6/18/15 7:00 AM	B	6.8	15.98	23.21	3.42	39.8	36.63	4.6	7.24		0	0	0
011	Charles River	Downstream of lower basin	6/18/15 7:00:AM	S	0.1	23.42	0.66	6.08	71.7	1.313	3.6	7.24	1.5	0	0	0
011	Charles River	Downstream of lower basin	7/16/15 6:52 AM	B	6.3	21.5	20.28	4.28	54.6	32.43	5	6.65		0	0	0.03
011	Charles River	Downstream of lower basin	7/16/15 6:52:AM	S	0.1	26.37	0.76	7.21	89.8	1.51	3.5	7.09	1.5	0	0	0.03
011	Charles River	Downstream of lower basin	7/17/15 6:38 AM	B	6	21.09	21.26	3.92	49.9	33.84	5.9	7.24		0	0	0
011	Charles River	Downstream of lower basin	7/17/15 6:38:AM	S	0.1	26.27	0.63	7.47	92.9	1.264	5.2	7.39	1.6	0	0	0
011	Charles River	Downstream of lower basin	8/17/15 6:48 AM	B	6.5	20.2	25.64	4.24	54.4	40.08	6.4	7.3		0	0	0.08
011	Charles River	Downstream of lower basin	8/17/15 6:48:AM	S	0.1	28.18	1.23	8.53	110	2.416	6	7.94	1.2	0	0	0.08
011	Charles River	Downstream of lower basin	8/20/15 6:58 AM	B	6.2	20.15	25.51	3.64	46.6	39.89	3.9	7.34		0	0	0.14
011	Charles River	Downstream of lower basin	8/20/15 6:58:AM	S	0.1	28.73	1.17	7.29	94.9	2.291	5.3	7.85	1.5	0	0	0.14
011	Charles River	Downstream of lower basin	9/8/15 6:45 AM	B	6.2	20.98	25.55	3.55	46.3	39.95	5.6	7.28		0.2	0.2	0.2
011	Charles River	Downstream of lower basin	9/8/15 6:45:AM	S	0.1	26.84	1.29	8.22	103.6	2.512	12.2	8.12	0.7	0.2	0.2	0.2
011	Charles River	Downstream of lower basin	9/9/15 6:33 AM	B	6.7	20.85	25.65	2.41	31.3	40.09	1.8	7.39		0	0.2	0.2
011	Charles River	Downstream of lower basin	9/9/15 6:33:AM	S	0.1	27.42	1.31	9.06	115.4	2.552	6.9	8.64	0.7	0	0.2	0.2
011	Charles River	Downstream of lower basin	9/21/15 7:10 AM	B	6.5	20.21	26.26	3.37	43.4	40.95	7.2	7.07		0	0	0
011	Charles River	Downstream of lower basin	9/21/15 7:10:AM	S	0.1	24.3	1.5	6.67	80.4	2.89	8.3	7.38	1	0	0	0
011	Charles River	Downstream of lower basin	9/22/15 7:00 AM	B	5.9	20.02	26.5	2.82	36.2	41.28	5.2	7.28		0	0	0
011	Charles River	Downstream of lower basin	9/22/15 7:00:AM	S	0.1	23.71	1.54	6.43	76.6	2.968	6.8	7.68	1.1	0	0	0
011	Charles River	Downstream of lower basin	10/14/15 7:04 AM	B	6.3	16.92	19.18	4.78	55.5	30.78	5.5	7.15		0	0.12	0.12
011	Charles River	Downstream of lower basin	10/14/15 7:04:AM	S	0.1	18.1	1.05	8.54	91	2.043	5.5	8.09	1.4	0	0.12	0.12
011	Charles River	Downstream of lower basin	10/15/15 7:00 AM	B	6.3	16.64	19.6	5.15	59.5	31.4	4.7	6.86		0	0	0.12
011	Charles River	Downstream of lower basin	10/15/15 7:00:AM	S	0.1	17.44	1.09	8.34	87.7	2.121	4.2	7.15	1.5	0	0	0.12
174	Mystic/Alewife	Alewife Brook	4/13/15 8:31 AM	S	0.1	10.5	0.73	8.83	79.5	1.449		7.31		0	0	0
174	Mystic/Alewife	Alewife Brook	8/26/15 8:26 AM	S	0.1	20.88	0.59	5.44	61	1.191		7.53		0	0	0
074	Mystic/Alewife	Alewife Brook	4/15/15 8:38 AM	S	0.1	11.59	0.75	8.54	78.9	1.477	15.8	7.34		0.01	0.01	0.01
074	Mystic/Alewife	Alewife Brook	5/4/15 9:58 AM	S	0.1	17.06	0.73	10.91	113.5	1.438		7.77		0	0	0
074	Mystic/Alewife	Alewife Brook	5/5/15 10:04 AM	S	0.1	16.11	0.74	7.18	73.2	1.465	21	7.53		0.02	0.02	0.02
074	Mystic/Alewife	Alewife Brook	5/19/15 8:40 AM	S	0.1	16.06	0.72	5.64	57.4	1.425		7.37		0.27	0.27	0.27
074	Mystic/Alewife	Alewife Brook	5/20/15 8:20 AM	S	0.1	16.38	0.73	5.33	54.7	1.44	11.7	7.34		0	0.27	0.27
074	Mystic/Alewife	Alewife Brook	6/9/15 10:32 AM	S	0.1	19.57	0.66	8.2	89.8	1.32		7.65		0	0	0
074	Mystic/Alewife	Alewife Brook	6/11/15 8:34 AM	S	0.1	20.26	0.63	4.38	48.6	1.269	11.3	7.41		0	0	0
074	Mystic/Alewife	Alewife Brook	6/12/15 7:39 AM	S	0.1	19.41	0.62	7.33	80	1.234		7.44		0	0	0
074	Mystic/Alewife	Alewife Brook	6/22/15 8:32 AM	S	0.1	21.78	0.58	7.51	85.8	1.164		7.59		0	1.72	1.76
074	Mystic/Alewife	Alewife Brook	6/26/15 8:09 AM	S	0.1	19.18	0.65	3.2	34.8	1.287	7	7.45		0	0	0
074	Mystic/Alewife	Alewife Brook	7/13/15 8:37 AM	S	0.1	22.96	0.56	7.11	83.1	1.129		7.54		0	0	0
074	Mystic/Alewife	Alewife Brook	7/27/15 8:09 AM	S	0.1	19.87	0.59	5.31	58.4	1.188	7.41		0.06	0.06	0.06	
074	Mystic/Alewife	Alewife Brook	7/31/15 7:48 AM	S	0.1	20.95	0.61	6.83	76.8	1.213		7.46		0	0.02	0.02
074	Mystic/Alewife	Alewife Brook	8/28/15 7:45 AM	S	0.1	17.76	0.6	7.96	84	1.2		7.7		0	0	0
074	Mystic/Alewife	Alewife Brook	9/15/15 8:23 AM	B		16.28	0.61	3.88	39.7	1.21	4.7	7.38		0	0	0.38
074	Mystic/Alewife	Alewife Brook	9/18/15 8:46 AM	B		17.9	0.59	3.71	39.2	1.176		7.42		0	0	0
074	Mystic/Alewife	Alewife Brook	9/25/15 8:01 AM	B		14	0.58	8.62	84	1.163		7.55		0	0	0
074	Mystic/Alewife	Alewife Brook	9/29/15 9:22 AM	B		17.55	0.61	4.63	48.6	1.223	5.1	7.79		0.04	0.04	0.04
074	Mystic/Alewife	Alewife Brook	10/5/15 7:36 AM	S	0.1	12.65	0.31	4.28	40.4	0.633	5.1	7.32		0	0	0.01
074	Mystic/Alewife	Alewife Brook	11/12/15 9:57 AM	S	0.1	10.48	0.56	4.65	41.8	1.123	8.7	7.32		0.01	0.05	0.59
172	Mystic/Alewife	Alewife Brook	4/13/15 8:02 AM	S	0.1	9.57	0.74	8.47	74.6	1.467		7.25		0	0	0
172	Mystic/Alewife	Alewife Brook	4/15/15 8:17 AM	S	0.1	10.54	0.75	7.87	70.9	1.491	19.8	7.27		0	0.01	0.01
172	Mystic/Alewife	Alewife Brook	5/4/15 9:34 AM	S	0.1	14.47	0.72	9.45	93.1	1.433		7.71		0	0	0
172	Mystic/Alewife	Alewife Brook	5/5/15 9:35 AM	S	0.1	15.75	0.74	6.34	64.2	1.472	18.1	7.53		0.02	0.02	0.02
172	Mystic/Alewife	Alewife Brook	5/19/15 8:16 AM	S	0.1	15.61	0.72	4.05	40.9	1.433		7.27		0.27	0.27	0.27
172	Mystic/Alewife	Alewife Brook	5/20/15 7:49 AM	S	0.1	15.44	0.73	3.33	33.5	1.444	6.4	7.3		0	0.27	0.27

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall		Logan Rainfall THREE_DAY_RAIN	
															TWO_DAY_RAIN	THREE_DAY_RAIN		
172	Mystic/Alewife	Alewife Brook	6/9/15 10:12 AM	S	0.1	18.43	0.66	8.22	88	1.32		7.58		0	0	0	0	
172	Mystic/Alewife	Alewife Brook	6/11/15 8:05 AM	S	0.1	19.57	0.63	2.79	30.5	1.266	6.8	7.31		0	0	0	0	
172	Mystic/Alewife	Alewife Brook	6/12/15 7:14 AM	S	0.1	18.98	0.62	7.44	80.5	1.238		7.49		0	0	0	0	
172	Mystic/Alewife	Alewife Brook	6/22/15 8:03 AM	S	0.1	20.77	0.55	7.49	83.9	1.109		7.49		0	1.72	1.76		
172	Mystic/Alewife	Alewife Brook	6/26/15 7:41 AM	S	0.1	19.65	0.63	3.3	36.2	1.259	5.5	7.41		0	0	0	0	
172	Mystic/Alewife	Alewife Brook	7/13/15 8:08 AM	S	0.1	22.28	0.56	6.68	77.1	1.132		7.32		0	0	0	0	
172	Mystic/Alewife	Alewife Brook	7/27/15 7:41 AM	S	0.1	19.43	0.61	5.29	57.8	1.227		7.33		0.06	0.06	0.06		
172	Mystic/Alewife	Alewife Brook	7/31/15 7:25 AM	S	0.1	21.18	0.61	6.31	71.2	1.22		7.39		0	0.02	0.02		
172	Mystic/Alewife	Alewife Brook	8/26/15 8:04 AM	S	0.1	20.97	0.59	5.97	67.1	1.19		7.51		0	0	0		
172	Mystic/Alewife	Alewife Brook	8/28/15 7:23 AM	S	0.1	18.12	0.58	7.96	84.6	1.17		7.72		0	0	0		
172	Mystic/Alewife	Alewife Brook	9/15/15 7:53 AM	B		16.18	0.62	3.83	39.1	1.24	5.4	7.21		0	0	0.38		
172	Mystic/Alewife	Alewife Brook	9/18/15 8:22 AM	B		18.75	0.59	3.1	33.3	1.183		7.25		0	0	0		
172	Mystic/Alewife	Alewife Brook	9/18/15 8:22 AM	S	0.1	18.78	0.59	4.36	47	1.185		7.29		0	0	0		
172	Mystic/Alewife	Alewife Brook	9/25/15 7:36 AM	S	0.1	15.28	0.6	8.7	87.1	1.204		7.49		0	0	0		
172	Mystic/Alewife	Alewife Brook	9/29/15 8:52 AM	S	0.1	17.99	0.62	3.65	38.7	1.232	3.9	7.82		0.04	0.04	0.04		
172	Mystic/Alewife	Alewife Brook	10/5/15 7:12 AM	S	0.1	12.57	0.53	4.51	42.5	1.056	5.5	7.16		0	0	0.01		
172	Mystic/Alewife	Alewife Brook	11/12/15 9:30 AM	S	0.1	10.29	0.55	3.87	34.6	1.107	5.3	7.23		0.01	0.05	0.59		
070	Mystic/Alewife	Alewife Brook	4/13/15 7:45 AM	S	0.1	9.8	0.74	7.91	70	1.473		7.14	0.6	0	0	0		
070	Mystic/Alewife	Alewife Brook	4/15/15 7:54 AM	B		10.84	0.76	6.89	62.6	1.503	13.4	7.08		0	0.01	0.01		
070	Mystic/Alewife	Alewife Brook	4/15/15 7:54 AM	S	0.1	10.88	0.76	7.35	66.8	1.501	12.9	7	0.6	0	0.01	0.01		
070	Mystic/Alewife	Alewife Brook	5/4/15 9:15 AM	S	0.1	14.82	0.73	7.8	77.4	1.447		7.81		0	0	0		
070	Mystic/Alewife	Alewife Brook	5/5/15 9:18 AM	S	0.1	15.94	0.67	6.21	63.1	1.333	15.6	7.61		0.02	0.02	0.02		
070	Mystic/Alewife	Alewife Brook	5/19/15 8:01 AM	S	0.1	17.91	0.71	4.18	44.2	1.415		7.27		0.27	0.27	0.27		
070	Mystic/Alewife	Alewife Brook	5/20/15 7:28 AM	B		16.55	0.73	2.73	28.1	1.442	8.2	7.03		0	0.27	0.27		
070	Mystic/Alewife	Alewife Brook	5/20/15 7:28 AM	S	0.1	16.55	0.73	2.82	29	1.442	9.1	7.01	0.6	0	0.27	0.27		
070	Mystic/Alewife	Alewife Brook	6/9/15 9:42 AM	S	0.1	19	0.63	8.52	92.2	1.253		7.6		0	0	0		
070	Mystic/Alewife	Alewife Brook	6/11/15 7:39 AM	S	0.1	21.74	0.63	2.63	30.1	1.263	5.4	7.13		0	0	0		
070	Mystic/Alewife	Alewife Brook	6/12/15 6:48 AM	S	0.1	22	0.63	7.65	87.8	1.263		7.21		0	0	0		
070	Mystic/Alewife	Alewife Brook	6/22/15 7:47 AM	S	0.1	20.54	0.52	7.65	85.2	1.048		7.45		0	1.72	1.76		
070	Mystic/Alewife	Alewife Brook	6/26/15 7:22 AM	S	0.1	22.4	0.64	2.22	25.7	1.289	6.9	7.2		0	0	0		
070	Mystic/Alewife	Alewife Brook	7/13/15 7:50 AM	S	0.1	24.94	0.57	7.52	91.2	1.143		7.16		0	0	0		
070	Mystic/Alewife	Alewife Brook	7/27/15 7:16 AM	B		20.46	0.6	5.71	63.5	1.196		7.11		0.06	0.06	0.06		
