

NPDES compliance summary  
report, fiscal year 2012

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Massachusetts Water Resources Authority

Environmental Quality, Water and Wastewater  
Report 2013-19



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**NPDES COMPLIANCE SUMMARY REPORT**  
**Fiscal Year 2012**

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# Executive Summary

## Overview

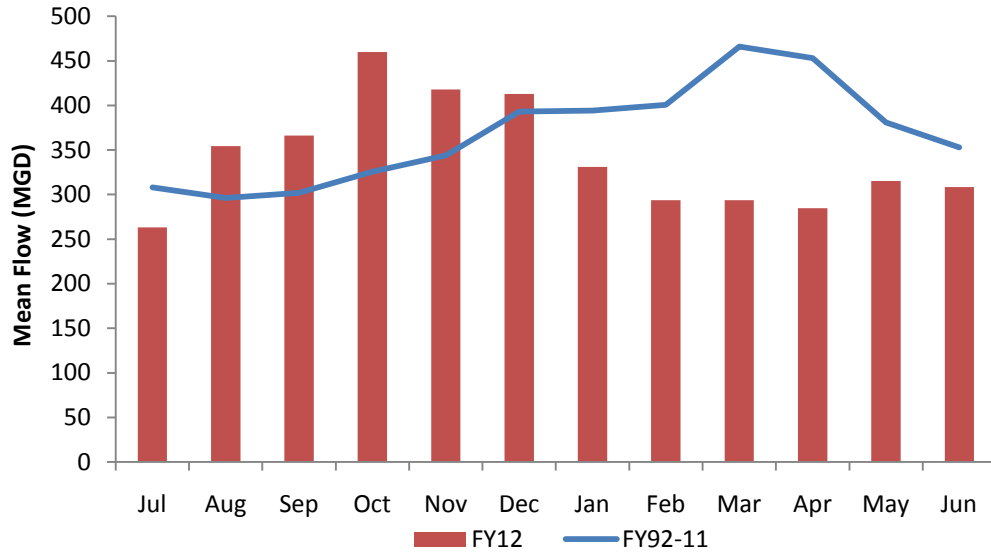
This report presents and summarizes monitoring and compliance data collected and analyzed by the Massachusetts Water Resources Authority's (MWRA) Environmental Quality, Water and Wastewater department (EnQual) from July 1, 2011 to June 30, 2012. This report, while not a regulatory requirement, provides a useful documentation of influent and effluent quality trends over the course of a fiscal year for the MWRA's Deer Island Treatment Plant (DITP) and Combined Sewer Overflow (CSO) facilities.

## Deer Island Treatment Plant

The MWRA's NPDES permit requires the Authority to monitor its wastewater treatment plant at Deer Island for specific parameters. The MWRA currently operates under a permit issued in July 10, 2000 and effective August 9, 2000. The permit calls for secondary treatment of wastewater and monitoring of the effects of the new outfall in the Massachusetts Bay. Secondary treatment began at DITP in August 1997 with the start-up of the first battery of secondary treatment (Battery A). In March 1998, Battery B was brought on-line. The final battery, Battery C, became operational in March 2001. DITP was designed for an average design flow of 361 million gallons a day, a maximum secondary treatment capacity of 700 million gallons a day, and a hydraulic capacity of 1.2 billion gallons a day.

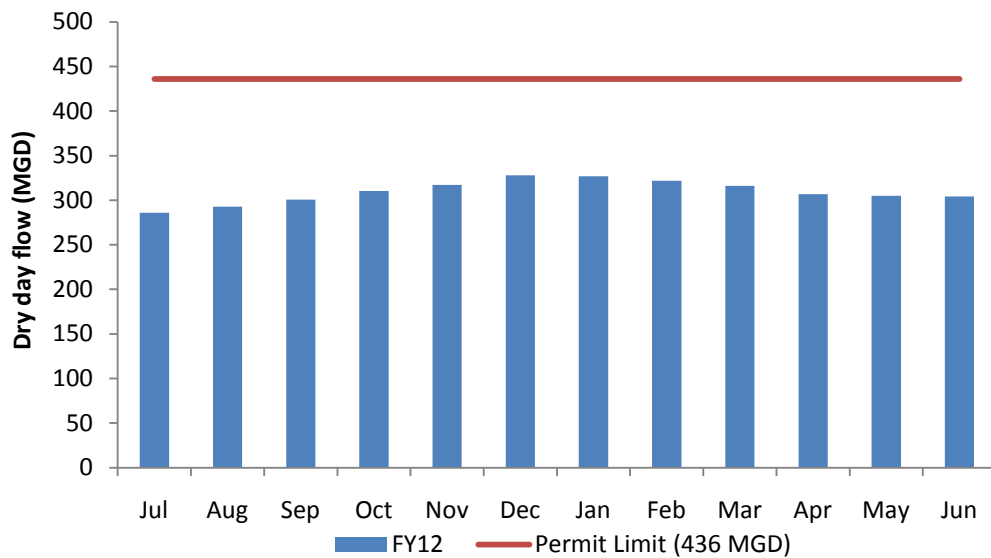
In addition to the completion of secondary treatment facilities, the MWRA opened on September 6, 2000 a new 9.5-mile outfall tunnel that carries treated wastewater from DITP to Massachusetts Bay. The permit requires extensive monitoring of Massachusetts Bay to determine the effects of the outfall, if any exist.

Figure 1, on the following page, shows the Deer Island flow during each month of FY12, comparing the flow with the monthly averages of the previous eighteen years – FY92 to FY11. From FY99 to FY02 all flows were treated at Deer Island, while from FY92 to FY98 flows were treated at DITP and the former Nut Island Treatment Plant, now the headworks for South System influent to DITP.



**Figure 1. MWRA Flows, FY92-FY12**

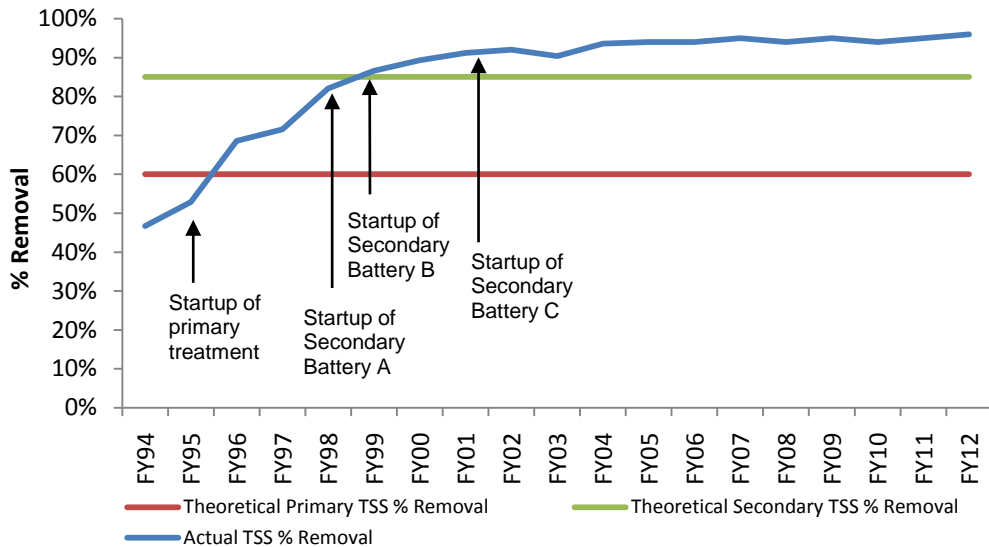
Restrictions on dry day flow are also part of the permit. These restrictions act to control new connections, ensuring that the collection system and the new treatment plant retain adequate capacity. Monthly dry day flows are calculated by averaging the flows on dry days over the previous year. A dry day is defined as a day with 0.09 inches of precipitation or less and no snow melt with the following restrictions: the precipitation on the previous day is less than 0.3 inches, the precipitation two days prior is less than 1.0 inch, and the precipitation three days prior is less than 2.0 inches. A day with snowmelt is defined as a day when there is snow on the ground and the air temperature is above 32°F. Figure 2 shows the dry day flow for Deer Island during each month of FY12. The solid line represents the dry day flow limit of 436 mgd for the permit. In FY12, no violations of the dry day flow limit occurred.



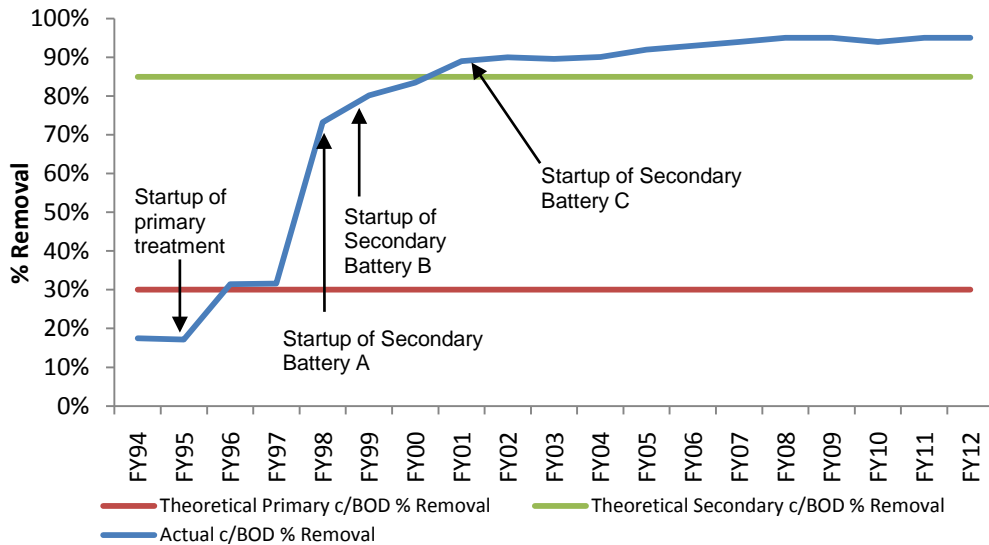
**Figure 2. DITP Dry Day Flows, FY12**

Since the new primary treatment plant came on-line on January 21, 1995, appreciable improvements have been seen in effluent quality. The removal rates for both TSS and BOD or

cBOD (cBOD has replaced BOD in the current permit as the measure of oxygen demand) have improved significantly (see Figures 3 and 4, respectively). In FY96 and FY97, removal efficiencies compared favorably to theoretical removal efficiencies for primary treatment. In FY98, efficiencies continued to improve, especially for BOD, with a removal rate well above the theoretical range.<sup>1</sup> This coincided with the start-up of Batteries A and B of secondary treatment. Since FY00, removal rates for both TSS and cBOD have essentially leveled off as DITP has reached its optimal efficiency level.



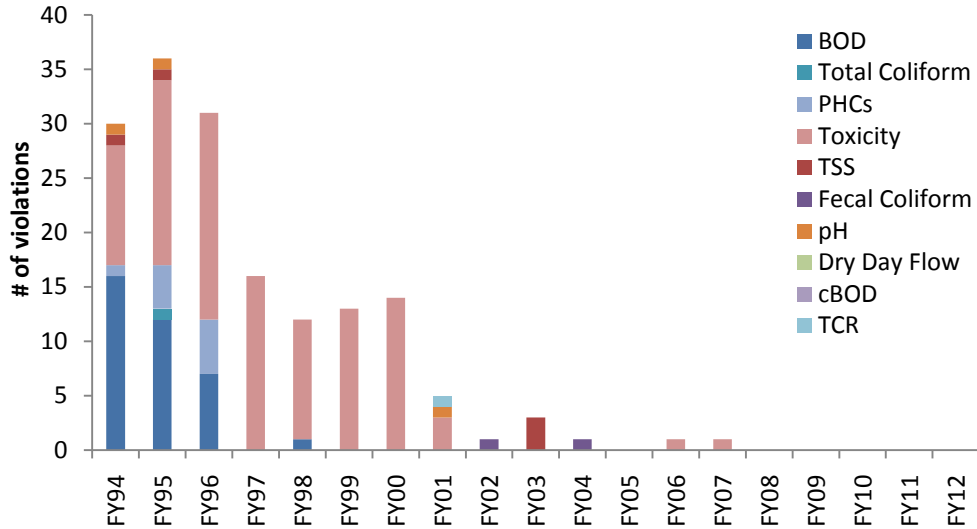
**Figure 3. DITP Effluent TSS Removal Rate, FY94-FY12**



**Figure 4. DITP Effluent BOD/cBOD Removal Rate, FY94-FY12**

<sup>1</sup> Metcalf & Eddy, Inc. 1972. *Wastewater Engineering: Collection, Treatment, Disposal*. New York: McGraw-Hill Book Company. p. 446.