070	Mystic/Alewife	Alewife Brook	7/27/15 7:16 AM	S	0.1	20.94	0.56	6.19	69.6	1.12		7.16	0.5	0.06	0.06	0.06		
070	Mystic/Alewife	Alewife Brook	7/31/15 7:07 AM	S	0.1	23.86	0.61	6.54	77.7	1.235		7.18	0.5	0	0.02	0.02		
070	Mystic/Alewife	Alewife Brook	8/26/15 7:36 AM	S	0.1	22.33	0.6	6.37	73.6	1.211		7.32		0	0	0		
070	Mystic/Alewife	Alewife Brook	8/28/15 7:03 AM	S	0.1	19.67	0.58	7.65	83.9	1.157		7.49		0	0	0		
070	Mystic/Alewife	Alewife Brook	9/15/15 7:34 AM	B		17.71	0.62	4.17	44	1.241	9	6.92		0	0	0.38		
070	Mystic/Alewife	Alewife Brook	9/15/15 7:34 AM	S	0.1	17.76	0.62	4.65	49	1.245	7.2	6.87	0.5	0	0	0.38		
070	Mystic/Alewife	Alewife Brook	9/18/15 8:04 AM	B		20.6	0.6	2.91	32.5	1.2		7.08		0	0	0		
070	Mystic/Alewife	Alewife Brook	9/18/15 8:04 AM	S	0.1	20.66	0.6	3.11	34.8	1.203		7.04	0.5	0	0	0		
070	Mystic/Alewife	Alewife Brook	9/25/15 7:20 AM	B		16.62	0.63	8.77	90.4	1.253		7.3		0	0	0		
070	Mystic/Alewife	Alewife Brook	9/25/15 7:20 AM	S	0.1								0.5	0	0	0		
070	Mystic/Alewife	Alewife Brook	9/29/15 8:41 AM	B		17.5	0.63	4.47	46.9	1.253	5	8.3		0.04	0.04	0.04		
070	Mystic/Alewife	Alewife Brook	9/29/15 8:41 AM	S	0.1								0.5	0	0.04	0.04		
070	Mystic/Alewife	Alewife Brook	10/5/15 6:47 AM	S	0.1	13.03	0.53	5.58	53.1	1.061	7.1	7.06	0.8	0	0	0.01	0.01	
070	Mystic/Alewife	Alewife Brook	11/12/15 9:15 AM	S	0.1	10.18	0.52	3.69	33	1.04	3.6	7.35		0.01	0.05	0.59		
083	Mystic/Alewife	Upper Mystic	1/20/15 9:38 AM	S	0.1	1.85	0.45	12.16	87.8	0.914	15.6	7.32		0	0	0.15		
083	Mystic/Alewife	Upper Mystic	3/30/15 8:57 AM	S	0.1	3.15	0.42	11.68	87.4	0.853		7.22		0	0	0.12		
083	Mystic/Alewife	Upper Mystic	4/13/15 9:41 AM	S	0.1	7.28	0.58	11.48	95.6	1.167	3.7	7.53		0	0	0		
083	Mystic/Alewife	Upper Mystic	4/16/15 8:40 AM	S	0.1	8.92	0.61	11.66	101.1	1.223	4	7.43		0	0	0.01		
083	Mystic/Alewife	Upper Mystic	4/30/15 9:04 AM	B		11.44	0.54	11.03	101.4	1.09		7.54		0	0	0.07		
083	Mystic/Alewife	Upper Mystic	4/30/15 9:04 AM	S	0.1	11.55	0.55	11.1	102.3	1.092		7.56		0	0	0.07		
083	Mystic/Alewife	Upper Mystic	5/4/15 9:17 AM	B		13.95	0.55	10.78	104.9	1.103	9.5	8.21		0	0	0		
083	Mystic/Alewife	Upper Mystic	5/4/15 9:17 AM	S	0.1	14.59	0.55	11.04	108.9	1.108	3.9	8.62		0	0	0		
083	Mystic/Alewife	Upper Mystic	5/5/15 9:11 AM	B		14.01	0.55	10.2	99.3	1.103	10.1	7.71		0.02	0.02	0.02		
083	Mystic/Alewife	Upper Mystic	5/5/15 9:11 AM	S	0.1	14.22	0.55	10.32	101	1.102	4.1	7.79		0.02	0.02	0.02		
083	Mystic/Alewife	Upper Mystic	5/12/15 9:03 AM	B		19.49	0.59	8.01	87.5	1.174	8.3	7.48		0.02	0.02	0.02		
083	Mystic/Alewife	Upper Mystic	5/12/15 9:03 AM	S	0.1	19.6	0.58	8.11	88.7	1.172	7.2	7.51		0.02	0.02	0.02		
083	Mystic/Alewife	Upper Mystic	5/19/15 7:41 AM	S	0.1	17.87	0.32	10.99	116	0.659		8.02		0.27	0.27	0.27		
083	Mystic/Alewife	Upper Mystic	5/20/15 8:53 AM	B		18.26	0.55	10.76	114.7	1.112	9.8	8.43		0	0.27	0.27		
083	Mystic/Alewife	Upper Mystic	5/20/15 8:53 AM	S	0.1	18.26	0.55	10.33	110	1.113	9.1	8.44	0.7	0	0.27	0.27		
083	Mystic/Alewife	Upper Mystic	5/28/15 8:46 AM	B		20.73	0.55	9.38	105	1.099		8.54		0	0	0		
083	Mystic/Alewife	Upper Mystic	5/28/15 8:46 AM	S	0.1	21.09	0.55	8.97	101.1	1.103		8.36		0	0	0		
083	Mystic/Alewife	Upper Mystic	6/8/15 9:42 AM	S	0.1	18.64	0.53	8.2	88	1.062	13.4	7.66		0	0	0.09		
083	Mystic/Alewife	Upper Mystic	6/9/15 9:20 AM	S	0.1	18.97	0.52	8.98	97.1	1.054		8.16		0	0	0		
083	Mystic/Alewife	Upper Mystic	6/11/15 9:09 AM	B		20.22	0.52	8.21	91	1.045	6.6	7.85		0	0	0		
083	Mystic/Alewife	Upper Mystic	6/11/15 9:09 AM	S	0.1	20.56	0.52	8.68	96.8	1.053	3.5	8.27		0	0	0		

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall		Logan Rainfall THREE_DAY_RAIN
															TWO_DAY_RAIN	THREE_DAY_RAIN	
083	Mystic/Alewife	Upper Mystic	6/22/15 7:20 AM	S	0.1	21.92	0.48	8.42	96.4	0.982		7.67		0	1.72		1.76
083	Mystic/Alewife	Upper Mystic	6/23/15 8:49 AM	B		22.73	0.49	7.44	86.6	0.987		7.73		0.01	0.01		1.73
083	Mystic/Alewife	Upper Mystic	6/23/15 8:49 AM	S	0.1	22.76	0.49	7.41	86.2	0.987		7.67		0.01	0.01		1.73
083	Mystic/Alewife	Upper Mystic	6/24/15 9:17 AM	S	0.1	23.23	0.49	8.49	99.7	0.994	3.4	7.85		0	0.01		0.01
083	Mystic/Alewife	Upper Mystic	7/8/15 8:45 AM	S	0.1	24.69	0.47	8.19	98.8	0.961	6.4	7.61		0	0.02		0.02
083	Mystic/Alewife	Upper Mystic	7/13/15 7:53 AM	B		26.12	0.46	7.85	97.2	0.939	4.4	7.62		0	0		0
083	Mystic/Alewife	Upper Mystic	7/13/15 7:53 AM	S	0.1	26.15	0.46	7.84	97.1	0.939	5.5	7.5		0	0		0
083	Mystic/Alewife	Upper Mystic	7/14/15 7:26 AM	S	0.1	25.48	0.46	8.03	98.2	0.933	4.4	8.06		0.03	0.03		0.03
083	Mystic/Alewife	Upper Mystic	7/20/15 8:54 AM	B		25.06	0.45	6.05	73.4	0.915		7.73		0	0		0.14
083	Mystic/Alewife	Upper Mystic	7/20/15 8:54 AM	S	0.1	25.91	0.46	5.99	73.9	0.941		7.87		0	0		0.14
083	Mystic/Alewife	Upper Mystic	7/27/15 8:26 AM	S	0.1	23.53	0.48	5.64	66.5	0.967		7.65		0.06	0.06		0.06
083	Mystic/Alewife	Upper Mystic	7/28/15 7:30 AM	B		24.54	0.48	6.88	82.8	0.975	5.7	7.52		0	0.06		0.06
083	Mystic/Alewife	Upper Mystic	7/28/15 7:30 AM	S	0.1	24.77	0.48	7.48	90.3	0.977	3.2	7.62		0	0.06		0.06
083	Mystic/Alewife	Upper Mystic	8/3/15 8:39 AM	B		25.19	0.49	5.04	61.4	0.991	4	7.44		0	0		0
083	Mystic/Alewife	Upper Mystic	8/3/15 8:39 AM	S	0.1	24.41	0.42	6.89	82.6	0.853	5	7.74		0	0		0
083	Mystic/Alewife	Upper Mystic	8/18/15 8:19 AM	B		25.96	0.49	7.17	88.5	0.993		7.56		0.14	0.14		0.14
083	Mystic/Alewife	Upper Mystic	8/18/15 8:19 AM	S	0.1	26.36	0.49	7.2	89.6	1.005		7.71		0.14	0.14		0.14
083	Mystic/Alewife	Upper Mystic	8/26/15 8:33 AM	B		25.29	0.48	6.8	83	0.969	5.3	8.35		0	0		0
083	Mystic/Alewife	Upper Mystic	8/26/15 8:33 AM	S	0.1	25.39	0.48	7.05	86.1	0.971	5.7	8.51		0	0		0
083	Mystic/Alewife	Upper Mystic	8/27/15 8:38 AM	S	0.1	24.66	0.48	7.68	92.5	0.968	2.7	8.64		0	0		0
083	Mystic/Alewife	Upper Mystic	9/3/15 8:48 AM	B		24.88	0.48	7.17	86.8	0.974	2.1	7.81		0.01	0.01		0.01
083	Mystic/Alewife	Upper Mystic	9/3/15 8:48 AM	S	0.1	25.14	0.49	7.14	86.8	0.995	2.7	7.8		0.01	0.01		0.01
083	Mystic/Alewife	Upper Mystic	9/14/15 8:17 AM	B		21.1	0.48	7.83	88.2	0.98		7.8		0	0.38		0.39
083	Mystic/Alewife	Upper Mystic	9/14/15 8:17 AM	S	0.1	21.26	0.48	7.96	90	0.979		7.89		0	0.38		0.39
083	Mystic/Alewife	Upper Mystic	9/15/15 9:12 AM	B		21.1	0.48	6.68	75.3	0.977	3.9	8.57		0	0		0.38
083	Mystic/Alewife	Upper Mystic	9/16/15 8:57 AM	B		21.66	0.49	8	91.2	0.996	3.2	8.65		0	0		0
083	Mystic/Alewife	Upper Mystic	9/28/15 8:20 AM	B		17.57	0.51	7.97	83.7	1.025	1.6	7.83		0	0		0
083	Mystic/Alewife	Upper Mystic	9/28/15 8:20 AM	S	0.1	17.73	0.51	8.14	85.8	1.026	1.5	7.85		0	0		0
083	Mystic/Alewife	Upper Mystic	10/5/15 7:50 AM	S	0.1	15.39	0.47	7.29	73.1	0.944	7			0	0		0.01
083	Mystic/Alewife	Upper Mystic	10/6/15 8:52 AM	S	0.1	15.93	0.44	7.98	80.9	0.897	3.8	7.82		0	0		0
083	Mystic/Alewife	Upper Mystic	10/16/15 7:50 AM	S	0.1	14.69	0.44	9.23	91.2	0.894		7.97		0	0		0
083	Mystic/Alewife	Upper Mystic	10/27/15 8:33 AM	S	0.1	10.59	0.47	10.35	93.2	0.942		7.72		0	0		0.03
083	Mystic/Alewife	Upper Mystic	11/10/15 9:29 AM	S	0.1	10.67	0.46	9.83	88.8	0.926	3.3	7.48		0.54	0.61		0.61
083	Mystic/Alewife	Upper Mystic	11/23/15 10:06 AM	S	0.1	8.08	0.44	10.42	88.4	0.892	2.8	7.11		0.04	0.34		0.34
083	Mystic/Alewife	Upper Mystic	12/8/15 9:39 AM	S	0.1	6.46	0.46	8.86	72.2	0.924	4.2	7.51		0	0		0
083	Mystic/Alewife	Upper Mystic	12/21/15 9:55 AM	S	0.1	5.49	0.48	10.88	86.5	0.975	7.5	7.34		0	0		0
057	Mystic/Alewife	Upper Mystic	4/13/15 9:35 AM	B		7.12	0.58	11.38	94.4	1.168	3.5	7.37		0	0		0
057	Mystic/Alewife	Upper Mystic	4/13/15 9:35 AM	S	0.1	7.93	0.58	11.3	95.6	1.166	3.4	7.48		0	0		0
057	Mystic/Alewife	Upper Mystic	5/4/15 9:11 AM	B		14.66	0.73	8.01	79.2	1.439		8.04		0	0		0
057	Mystic/Alewife	Upper Mystic	5/4/15 9:11 AM	S	0.1	14.54	0.56	10.84	106.8	1.129	4.4	8.59		0	0		0
057	Mystic/Alewife	Upper Mystic	5/5/15 9:06 AM	B		14.09	0.55	10.26	100.1	1.105	17.9	7.72		0.02	0.02		0.02
057	Mystic/Alewife	Upper Mystic	5/5/15 9:06 AM	S	0.1	14.21	0.55	10.34	101.1	1.105	3.9	7.84		0.02	0.02		0.02
057	Mystic/Alewife	Upper Mystic	5/19/15 7:49 AM	S	0.1	17.92	0.28	8.6	90.8	0.585		7.5		0.27	0.27		0.27
057	Mystic/Alewife	Upper Mystic	5/20/15 8:48 AM	B		18.02	0.58	8.66	91.8	1.163	9.6	7.73		0	0.27		0.27
057	Mystic/Alewife	Upper Mystic	5/20/15 8:48 AM	S	0.1	18.2	0.56	9.57	101.8	1.131	8	8.01		0	0.27		0.27
057	Mystic/Alewife	Upper Mystic	6/9/15 9:29 AM	B		18.86	0.51	8.97	96.7	1.035		7.75		0	0		0
057	Mystic/Alewife	Upper Mystic	6/9/15 9:29 AM	S	0.1	19.17	0.52	8.99	97.5	1.043		7.93		0	0		0
057	Mystic/Alewife	Upper Mystic	6/11/15 9:04 AM	S	0.1	21.33	0.58	5.81	65.8	1.158	7.6	7.78		0	0		0
057	Mystic/Alewife	Upper Mystic	6/22/15 7:34 AM	S	0.1	21.66	0.49	8.25	94	0.986		7.54		0	1.72		1.76
057	Mystic/Alewife	Upper Mystic	6/24/15 9:11 AM	S	0.1	22.91	0.52	7.11	83	1.049	4.4	7.57		0	0.01		0.01
057	Mystic/Alewife	Upper Mystic	7/13/15 7:59 AM	B		25.97	0.51	4.95	61.1	1.03	9.4	7.44		0	0		0
057	Mystic/Alewife	Upper Mystic	7/13/15 7:59 AM	S	0.1	26.38	0.47	7.47	92.9	0.951	6.4	7.68		0	0		0
057	Mystic/Alewife	Upper Mystic	7/14/15 7:33 AM	S	0.1	25.46	0.47	7.5	91.7	0.957	5.3	7.94		0.03	0.03		0.03
057	Mystic/Alewife	Upper Mystic	7/27/15 8:46 AM	S	0.1	23.45	0.48	5.28	62.2	0.966		7.63		0.06	0.06		0.06
057	Mystic/Alewife	Upper Mystic	7/28/15 7:38 AM	B		22.88	0.6	2.63	30.7	1.215	8.6	7.19		0	0.06		0.06
057	Mystic/Alewife	Upper Mystic	7/28/15 7:38 AM	S	0.1	23.96	0.53	4.68	55.7	1.077	5.7	7.3		0	0.06		0.06
057	Mystic/Alewife	Upper Mystic	8/26/15 8:28 AM	B		23.43	0.56	3.6	42.5	1.135		8.11		0	0		0
057	Mystic/Alewife	Upper Mystic	8/26/15 8:28 AM	S	0.1	24.92	0.5	5.65	68.5	1.008	5.8	8.49		0	0		0
057	Mystic/Alewife	Upper Mystic	8/27/15 8:33 AM	S	0.1	24.67	0.48	7.35	88.7	0.967	3.1	8.42		0	0		0
057	Mystic/Alewife	Upper Mystic	9/15/15 9:05 AM	B		19.36	0.57	7.24	78.9	1.149	10.1	8.93		0	0		0.38
057	Mystic/Alewife	Upper Mystic	9/16/15 8:53 AM	B		21	0.53	7.06	79.4	1.066	3.2	8.52		0	0		0
057	Mystic/Alewife	Upper Mystic	10/5/15 8:03 AM	S	0.1	15.6	0.45	6.93	69.8	0.91	2.4			0	0		0.01
057	Mystic/Alewife	Upper Mystic	10/6/15 8:46 AM	B		14.07	0.51	6.91	67.4	1.024	7.8	7.68		0	0		0
057	Mystic/Alewife	Upper Mystic	10/6/15 8:46 AM	S	0.1	15.77	0.44	8.11	82	0.898	3.2	7.83		0	0		0
066	Mystic/Alewife	Upper Mystic	1/7/15 8:58 AM	B		1.27	0.47	11.71	83.2	0.957	3.1	7.02		0	0.02		0.02
066	Mystic/Alewife	Upper Mystic	1/7/15 8:58 AM	S	0.1	1.26	0.47	11.7	83.2	0.958	2.7	6.96		0	0.02		0.02
066	Mystic/Alewife	Upper Mystic	1/20/15 9:26 AM	B		1.94	0.48	11.69	84.7	0.991	2.9	7.36		0	0		0.15

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall		
														TWO_DAY_RAIN	THREE_DAY_RAIN	
066	Mystic/Alewife	Upper Mystic	1/20/15 9:26 AM	S	0.1	1.94	0.48	11.95	86.5	0.991	2.8	7.42		0	0	0.15
066	Mystic/Alewife	Upper Mystic	2/19/15 9:23 AM	B		1.2	0.55	10.4	73.9	1.125	4.7	7.07		0.06	0.07	0.09
066	Mystic/Alewife	Upper Mystic	2/19/15 9:23 AM	S	0.1	1.16	0.55	10.49	74.4	1.125	4.4	7		0.06	0.07	0.09
066	Mystic/Alewife	Upper Mystic	3/3/15 8:59 AM	S	0.1	0.9	0.62	11.51	81	1.262		6.63		0.26	0.27	0.44
066	Mystic/Alewife	Upper Mystic	3/16/15 8:30 AM	B		2.29	0.66	10.48	76.7	1.342	5.3	7.27		0	0.27	1.07
066	Mystic/Alewife	Upper Mystic	3/16/15 8:30 AM	S	0.1	2.29	0.67	11.21	82.1	1.343	4.5	7.35		0	0.27	1.07
066	Mystic/Alewife	Upper Mystic	3/30/15 8:46 AM	B		3.2	0.63	10.94	82	1.264		7.19		0	0	0.12
066	Mystic/Alewife	Upper Mystic	4/16/15 8:29 AM	B		8.91	0.61	10.81	93.7	1.226	5	7.4		0	0	0.01
066	Mystic/Alewife	Upper Mystic	4/16/15 8:29 AM	S	0.1	9.06	0.61	10.87	94.5	1.227	4.3	7.46		0	0	0.01
066	Mystic/Alewife	Upper Mystic	4/30/15 8:47 AM	B		11.38	0.57	9.97	91.5	1.143		7.43		0	0	0.07
066	Mystic/Alewife	Upper Mystic	4/30/15 8:47 AM	S	0.1	11.44	0.58	10.02	92.1	1.15		7.46		0	0	0.07
066	Mystic/Alewife	Upper Mystic	5/12/15 8:50 AM	B		19.38	0.57	7.69	83.8	1.144	9.5	7.53		0.02	0.02	0.02
066	Mystic/Alewife	Upper Mystic	5/12/15 8:50 AM	S	0.1	19.4	0.57	7.93	86.5	1.142	8.4	7.66		0.02	0.02	0.02
066	Mystic/Alewife	Upper Mystic	5/28/15 8:32 AM	B		21.48	0.56	9.31	105.8	1.131		7.92		0	0	0
066	Mystic/Alewife	Upper Mystic	5/28/15 8:32 AM	S	0.1	21.71	0.56	8.94	102	1.134		7.96		0	0	0
066	Mystic/Alewife	Upper Mystic	6/8/15 9:35 AM	B		18.6	0.57	7.17	76.9	1.145	5.7	7.63		0	0	0.09
066	Mystic/Alewife	Upper Mystic	6/8/15 9:35 AM	S	0.1	18.81	0.57	7.56	81.5	1.142		7.68		0	0	0.09
066	Mystic/Alewife	Upper Mystic	6/23/15 8:37 AM	B		22.84	0.5	7.49	87.3	1.016		7.54		0.01	0.01	1.73
066	Mystic/Alewife	Upper Mystic	6/23/15 8:37 AM	S	0.1	22.86	0.5	7.56	88.1	1.015		7.6		0.01	0.01	1.73
066	Mystic/Alewife	Upper Mystic	7/8/15 8:23 AM	B		24.73	0.5	5.22	63	1.01	4.5	7.45		0	0.02	0.02
066	Mystic/Alewife	Upper Mystic	7/8/15 8:23 AM	S	0.1	25.08	0.47	7.77	94.4	0.966	3.5	7.64		0	0.02	0.02
066	Mystic/Alewife	Upper Mystic	7/20/15 8:36 AM	B		25.42	0.48	6.14	75.1	0.985		7.5		0	0	0.14
066	Mystic/Alewife	Upper Mystic	7/20/15 8:36 AM	S	0.1	25.8	0.49	6.29	77.5	0.995		7.7		0	0	0.14
066	Mystic/Alewife	Upper Mystic	8/3/15 8:26 AM	B		24.19	0.58	4.12	49.2	1.169	2.9	7.55		0	0	0
066	Mystic/Alewife	Upper Mystic	8/3/15 8:26 AM	S	0.1	24.47	0.58	5.46	65.6	1.162	3	7.79		0	0	0
066	Mystic/Alewife	Upper Mystic	8/18/15 8:07 AM	B		25.52	0.53	6.69	81.9	1.065		7.52		0.14	0.14	0.14
066	Mystic/Alewife	Upper Mystic	8/18/15 8:07 AM	S	0.1	25.73	0.52	7.11	87.4	1.057		7.71		0.14	0.14	0.14
066	Mystic/Alewife	Upper Mystic	9/3/15 8:39 AM	B		24.35	0.53	4.3	51.6	1.064	2.8	7.6		0.01	0.01	0.01
066	Mystic/Alewife	Upper Mystic	9/3/15 8:39 AM	S	0.1	24.49	0.53	5	60.1	1.068	2	7.79		0.01	0.01	0.01
066	Mystic/Alewife	Upper Mystic	9/14/15 8:09 AM	B		20.12	0.5	7.79	86.1	1.011		7.9		0	0.38	0.39
066	Mystic/Alewife	Upper Mystic	9/14/15 8:09 AM	S	0.1	20.21	0.5	8.07	89.3	1.009		8.12		0	0.38	0.39
066	Mystic/Alewife	Upper Mystic	9/28/15 8:09 AM	B		16.34	0.55	6.83	69.9	1.107	3.1	7.93		0	0	0
066	Mystic/Alewife	Upper Mystic	9/28/15 8:09 AM	S	0.1	16.44	0.55	7.09	72.8	1.111	2.1	8.13		0	0	0
066	Mystic/Alewife	Upper Mystic	10/16/15 7:40 AM	B		13.73	0.47	9.12	88.2	0.94		7.95		0	0	0
066	Mystic/Alewife	Upper Mystic	10/16/15 7:40 AM	S	0.1	13.79	0.47	9.3	90.1	0.939		8.08		0	0	0
066	Mystic/Alewife	Upper Mystic	10/27/15 8:25 AM	B		9.92	0.48	10.32	91.5	0.976		7.66		0	0	0.03
066	Mystic/Alewife	Upper Mystic	10/27/15 8:25 AM	S	0.1	9.89	0.49	10.51	93.1	0.979		7.7		0	0	0.03
066	Mystic/Alewife	Upper Mystic	11/10/15 9:22 AM	B		9.81	0.49	6.09	53.8	0.986	3.7	7.29		0.54	0.61	0.61
066	Mystic/Alewife	Upper Mystic	11/10/15 9:22 AM	S	0.1	9.85	0.49	6.6	58.4	0.988	2.9	7.36		0.54	0.61	0.61
066	Mystic/Alewife	Upper Mystic	11/23/15 9:50 AM	B		8.41	0.46	10.28	87.9	0.933	3.7	7.17		0.04	0.34	0.34
066	Mystic/Alewife	Upper Mystic	11/23/15 9:50 AM	S	0.1	8.42	0.46	10.51	89.9	0.932	3.5	7.24		0.04	0.34	0.34
066	Mystic/Alewife	Upper Mystic	12/8/15 9:30 AM	B		6.32	0.53	7.31	59.4	1.065	2.6	7.5		0	0	0
066	Mystic/Alewife	Upper Mystic	12/8/15 9:30 AM	S	0.1	6.09	0.52	8.34	67.4	1.041	2.9	7.6		0	0	0
066	Mystic/Alewife	Upper Mystic	12/21/15 9:48 AM	S	0.1	5.19	0.49	11.08	87.5	0.987	2.6	7.52		0	0	0
056	Mystic/Alewife	Upper Mystic	4/13/15 9:12 AM	B		8.69	0.62	10.8	93.1	1.236	5	7.36		0	0	0
056	Mystic/Alewife	Upper Mystic	4/13/15 9:12 AM	S	0.1	9.18	0.61	10.9	95.1	1.224	4.5	7.44	1.6	0	0	0
056	Mystic/Alewife	Upper Mystic	4/15/15 9:26 AM	S	0.1								1.5	0	0.01	0.01
056	Mystic/Alewife	Upper Mystic	5/4/15 8:49 AM	B		14.43	0.6	9.85	96.8	1.189	25.8	8.01		0	0	0
056	Mystic/Alewife	Upper Mystic	5/4/15 8:49 AM	S	0.1	15.24		10.63	105.9		6.8	8.44	1	0	0	0
056	Mystic/Alewife	Upper Mystic	5/5/15 8:45 AM	B		15.85	0.61	9.48	96.1	1.209	6.8	7.54		0.02	0.02	0.02
056	Mystic/Alewife	Upper Mystic	5/5/15 8:45 AM	S	0.1	16.16	0.58	9.93	101.3	1.159	5.2	7.63	1.1	0.02	0.02	0.02
056	Mystic/Alewife	Upper Mystic	5/19/15 9:03 AM	B		18.4	1.05	5.97	63.9	2.048	10.6	7.49		0.27	0.27	0.27
056	Mystic/Alewife	Upper Mystic	5/19/15 9:03 AM	S	0.1	19.07	0.61	8.98	97.3	1.22	8.1	7.91	0.8	0.27	0.27	0.27
056	Mystic/Alewife	Upper Mystic	5/20/15 8:29 AM	B		17.74	0.76	6.34	66.9	1.505	9	7.43		0	0.27	0.27
056	Mystic/Alewife	Upper Mystic	5/20/15 8:29 AM	S	0.1	18.32	0.6	8.77	93.5	1.198	8.4	7.97	0.7	0	0.27	0.27
056	Mystic/Alewife	Upper Mystic	6/9/15 8:36 AM	B		19.26	0.57	6.43	69.9	1.144	7.4	7.49		0	0	0
056	Mystic/Alewife	Upper Mystic	6/9/15 8:36 AM	S	0.1	19.49	0.56	6.84	74.7	1.116	4	7.58	0.9	0	0	0
056	Mystic/Alewife	Upper Mystic	6/11/15 8:40 AM	B		21.14	0.53	4.54	51.2	1.059	4.8	7.53		0	0	0
056	Mystic/Alewife	Upper Mystic	6/11/15 8:40 AM	S	0.1	21.26	0.53	5.34	60.4	1.064	4.7	7.89	1.2	0	0	0
056	Mystic/Alewife	Upper Mystic	6/22/15 8:55 AM	B		21.92	0.48	6.9	79	0.963	8.4	7.5		0	1.72	1.76
056	Mystic/Alewife	Upper Mystic	6/22/15 8:55 AM	S	0.1	22.22	0.47	7.04	81.1	0.956	6.3	7.56	1.4	0	1.72	1.76
056	Mystic/Alewife	Upper Mystic	6/24/15 8:50 AM	B		23.14	0.51	7.44	87.2	1.028	5.2	7.56		0	0.01	0.01
056	Mystic/Alewife	Upper Mystic	6/24/15 8:50 AM	S	0.1	23.41	0.51	7.84	92.3	1.025	4.2	7.69	1.6	0	0.01	0.01
056	Mystic/Alewife	Upper Mystic	7/13/15 8:37 AM	B		24.19	0.57	5.6	67	1.158	6.1	7.52		0	0	0
056	Mystic/Alewife	Upper Mystic	7/13/15 8:37 AM	S	0.1	26.19	0.49	6.43	79.7	1.005	4.9	7.78	1.5	0	0	0
056	Mystic/Alewife	Upper Mystic	7/14/15 8:07 AM	B		23.97	0.63	4.05	48.2	1.273	5	7.28		0.03	0.03	0.03

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall		
														TWO_DAY_RAIN	THREE_DAY_RAIN	
056	Mystic/Alewife	Upper Mystic	7/14/15 8:07 AM	S	0.1	25.57	0.5	7.75	95.1	1.01	4.1	7.87	1.8	0.03	0.03	0.03