Annual numbers of NPDES violations have decreased dramatically due to improved treatment at DITP. Figure 5 compares the number of NPDES permit violations at Deer Island in FY12 to previous years. No non-toxicity NPDES violations occurred in FY 12, FY11, FY10, FY09, FY08, FY07, FY06, FY05, FY00, FY99, or FY97. One non-toxicity violation occurred in FY04, FY02 and FY98, three in FY03, and four in FY01, compared to 12 in FY96 and 19 in both FY95 and FY94. In FY12, there were no toxicity violations at DITP.



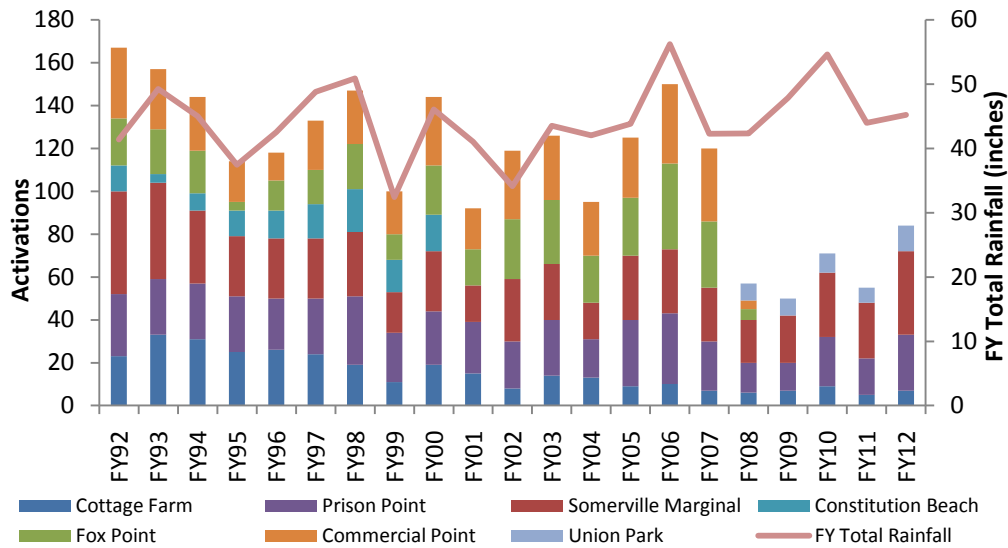
**Figure 5. NPDES Violations at DITP, FY94-FY12**

Since the opening of the new plant, Deer Island has seen significant reductions in loadings of metals and organic compounds in the effluent – see Chapter 2 for more details. These improvements are probably due to two factors: first, corrosion control activities and source reduction programs have helped to lower these pollutants in the incoming influent. Second, the new plant is able to better capture both metals and organics in the treatment process.

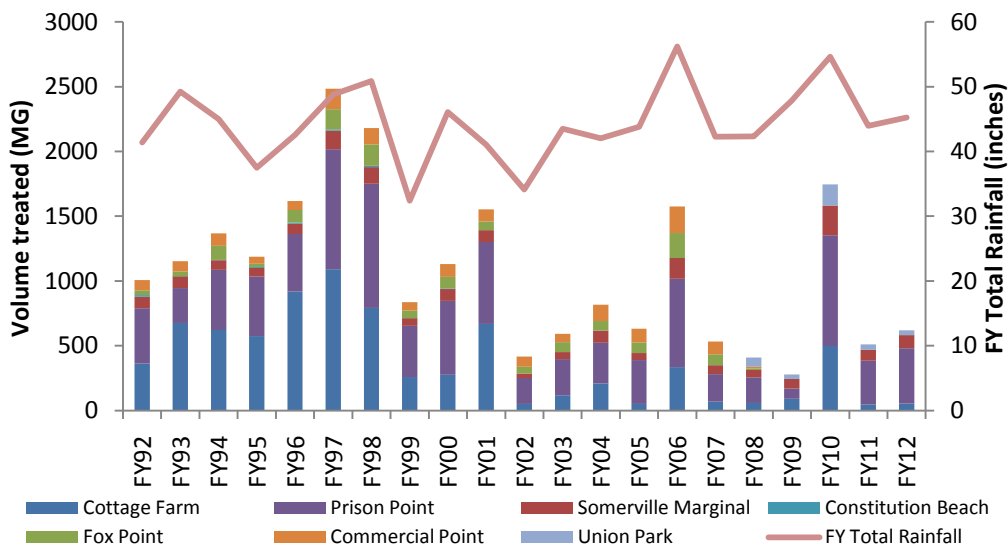
### Combined Sewer Overflow Facilities

MWRA monitored three CSO facilities – Cottage Farm, Prison Point, and Somerville Marginal – under the permit at the beginning of FY12. The Fox Point, Commercial Point, and Constitution Beach facilities are also included under the permit. However, MWRA decommissioned the Constitution Beach facility in September 2000 following the completion of a sewer separation project in East Boston. In November 2007, the Fox Point and Commercial Point facilities were decommissioned after a sewer separation project was finished in Dorchester. A separate permit issued jointly to the MWRA and the Boston Water and Sewer Commission covers a fourth monitored facility, Union Park, which started operations at the beginning of FY08.

Figures 6 and 7 on the next page show the number of activations and the total volume treated, respectively, at the CSO facilities since FY92. The correlation between rainfall and CSO activation can be seen in both figures. Note that although total rainfall is correlated to CSO activations, the intensity of the rainfall and frequency of storms will have an important effect. These characteristics influence the degree of ground saturation, affecting the volume treated at the CSO facilities during a storm.



**Figure 6. CSO Activations, FY92-FY12**

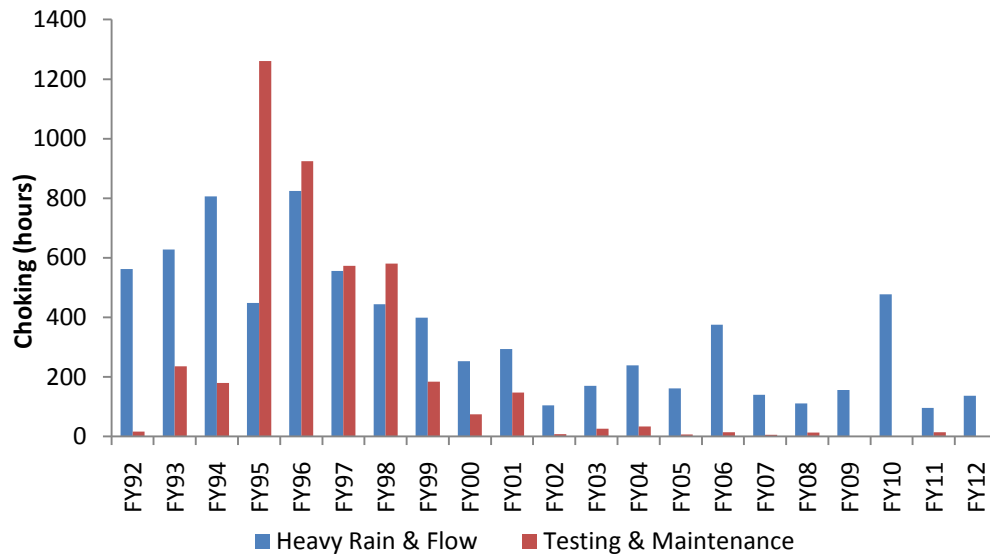


**Figure 7. CSO Volume Treated, FY92-FY12**

## Collection and Transport System

The MWRA monitors the capacity of the wastewater collection and transport system. One of the system capacity parameters in the North System is choking, which occurs at the remote headworks. Choking is a reduction or stopping of flow to Deer Island at the remote headworks, either when heavy flow exceeds the capacity of the treatment plant or when maintenance or system upgrades are performed at the plant.

As Figure 8 on the following page shows, the number of hours of choking has fallen to very low levels since FY01, mainly due to the completion of the Deer Island plant. To minimize choking related to testing and maintenance, MWRA performs maintenance and testing at off-peak times so not to cause any backups in the system upstream of the headworks.



**Figure 8. Headworks Choking, FY92-FY12**

The MWRA also monitors the occurrence of Sanitary Sewer Overflows, or SSOs, associated with MWRA-owned sewer lines. These overflows occur in areas where the collection system becomes overloaded by heavy flows. In FY95, the MWRA’s Field Operations Department started to locate and visually monitor these SSOs in the North and South Systems. Table 1 on the page lists the SSOs observed by MWRA personnel in FY12. There were no SSOs in either the North or South System.

**Table 1. Sanitary Sewer Overflows, FY12**

Location	Number of Overflows
North System	
--	
South System	
--	

## Future Outlook

The startup of the new primary treatment plant at Deer Island in FY95 was just the first of several changes and improvements in the MWRA’s facilities, including full secondary treatment, the Inter-Island Tunnel linking the South System to DITP, and the new outfall tunnel to Massachusetts Bay. The MWRA no longer discharges effluent into Boston Harbor and the Authority is currently monitoring the effects of these changes on water quality in the Harbor and Massachusetts Bay, as required by the NPDES permit issued in July 2000. In addition, a contingency plan ensures that the discharge does not adversely impact Massachusetts Bay.

Starting in April 2005, digested sludge was sent to the MWRA’s Fore River facility via the Inter-Island Tunnel, eliminating the need to centrifuge the sludge at DITP. Eliminating this step has stopped the return of sludge centrate to the head of the plant, enabling better process control in the secondary treatment plant.

In March 2006, as a result of the sludge transfer noted above, the secondary process limit was raised from 630 to 660 million gallons per day. Further experiments conducted between March 2006 and June 2007 have set the secondary process limit to 700 million gallons a day.

Major upgrades are finished at all the operational CSO facilities, and construction of an additional facility, Union Park, was completed in April 2007. Several upgrades were also finished at the Quincy, Braintree-Weymouth, and Squantum pump stations in 2002, 2002, and 2003, respectively. The Intermediate Pump Station was brought on-line in 2004, increasing pumping capacity to DITP. This increased capacity should reduce sanitary sewer overflows to Smelt Brook. Taken as a whole, these upgrades have modernized MWRA facilities and reduced pollutants discharged to receiving waters. The initial discharge from Union Park was in the first month of FY08. Finally, the Fox Point and Commercial Point CSO facilities were decommissioned in November 2007 after the completion of a sewer separation project in the Dorchester area.

In January of 2012, the Primary and Secondary Clarifier Rehabilitation Project was completed after 33 months of work. The primary aim was to replace all the longitudinal and cross-collector chains and sprockets in both the primary and secondary clarifiers. Additionally, a number of other smaller maintenance projects were undertaken on the primary clarifiers as well as the replacement of headshafts on Battery C of the secondary clarifiers.

## Introduction

This report presents and summarizes the NPDES monitoring and compliance data compiled and analyzed by the MWRA Environmental Quality Department during the period of July 2011 to June 2012. MWRA's DITP and CSO facilities serve large communities' needs for sewer systems while maintaining healthy water environments for recreation and wildlife.

The balance of this report contains the following sections. First, the next section presents and discusses the monitoring results for DITP, along with Contingency Plan and Ambient Monitoring Plan requirements. The following section describes the results for the five CSO facilities. Subsequent sections discuss sludge processing operations at DITP and the MWRA's Fore River pelletizing facility, transport and sewer system capacity issues, and finally, miscellaneous topics introduced by the permit. Appendices A-E provide detailed monthly data for the Deer Island plants and for the four CSO facilities. Appendix F provides background information about MWRA's regulatory requirements, and Appendix G describes the MWRA sewer system and facilities. Appendix H defines the types of detection limits encountered in chemical analyses. Appendix I lists pollutants of concern. Finally, Appendix J is a glossary of the terms and phrases used throughout this report.