056	Mystic/Alewife	Upper Mystic	7/27/15 9:08 AM	B		22.55	0.56	5.81	67.3	1.127	9.1	8.19		0.06	0.06	0.06
056	Mystic/Alewife	Upper Mystic	7/27/15 9:08 AM	S	0.1	23.33	0.52	7.73	91	1.051	5.4	8.79	1.6	0.06	0.06	0.06
056	Mystic/Alewife	Upper Mystic	7/28/15 8:23 AM	B		22.19	0.86	3.14	36.2	1.708	7.2	7.05		0	0.06	0.06
056	Mystic/Alewife	Upper Mystic	7/28/15 8:23 AM	S	0.1	23.55	0.52	6.46	76.3		2.9	7.4	2.2	0	0.06	0.06
056	Mystic/Alewife	Upper Mystic	8/26/15 8:06 AM	B		24.68	0.53	4.08	49.3	1.082	5.6	7.93		0	0	0
056	Mystic/Alewife	Upper Mystic	8/26/15 8:06 AM	S	0.1	24.85	0.52	4.92	59.6	1.06	3.4	8.2	2	0	0	0
056	Mystic/Alewife	Upper Mystic	8/27/15 8:10 AM	B		24.33	0.52	4.74	56.8	1.046	6.4	7.75		0	0	0
056	Mystic/Alewife	Upper Mystic	8/27/15 8:10 AM	S	0.1	24.34	0.52	5.49	65.8	1.045	3.9	8.23	1.8	0	0	0
056	Mystic/Alewife	Upper Mystic	9/15/15 8:26 AM	B		24.01	2.75	0.92	11.1	5.111	9.5	7.45		0	0	0.38
056	Mystic/Alewife	Upper Mystic	9/15/15 8:26 AM	S	0.1	20.6	0.63	3.96	44.2	1.266		8.15	0.9	0	0	0.38
056	Mystic/Alewife	Upper Mystic	9/16/15 8:14 AM	B		21.85	3.33	7.24	84.2	6.101	9.8	7.66		0	0	0
056	Mystic/Alewife	Upper Mystic	9/16/15 8:14 AM	S	0.1	20.5	0.62	6.06	67.6	1.237	3.7	8.29	1.1	0	0	0
056	Mystic/Alewife	Upper Mystic	10/5/15 8:48 AM	B		15.38	0.46	7.25	72.7	0.937	7.3	7.64		0	0.01	0.01
056	Mystic/Alewife	Upper Mystic	10/5/15 8:48 AM	S	0.1	15.42	0.46	7.65	76.7	0.936	4.1	7.72	1.7	0	0	0.01
056	Mystic/Alewife	Upper Mystic	10/6/15 8:25 AM	B		15.25	0.48	7.36	73.6	0.959	8.2	7.67		0	0	0
056	Mystic/Alewife	Upper Mystic	10/6/15 8:25 AM	S	0.1	15.33	0.47	7.8	78.2	0.954	4.1	7.78	1.5	0	0	0
177	Mystic/Alewife	Lower Mystic basin	1/20/15 8:48 AM	B		4.84	12.15	1.55	13.1	20.57	7.3	6.39		0	0	0.15
177	Mystic/Alewife	Lower Mystic basin	1/20/15 8:48 AM	S	0.1	2.29	0.62	11.38	83.3	1.246	3.6	6.91		0	0	0.15
177	Mystic/Alewife	Lower Mystic basin	3/16/15 7:52 AM	B		3.63	12.39	3.16	25.9	21.05	9.7	6.39		0	0.27	1.07
177	Mystic/Alewife	Lower Mystic basin	3/16/15 7:52 AM	S	0.1	1.74	0.79	10.82	78.1	1.593	5.7	6.87		0	0.27	1.07
177	Mystic/Alewife	Lower Mystic basin	3/30/15 8:07 AM	B		3.13	0.65	10.58	79.2	1.306		7.21		0	0	0.12
177	Mystic/Alewife	Lower Mystic basin	3/30/15 8:07 AM	S	0.1	3.05	0.64	11.36	84.8	1.284		7.51		0	0	0.12
177	Mystic/Alewife	Lower Mystic basin	4/16/15 7:36 AM	B		10.77	0.64	10.44	94.5	1.269	6.8	7.43		0	0	0.01
177	Mystic/Alewife	Lower Mystic basin	4/16/15 7:36 AM	S	0.1	10.87	0.63	10.8	98	1.261	4.7	7.61		0	0	0.01
177	Mystic/Alewife	Lower Mystic basin	4/30/15 8:03 AM	B		12.53	0.59	10.15	95.7	1.179		7.56		0	0	0.07
177	Mystic/Alewife	Lower Mystic basin	4/30/15 8:03 AM	S	0.1	12.5	0.59	10.32	97.2	1.178		7.9		0	0	0.07
177	Mystic/Alewife	Lower Mystic basin	5/12/15 7:54 AM	B		17.79	4.19	7.76	83.7	7.548	9.6	7.51		0.02	0.02	0.02
177	Mystic/Alewife	Lower Mystic basin	5/12/15 7:54 AM	S	0.1	20.49	0.86	9.85	110	1.689	8.6	7.94		0.02	0.02	0.02
177	Mystic/Alewife	Lower Mystic basin	5/28/15 7:57 AM	B		22.11	1.38	9.46	109.3	2.661		7.66		0	0	0
177	Mystic/Alewife	Lower Mystic basin	5/28/15 7:57 AM	S	0.1	22.52	0.7	8.71	101.1	1.394		7.79		0	0	0
177	Mystic/Alewife	Lower Mystic basin	6/8/15 7:43 AM	B		18.79	0.58	6.29	67.7	1.167	5	7.72		0	0	0.09
177	Mystic/Alewife	Lower Mystic basin	6/8/15 7:43 AM	S	0.1	19.01	0.58	7.28	78.7	1.159	4.2	8.14		0	0	0.09
177	Mystic/Alewife	Lower Mystic basin	6/23/15 8:14 AM	B		22.56	0.52	7.49	86.8	1.052		7.43		0.01	0.01	0.13
177	Mystic/Alewife	Lower Mystic basin	6/23/15 8:14 AM	S	0.1	22.92	0.48	7.63	89.1	0.979		7.94		0.01	0.01	0.13
177	Mystic/Alewife	Lower Mystic basin	7/8/15 7:34 AM	B		24.53	0.58	4.72	56.8	1.163	11.2	7.36		0	0.02	0.02
177	Mystic/Alewife	Lower Mystic basin	7/8/15 7:34 AM	S	0.1	25.23	0.53	8.05	98.1	1.074	4.1	7.67		0	0.02	0.02
177	Mystic/Alewife	Lower Mystic basin	7/20/15 7:53 AM	B		24.51	0.53	7.02	84.4	1.064		7.48		0	0	0.14
177	Mystic/Alewife	Lower Mystic basin	7/20/15 7:53 AM	S	0.1	25.17	0.52	7.26	88.4	1.053		7.79		0	0	0.14
177	Mystic/Alewife	Lower Mystic basin	8/3/15 7:47 AM	B		25.86	1.95	3.39	42.1	3.71	10.7	7.31		0	0	0
177	Mystic/Alewife	Lower Mystic basin	8/3/15 7:47 AM	S	0.1	25.57	1.42	7.42	91.4	2.754	5.1	7.69		0	0	0
177	Mystic/Alewife	Lower Mystic basin	8/18/15 7:28 AM	B		25.79	4.2	7.08	89	7.616		7.39		0.14	0.14	0.14
177	Mystic/Alewife	Lower Mystic basin	8/18/15 7:28 AM	S	0.1	25.95	1.3	7.76	96.2	2.531		7.86		0.14	0.14	0.14
177	Mystic/Alewife	Lower Mystic basin	9/3/15 7:54 AM	B		25.28	3.95	0.69	8.6	7.195		7.31		0.01	0.01	0.01
177	Mystic/Alewife	Lower Mystic basin	9/3/15 7:54 AM	S	0.1	24.84	1.65	7.66	93.3	3.158	3.7	7.86		0.01	0.01	0.01
177	Mystic/Alewife	Lower Mystic basin	9/14/15 7:27 AM	B		22.08	2.04	7.37	85.4	3.847		7.63		0	0.38	0.39
177	Mystic/Alewife	Lower Mystic basin	9/14/15 7:27 AM	S	0.1	21.31	1.44	7.81	88.8	2.778		8.04		0	0.38	0.39
177	Mystic/Alewife	Lower Mystic basin	9/28/15 7:36 AM	B		19.73	4.63	7.9	88.8	8.3	6.9	7.76		0	0	0
177	Mystic/Alewife	Lower Mystic basin	9/28/15 7:36 AM	S	0.1	19.14	2.78	9.21	101.2	5.153	4.8	7.86		0	0	0
177	Mystic/Alewife	Lower Mystic basin	10/16/15 7:15 AM	B		16.55	3.14	8.45	88.3	5.767		7.67		0	0	0
177	Mystic/Alewife	Lower Mystic basin	10/16/15 7:15 AM	S	0.1	14.36	0.72	9.74	93.4	1.433		8.35		0	0	0
177	Mystic/Alewife	Lower Mystic basin	10/27/15 7:54 AM	B		11.61	3.41	9.99	93.9	6.227		7.37		0	0	0.03
177	Mystic/Alewife	Lower Mystic basin	10/27/15 7:54 AM	S	0.1	9.81	1.01	10.58	93.9	1.975		7.89		0	0	0.03
177	Mystic/Alewife	Lower Mystic basin	11/10/15 9:04 AM	B		11.43	0.54	4.79	44	1.083	6.8	7.28		0.54	0.61	0.61
177	Mystic/Alewife	Lower Mystic basin	11/10/15 9:04 AM	S	0.1	11.56	0.54	5.88	54.2	1.079	2.6	7.59		0.54	0.61	0.61
177	Mystic/Alewife	Lower Mystic basin	11/23/15 9:18 AM	B		8.35	0.7	9.74	83.3	1.395	7.2	7.07		0.04	0.34	0.34
177	Mystic/Alewife	Lower Mystic basin	11/23/15 9:18 AM	S	0.1	7.76	0.48	9.97	84	0.961	3.1	7.28		0.04	0.34	0.34
177	Mystic/Alewife	Lower Mystic basin	12/8/15 8:55 AM	B		6.38	0.66	9.42	76.8	1.327	6.6	7.65		0	0	0
177	Mystic/Alewife	Lower Mystic basin	12/8/15 8:55 AM	S	0.1	6	0.56	9.78	78.8	1.129	2.3	7.8		0	0	0
177	Mystic/Alewife	Lower Mystic basin	12/21/15 9:12 AM	B		4.3	0.48	10.95	84.5	0.98	6.3	7.73		0	0	0
177	Mystic/Alewife	Lower Mystic basin	12/21/15 9:12 AM	S	0.1	4.46	0.47	11.17	86.5	0.955	3.8	8.13		0	0	0
067	Mystic/Alewife	Lower Mystic basin	4/13/15 8:58 AM	B		9.5	0.65	11.31	99.4	1.292	6.8	7.47		0	0	0
067	Mystic/Alewife	Lower Mystic basin	4/13/15 8:58 AM	S	0.1	10.21	0.63	11.89	106.2	1.247	4.8	7.56	1.3	0	0	0
067	Mystic/Alewife	Lower Mystic basin	4/15/15 9:15 AM	B									1.1	0	0.01	0.01
067	Mystic/Alewife	Lower Mystic basin	5/4/15 8:34 AM	B		13.5	3.1	10.14	99.2	5.698	16.9	7.82		0	0	0
067	Mystic/Alewife	Lower Mystic basin	5/4/15 8:34 AM	S	0.1	15.58	0.64	12.08	121.7	1.271	8	8.3	0.7	0	0	0
067	Mystic/Alewife	Lower Mystic basin	5/5/15 8:34 AM	B		15.12	5.29	10.72	110.1	9.385	7.5	7.93		0.02	0.02	0.02

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall		
														TWO_DAY_RAIN	THREE_DAY_RAIN	
067	Mystic/Alewife	Lower Mystic basin	5/15/15 8:34 AM	S	0.1	16.2	0.67	11.29	115.4	1.328	8	8.23	0.7	0.02	0.02	0.02
067	Mystic/Alewife	Lower Mystic basin	5/19/15 8:44 AM	B		18.8	4.02	4.25	46.7	7.269	10.8	7.56		0.27	0.27	0.27
067	Mystic/Alewife	Lower Mystic basin	5/19/15 8:44 AM	S	0.1	19.58	1.88	9.48	104.5	3.563	12.4	8.04	0.5	0.27	0.27	0.27
067	Mystic/Alewife	Lower Mystic basin	5/20/15 8:15 AM	B		18.81	4.73	6.72	74.2	8.46	11.5	7.52		0	0.27	0.27
067	Mystic/Alewife	Lower Mystic basin	5/20/15 8:15 AM	S	0.1	18.88	1.61	9.56	103.8	3.077	10.7	7.92	0.6	0	0.27	0.27
067	Mystic/Alewife	Lower Mystic basin	6/9/15 8:19 AM	B		19.87	0.57	8.35	91.9	1.15	9.6	7.74		0	0	0
067	Mystic/Alewife	Lower Mystic basin	6/9/15 8:19 AM	S	0.1	20.2	0.57	8.67	96.1	1.147	6.6	7.82	0.8	0	0	0
067	Mystic/Alewife	Lower Mystic basin	6/11/15 8:24 AM	B		20.3	2.57	5.65	63.5	4.79	10	7.47		0	0	0
067	Mystic/Alewife	Lower Mystic basin	6/11/15 8:24 AM	S	0.1	21.83	0.7	9.07	103.8	1.404	6.1	8.09	0.7	0	0	0
067	Mystic/Alewife	Lower Mystic basin	6/22/15 8:35 AM	B		22.05	0.54	6.03	69.2	1.081	9.5	7.42		0	1.72	1.76
067	Mystic/Alewife	Lower Mystic basin	6/22/15 8:35 AM	S	0.1	22.14	0.53	6.52	75	1.066	7.7	7.57	1	0	1.72	1.76
067	Mystic/Alewife	Lower Mystic basin	6/24/15 8:31 AM	B		23.71	0.54	6.73	79.8	1.097	9.1	7.49		0	0.01	0.01
067	Mystic/Alewife	Lower Mystic basin	6/24/15 8:31 AM	S	0.1	23.98	0.54	7.77	92.5	1.085	6.2	7.64	1	0	0.01	0.01
067	Mystic/Alewife	Lower Mystic basin	7/13/15 8:52 AM	B		22.76	13.46	2.31	29	22.32	9.5	7.11		0	0	0
067	Mystic/Alewife	Lower Mystic basin	7/13/15 8:52 AM	S	0.1	26.27	0.83	9.86	122.7	1.661	6.9	7.97	0.8	0	0	0
067	Mystic/Alewife	Lower Mystic basin	7/14/15 8:27 AM	B		23.96	9.69	1.56	19.6	16.52	8.7	7.04		0.03	0.03	0.03
067	Mystic/Alewife	Lower Mystic basin	7/14/15 8:27 AM	S	0.1	25.63	0.76	9.47	116.4	1.509	7.4	7.9	0.6	0.03	0.03	0.03
067	Mystic/Alewife	Lower Mystic basin	7/27/15 8:51 AM	B		24.47	6.41	1.03	12.8	11.28	11.4	7.52		0.06	0.06	0.06
067	Mystic/Alewife	Lower Mystic basin	7/27/15 8:51 AM	S	0.1	23.98	1.6	9.42	112.9	3.067	7.8	8.42	1.4	0.06	0.06	0.06
067	Mystic/Alewife	Lower Mystic basin	7/28/15 8:41 AM	B		24.33	6.55	0.68	8.4	11.5	7.9	7.12		0	0.06	0.06
067	Mystic/Alewife	Lower Mystic basin	7/28/15 8:41 AM	S	0.1	24.87	1.25	9.95	120.9	2.428	5.6	7.96	1.2	0	0.06	0.06
067	Mystic/Alewife	Lower Mystic basin	8/26/15 7:52 AM	B		23.33	14.15	5.62	71.5	23.37	7.5	7.62		0	0	0
067	Mystic/Alewife	Lower Mystic basin	8/26/15 7:52 AM	S	0.1	25.14	1.77	9.22	112.9	3.39	5.5	8.47	0.9	0	0	0
067	Mystic/Alewife	Lower Mystic basin	8/27/15 7:58 AM	B		23.94	12.58	6.93	88.4	20.99	7.9	7.53		0	0	0
067	Mystic/Alewife	Lower Mystic basin	8/27/15 7:58 AM	S	0.1	24.35	1.48	9.73	117.3	2.858	6.1	8.71	1	0	0	0
067	Mystic/Alewife	Lower Mystic basin	9/15/15 8:14 AM	B		21.85	6.48	8	9.48	11.36	9.9	7.99		0	0	0.38
067	Mystic/Alewife	Lower Mystic basin	9/15/15 8:14 AM	S	0.1	20.2	2.58	9.38	105.2	4.804	7.3	8.51	0.7	0	0	0.38
067	Mystic/Alewife	Lower Mystic basin	9/16/15 8:02 AM	B		21.54	6.39	6.48	76.2	11.22	11.1	7.83		0	0	0
067	Mystic/Alewife	Lower Mystic basin	9/16/15 8:02 AM	S	0.1	21.09	2.28	12.42	141.4	4.275	6.4	8.99	0.7	0	0	0
067	Mystic/Alewife	Lower Mystic basin	10/5/15 8:31 AM	B		14.37	0.82	8.27	81.3	1.612	7.1	7.65		0	0.01	0.01
067	Mystic/Alewife	Lower Mystic basin	10/5/15 8:31 AM	S	0.1	13.95	0.54	8.7	84.6	1.076	4.7	7.8	1.4	0	0	0.01
067	Mystic/Alewife	Lower Mystic basin	10/6/15 8:14 AM	B		13.77	0.68	9.33	90.5	1.35	4.9	7.84		0	0	0
067	Mystic/Alewife	Lower Mystic basin	10/6/15 8:14 AM	S	0.1	14.13	0.62	9.12	89	1.23	5	7.87	1.2	0	0	0
059	Mystic/Alewife	Lower Mystic basin	4/13/15 8:44 AM	B		10.04	0.72	12.21	108.8	1.43	5.4	7.71		0	0	0
059	Mystic/Alewife	Lower Mystic basin	4/13/15 8:44 AM	S	0.1	10.09	0.67	12.22	109	1.333	4.8	7.89	1.4	0	0	0
059	Mystic/Alewife	Lower Mystic basin	4/15/15 9:04 AM	B		0.1							1.3	0	0.01	0.01
059	Mystic/Alewife	Lower Mystic basin	5/4/15 8:20 AM	B		15.06	0.97	12.72	127	1.897	11.1	8.59		0	0	0
059	Mystic/Alewife	Lower Mystic basin	5/4/15 8:20 AM	S	0.1	15.39	0.8	12.44	125	1.583	7	8.73	0.8	0	0	0
059	Mystic/Alewife	Lower Mystic basin	5/5/15 8:19 AM	B		16.36	0.88	11.56	118.6	1.737	7.6	8.58		0.02	0.02	0.02
059	Mystic/Alewife	Lower Mystic basin	5/5/15 8:19 AM	S	0.1	16.36	0.91	11.55	118.5	1.794	14.7	8.58	0.7	0.02	0.02	0.02
059	Mystic/Alewife	Lower Mystic basin	5/19/15 8:23 AM	B		19.59	2.29	9.77	108.1	4.297	10.7	8.23		0.27	0.27	0.27
059	Mystic/Alewife	Lower Mystic basin	5/19/15 8:23 AM	S	0.1	19.61	2.23	9.96	110.1	4.183	15	8.3	0.6	0.27	0.27	0.27
059	Mystic/Alewife	Lower Mystic basin	5/20/15 8:01 AM	B		18.7	2.05	9.55	103.6	3.857	10.2	8.16		0	0.27	0.27
059	Mystic/Alewife	Lower Mystic basin	5/20/15 8:01 AM	S	0.1	18.77	2.02	9.99	108.4	3.806	9.9	8.23	0.6	0	0.27	0.27
059	Mystic/Alewife	Lower Mystic basin	6/9/15 8:06 AM	B		19.37	0.78	8.48	92.6	1.549	9.1	8.01		0	0	0
059	Mystic/Alewife	Lower Mystic basin	6/9/15 8:06 AM	S	0.1	19.62	0.7	8.92	97.8	1.389	8.7	8.17	0.8	0	0	0
059	Mystic/Alewife	Lower Mystic basin	6/11/15 8:12 AM	B		21.18	1.25	8.7	98.7	2.431	7.1	7.85		0	0	0
059	Mystic/Alewife	Lower Mystic basin	6/11/15 8:12 AM	S	0.1	21.53	0.78	9.42	107.2	1.549	5.8	8.13	0.7	0	0	0
059	Mystic/Alewife	Lower Mystic basin	6/22/15 8:12 AM	B		22.41	0.75	8.1	93.7	1.484	10.6	7.93		0	1.72	1.76
059	Mystic/Alewife	Lower Mystic basin	6/22/15 8:12 AM	S	0.1	22.97	0.76	9.2	107.7	1.503	6.7	8.09	0.8	0	1.72	1.76
059	Mystic/Alewife	Lower Mystic basin	6/24/15 8:11 AM	B		23.78	0.65	9.08	107.8	1.296	8.4	7.94		0	0.01	0.01
059	Mystic/Alewife	Lower Mystic basin	6/24/15 8:11 AM	S	0.1	23.72	0.64	9.29	110.1	1.282	6.8	8.07	1	0	0.01	0.01
059	Mystic/Alewife	Lower Mystic basin	7/13/15 9:06 AM	B		26.36	0.86	11.02	137.3	1.7	8.8	8.45		0	0	0
059	Mystic/Alewife	Lower Mystic basin	7/13/15 9:06 AM	S	0.1	26.43	0.84	10.91	136.1	1.68	5.4	8.42	1	0	0	0
059	Mystic/Alewife	Lower Mystic basin	7/14/15 8:47 AM	B		25.93	0.93	10.34	128	1.842	7.5	8.4		0.03	0.03	0.03
059	Mystic/Alewife	Lower Mystic basin	7/14/15 8:47 AM	S	0.1	26.21	0.91	10.77	133.9	1.803	5.8	8.55	0.8	0.03	0.03	0.03
059	Mystic/Alewife	Lower Mystic basin	7/27/15 8:28 AM	B		23.81	2.02	8.82	105.6	3.819	7.2	8.3		0.06	0.06	0.06
059	Mystic/Alewife	Lower Mystic basin	7/27/15 8:28 AM	S	0.1	23.74	1.85	9.06	108.2	3.528	6.7	8.52	1.2	0.06	0.06	0.06
059	Mystic/Alewife	Lower Mystic basin	7/28/15 8:56 AM	B		23.99	7.12	5.4	66.8	12.42	10.2	7.47		0	0.06	0.06
059	Mystic/Alewife	Lower Mystic basin	7/28/15 8:56 AM	S	0.1	25.1	1.49	9.89	121	2.877	5.3	8.13	1.2	0	0.06	0.06
059	Mystic/Alewife	Lower Mystic basin	8/26/15 7:38 AM	B		24.14	6.38	8.18	101	11.22	7	8.04		0	0	0
059	Mystic/Alewife	Lower Mystic basin	8/26/15 7:38 AM	S	0.1	25.01	1.84	10.18	124.5	3.514	7.3	8.65	0.9	0	0	0
059	Mystic/Alewife	Lower Mystic basin	8/27/15 7:48 AM	B		24.31	1.84	10.53	127.1	3.511	5.9	8.73		0	0	0
059	Mystic/Alewife	Lower Mystic basin	8/27/15 7:48 AM	S	0.1	24.29	1.78	10.25	123.7	3.402	5.9	8.79	1	0	0	0
059	Mystic/Alewife	Lower Mystic basin	9/15/15 8:02 AM	B		20.38	3.41	10.89	123.1	6.235	8.7	8.61		0	0	0.38
059	Mystic/Alewife	Lower Mystic basin	9/15/15 8:02 AM	S	0.1	20.48	3.41	10.99	124.5	6.234	7.7	8.67	0.7	0	0	0.38
059	Mystic/Alewife	Lower Mystic basin	9/16/15 7:49 AM	B		21.4	3.64	10.24	118.2	6.638	10.1	8.69		0	0	0

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall		Logan Rainfall THREE_DAY_RAIN
															TWO_DAY_RAIN	THREE_DAY_RAIN	
059	Mystic/Alewife	Lower Mystic basin	9/16/15 7:49 AM	S	0.1	21.04	2.85	12.92	147.5	5.279	6.8	8.98	0.6	0	0	0	0
059	Mystic/Alewife	Lower Mystic basin	10/5/15 8:13 AM	B		13.67	0.65	9.28	89.8	1.301	5.7	8.11		0	0	0	0.01
059	Mystic/Alewife	Lower Mystic basin	10/5/15 8:13 AM	S	0.1	13.69	0.69	9.34	90.4	1.377	5.1	8.15	1.2	0	0	0	0.01
059	Mystic/Alewife	Lower Mystic basin	10/6/15 7:58 AM	B		14.44	2.02	9.76	96.8	3.806	6.9	7.91		0	0	0	0
059	Mystic/Alewife	Lower Mystic basin	10/6/15 7:58 AM	S	0.1	13.9	0.75	10.1	98.2	1.484	4.5	8.45	1.4	0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	4/13/15 8:49 AM	B		5.63	25.44	7.65	72.1	40.45	4.3	7.6		0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	4/13/15 8:49 AM	S	0.1	11.22	0.73	11.62	106.4	1.437	7.5	7.53	1	0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	4/13/15 8:49 AM	B		5.63	25.44	7.65	72.1	40.45	4.3	7.6		0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	4/13/15 8:49 AM	S	0.1	11.22	0.73	11.62	106.4	1.437	7.5	7.53	1	0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	4/15/15 9:08 AM	S	0.1								1.1	0	0.01	0.01	0.01
176	Mystic/Alewife	Lower Mystic basin	4/15/15 9:08 AM	S	0.1								1.1	0	0.01	0.01	0.01
176	Mystic/Alewife	Lower Mystic basin	5/4/15 8:25 AM	B		11.48	15.35	9.5	96	25.18	9.7	7.57		0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	5/4/15 8:25 AM	S	0.1	14.8	0.89	12.4	123.1	1.743	7.4	8.57	0.7	0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	5/4/15 8:25 AM	B		11.48	15.35	9.5	96	25.18	9.7	7.57		0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	5/4/15 8:25 AM	S	0.1	14.8	0.89	12.4	123.1	1.743	7.4	8.57	0.7	0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	5/5/15 8:24 AM	B		11.19	19.86	0.54	5.6	31.88	10	7.03		0.02	0.02	0.02	0.02
176	Mystic/Alewife	Lower Mystic basin	5/5/15 8:24 AM	S	0.1	16.63	0.85	11.89	122.7	1.669	7.1	8.26	0.7	0.02	0.02	0.02	0.02
176	Mystic/Alewife	Lower Mystic basin	5/5/15 8:24 AM	B		11.19	19.86	0.54	5.6	31.88	10	7.03		0.02	0.02	0.02	0.02
176	Mystic/Alewife	Lower Mystic basin	5/5/15 8:24 AM	S	0.1	16.63	0.85	11.89	122.7	1.669	7.1	8.26	0.7	0.02	0.02	0.02	0.02
176	Mystic/Alewife	Lower Mystic basin	5/19/15 8:31 AM	B		14.44	19.84	0.48	5.3	31.77	10	7.03		0.27	0.27	0.27	0.27
176	Mystic/Alewife	Lower Mystic basin	5/19/15 8:31 AM	S	0.1	19.3	2.2	9.66	106.1	4.138	10.1	7.98	0.6	0.27	0.27	0.27	0.27
176	Mystic/Alewife	Lower Mystic basin	5/19/15 8:31 AM	B		14.44	19.84	0.48	5.3	31.77	8.6	7.24		0.27	0.27	0.27	0.27
176	Mystic/Alewife	Lower Mystic basin	5/19/15 8:31 AM	S	0.1	19.3	2.2	9.66	106.1	4.138	10.1	7.98	0.6	0.27	0.27	0.27	0.27
176	Mystic/Alewife	Lower Mystic basin	5/20/15 8:07 AM	B		14.14	20.91	2.59	28.7	33.33	6.8	7.22		0	0.27	0.27	0.27
176	Mystic/Alewife	Lower Mystic basin	5/20/15 8:07 AM	S	0.1	18.85	1.98	9.11	99.1	3.73	10.6	7.73	0.6	0	0.27	0.27	0.27
176	Mystic/Alewife	Lower Mystic basin	5/20/15 8:07 AM	B		14.14	20.91	2.59	28.7	33.33	6.8	7.22		0	0.27	0.27	0.27
176	Mystic/Alewife	Lower Mystic basin	5/20/15 8:07 AM	S	0.1	18.85	1.98	9.11	99.1	3.73	10.6	7.73	0.6	0	0.27	0.27	0.27