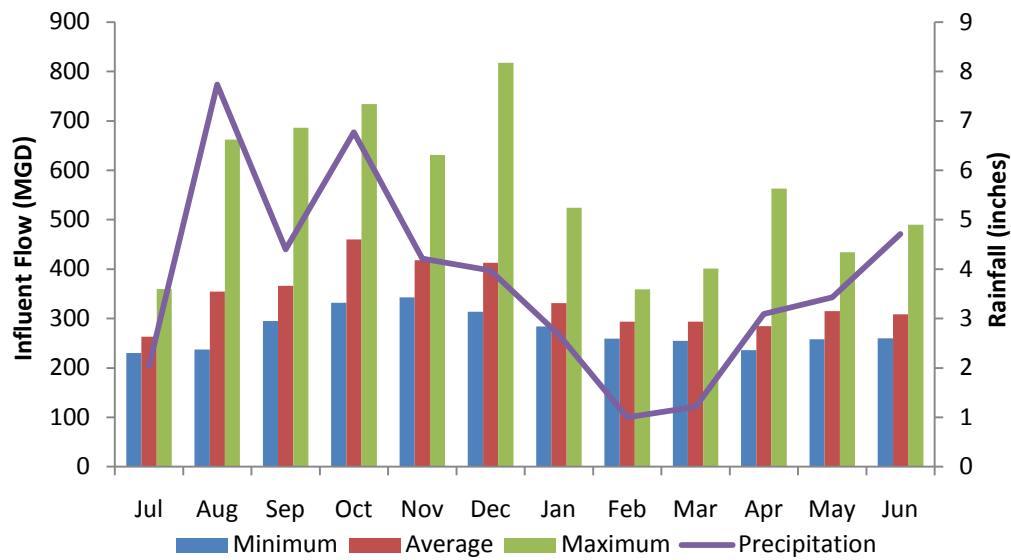
# Deer Island Treatment Plant

## Overview

This chapter presents and discusses monitoring information for DITP. The characteristics examined include flow, conventional parameters, nutrients, priority pollutants (metals, cyanide, pesticides/PCBs, and organic compounds), fecal coliform bacteria, and whole effluent toxicity. Since a number of limits in the Contingency Plan set forth by the NPDES permit deal with effluent quality, this section finishes up with a description of the Contingency Plan and the closely related Ambient Monitoring Plan.

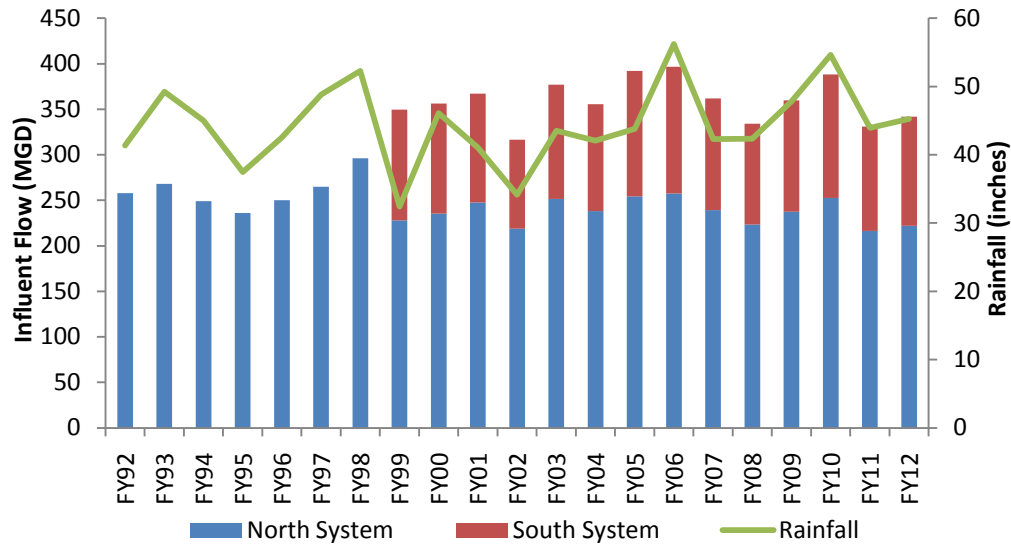
## Influent Flow

The average flow to DITP in FY12 was 342 million gallons per day (mgd). Figure 9 shows that flow generally rises and falls with the amount of precipitation. This occurs because several of the larger communities in the North System (Boston, Cambridge, Somerville, and Chelsea) have combined sewers.



**Figure 9. DITP Influent Flow Compared to Precipitation, FY12**

The impact of rainfall on flows can also be seen in Figure 10 on the following page, which tracks average flow and precipitation over the past twenty fiscal years. The completion of the Inter-Island Tunnel from Nut Island to Deer Island in early FY99 resulted in increased flow to DITP, as DITP treated South System sewage previously treated at the Nut Island Treatment Plant. An increase in rain may lead to slightly higher average flows to DITP. Conversely, decreases in rainfall may lead to lower average flows to DITP. Higher average flows may also be a result of continuing sewer separation projects and greater capture of combined sewer overflows.



**Figure 10. DITP Influent Flow Compared to Precipitation, FY92-FY12**

### Influent Conventional Parameters and Nutrients

As Table 2 indicates, Deer Island influent in FY12 can be classified as weak/medium.<sup>2</sup>

**Table 2. Classification of DITP Influent, FY12**

Parameter	Value	Weak	Medium	Strong
TSS (mg/L)	181	100	200	350
TKN (mg/L)	38	20	40	85
Ammonia (mg/L)	27.4	12	25	50

A summary of Deer Island influent characteristics from FY99-FY12 is provided in Table 3 on page 11. Note that cBOD only became a measured parameter in August 2000, so no historical data is available previous to FY01.

<sup>2</sup> Metcalf & Eddy, Inc. 1972. *Wastewater Engineering: Collection, Treatment, Disposal*. New York: McGraw-Hill Book Company, p. 231.

**Table 3. Deer Island Influent Characterization, FY99-FY12**

Parameter	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12
<b>Flow (mgd)</b>														
Minimum	233	219	260	223	238	247	243	230	237	214	235	243	201	230
Average	350	356	367	317	378	356	392	397	362	334	360	388	331	342
Maximum	824	901	1136	773	897	1132	871	1203	1023	963	1031	1262	833	818
<b>Total Suspended Solids (TSS)</b>														
Min Conc (mg/L)	43	86	63	157	140	129	145	124	109	118	108	102	114	139
Avg Conc (mg/L)	160	167	176	200	188	234	237	171	174	187	156	166	170	181
Max Conc (mg/L)	564	379	336	255	230	281	329	224	224	231	186	200	206	216
Average Loading (tons/d)	234	248	269	264	296	347	387	283	263	260	234	269	235	258
<b>Carbonaceous Biochemical Oxygen Demand (cBOD)</b>														
Min Conc (mg/L)	*	*	29	93	80	75	86	65	58	69	76	52	67	73
Avg Conc (mg/L)	*	*	111	124	106	126	118	99	101	115	101	94	109	99
Max Conc (mg/L)	*	*	242	162	131	146	141	132	133	156	123	115	126	129
Average Loading (tons/d)	*	*	170	164	167	187	193	164	152	160	152	152	150	141
<b>Settleable Solids</b>														
Min Conc (mL/L)	0.1	0.7	0.3	4.5	4.7	3.6	5.3	3.9	4.0	3.9	4.3	3.5	4.5	4.7
Avg Conc (mL/L)	5.9	5.3	5.8	6.5	7.4	9.2	10.2	6.4	6.6	6.9	6.3	6.8	7.4	7.4
Max Conc (mL/L)	34.2	24.6	15.5	9.5	11.1	14.0	16.7	8.8	9.1	10.8	8.5	8.9	9.8	10.4
Average Loading (tons/d)	8.6	7.9	8.9	8.6	11.7	13.7	16.7	10.6	10.0	9.6	9.5	11.0	10.2	10.6
<b>Total Kjeldahl Nitrogen</b>														
Min Conc (mg/L)	14.6	13.2	16.3	26.0	23.3	18.7	21.7	20.5	21.9	18.5	25.6	17.6	23.4	28.1
Avg Conc (mg/L)	29.2	27.7	30.1	35.2	29.3	31.0	31.6	32.5	34.4	39.4	36.1	35.3	36.7	38.0
Max Conc (mg/L)	45.6	46.5	46.5	44.5	38.1	37.0	39.4	44.8	41.3	51.1	47.0	44.9	44.5	47.4
Average Loading (tons/d)	42.7	41.1	46.1	46.5	46.2	46.0	51.7	53.7	51.9	54.9	54.2	57.2	50.7	54.2
<b>Ammonia-Nitrogen</b>														
Min Conc (mg/L)	6.0	6.1	6.8	14.2	12.4	10.8	13.8	13.7	16.0	13.3	18.1	11.4	18.4	18.8
Avg Conc (mg/L)	16.6	16.3	17.8	20.5	17.0	19.0	19.6	23.0	25.4	29.2	27.7	27.1	28.4	27.4
Max Conc (mg/L)	30.8	25.0	24.2	28.6	23.7	22.7	25.7	31.3	31.9	38.1	35.6	36.3	37.5	34.7
Average Loading (tons/d)	24.2	24.2	27.2	27.1	26.8	28.2	32.0	38.0	38.3	40.7	41.6	43.9	39.2	39.1
<b>Nitrates</b>														
Min Conc (mg/L)	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.04	0.05
Avg Conc (mg/L)	0.06	0.13	0.17	0.05	0.10	0.13	0.16	0.13	0.14	0.14	0.06	0.23	0.3	0.25
Max Conc (mg/L)	1.21	1.56	1.53	0.26	0.37	0.81	0.7	0.54	0.59	0.72	0.27	1.13	0.9	0.48
Average Loading (tons/d)	0.09	0.19	0.26	0.07	0.16	0.19	0.26	0.21	0.21	0.19	0.09	0.37	0.41	0.36
<b>Nitrites</b>														
Min Conc (mg/L)	0.01	0.01	0.00	0.01	0.07	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.1	0.1
Avg Conc (mg/L)	0.05	0.14	0.15	0.11	0.22	0.13	0.23	0.19	0.09	0.17	0.07	0.23	0.28	0.3
Max Conc (mg/L)	0.45	0.72	0.47	0.35	0.55	0.41	0.62	0.72	0.21	0.4	0.15	0.54	0.55	0.54
Average Loading (tons/d)	0.07	0.21	0.23	0.15	0.35	0.19	0.38	0.31	0.14	0.24	0.11	0.37	0.39	0.43

\* Samples not collected.

### Influent Priority Pollutants

The results of a complete priority pollutant scan of Deer Island influent can be found in Tables A-2 and A-3 of Appendix A. For levels below detection limits, one half of the method detection limit for inorganic compounds or one tenth of the quantitation limit for organic compounds was substituted to calculate concentrations and loadings. Appendix J provides a detailed discussion of detection and quantitation limits.

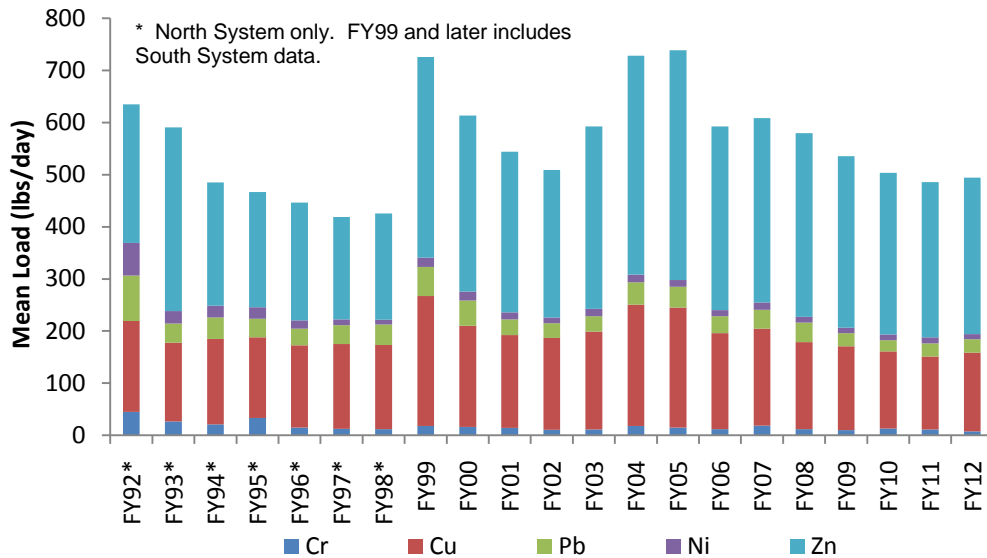
A pollutant is included whether it was detected just once or 37 times over the course of a year. Figures 11 and 12 below show annual averages of the daily loads; however, they do not truly reflect how often the pollutant was detected during the year. Therefore, if a below detection limit concentration is converted to a loading, it is recorded as a non-zero value, even though the constituent may not have been present in the sample. Note that these caveats apply to both metals

and organics loadings. However, since metals are commonly detected in almost every sample, the notes raised above are less of an issue.