176	Mystic/Alewife	Lower Mystic basin	6/9/15 8:11 AM	B		19.13	0.71	7.43	80.7	1.419	6.7	7.7		0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	6/9/15 8:11 AM	S	0.1	19.34	0.71	8.16	88.9	1.41	6.6	7.8	0.7	0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	6/9/15 8:11 AM	B		19.13	0.71	7.43	80.7	1.419	6.7	7.7		0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	6/9/15 8:11 AM	S	0.1	19.34	0.71	8.16	88.9	1.41	6.6	7.8	0.7	0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	6/11/15 8:17 AM	B		18.82	10.24	6.55	74.8	17.32	7	7.26		0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	6/11/15 8:17 AM	S	0.1	21.04	0.71	7.59	85.6	1.421	7.1	7.76	0.6	0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	6/11/15 8:17 AM	B		18.82	10.24	6.55	74.8	17.32	7	7.26		0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	6/11/15 8:17 AM	S	0.1	21.04	0.71	7.59	85.6	1.421	7.1	7.76	0.6	0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	6/22/15 8:21 AM	B		20.19	0.69	2.97	33	1.375	11	7.28		0	1.72	1.76	1.76
176	Mystic/Alewife	Lower Mystic basin	6/22/15 8:21 AM	S	0.1	21.23	0.48	6.06	68.4	0.967	8.2	7.63	0.7	0	1.72	1.76	1.76
176	Mystic/Alewife	Lower Mystic basin	6/22/15 8:21 AM	B		20.19	0.69	2.97	33	1.375	11	7.28		0	1.72	1.76	1.76
176	Mystic/Alewife	Lower Mystic basin	6/22/15 8:21 AM	S	0.1	21.23	0.48	6.06	68.4	0.967	8.2	7.63	0.7	0	1.72	1.76	1.76
176	Mystic/Alewife	Lower Mystic basin	6/24/15 8:16 AM	B		21.94	0.52	3.87	44.3	1.055	8.4	7.35		0	0.01	0.01	0.01
176	Mystic/Alewife	Lower Mystic basin	6/24/15 8:16 AM	S	0.1	23.65	0.61	7.88	93.4	1.22	6	7.67	1.1	0	0.01	0.01	0.01
176	Mystic/Alewife	Lower Mystic basin	6/24/15 8:16 AM	B		21.94	0.52	3.87	44.3	1.055	8.4	7.35		0	0.01	0.01	0.01
176	Mystic/Alewife	Lower Mystic basin	6/24/15 8:16 AM	S	0.1	23.65	0.61	7.88	93.4	1.22	6	7.67	1.1	0	0.01	0.01	0.01
176	Mystic/Alewife	Lower Mystic basin	7/13/15 9:02 AM	B		20.45	23.82	6.07	77.5	37.5	8.1	7.23		0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	7/13/15 9:02 AM	S	0.1	26.89	0.72	9.99	125.6	1.445	4.9	8.06	1	0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	7/13/15 9:02 AM	B		20.45	23.82	6.07	77.5	37.5	8.1	7.23		0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	7/13/15 9:02 AM	S	0.1	26.89	0.72	9.99	125.6	1.445	4.9	8.06	1	0	0	0	0
176	Mystic/Alewife	Lower Mystic basin	7/14/15 8:41 AM	B		20.25	24.05	3.73	47.6	37.82	7.9	7.25		0.03	0.03	0.03	0.03
176	Mystic/Alewife	Lower Mystic basin	7/14/15 8:41 AM	S	0.1	25.86	0.74	8.81	108.8	1.485	5.1	7.77	1	0.03	0.03	0.03	0.03
176	Mystic/Alewife	Lower Mystic basin	7/14/15 8:41 AM	B		20.25	24.05	3.73	47.6	37.82	7.9	7.25		0.03	0.03	0.03	0.03
176	Mystic/Alewife	Lower Mystic basin	7/14/15 8:41 AM	S	0.1	25.86	0.74	8.81	108.8	1.485	5.1	7.77	1	0.03	0.03	0.03	0.03
176	Mystic/Alewife	Lower Mystic basin	7/27/15 8:35 AM	B		20.91	23.46	1.36	17.4	36.98	12.9	7.15		0.06	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/27/15 8:35 AM	S	0.1	23.97	1.67	9.04	108.4	3.193	10	8.79	1.3	0.06	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/27/15 8:35 AM	B		20.39	24.02	1.24	15.8	37.78	9.9	7.07		0	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/28/15 8:51 AM	S	0.1	24.53	1.6	8.26	100	3.065	5.1	7.44	1.4	0	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/28/15 8:51 AM	B		20.39	24.02	1.24	15.8	37.78	9.9	7.07		0	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/28/15 8:51 AM	S	0.1	24.53	1.6	8.26	100	3.065	5.1	7.44	1.4	0	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/28/15 8:51 AM	B		20.27	23.97	1.67	9.04	108.4	3.193	10	8.79	1.3	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/28/15 8:51 AM	S	0.1	24.77	1.95	8.87	108.1	3.065	5.1	7.44	1.4	0	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/28/15 8:51 AM	B		20.27	23.97	1.67	9.04	108.4	3.193	10	8.79	1.3	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/28/15 8:51 AM	S	0.1	24.77	1.95	8.87	108.1	3.065	5.1	7.44	1.4	0	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/28/15 8:51 AM	B		20.27	23.97	1.67	9.04	108.4	3.193	10	8.79	1.3	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/28/15 8:51 AM	S	0.1	24.77	1.95	8.87	108.1	3.065	5.1	7.44	1.4	0	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/28/15 8:51 AM	B		20.27	23.97	1.67	9.04	108.4	3.193	10	8.79	1.3	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/28/15 8:51 AM	S	0.1	24.77	1.95	8.87	108.1	3.065	5.1	7.44	1.4	0	0.06	0.06	0.06
176	Mystic/Alewife	Lower Mystic basin	7/28/15 8:51 AM	B		20.27	23.97	1.67	9.04	108.4	3.193	10	8.79	1			

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
176	Mystic/Alewife	Lower Mystic basin	9/15/15 8:07 AM	B		22.58	8.47	4.55	55.2	14.58	9.9	7.71		0	0	0.38
176	Mystic/Alewife	Lower Mystic basin	9/15/15 8:07 AM	S	0.1	20.8	2.89	9.55	108.6	5.342	6.7	8.38	0.9	0	0	0.38
176	Mystic/Alewife	Lower Mystic basin	9/15/15 8:07 AM	B		22.58	8.47	4.55	55.2	14.58	9.9	7.71		0	0	0.38
176	Mystic/Alewife	Lower Mystic basin	9/15/15 8:07 AM	S	0.1	20.8	2.89	9.55	108.6	5.342	6.7	8.38	0.9	0	0	0.38
176	Mystic/Alewife	Lower Mystic basin	9/16/15 7:55 AM	B		22.09	21.82	2.27	29.5	34.66	10.7	7.05		0	0	0
176	Mystic/Alewife	Lower Mystic basin	9/16/15 7:55 AM	S	0.1	21.47	2.78	12.79	147.1	5.155	6.3	8.85	0.8	0	0	0
176	Mystic/Alewife	Lower Mystic basin	9/16/15 7:55 AM	B		22.09	21.82	2.27	29.5	34.66	10.7	7.05		0	0	0
176	Mystic/Alewife	Lower Mystic basin	9/16/15 7:55 AM	S	0.1	21.47	2.78	12.79	147.1	5.155	6.3	8.85	0.8	0	0	0
176	Mystic/Alewife	Lower Mystic basin	10/5/15 8:20 AM	B		16.19	6.19	5.04	53.3	10.87	7.7	7.25		0	0	0.01
176	Mystic/Alewife	Lower Mystic basin	10/5/15 8:20 AM	S	0.1	14.03	0.87	9.29	90.7	1.712	5.9	7.84	0.9	0	0	0.01
176	Mystic/Alewife	Lower Mystic basin	10/5/15 8:20 AM	B		16.19	6.19	5.04	53.3	10.87	7.7	7.25		0	0	0.01
176	Mystic/Alewife	Lower Mystic basin	10/5/15 8:20 AM	S	0.1	14.03	0.87	9.29	90.7	1.712	5.9	7.84	0.9	0	0	0.01
176	Mystic/Alewife	Lower Mystic basin	10/6/15 8:04 AM	B		16.12	5.75	5.92	62.2	10.14	8.6	7.26		0	0	0
176	Mystic/Alewife	Lower Mystic basin	10/6/15 8:04 AM	S	0.1	14.07	0.94	9.97	97.5	1.841	5.8	7.94	1.2	0	0	0
176	Mystic/Alewife	Lower Mystic basin	10/6/15 8:04 AM	B		16.12	5.75	5.92	62.2	10.14	8.6	7.26		0	0	0
176	Mystic/Alewife	Lower Mystic basin	10/6/15 8:04 AM	S	0.1	14.07	0.94	9.97	97.5	1.841	5.8	7.94	1.2	0	0	0
167	Mystic/Alewife	Lower Mystic basin	3/30/15 7:37 AM	B		2.78	18.66	11.38	95.4	30.81		7.44		0	0	0.12
167	Mystic/Alewife	Lower Mystic basin	3/30/15 7:37 AM	S	0.1	4	0.71	12	92	1.426		6.83		0	0	0.12
167	Mystic/Alewife	Lower Mystic basin	4/10/15 7:04 AM	B		5.04	12.92	11.67	99.7	21.76	3.7	7.15		0.09	0.18	0.44
167	Mystic/Alewife	Lower Mystic basin	4/10/15 7:04 AM	S	0.1	5.45	0.67	12.85	102.2	1.348	4.1	6.99		0.09	0.18	0.44
167	Mystic/Alewife	Lower Mystic basin	4/13/15 8:40 AM	S									2	0	0	0
167	Mystic/Alewife	Lower Mystic basin	4/15/15 9:02 AM	S									1.4	0	0.01	0.01
167	Mystic/Alewife	Lower Mystic basin	4/16/15 7:08 AM	B		11.15	8.34	10.73	102.9	14.35	4.1	7.04		0	0	0.01
167	Mystic/Alewife	Lower Mystic basin	4/16/15 7:08 AM	S	0.1	12.16	0.74	11.55	108	1.456	4.6	6.98		0	0	0.01
167	Mystic/Alewife	Lower Mystic basin	4/30/15 7:29 AM	B		8.37	25.5	7.76	78	40.24		7.44		0	0	0.07
167	Mystic/Alewife	Lower Mystic basin	4/30/15 7:29 AM	S	0.1	12.64	0.76	12.19	115.3	1.506		7.86		0	0	0.07
167	Mystic/Alewife	Lower Mystic basin	5/4/15 8:15 AM	S									0.8	0	0	0
167	Mystic/Alewife	Lower Mystic basin	5/5/15 8:16 AM	S									0.8	0.02	0.02	0.02
167	Mystic/Alewife	Lower Mystic basin	5/12/15 7:25 AM	B		10.35	29.83	7.3	78.8	46.2	3.1	7.76		0.02	0.02	0.02
167	Mystic/Alewife	Lower Mystic basin	5/12/15 7:25 AM	S	0.1	21.05	1.38	11.97	135.4	2.663	4.5	8.3		0.02	0.02	0.02
167	Mystic/Alewife	Lower Mystic basin	5/19/15 8:21 AM	S									0.7	0.27	0.27	0.27
167	Mystic/Alewife	Lower Mystic basin	5/20/15 8:00 AM	S									0.7	0	0.27	0.27
167	Mystic/Alewife	Lower Mystic basin	5/28/15 7:29 AM	B		13.69	27.64	10.51	120.2	42.95		7.41		0	0	0
167	Mystic/Alewife	Lower Mystic basin	5/28/15 7:29 AM	S	0.1	22.48	1.87	8.9	103.8	3.559		7.85		0	0	0
167	Mystic/Alewife	Lower Mystic basin	6/8/15 7:16 AM	B		14.92	23.46	6.62	75.7	37	5.6	7.55		0	0	0.09
167	Mystic/Alewife	Lower Mystic basin	6/8/15 7:16 AM	S	0.1	18.66	0.7	9.66	103.8	1.39	7.1	7.22		0	0	0.09
167	Mystic/Alewife	Lower Mystic basin	6/23/15 7:35 AM	B		16.95	22.14	6.65	78.6	35.09		7.19		0.01	0.01	1.73
167	Mystic/Alewife	Lower Mystic basin	6/23/15 7:35 AM	S	0.1	23.51	0.67	7.9	93.3	1.345		7.86		0.01	0.01	1.73
167	Mystic/Alewife	Lower Mystic basin	7/2/15 7:23 AM	B		17.8	22.09	5.87	70.5	35		7.2		0	0.54	0.54
167	Mystic/Alewife	Lower Mystic basin	7/2/15 7:23 AM	S	0.1	21.62	0.65	6.75	76.9	1.297		7.52		0	0.54	0.54