Figure 11 compares FY12 average influent loadings for several key metals to historical values. The MWRA samples for these pollutants a few times a month. Using the measured concentration and the flow on the day on which the sample was taken, daily loads can be calculated. Data from FY98 and earlier is from the North System only.

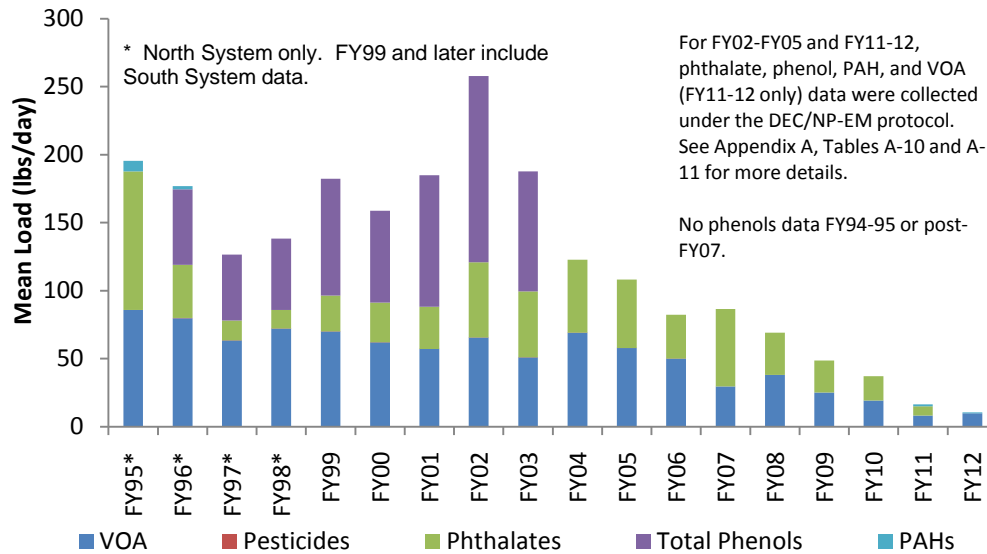
Before 1999, metals loadings in the North System decreased steadily, as MWRA made strides in toxic and corrosion control efforts involving both water supply and wastewater transport.

Since the South System flow was transferred from Nut Island to Deer Island at the start of FY99, the data after FY99 includes the South System flow. This larger, combined flow explains the increase in metals loadings from FY92-98 compared to FY99-12. Since loadings are calculated using flow, which in turn is affected by rainfall, loadings can also rise and fall with rainfall amounts.



**Figure 11. DITP Mean Influent Metals Loadings, FY92-FY12**

Figure 12 on the following page compares influent loadings of certain representative organic priority pollutants to the loadings in previous years (see Appendix A, Table A-3). The opening of the Inter-Island Tunnel in FY99 had an identical effect on organics loadings at Deer Island as it did on metals loadings; they increased due to the added flow from the South System.



**Figure 12. DITP Mean Influent Organics Loadings, FY94-FY12**

### Effluent Conventional Parameters and Nutrients

Table 4 compares DITP’s removal efficiencies for TSS and cBOD with theoretical removal efficiencies.<sup>3</sup> The removal efficiencies are determined from the average effluent and influent concentrations for TSS and cBOD as reported in Table A-1 of Appendix A.

**Table 4. Deer Island Removal Efficiency, FY12**

Parameter	DITP % Removal*	Theoretical % Removal for Secondary Treatment
TSS	96%	85%
cBOD	95%	85%

\* Removal efficiencies were determined using the average influent and effluent concentration values as reported in Table A-1, Appendix A. Note that only a portion of the total flow each month went through secondary treatment. See Table 5 for more information.

For the fiscal year, 99.3% of DITP flow went through secondary treatment and removal efficiency for TSS was 96%. For cBOD, the plant achieved 95% removal efficiency.

Table 6 (next page) summarizes the conventional parameters and nutrients in Deer Island effluent since FY99.

<sup>3</sup> Metcalf & Eddy, Inc. 1972. *Wastewater Engineering Collection, Treatment, Disposal*. New York. McGraw-Hill Book Company, p. 446.

**Table 5. Deer Island Effluent Characterization, FY99-FY12**

Parameter	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12
<b>Flow (mgd)</b>														
Minimum	237	219	260	222	238	246	243	229	237	214	236	243	201	230
Average	350	356	367	317	377	356	392	396	362	334	360	388	331	342
Maximum	757	900	1136	773	898	1132	871	1203	1023	963	1031	1262	833	819
<b>Total Suspended Solids (TSS)</b>														
Min Conc (mg/L)	3	5	4	3	5	5	5	5	5	2	2	2	2	2
Avg Conc (mg/L)	22	18	15	16	18	17	15	9	8	9.1	8	8.4	8.1	7.1
Max Conc (mg/L)	69	62	47	43	132	78	62	61	49	60.8	51	49	31.6	26.3
Average Loading (tons/d)	31	26	24	21	28	25	25	16	12	13	12	14	11	10
<b>Carbonaceous Biochemical Oxygen Demand (cBOD)</b>														
Min Conc (mg/L)	*	*	4	3	3	3	2	2	2	1.6	1.6	1.5	1.7	1.7
Avg Conc (mg/L)	*	*	12	13	11	12	10	7	5	5.5	5.1	5.2	5.4	4.6
Max Conc (mg/L)	*	*	36	40	40	50	38	66	19	22.6	22.7	21.8	28.6	16.8
Average Loading (tons/d)	*	*	19	17	17	18	16	11	8	8	8	8	7	7
<b>Settleable Solids</b>														
Min Conc (mL/L)	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Avg Conc (mL/L)	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Max Conc (mL/L)	3.0	3.1	1.9	3.0	3.0	6.0	1.2	1.0	0.4	1.0	0.2	0.2	0.7	0.2
Average Loading (tons/d)	0.3	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1
<b>Total Kjeldahl Nitrogen</b>														
Min Conc (mg/L)	11.2	8.2	12.2	15.1	9.7	11.0	6.6	5.8	7.8	7.8	7.5	6.2	8.3	11.3
Avg Conc (mg/L)	23.4	21.8	23.6	25.9	21.2	21.4	18.2	19.6	20.4	24.6	22.1	21.8	24.3	24.1
Max Conc (mg/L)	34.3	32.4	33.3	35.0	32.3	33.3	30.9	35.3	31.9	72.0	34.8	34.5	36.2	38.1
Average Loading (tons/d)	34.2	32.4	36.1	34.2	33.3	31.8	29.8	32.4	30.8	34.3	33.2	35.3	33.5	34.4
<b>Ammonia-Nitrogen</b>														
Min Conc (mg/L)	5.4	5.0	5.1	9.4	7.0	7.5	4.5	4.6	7.0	6.7	6.9	4.9	7.4	6.7
Avg Conc (mg/L)	18.0	17.6	17.6	21.2	17.5	18.6	16.6	18.8	20.1	22.4	21.1	21.6	24	22.9
Max Conc (mg/L)	26.4	25.2	24.9	32.0	28.0	28.0	28.7	45.2	31.4	36.8	36.4	36.4	39.9	35.9
Average Loading (tons/d)	26.2	26.1	27.0	28.0	27.5	27.6	27.1	31.0	30.3	31.2	31.7	34.9	33.1	32.7
<b>Nitrates</b>														
Min Conc (mg/L)	0.01	0.00	0.0	0.01	0.01	0.01	0.01	0.02	0.06	0.15	0.03	0.43	0.04	0.01
Avg Conc (mg/L)	0.22	0.69	0.7	0.89	1.50	1.93	2.24	1.25	0.98	1.49	1.25	1.25	1.07	0.76
Max Conc (mg/L)	1.93	2.96	4.2	2.86	5.07	3.88	5.77	4.8	3.2	3.48	2.78	3.18	3.08	3.72
Average Loading (tons/d)	0.3	1.0	1.1	1.2	2.4	2.9	3.7	2.1	1.5	2.1	1.9	2.0	1.5	1.1
<b>Nitrites</b>														
Min Conc (mg/L)	0.01	0.04	0.0	0.01	0.01	0.01	0.03	0.27	0.35	0.08	0.35	0.09	0.07	0.02
Avg Conc (mg/L)	0.30	0.95	0.2	0.34	0.28	0.21	0.54	1.42	1.42	0.79	1.11	0.84	0.62	0.3
Max Conc (mg/L)	1.99	3.06	1.1	1.26	0.91	0.69	0.71	2.74	2.96	2.59	2.46	1.61	2.19	0.98
Average Loading (tons/d)	0.4	1.4	0.3	0.4	0.4	0.3	0.9	2.3	2.1	1.1	1.7	1.4	0.9	0.4

\* Samples not collected.

A summary of nutrient concentrations in Deer Island effluent from FY94-FY12 is provided in Figure 13 on the following page. The introduction of the new primary treatment plant in FY95 did not affect nutrient concentrations, as primary treatment has no effect on nutrients.

However, the activated sludge process used in DITP's secondary treatment does change nutrient concentrations. The activated sludge process uses bacteria to promote efficient and rapid breakdown of wastes. This bacterial breakdown results in changes in the proportions of nitrogen species. For example, total Kjeldahl nitrogen (TKN) consists of NH<sub>3</sub>-N plus organic nitrogen. Effluent NH<sub>3</sub>-N concentrations have risen while total Kjeldahl nitrogen (TKN) concentrations have remained relatively stable. Therefore, the proportion of NH<sub>3</sub>-N as a TKN component has increased. Elevated levels of NH<sub>3</sub>-N are characteristic of the activated sludge process.

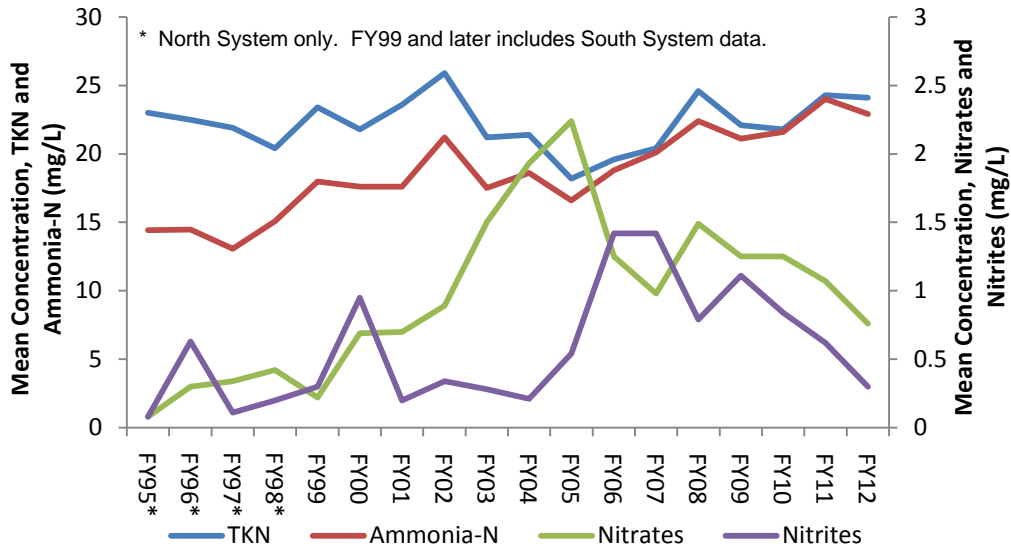


Figure 13. DITP Mean Effluent Nutrients Concentrations, FY94-FY12

### Effluent Priority Pollutants

Appendix A, Tables A-8 and A-9 provide a summary of priority pollutant concentrations and loadings in DITP effluent for FY12. For a discussion of the importance of detection limits in loading calculations, see the section on influent priority pollutants above, and Appendix H. Metals loadings over the past 24 years are summarized in Figure 14, while Figure 15 on the next page graphs organic pollutants from FY94-FY12. Two factors may explain the long-term decrease in loadings. First, the MWRA has instituted a more aggressive industrial pre-treatment program coupled with stricter enforcement of local limits. Second, the decrease may also be attributed to better capture of metals and organics at the plant.

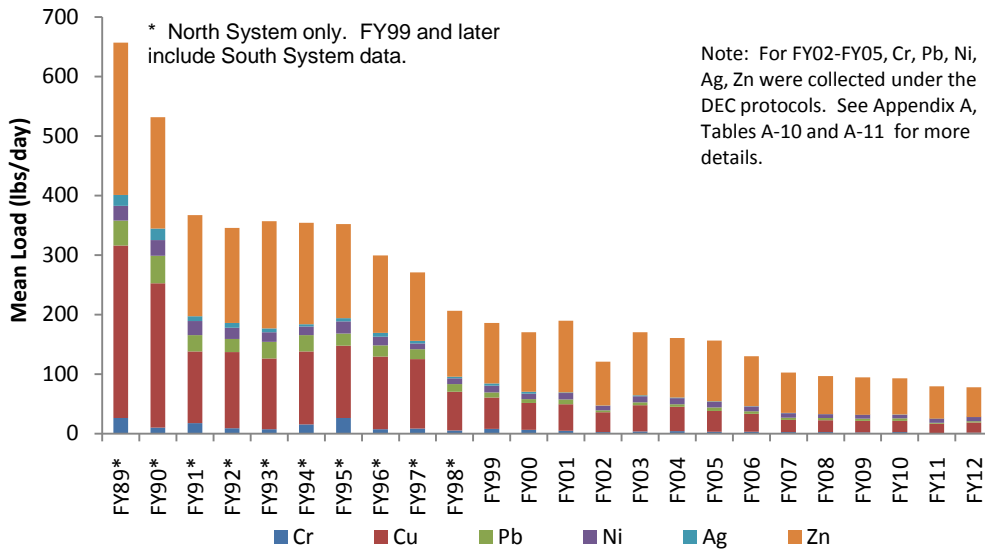
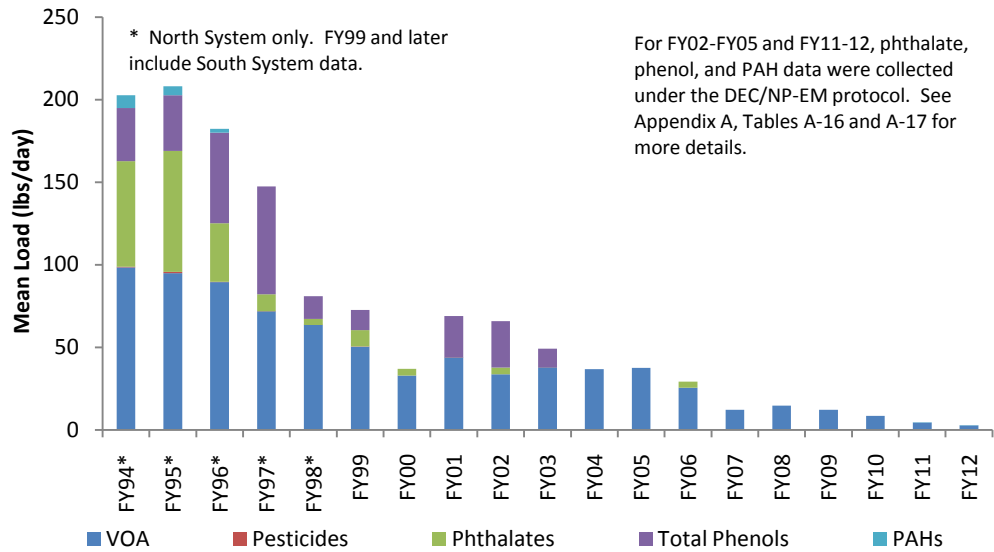


Figure 14. DITP Mean Effluent Metals Loadings, FY89-FY12



**Figure 15. DITP Mean Effluent Organics Loadings, FY94-FY12**

## Whole Effluent Toxicity

The MWRA tests effluent toxicity every month at DITP. Effluent toxicity provides an overall view of effluent quality, ensuring that the effluent does not adversely affect the environment. In 1989, the EPA found that surfactants were the probable cause of most acute toxicity in DITP’s effluent. Surfactants are most commonly used in household detergents to improve cleansing power. No acute toxicity could be attributed to metals or pesticides.

The MWRA permit requires four tests for effluent toxicity testing. 48 hour acute static toxicity tests using the mysid shrimp (*Americamysis bahia*) and the silversides fish (*Menidia beryllina*) measure the short-term lethal effects caused by the effluent. A chronic survival and growth test using *Menidia* and a chronic fertilization test using the sea urchin (*Arbacia punctulata*) both measure subtle toxic impacts over a longer period of time. The results of these tests for FY12, where there were no violations, can be found in Table 6 on the following page.

The LC50 (Lethal Concentration 50%) is the concentration of effluent in a sample that causes mortality to 50% of the test population during the duration of the test. The two acute tests use LC50.

The NOEC (No Observed Effect Concentration) used in the chronic tests is the concentration of effluent in a sample to which organisms are exposed in a life cycle or partial life cycle test that has no adverse effects. An NOEC limit of 1.5% means that 1.5% of the sample is effluent, and the remainder dilution water. Any acute LC50 below 50% or chronic NOEC below 1.5% would violate the NPDES limit.



**Table 6. Deer Island Effluent, Results of Toxicity Testing, FY12**

	Mysid acute LC50	Menidia acute LC50	Arbacia chronic NOEC	Menidia chronic NOEC
Limits (%)	50	50	1.5	1.5
July	> 100	> 100	100	100
August	> 100	> 100	50	25
September	> 100	> 100	25	100
October	> 100	> 100	50	100
November	> 100	> 100	100	100
December	> 100	> 100	12.5	100
January	> 100	> 100	25	100
February	> 100	> 100	12.5	100
March	> 100	> 100	25	100
April	> 100	> 100	50	100
May	> 100	> 100	100	100
June	> 100	> 100	100	100
# of Violations	0	0	0	0
Results in <b>bold</b> indicate a violation of the regulatory limits. * indicates an invalid test.				

## Compliance with Regulatory Limits

Plant performance at Deer Island is compared to permit limits in Table 7 and Figures 16 to 24 on the following pages. There were no permit violations in FY12.

**Table 7. Deer Island Effluent Quality Compared to Permit Limits, FY12**

Parameter	Permit Limits	Range of Values Exceeding Limits	Number of Violations
Carbonaceous Biochemical Oxygen Demand (mg/L)			
Monthly Average	25	--	0
Weekly Average	40	--	0
Total Suspended Solids (mg/L)			
Monthly Average	30	--	0
Weekly Average	45	--	0
Total Chlorine Residual (µg/L)			
Monthly Average	456	--	0
Daily Maximum	631	--	0
Fecal Coliform			
Daily Geometric Mean (col/100mL)	14,000	--	0
% of samples > 14,000 col/100mL	10	--	0
Consecutive samples > 14,000col/100mL	3	--	0
pH (S.U.)	6.0-9.0	--	0
PCB, Aroclors (µg/L)	0.000045	--	0
Acute Toxicity			
Mysid shrimp (%)	≥50	--	0
Inland silverside (%)	≥50	--	0
Chronic Toxicity			
Inland silverside (%)	≥1.5	--	0
Sea urchin (%)	≥1.5	--	0
Dry Day Flow (MGD)	436	--	0
Total Number of Violations			<b>0</b>

Table 8 on the next page compares the number of NPDES violations in FY12 to previous years.

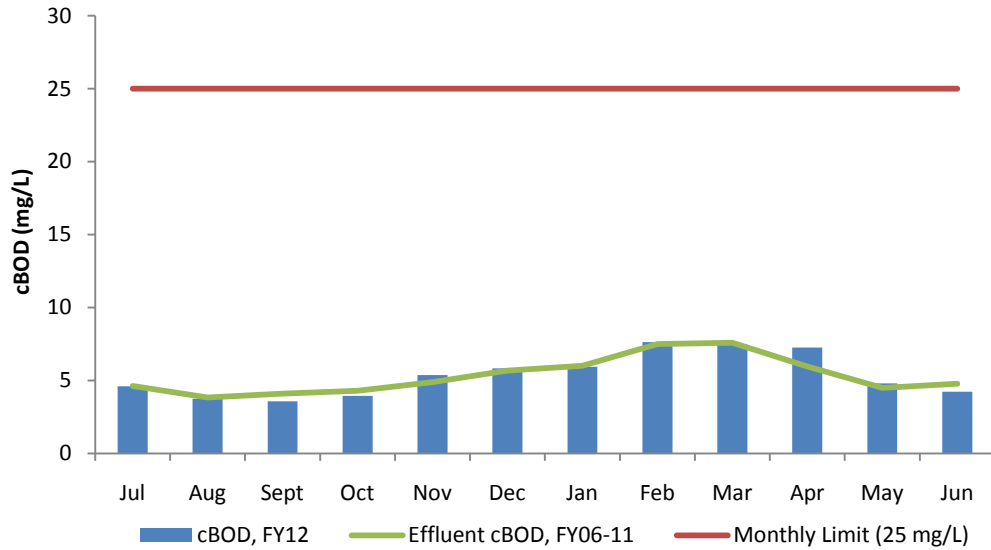
**Table 8. NPDES Violations at Deer Island, FY94-FY12**

	BOD	PHCs	Settleable solids	Total Coliform	TSS	Fecal coliform	pH	cBOD	Dry day flow	TCR	Toxicity	Non-toxicity violations	Total violations
FY94	16	1	0	0	1	0	1	--	--	--	11	19	30
FY95	12	4	0	1	1	0	1	--	--	--	17	19	36
FY96	7	5	0	0	0	0	0	--	--	--	19	12	31
FY97	0	0	0	0	0	0	0	--	--	--	16	0	16
FY98	1	0	0	0	0	0	0	--	--	--	11	1	12
FY99	0	0	0	0	0	0	0	--	--	--	13	0	13
FY00	0	0	0	0	0	0	0	--	--	--	14	0	14
FY01	--	--	--	--	0	0	1	0	0	1	3	2	5
FY02	--	--	--	--	0	1	0	0	0	0	0	1	1
FY03	--	--	--	--	3	0	0	0	0	0	0	3	3
FY04	--	--	--	--	0	1	0	0	0	0	0	1	1
FY05	--	--	--	--	0	0	0	0	0	0	0	0	0
FY06	--	--	--	--	0	0	0	0	0	0	1	0	1
FY07	--	--	--	--	0	0	0	0	0	0	1	0	1
FY08	--	--	--	--	0	0	0	0	0	0	0	0	0
FY09	--	--	--	--	0	0	0	0	0	0	0	0	0
FY10	--	--	--	--	0	0	0	0	0	0	0	0	0
FY11	--	--	--	--	0	0	0	0	0	0	0	0	0
<b>FY12</b>	--	--	--	--	0	0	0	0	0	0	0	0	0

--: Not a permit limit at that particular time.