167	Mystic/Alewife	Lower Mystic basin	7/8/15 7:04 AM	B		18.25	28.75	4.3	54.2	44.42	4.3	7.16		0	0.02	0.02
167	Mystic/Alewife	Lower Mystic basin	7/8/15 7:04 AM	S	0.1	25.02	0.9	8.82	107.3	1.775	4.7	7.4		0	0.02	0.02
167	Mystic/Alewife	Lower Mystic basin	7/13/15 9:06 AM	S									1	0	0	0
167	Mystic/Alewife	Lower Mystic basin	7/14/15 8:46 AM	S									0.8	0.03	0.03	0.03
167	Mystic/Alewife	Lower Mystic basin	7/20/15 7:19 AM	B		21.06	21.19	6.51	82.8	33.74		7.23		0	0	0.14
167	Mystic/Alewife	Lower Mystic basin	7/20/15 7:19 AM	S	0.1	25.83	1.06	8.01	98.9	2.08		7.97		0	0	0.14
167	Mystic/Alewife	Lower Mystic basin	7/27/15 8:28 AM	S									1.2	0.06	0.06	0.06
167	Mystic/Alewife	Lower Mystic basin	7/28/15 8:53 AM	S									1.2	0	0.06	0.06
167	Mystic/Alewife	Lower Mystic basin	8/3/15 7:15 AM	B		20.41	29.81	0.87	11.5	45.89	5.3	7.11		0	0	0
167	Mystic/Alewife	Lower Mystic basin	8/3/15 7:15 AM	S	0.1	25.24	2.4	9.27	114.2	4.503	3.2	7.07		0	0	0
167	Mystic/Alewife	Lower Mystic basin	8/18/15 6:58 AM	B		19.05	29.37	6.27	80.5	45.28		7.33		0.14	0.14	0.14
167	Mystic/Alewife	Lower Mystic basin	8/18/15 6:58 AM	S	0.1	26.49	2.23	8.28	104.3	4.216		7.93		0.14	0.14	0.14
167	Mystic/Alewife	Lower Mystic basin	8/26/15 7:30 AM	S									1	0	0	0
167	Mystic/Alewife	Lower Mystic basin	8/27/15 7:50 AM	S									1.1	0	0	0
167	Mystic/Alewife	Lower Mystic basin	9/3/15 7:25 AM	B		21.14	26.67	3.38	44.4	41.53	3.4	7.5		0.01	0.01	0.01
167	Mystic/Alewife	Lower Mystic basin	9/3/15 7:25 AM	S	0.1	25.18	2.84	9.86	121.6	5.281	4.9	8.01		0.01	0.01	0.01
167	Mystic/Alewife	Lower Mystic basin	9/14/15 7:01 AM	B		19.74	30.95	5.76	75.7	47.46		7.27		0	0.38	0.39
167	Mystic/Alewife	Lower Mystic basin	9/14/15 7:01 AM	S	0.1	20.83	3.3	8.8	100.2	6.054		7.67		0	0.38	0.39
167	Mystic/Alewife	Lower Mystic basin	9/15/15 7:54 AM	S									0.8	0	0	0.38
167	Mystic/Alewife	Lower Mystic basin	9/16/15 7:47 AM	S									0.6	0	0	0
167	Mystic/Alewife	Lower Mystic basin	9/28/15 6:55 AM	B		19.24	30.37	1.93	25.1	46.66	8.1	7.18		0	0	0
167	Mystic/Alewife	Lower Mystic basin	9/28/15 6:55 AM	S	0.1	18.08	4.29	10.15	110.2	7.724	6	7.3		0	0	0
167	Mystic/Alewife	Lower Mystic basin	9/30/15 7:44 AM	B		20.99	4.75	8.89	102.6	8.508	10.5	7.98		2.46	2.5	2.5
167	Mystic/Alewife	Lower Mystic basin	9/30/15 7:44 AM	S	0.1	21.31	4.21	9.88	114.2	7.609	7.8	7.8		2.46	2.5	2.5
167	Mystic/Alewife	Lower Mystic basin	10/2/15 6:57 AM	B		18	0.57	8.73	92.5	1.136		7.42		0.08	0.08	0.24
167	Mystic/Alewife	Lower Mystic basin	10/2/15 6:57 AM	S	0.1	17.94	0.57	8.83	93.4	1.136		7.49		0.08	0.08	0.24
167	Mystic/Alewife	Lower Mystic basin	10/5/15 8:04 AM	S									1.5	0	0	0.01

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall		Logan Rainfall THREE_DAY_RAIN	
														TWO_DAY_RAIN	THREE_DAY_RAIN		
167	Mystic/Alewife	Lower Mystic basin	10/6/15 7:49 AM	S										1.5	0	0	0
167	Mystic/Alewife	Lower Mystic basin	10/16/15 6:47 AM	B		15.22	30.68	7.45	89.5	47.13		7.53		0	0	0	0
167	Mystic/Alewife	Lower Mystic basin	10/16/15 6:47 AM	S	0.1	14.44	1.32	9.65	95.3	2.549		8.09		0	0	0	0
167	Mystic/Alewife	Lower Mystic basin	10/27/15 7:30 AM	B		12.3	24.56	8.53	93	38.65		7.01		0	0	0	0.03
167	Mystic/Alewife	Lower Mystic basin	10/27/15 7:30 AM	S	0.1	9.48	1.85	10.44	92.4	3.502		7.66		0	0	0	0.03
167	Mystic/Alewife	Lower Mystic basin	10/29/15 9:12 AM	B		11.96	18.66	8.15	84.9	30.1		7.51		0.73	1.09	1.09	
167	Mystic/Alewife	Lower Mystic basin	10/29/15 9:12 AM	S	0.1	12.69	1.28	9.22	87.5	2.471		8.1		0.73	1.09	1.09	
167	Mystic/Alewife	Lower Mystic basin	11/10/15 8:40 AM	B		12.24	31.38	4.98	56.5	48.23	2.8	7.27		0.54	0.61	0.61	
167	Mystic/Alewife	Lower Mystic basin	11/10/15 8:40 AM	S	0.1	11.73	0.91	9.65	89.5	1.781	4.2	7.37		0.54	0.61	0.61	
167	Mystic/Alewife	Lower Mystic basin	11/12/15 8:36 AM	B		12.05	29.9	5.14	57.7	46.19	8	7.28		0.01	0.05	0.59	
167	Mystic/Alewife	Lower Mystic basin	11/12/15 8:36 AM	S	0.1	10.47	0.83	8.64	77.8	1.635	3.6	7.97		0.01	0.05	0.59	
167	Mystic/Alewife	Lower Mystic basin	11/23/15 8:47 AM	B		9.28	18.84	8.9	87.5	30.48	6.5	6.16		0.04	0.34	0.34	
167	Mystic/Alewife	Lower Mystic basin	11/23/15 8:47 AM	S	0.1	7.15	0.81	10.5	87.3	1.607	3.8	6.5		0.04	0.34	0.34	
167	Mystic/Alewife	Lower Mystic basin	12/8/15 8:34 AM	B		8.38	29.86	5.46	56.5	46.43	2	7.11		0	0	0	
167	Mystic/Alewife	Lower Mystic basin	12/8/15 8:34 AM	S	0.1	5.52	0.74	12.29	98	1.477	3.1	7.14		0	0	0	
167	Mystic/Alewife	Lower Mystic basin	12/21/15 8:42 AM	B		7.37	30.79	8.69	88.4	47.86	5.6	7.1		0	0	0	
167	Mystic/Alewife	Lower Mystic basin	12/21/15 8:42 AM	S	0.1	4.39	0.66	10.88	84.2	1.322	3.7	6.73		0	0	0	
052	Mystic/Alewife	Mystic mouth	4/13/15 10:47 AM	S	0.1	6.99	21.71	11.62	110.3	34.87	4.5	7.93		0	0	0	
052	Mystic/Alewife	Mystic mouth	4/15/15 8:55 AM	S	0.1								0.9	0	0.01	0.01	
052	Mystic/Alewife	Mystic mouth	5/4/15 8:08 AM	B	1.4	10.45	26.3	9.23	97.7	41.22	7	7.9		0	0	0	
052	Mystic/Alewife	Mystic mouth	5/4/15 8:08 AM	S	0.1	12.01	19.69	10.32	108.4	31.61	4.7	7.98	1.4	0	0	0	
052	Mystic/Alewife	Mystic mouth	5/5/15 8:06 AM	B	0.8	11.23	21.7	8.82	92.3	34.57	5.7	7.83		0.02	0.02	0.02	
052	Mystic/Alewife	Mystic mouth	5/5/15 8:06 AM	S	0.1	12.33	17.29	9.68	100.8	28.06	8	7.95		0.02	0.02	0.02	
052	Mystic/Alewife	Mystic mouth	5/19/15 8:14 AM	B	1	14.43	27.13	10.35	119.9	42.21	9.5	8.02		0.27	0.27	0.27	
052	Mystic/Alewife	Mystic mouth	5/19/15 8:14 AM	S	0.1	15.67	21.12	10.12	115.8	33.61	7.4	8.07	1.2	0.27	0.27	0.27	
052	Mystic/Alewife	Mystic mouth	5/20/15 7:49 AM	S	0.1	15.29	18.92	9.39	105.2	30.42	2.95	7.96		0	0.27	0.27	
052	Mystic/Alewife	Mystic mouth	6/2/15 7:26 AM	B		13.56	19.92	6.74	73.3	31.9	8.6	7.17		0.74	1.12	2.03	
052	Mystic/Alewife	Mystic mouth	6/2/15 7:26 AM	S	0.1	16.03	5.55	6.05	63.5	9.807	11.7	6.9		0.74	1.12	2.03	
052	Mystic/Alewife	Mystic mouth	6/9/15 7:57 AM	B		15.13	27.63	8.66	102	42.89	7	7.85		0	0	0	
052	Mystic/Alewife	Mystic mouth	6/9/15 7:57 AM	S	0.1	17.35	13.87	8.99	101.8	22.89	4.8	7.95		0	0	0	
052	Mystic/Alewife	Mystic mouth	6/11/15 8:01 AM	B	2.3	13.44	29.65	7.83	90.2	45.76	4.6	7.79		0	0	0	
052	Mystic/Alewife	Mystic mouth	6/11/15 8:01 AM	S	0.1	15.03	26.53	8.29	96.8	41.35	4.6	7.82		0	0	0	
052	Mystic/Alewife	Mystic mouth	6/22/15 8:03 AM	S	0.1	18.7	17.12	7.4	87.7	27.75	7	7.7	0.9	0	1.72	1.76	
052	Mystic/Alewife	Mystic mouth	6/24/15 8:03 AM	B	1.3	15.46	29.56	6.54	78.5	45.58	4.7	7.65		0	0.01	0.01	
052	Mystic/Alewife	Mystic mouth	6/24/15 8:03 AM	S	0.1	16.4	28.23	7.56	91.6	43.71	4.1	7.71		0	0.01	0.01	
052	Mystic/Alewife	Mystic mouth	7/13/15 9:15 AM	B	2.7	19.16	30.03	6.57	85	46.19	4.4	7.65		0	0	0	
052	Mystic/Alewife	Mystic mouth	7/13/15 9:15 AM	S	0.1	22.49	19.44	7.88	101.7	31.21	3.2	7.51	0.4	0	0	0	
052	Mystic/Alewife	Mystic mouth	7/14/15 8:55 AM	B	2.4	19.95	29.43	8.11	106	45.37	5.1	7.83		0.03	0.03	0.03	
052	Mystic/Alewife	Mystic mouth	7/14/15 8:55 AM	S	0.1	22.22	19.59	7.99	102.8	31.43	5.3	7.76	1.1	0.03	0.03	0.03	
052	Mystic/Alewife	Mystic mouth	7/27/15 8:18 AM	B	2.5	20.04	30.98	7	92.5	47.5	9.3	7.8		0.06	0.06	0.06	
052	Mystic/Alewife	Mystic mouth	7/27/15 8:18 AM	S	0.1	21.17	27.62	8.09	107	42.87	6.7	7.91	1.6	0.06	0.06	0.06	
052	Mystic/Alewife	Mystic mouth	7/28/15 9:05 AM	B	2.4	20.2	30.61	5.88	77.8	46.99	5.3	7.65		0	0.06	0.06	
052	Mystic/Alewife	Mystic mouth	7/28/15 9:05 AM	S	0.1	21.87	28.2	8.32	111.8	43.68	6.1	7.85	0.9	0	0.06	0.06	
052	Mystic/Alewife	Mystic mouth	8/26/15 7:28 AM	B	1.8	19.8	30.77	7.93	104.2	47.22	5.3	7.9		0	0	0	
052	Mystic/Alewife	Mystic mouth	8/26/15 7:28 AM	S	0.1	21.15	26.3	7.54	99	41.02	5.3	7.93	1.6	0	0	0	
052	Mystic/Alewife	Mystic mouth	8/27/15 7:40 AM	B	2.1	19.87	27.49	7.36	95	42.66	5.1	7.8		0	0	0	
052	Mystic/Alewife	Mystic mouth	8/27/15 7:40 AM	S	0.1	19.96	26.98	7.69	99.1	41.95	8.6	7.84	1.6	0	0	0	
052	Mystic/Alewife	Mystic mouth	9/15/15 7:55 AM	B		19.31	30.76	5.26	68.5	47.2	7.8	7.66		0	0	0.38	
052	Mystic/Alewife	Mystic mouth	9/16/15 7:42 AM	B		19.33	30.61	5.51	71.6	46.98	10.3	7.66		0	0	0	
052	Mystic/Alewife	Mystic mouth	10/5/15 8:06 AM	B		18.1	30.96	4.88	62.2	47.47	6.1	7.65		0	0	0.01	
052	Mystic/Alewife	Mystic mouth	10/5/15 8:06 AM	S	0.1	17.88	30.76	5.52	69.9	47.2	4	7.68		0	0	0.01	
052	Mystic/Alewife	Mystic mouth	10/6/15 9:57 AM	B	1.2	18.05	31.06	4.93	62.7	47.6	5	7.54		0	0	0	
052	Mystic/Alewife	Mystic mouth	10/6/15 9:57 AM	S	0.1	18.32	30.64	5.98	76.3	47.03	3.7	7.47		0	0	0	
052	Mystic/Alewife	Mystic mouth	10/29/15 9:05 AM	B	0.1	13.2	5.7	8.78	86.8	10.06	7.8		0.73	1.09	1.09		
069	Mystic/Alewife	Mystic mouth	4/13/15 8:25 AM	B	1.4	5.31	28.72	12.2	116.6	45.22	3.7	8.22		0	0	0	
069	Mystic/Alewife	Mystic mouth	4/13/15 8:25 AM	S	0.1	6.3	23.65	12.05	114	37.77	3.3	8.18		0	0	0	
069	Mystic/Alewife	Mystic mouth	4/15/15 8:45 AM	S	0.1								2	0	0.01	0.01	
069	Mystic/Alewife	Mystic mouth	5/4/15 7:58 AM	B	1.1	10.56	27.07	10.04	107.1	42.31	3.9	8.01		0	0	0	
069	Mystic/Alewife	Mystic mouth	5/4/15 7:58 AM	S	0.1	11.65	21.36	10.31	108.6	34.06	4	8.02		0	0	0	
069	Mystic/Alewife	Mystic mouth	5/5/15 7:58 AM	S	0.1	12.52	23.33	9.55	103.7	36.87	4.2	7.99		0.02	0.02	0.02	
069	Mystic/Alewife	Mystic mouth	5/19/15 8:05 AM	B		16.08	27.68	13.34	160.2	42.94	5.1	8.31		0.27	0.27	0.27	
069	Mystic/Alewife	Mystic mouth	5/19/15 8:05 AM	S	0.1	16.23	26.22	12.7	151.6	40.89	6.6	8.28		0.27	0.27	0.27	
069	Mystic/Alewife	Mystic mouth	5/20/15 7:42 AM	S	0.1	13.83	29.02	10.4	120.3	44.87	6.8	8.14		0	0.27	0.27	
069	Mystic/Alewife	Mystic mouth	6/2/15 7:36 AM	B		13.12	27.12	7.74	87.2	42.24	6.6	7.45		0.74	1.12	2.03	
069	Mystic/Alewife	Mystic mouth	6/2/15 7:36 AM	S	0.1	14.22	13.36	8.01	84.8	22.12	8.3	7.32		0.74	1.12	2.03	
069	Mystic/Alewife	Mystic mouth	6/9/15 7:50 AM	B		15.39	27.61	9.05	107.1	42.85	6.3	7.93		0	0	0	
069	Mystic/Alewife	Mystic mouth	6/9/15 7:50 AM	S	0.1	15.69	27.17	8.78	104.3	42.24	3.8	7.91		0	0	0	

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall	
															TWO_DAY_RAIN	THREE_DAY_RAIN
069	Mystic/Alewife	Mystic mouth	6/11/15 7:52 AM	B	2	13.31	29.84	8.34	95.9	46.04	3.4	7.84		0	0	0
069	Mystic/Alewife	Mystic mouth	6/11/15 7:52 AM	S	0.1	15.01	28.77	8.63	102.2	44.48	3.2	7.89		0	0	0
069	Mystic/Alewife	Mystic mouth	6/22/15 7:52 AM	S	0.1	19.61	14.96	8.1	96.6	24.55	5.6	7.82		0	1.72	1.76
069	Mystic/Alewife	Mystic mouth	6/24/15 7:54 AM	B	1.2	15.8	29.32	8.32	100.3	45.24	3.9	7.84		0	0.01	0.01
069	Mystic/Alewife	Mystic mouth	6/24/15 7:54 AM	S	0.1	17.38	27.6	8.6	105.8	42.82	3.9	7.89		0	0.01	0.01
069	Mystic/Alewife	Mystic mouth	7/13/15 9:25 AM	B	2.4	20.12	29.56	9.39	123.3	45.55	4	7.91		0	0	0
069	Mystic/Alewife	Mystic mouth	7/13/15 9:25 AM	S	0.1	21.3	27.37	9.29	122.9	42.51	3.9	7.83	1.6	0	0	0
069	Mystic/Alewife	Mystic mouth	7/14/15 9:06 AM	B	2.2	20.05	29.68	9.8	128.5	45.7	4.1	7.97		0.03	0.03	0.03
069	Mystic/Alewife	Mystic mouth	7/14/15 9:06 AM	S	0.1	21.94	22.68	9.93	129.4	35.88	4.4	8.03	1.4	0.03	0.03	0.03
069	Mystic/Alewife	Mystic mouth	7/27/15 8:08 AM	B	2.1	19.97	30.94	8.62	113.8	47.45	6	7.91		0.06	0.06	0.06
069	Mystic/Alewife	Mystic mouth	7/27/15 8:08 AM	S	0.1	20.64	30.38	8.88	118.2	46.68	5.1	7.99	2.2	0.06	0.06	0.06
069	Mystic/Alewife	Mystic mouth	7/28/15 9:24 AM	B	2.1	20.2	30.66	7.68	101.6	47.06	4.4	7.83		0	0.06	0.06
069	Mystic/Alewife	Mystic mouth	7/28/15 9:24 AM	S	0.1	20.92	30.5	8.29	111.1	46.85	3.4	7.82	2.3	0	0.06	0.06
069	Mystic/Alewife	Mystic mouth	8/26/15 7:20 AM	B	2.7	20.24	30.97	10.96	145.3	47.48	5.8	8.15		0	0	0
069	Mystic/Alewife	Mystic mouth	8/26/15 7:20 AM	S	0.1	21.73	28.9	11.21	151	44.65	5.7	8.21	2.1	0	0	0
069	Mystic/Alewife	Mystic mouth	8/27/15 7:32 AM	B	2.1	19.13	30.93	7.68	99.7	47.42	6.9	7.87		0	0	0
069	Mystic/Alewife	Mystic mouth	8/27/15 7:32 AM	S	0.1	19.21	30.81	8.15	106	47.26	3.1	7.95	2	0	0	0
069	Mystic/Alewife	Mystic mouth	9/15/15 7:49 AM	S	0.1	19.14	31.14	6.49	84.4	47.72	7.7	7.74		0	0	0.38
069	Mystic/Alewife	Mystic mouth	9/16/15 7:35 AM	S	0.1	19.25	31.4	6.46	84.3	48.07	9.8	7.76		0	0	0
069	Mystic/Alewife	Mystic mouth	10/5/15 7:57 AM	B		18.41	31.14	5.74	73.6	47.72	4	7.7		0	0	0.01
069	Mystic/Alewife	Mystic mouth	10/5/15 7:57 AM	S	0.1	15.73	25.57	6.78	79.9	39.97	3.8	7.73		0	0	0.01
069	Mystic/Alewife	Mystic mouth	10/6/15 7:45 AM	B	1.8	17.57	31.14	5.73	72.4	47.73	3.6	7.73		0	0	0
069	Mystic/Alewife	Mystic mouth	10/6/15 7:45 AM	S	0.1	16.66	29.96	6.37	78.4	46.11	3.2	7.73		0	0	0
069	Mystic/Alewife	Mystic mouth	10/29/15 8:47 AM	B		11.79	30.08	7.67	85.6	46.46	7.5			0.73	1.09	1.09
069	Mystic/Alewife	Mystic mouth	10/29/15 8:47 AM	S	0.1	12.9	12.98	8.59	88.2	21.56	7.77			0.73	1.09	1.09
137	Mystic/Alewife	Mystic mouth	1/6/15 8:22 AM	B	12.9	4.59	30.85	9.99	95.2	48.38	8.2	7.76		0.02	0.02	0.59
137	Mystic/Alewife	Mystic mouth	1/6/15 8:22 AM	S	0.1	3.44	27.74	10.62	96.3	44.14	6.5	7.44	2	0.02	0.02	0.59
137	Mystic/Alewife	Mystic mouth	1/21/15 7:56 AM	B	11.4	1.7	31.29	10.86	96.6	49.69	8.2	7.82		0	0	0
137	Mystic/Alewife	Mystic mouth	1/21/15 7:56 AM	S	0.1	1.03	30.8	11.51	100.3	49.16	3.7	7.75	3	0	0	0
137	Mystic/Alewife	Mystic mouth	2/12/15 8:45 AM	B	15.5	-0.21	31.8	10.26	87.2	51.03	4	7.85		0.03	0.04	0.09
137	Mystic/Alewife	Mystic mouth	2/12/15 8:45 AM	S	0.1	0.51	29.8	10.91	93.1	47.86	2.8	7.6	2.3	0.03	0.04	0.09
137	Mystic/Alewife	Mystic mouth	3/11/15 8:48 AM	B	10.7	-0.25	32.39	10.81	92.2	51.9	3.6	7.91		0.01	0.07	0.07
137	Mystic/Alewife	Mystic mouth	3/11/15 8:48 AM	S	0.1	1.16	25.35	11.23	94.6	41.13	3.5	7.74	3.6	0.01	0.07	0.07
137	Mystic/Alewife	Mystic mouth	3/24/15 7:09 AM	B	11.1	1.12	32.15	11.55	101.8	51.1	4.4	8.01		0	0	0
137	Mystic/Alewife	Mystic mouth	3/24/15 7:09 AM	S	0.1	0.75	30.59	12.13	104.8	48.93	4.5	8	3.6	0	0	0
137	Mystic/Alewife	Mystic mouth	4/2/15 10:37 AM	B	12.9	1.98	32.05	12.14	109.3	50.7	3.6	8.09		0	0	0
137	Mystic/Alewife	Mystic mouth	4/2/15 10:37 AM	S	0.1	3.13	22.14	13.97	121	35.98	7.9	8.23	2.2	0	0	0
137	Mystic/Alewife	Mystic mouth	4/22/15 10:16 AM	B	11.3	5.56	31.57	8.96	87.8	49.23	5	7.81		0	0.54	1.15
137	Mystic/Alewife	Mystic mouth	4/22/15 10:16 AM	S	0.1	11	13.35	12.35	121.9	22.16	6.6	8.17	1.6	0	0.54	1.15
137	Mystic/Alewife	Mystic mouth	5/7/15 9:22 AM	B	10.7	7.89	30.97	8.22	84.7	48.05	4.6	7.92		0	0.02	0
137	Mystic/Alewife	Mystic mouth	5/7/15 9:22 AM	S	0.1	13.07	24.61	9.52	105.5	38.69	4.4	8.02	2.4	0	0	0.02
137	Mystic/Alewife	Mystic mouth	5/21/15 10:16 AM	B	11.2	12.36	30.63	9	102	47.19	3.8	7.91		0	0	0.27
137	Mystic/Alewife	Mystic mouth	5/21/15 10:16 AM	S	0.1	13.26	29.23	10.21	116.9	45.19	3.4	8.08	1.6	0	0	0.27
137	Mystic/Alewife	Mystic mouth	6/10/15 9:40 AM	B	11.5	11.73	30.88	7.79	87.3	47.57	6.6	7.78		0	0	0
137	Mystic/Alewife	Mystic mouth	6/10/15 9:40 AM	S	0.1	17.17	26.53	9.26	112.8	41.32	4.2	7.93	3.4	0	0	0
137	Mystic/Alewife	Mystic mouth	6/25/15 9:58 AM	B	10.8	14.58	31.14	7.3	86.9	47.79	4.7	7.79		0	0	0.01
137	Mystic/Alewife	Mystic mouth	6/25/15 9:58 AM	S	0.1	16.92	29.91	9.3	115.1	46.04	3.4	7.98	3	0	0	0.01
137	Mystic/Alewife	Mystic mouth	7/7/15 9:53 AM	B	10.1	16.59	30.82	5.7	70.5	47.3	4.9	7.69		0.02	0.02	0.02
137	Mystic/Alewife	Mystic mouth	7/7/15 9:53 AM	S	0.1	20.87	27.47	9.32	122.5	42.64	4.9	7.98	2	0.02	0.02	0.02
137	Mystic/Alewife	Mystic mouth	7/23/15 9:14 AM	B	11.4	18.5	31.28	5.7	73.3	47.91	7.2	7.73		0	0	0
137	Mystic/Alewife	Mystic mouth	7/23/15 9:14 AM	S	0.1	20.04	28.43	7.16	93.2	43.98	5	7.79	1.8	0	0	0
137	Mystic/Alewife	Mystic mouth	8/6/15 9:26 AM	B	9.7	17.23	31.96	6.97	87.8	48.86	8.8	7.82		0	0	0.49
137	Mystic/Alewife	Mystic mouth	8/6/15 9:26 AM	S	0.1	18.16	31.75	7.57	97	48.56	6.6	7.86	2.2	0	0	0.49
137	Mystic/Alewife	Mystic mouth	8/19/15 6:47 AM	B	11	17.25	31.61	6.63	83.4	48.38	7.76			0	0.14	0.14
137	Mystic/Alewife	Mystic mouth	8/19/15 6:47 AM	S	0.1	19.78	30.98	8.33	109.5	47.5	4.6	7.76	2.2	0	0.14	0.14
137	Mystic/Alewife	Mystic mouth	9/1/15 9:49 AM	S	0.1	20.72	31.12	6.98	93.4	47.7		7.77	2.2	0	0	0
137	Mystic/Alewife	Mystic mouth	9/17/15 7:13 AM	S	0.1	19.74	31.1	7.72	101.4	47.66	4.9	7.71	2	0	0	0
137	Mystic/Alewife	Mystic mouth	10/8/15 9:28 AM	B	13	15.55	31.24	6.88	83.6	47.89	8.2	7.82		0	0	0
137	Mystic/Alewife	Mystic mouth	10/8/15 9:28 AM	S	0.1	16.19	28.8	7.61	92.2	44.51	7.1	7.87	2.1	0	0	0
137	Mystic/Alewife	Mystic mouth	10/20/15 7:25 AM	B	13.7	13.37	31.57	7.45	86.7	48.43	10.4	7.87		0	0	0
137	Mystic/Alewife	Mystic mouth	10/20/15 7:25 AM	S	0.1	13.62	31.39	7.62	89.1	48.17	4.4	7.85	2.6	0	0	0
137	Mystic/Alewife	Mystic mouth	11/5/15 11:00 AM	B	13.9	11.73	31.9	7.68	86.5	48.98	10.5	7.85		0	0	0
137	Mystic/Alewife	Mystic mouth	11/5/15 11:00 AM	S	0.1	13.11	30.49	8.34	95.9	46.95	6.7	7.89	3.7	0	0	0
137	Mystic/Alewife	Mystic mouth	11/18/15 10:52 AM	B	10.9	10.2	32.12	8.34	91.1	49.41	6.2	7.87		0	0	0
137	Mystic/Alewife	Mystic mouth	11/18/15 10:52 AM	S	0.1	9.32	31.29	8.97	95.6	48.33	4.2	7.89	3.6	0	0	0
137	Mystic/Alewife	Mystic mouth	11/30/15 11:01 AM	B	11.2	8.66	31.6	8.83	93	48.84	9.4	7.91		0	0	0.21
137	Mystic/Alewife	Mystic mouth	11/30/15 11:01 AM	S	0.1	8.14	31.04	9.29	96.3	48.11	7.2	7.92	2.7	0	0	0.21

Station	Region	Subregion	Day/Time (EST)	Surface or Bottom	Sample depth (m)	Temperature (C)	Salinity (PSU)	Dissolved Oxygen (mg/L)	DO Pct Saturation (pct)	Specific Conductivity (mS/cm)	Turbidity (NTU)	pH	Secchi depth (m)	Logan Rainfall ONE_DAY_RAIN	Logan Rainfall TWO_DAY_RAIN	Logan Rainfall THREE_DAY_RAIN
137	Mystic/Alewife	Mystic mouth	12/16/15 8:27 AM	B	10.4	7.77	31.39	9.01	92.8	48.65	4.8	7.57	0	0.19	0.61	
137	Mystic/Alewife	Mystic mouth	12/16/15 8:27 AM	S	0.1	7.28	29.82	9.22	92.9	46.49	3.9	7.61	3	0	0.19	0.61



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