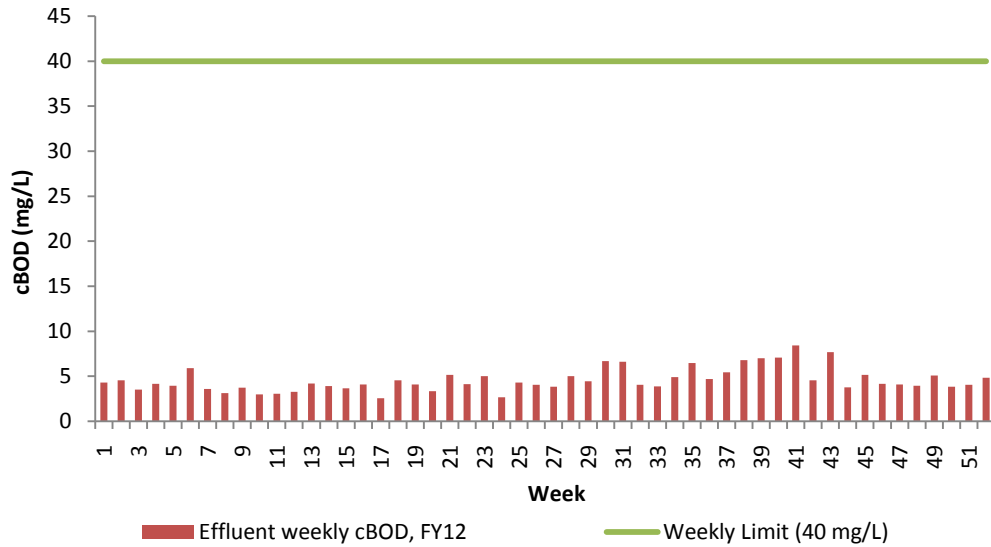
The following figures track trends in effluent over FY12. All of the effluent parameters were well under permit limits.

For carbonaceous biochemical oxygen demand (cBOD) and total suspended solids (TSS), the permit limits monthly and weekly average concentrations. Figure 16 shows that the monthly averages for cBOD never exceeded the regulatory discharge limit of 25 mg/L, and track the averages of the previous five fiscal years.



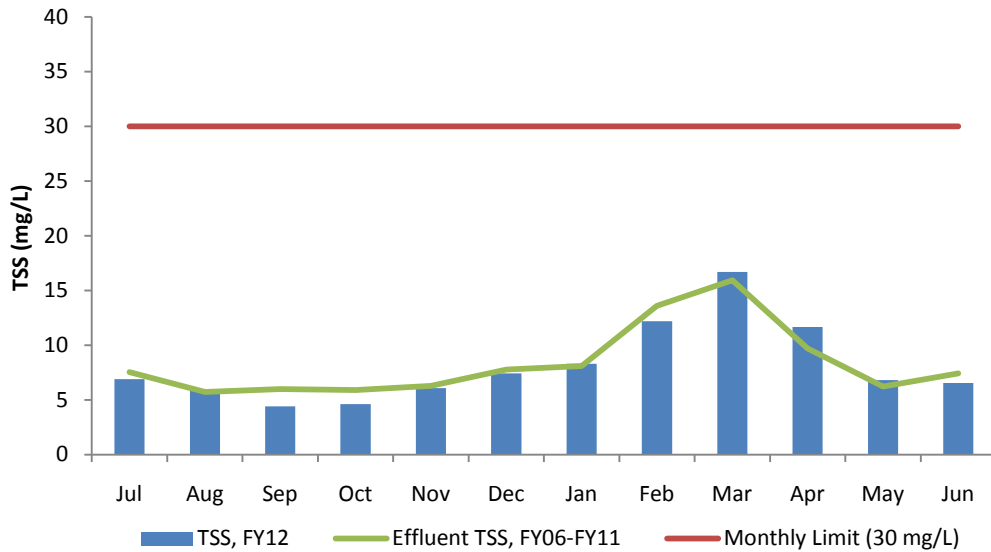
**Figure 16. DITP Effluent cBOD (Monthly Average), FY12**

Figure 17 shows there were no violations of the cBOD weekly limit (40 mg/L).



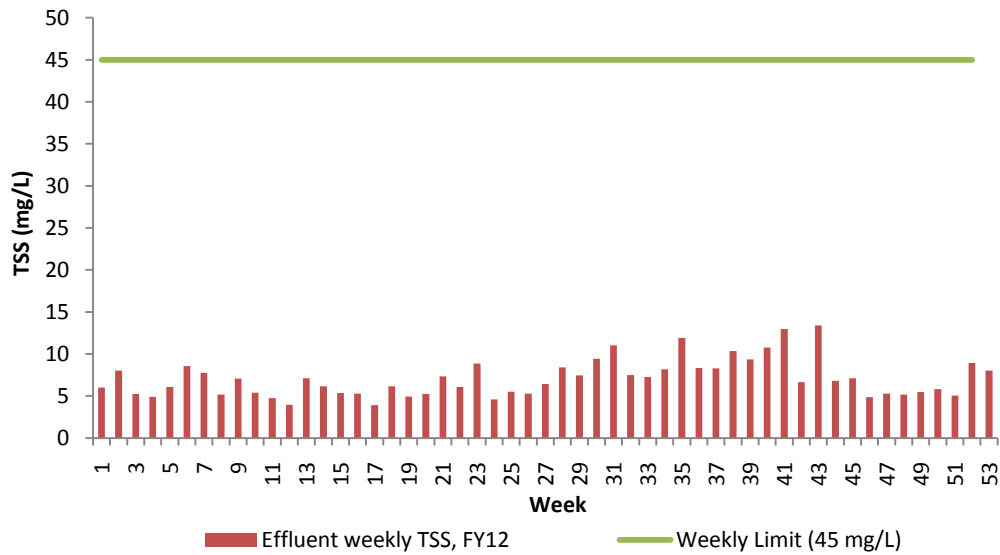
**Figure 17. DITP Effluent cBOD (Weekly Average), FY12**

Figure 18 shows FY12 monthly averages for TSS never exceeded the regulatory discharge limit of 30 mg/L. For the fiscal year, effluent TSS was comparable to the average of the previous five fiscal years.



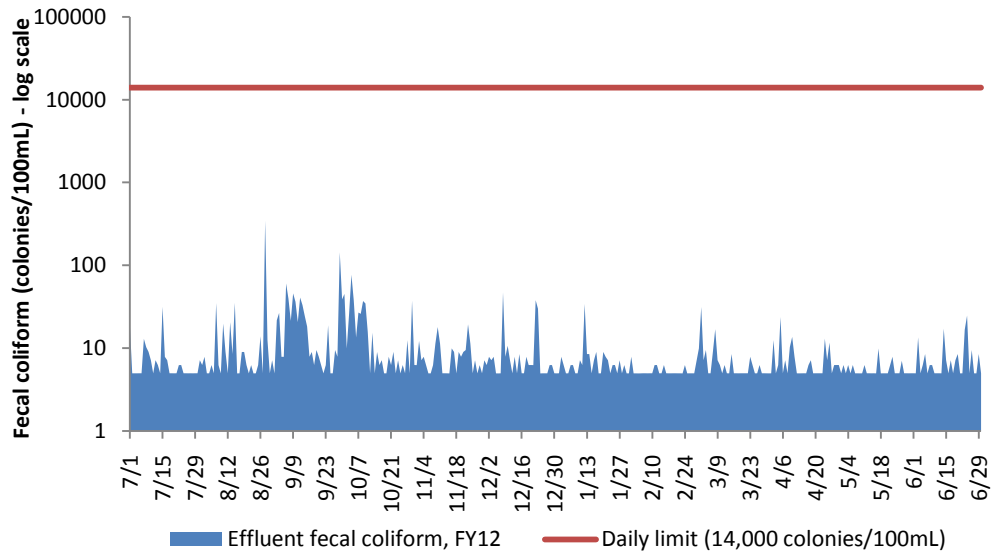
**Figure 18. DITP Effluent TSS (Monthly Average), FY12**

Figure 19 graphs the weekly averages for effluent TSS in FY12. The regulatory limit for weekly TSS averages is 45 mg/L. In FY12 this limit was not approached.



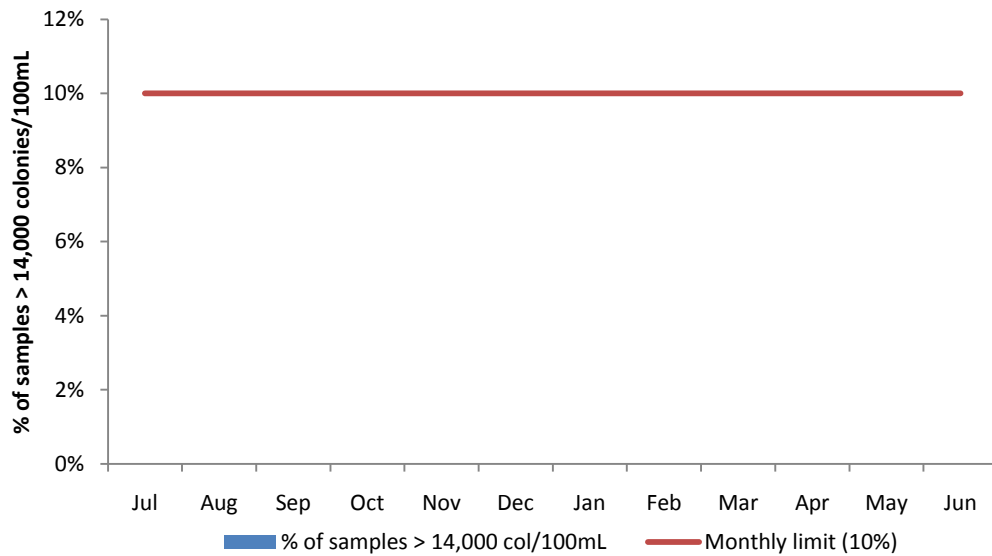
**Figure 19. DITP Effluent TSS (Weekly Average), FY12**

Fecal coliform has a daily discharge limit of 14,000 colonies/100mL, as calculated by the daily geometric mean of three samples per day. Figure 20 shows the daily effluent trends of fecal coliform in FY12. Note that 5 colonies/100mL is the detection limit for the fecal coliform test so there will not be results below that number.



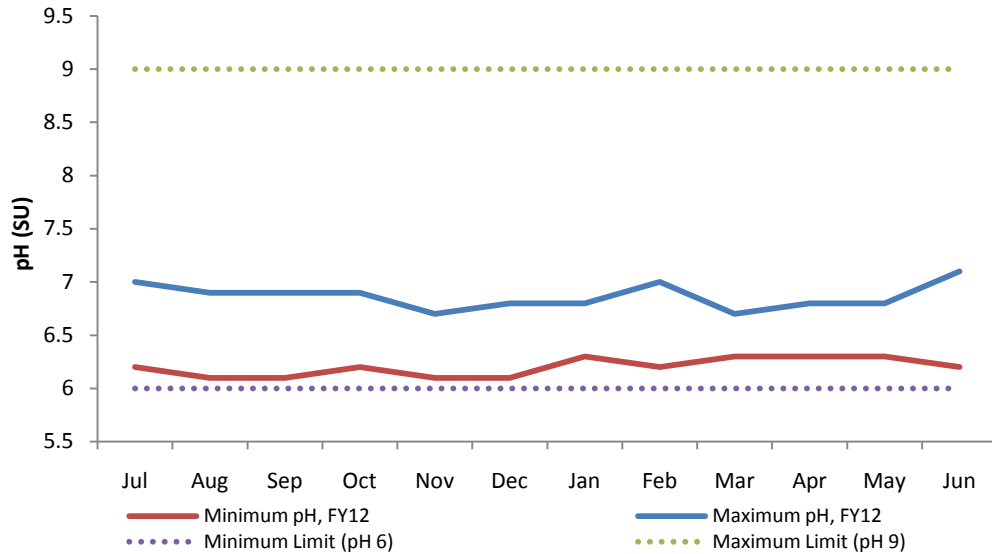
**Figure 20. DITP Effluent Fecal Coliform (Daily Geometric Mean), FY12**

Additional limits for fecal coliform include: not more than three consecutive samples measuring over 14,000 colonies/100mL, and no more than 10% of the samples in a month measuring over 14,000 colonies/100 mL. These latter two limits were not approached. Figure 21 shows the percentage of high sample counts (>14,000 colonies/100mL) by month – there were no violations of this limit either.



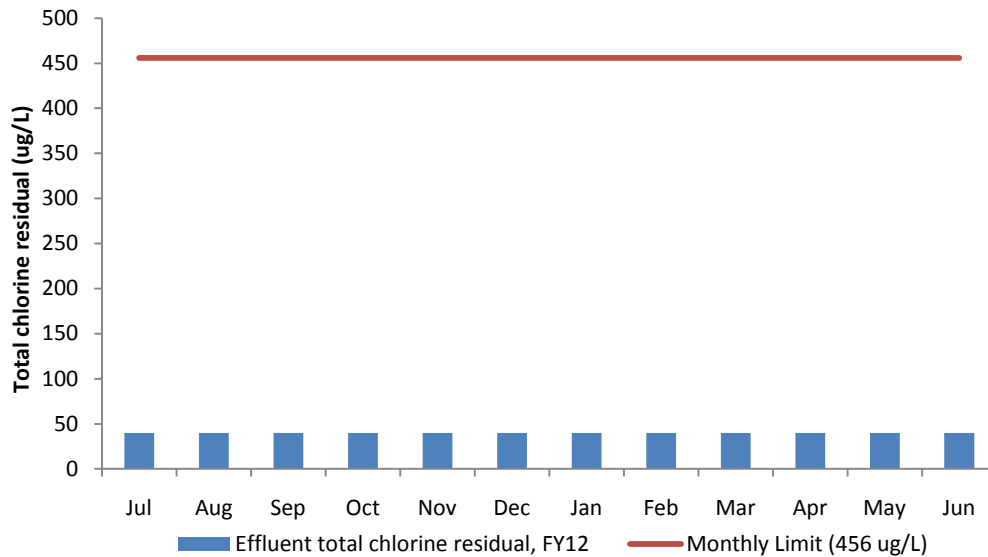
**Figure 21. DITP Effluent Fecal Coliform (High Sample Counts), FY12**

The limits for pH are based on the maximum and minimum values for each month, with pH required to fall between 6.0 and 9.0. In FY12, the pH of the effluent was always within this range although one month had a minimum pH of 6.0. Figure 22 shows the monthly minimums and maximums throughout FY12.

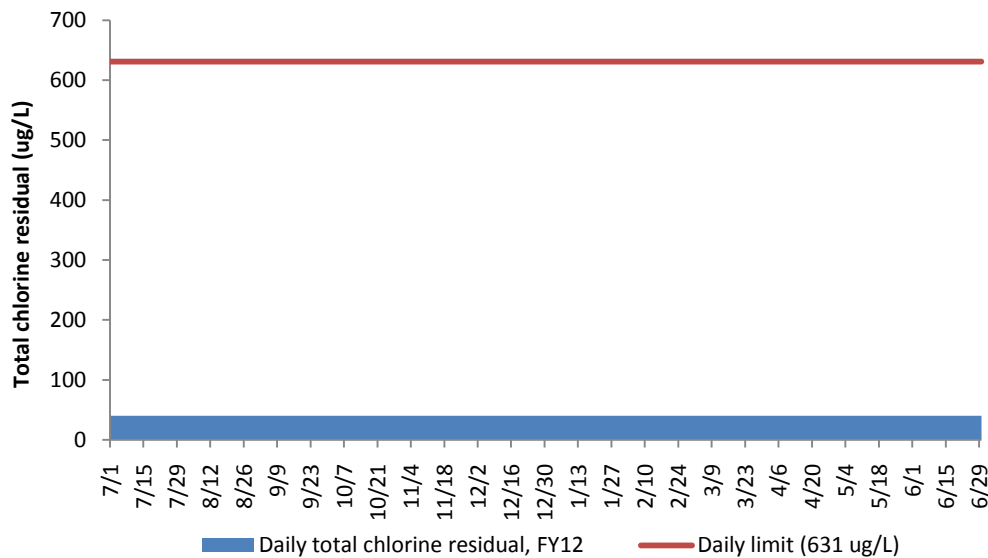


**Figure 22. DITP Effluent pH (Monthly Min and Max), FY12**

The permit regulates total chlorine residual through two limits: a monthly average of 456 µg/L and a daily maximum of 631 µg/L. Figure 23 shows monthly average chlorine residual results versus the regulatory limit. The following figure, Figure 24, shows the daily results against the permit limit. Neither limit was violated, or even approached, in FY12.



**Figure 23. DITP Effluent Total Chlorine Residual (Monthly Average), FY12**



**Figure 24. DITP Effluent Total Chlorine Residual (Daily Average), FY12**

In addition to the limits mentioned above, the permit sets forth two more effluent limits. Arochlors 1016, 1221, 1232, 1242, 1248, 1254, and 1260 have a 0.000045 µg/L limit. However, none of these compounds were detected in FY12. The limit on dry day flow was covered in the Executive Summary (Figure 2).

MWRA must also report a number of other effluent components, such as metals and nutrients, although they have no discharge limit. These are listed in Appendix H, Table H-1.

### Effluent Quality Compared to Water Quality Standards

Table 9 compares concentrations of priority pollutants in DITP effluent to water quality criteria, both acute and chronic. Even before the dilution provided by the outfall, all the pollutants except

for copper were below both the acute and chronic criteria. After dilution, all the pollutants were below the acute and chronic criteria.

**Table 9. Comparison of DITP Effluent with Water Quality Criteria, FY12**

Acute	FY12 Effluent		Concentration	Acute Dissolved	Acute Recoverable	Times
	Maximum (ug/L)	Dilution†	at ZID (ug/L)‡	Criteria (ug/L)*	Criteria (ug/L)**	Detected
Arsenic	1.51	50	0.03	69.0	69.0	8 of 24
Copper	9.45	50	0.189	4.8	5.8	49 of 49
Lead	1.69	50	0.034	210.0	220.8	14 of 48
Mercury	0.02	50	0.0004	1.8	2.1	23 of 48
Nickel	5.31	50	0.106	74.0	74.7	48 of 48
Silver	0.19	50	0.004	1.9	2.2	1 of 50
Zinc	25.1	50	0.502	90.0	95.1	47 of 50
Chronic	FY12 Effluent		Concentration	Chronic Dissolved	Chronic Recoverable	Times
	Average (ug/L)	Dilution†	at ZID (ug/L)‡	Criteria (ug/L)*	Criteria (ug/L)**	Detected
Arsenic	0.63	70	0.009	36.0	36.0	8 of 24
Copper	5.8	70	0.083	3.1	3.7	49 of 49
Lead	0.72	70	0.01	8.1	8.5	14 of 48
Mercury	0.01	70	0.0001	0.9	1.1	23 of 48
Nickel	2.43	70	0.035	8.2	8.3	48 of 48
Zinc	16.8	70	0.24	81.0	85.6	47 of 50
No conversion factor or chronic criteria exist for silver.						
† Permit estimate from Attachment S.						
‡ ZID is Zone of Initial Dilution, the area directly around the outfall.						
* National Recommended Water Quality Criteria for Priority Toxic Pollutants, Federal Register, 12/10/98.						
** Calculated using the conversion factors in Appendix A of the Federal Register, 12/10/98.						

## Ambient Monitoring Plan

The permit requires ambient monitoring of the Harbor and Massachusetts Bay. The ambient monitoring plan has three main components: the Harbor and Bay monitoring plan; the maintenance of the Bays Eutrophication Model; and the implementation of plume tracking. Table 10 summarizes the first and third components of the monitoring plan. Note that the plume tracking component of the plan is completed and results are available from EnQual.

The Bays Eutrophication Model is a three-dimensional hydrographic model that is run annually to provide information on whether new limits are needed on the effluent discharge. The Model is designed primarily to examine nutrient inputs.

In March 2004, the MWRA issued Revision 1 of the ambient monitoring plan, which made minor changes to the original plan. Copies of the revised plan are available online at the web address on the following page.

The Outfall Monitoring Science Advisory panel (OMSAP), a panel of scientific experts convened by the EPA and MA DEP, oversees the monitoring plan and examines scientific data produced by the MWRA and MWRA consultants. OMSAP also serves as a peer review board for technical reports, and advises EPA and MA DEP on the implications of monitoring observations. Finally, OMSAP evaluates any exceedances under the Contingency Plan, described in the next section.

Much more information on the ambient monitoring plan is available on the Internet. Documents directly associated with the permit, including Revision 1 of the ambient monitoring plan, can be found at: <http://www.mwra.state.ma.us/harbor/html/ambient.htm>

Associated information and synthesis reports generated by ambient monitoring results can be found at <http://www.mwra.state.ma.us/harbor/html/wklyintr.htm> for Boston Harbor and at <http://www.mwra.state.ma.us/harbor/html/mbmon.htm> for Massachusetts Bay.

The OMSAP web page, including announcements for public meetings, is at: <http://www.epa.gov/region1/omsap/index.html>



**Table 10. Post-Discharge Ambient Monitoring Plan Summary**

Task	Objective	Sampling Protocol	Analyses
Effluent sampling	Characterize wastewater discharge from Deer Island Treatment Plant	3x/daily Daily Weekly Several times monthly	Nutrients Solids and organic material Toxic contaminants Bacterial indicators Chlorine
<b>Water Column</b>			
Nearfield surveys	Collect water quality data near outfall location	12 surveys/year 7 stations	Temperature Salinity
Farfield surveys	Collect water quality data throughout Massachusetts and Cape Cod bays  (Not all analyses are performed at every near- or farfield station)	6 surveys/year 25 stations	Dissolved oxygen Nutrients Solids Chlorophyll Water clarity Photosynthesis Respiration Plankton Marine mammal observations
Plume-track surveys	Track discharge plume, measure discharge dilution	Completed	Completed
Mooring (USGS and GoMOOS)	Provides continuous oceanographic data near outfall location and Cape Ann	Continuous monitoring USGS near outfall GoMOOS near Cape Ann	Temperature Salinity Water clarity Chlorophyll
Remote sensing	Provides oceanographic data on a regional scale through satellite imagery	Available daily (cloud-cover permitting)	Surface temperature Chlorophyll
<b>Sea Floor</b>			
Soft-bottom studies	Evaluate sediment quality and benthos in Boston Harbor and Massachusetts Bay	1 survey/year 23 nearfield stations 8 farfield stations	Sediment chemistry Sediment profile imagery Community composition
Hard-bottom studies	Characterize marine benthic communities in rock and cobble areas	1 survey/year 23 stations	Topography Substrate Community composition
<b>Fish and Shellfish</b>			
Winter flounder	Determine contaminant body burden and population health	1 survey/year 4 stations	Tissue contaminant concentrations Physical abnormalities Liver histopathology
American lobster	Determine contaminant body burden	1 survey/year 3 stations	Tissue contaminant concentrations Physical abnormalities
Blue mussel	Evaluate biological condition and potential contaminant bioaccumulation	1 survey/year 3 stations	Tissue contaminant concentrations
Adapted from Werme, C. 2003. 2002 <i>Outfall Monitoring Overview</i> . EnQual report 2003-12. Updated from MWRA. 2004. <i>MWRA Effluent Outfall Ambient Monitoring Plan, rev. 1, 3/04</i> . EnQual report ms-092.			

## The Contingency Plan

The permit requires a contingency plan that defines a response plan when a parameter threshold is exceeded. Responses may include changes in laboratory procedures, changes in treatment plant process, or, in a worst case scenario, examining the feasibility of re-opening the Deer Island harbor outfalls. Tables 11, 12, and 13 show the thresholds for the parameters. The effluent and toxicity thresholds are set to be equal to the NPDES permit limits. However, the Contingency Plan includes a number of new thresholds related to parameters monitored under the Ambient Monitoring Plan in Massachusetts Bay.

**Table 11. Contingency Plan Thresholds – Toxic Contaminants**

Parameter	Caution Level	Warning Level
Effluent chlorine	--	456 ug/L average monthly
		631 ug/L maximum daily
Effluent PCBs	0.000045 ug/L monthly limit (as Arochlors)	--
Effluent toxicity	--	Acute: effluent LC50 < 50% for shrimp and fish Chronic: effluent NOEC for fish growth and sea urchin fertilization < 1.5%
Water column initial dilution of effluent	--	Effluent dilution predicted by EPA as basis for NPDES permit
Nearfield sediment toxics	--	NOAA Effects Range Median sediment guideline
Nearfield sediment toxics	90% EPA sediment criteria	EPA sediment criteria
Fish tissue mercury, near outfall	0.5 ug/g wet	0.8 ug/g wet
Fish tissue PCB, near outfall	1 ug/g wet	1.6 ug/g wet
Mussel tissue lead, near outfall	2 ug/g wet	3 ug/g wet
Fish tissue lipid-normalized toxics, near outfall	2 x baseline	--
Flounder liver disease incidence	Greater than harbor prevalence over time	--

**Table 12. Contingency Plan Thresholds - Nutrients**

Parameter	Caution Level	Warning Level
Effluent total nitrogen	12,500 mtons/year	14,000 mtons/year
Dissolved oxygen concentration, nearfield water column bottom, Stellwagen bottom	6.5 mg/L for any survey during stratification (June-Oct.) unless background conditions are lower	6 mg/L for any survey during stratification (June-Oct.) unless background conditions are lower
Dissolved oxygen percent saturation, nearfield water column bottom, Stellwagen bottom	80% saturation for any survey during stratification (June-Oct.) unless background conditions are lower	75% saturation for any survey during stratification (June-Oct.) unless background conditions are lower
Oxygen depletion rate, nearfield water column bottom	1.5 x baseline	2 x baseline
Nearfield water column chlorophyll	1.5 x baseline annual mean	2 x baseline annual mean
Nearfield water column chlorophyll	95th percentile of the baseline seasonal distribution	--
Nearfield water column nuisance algae (except <i>Alexandrium</i> )	95th percentile of the baseline seasonal mean	--
Nearfield water column zooplankton (1)	--	--
Nearfield water column <i>Alexandrium tamarense</i>	100 cells/L	--
Farfield water column PSP extent (2)	New incidence	--
Redox potential discontinuity, nearfield sediments	0.5 x baseline	--
(1) The MWRA will report annually on appreciable changes to the zooplankton community in its Annual Water Column Report and in the Outfall Monitoring Overview. The MWRA also makes every effort to participate in workshops to investigate food web pathways in Massachusetts and Cape Cod Bays sponsored by NOAA Fisheries. (2) The MWRA is continuing to work on improvements to the calculation of this threshold as proposed in its October 13, 2000 letter to the EPA and MADEP.		

**Table 13. Contingency Plan Thresholds – Other Parameters**

Parameter	Caution Level	Warning Level
Effluent cBOD	--	40 mg/L weekly 25 mg/L monthly
Effluent fecal coliform	--	14,000 fecal coliforms/100 ml
Effluent TSS	--	45 mg/L weekly 30 mg/L monthly
Nearfield benthic diversity	Appreciable change	--
Nearfield benthic opportunists	10%	25%
Effluent oil and grease (petroleum)	--	15 mg/L weekly
Plant performance	5 violations/year	Noncompliance 5% of the time pH <6 or >9 at any time Flow >436 MGD for an annual average dry day

Under the Contingency Plan, two types of thresholds exist: a caution level and a warning level. Figure 25 on the following page details the processes required by the Contingency Plan in case of a threshold exceedance. Table 14 details the Contingency Plan exceedances in FY12, of which

there was one. For more information on pre-FY12 exceedances, please refer to the web site listed below.

**Table 14. Contingency Plan Exceedances, FY12**

Threshold Level		
Date*	Exceeded	Threshold Exceeded
December 15, 2011	Caution	Infaunal diversity: Shannon-Wiener H' and Pielou's J'
* Notification date; typically within 5 days of knowing of the violation.		

In addition to the thresholds, the Contingency Plan also requires several other unrelated items. First, the MWRA must update annually a technical survey regarding tertiary treatment systems designed to remove nutrients. Second, the Authority must maintain a nitrogen monitoring program at DITP to examine the need for tertiary treatment. Both of these efforts are ongoing. Third, there must be a “dry run” of a Contingency Plan violation to assess the validity of the Contingency Plan structure. Fourth, \$81 million must be held in reserve for emergency use. Finally, the old Boston Harbor outfalls must be maintained in case diversion of the effluent back to the Harbor is deemed necessary. These last three options have been successfully completed.

More information on Contingency Plan topics is on the Internet at:

<http://www.mwra.state.ma.us/harbor/html/contingency.htm>

Exceedance reports are posted at:

<http://www.mwra.state.ma.us/harbor/html/exceed.htm>

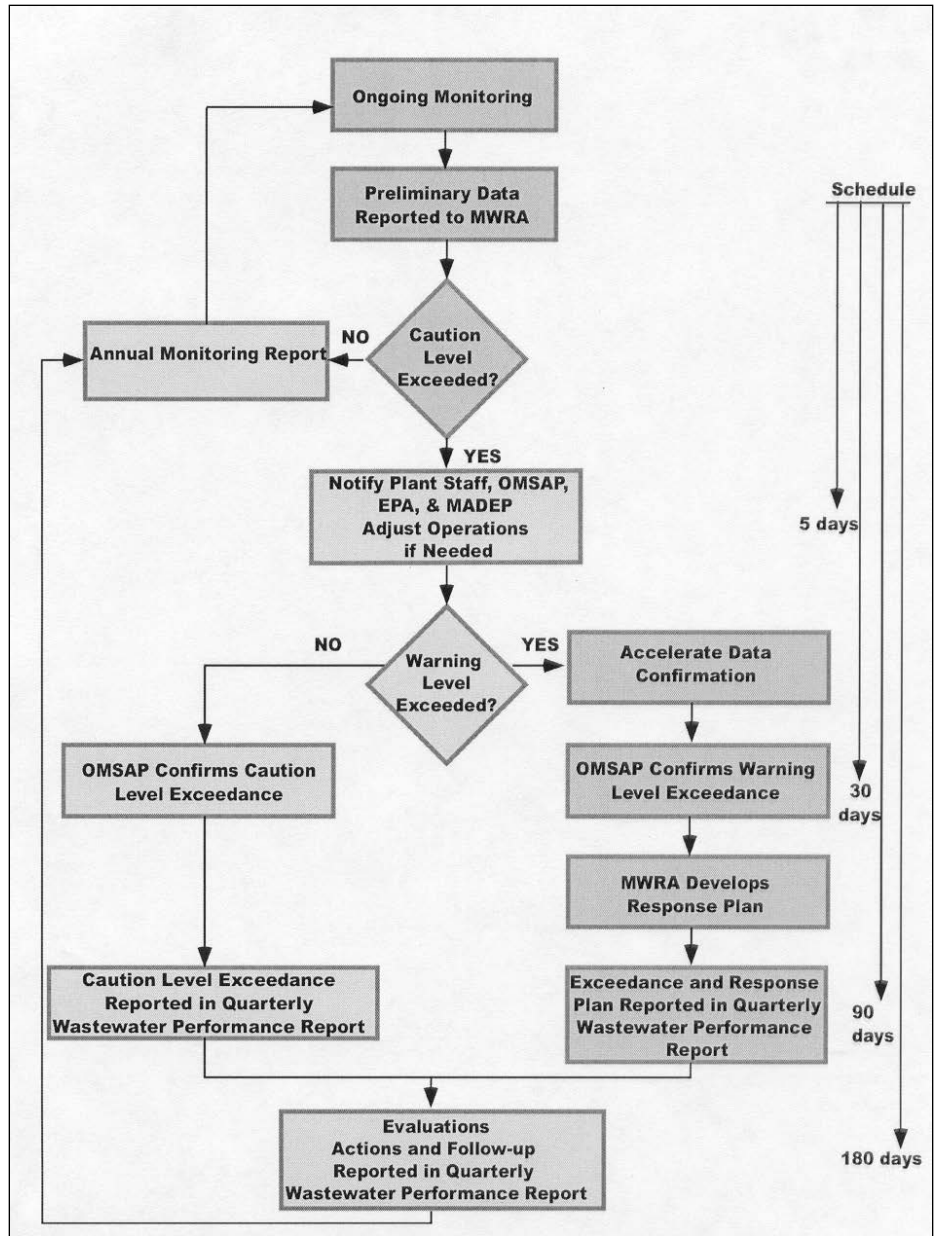


Figure 25. Contingency Plan Flow Chart

# Combined Sewer Overflows

## Overview

MWRA monitored four CSO facilities in the North System at the beginning of FY12. Three of the facilities – Cottage Farm, Prison Point, and Somerville Marginal – were originally included in the same NPDES permit as DITP. The fourth facility is the Union Park CSO facility, located in Boston and discharging to the Fort Point Channel. Union Park operates under a different NPDES permit than the other CSO facilities. Details of the Union Park facility can be found in Appendix G. There are no CSO facilities in the South System. Three CSO facilities in the North System have been closed following sewer separation projects. In November 2007, the Fox Point and Commercial Point facilities were decommissioned and will no longer discharge due to the completion of a separation project in the Dorchester area. The Constitution Beach facility was deactivated in September 2000.

The monitoring results vary significantly between facilities because of differences in type and location. Location is especially important since storms can be highly localized, affecting the level and intensity of rainfall at the CSO facility and the area that the facility serves. Improvements to the transport system (such as sewer separation projects) and the CSO facilities themselves have improved the capture of combined sewage. This has resulted in having fewer activations but a greater discharge volume.

Each CSO facility screens, chlorinates, and dechlorinates combined wastewater (sewage and storm water) prior to discharge. The Cottage Farm, Prison Point, and Union Park facilities also have pumping and tank storage capacity. Pumping and tank storage allows screened and chlorinated wastewater to be held at these facilities up to their storage capacities prior to discharge. Stored wastewater can eventually be pumped back into the system and processed at Deer Island. Any wastewater exceeding the storage capacity will overflow and discharged through the CSO outfalls. All of this discharge is disinfected.

The remaining CSO facility – Somerville Marginal – is a gravity CSO facility, meaning that combined wastewater both arrives and leaves the CSO facility by gravity instead of pumping. The disinfected wastewater overflows to the receiving water as quickly as it arrives at the facility. A detailed description of the CSO facilities, including the decommissioned facilities, can be found in Appendix G.

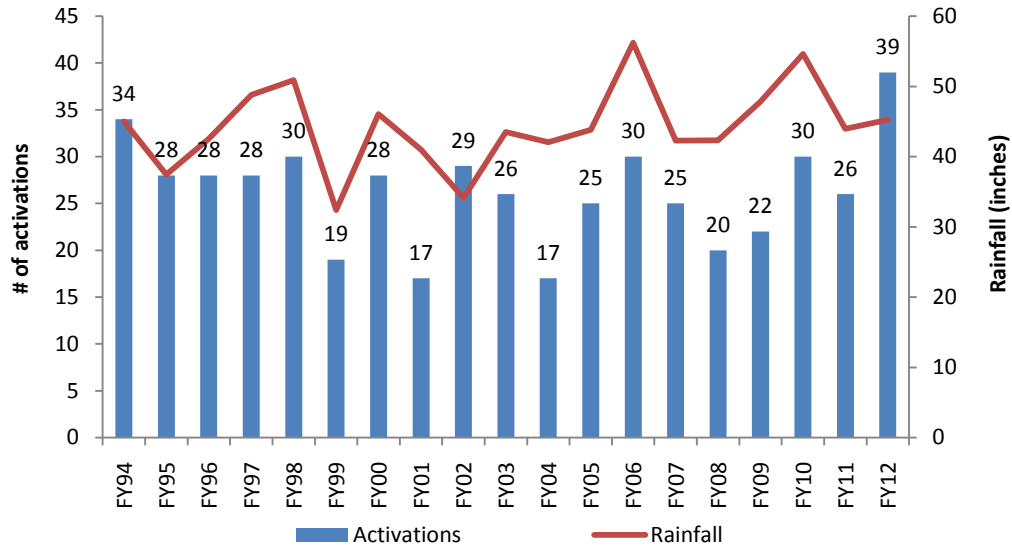
## Cottage Farm CSO Facility

Table 15 and Figures 26 and 27 summarize activation data for the Cottage Farm CSO facility. Releases from FY11 to FY12 increased slightly as the amount of rainfall also increased.

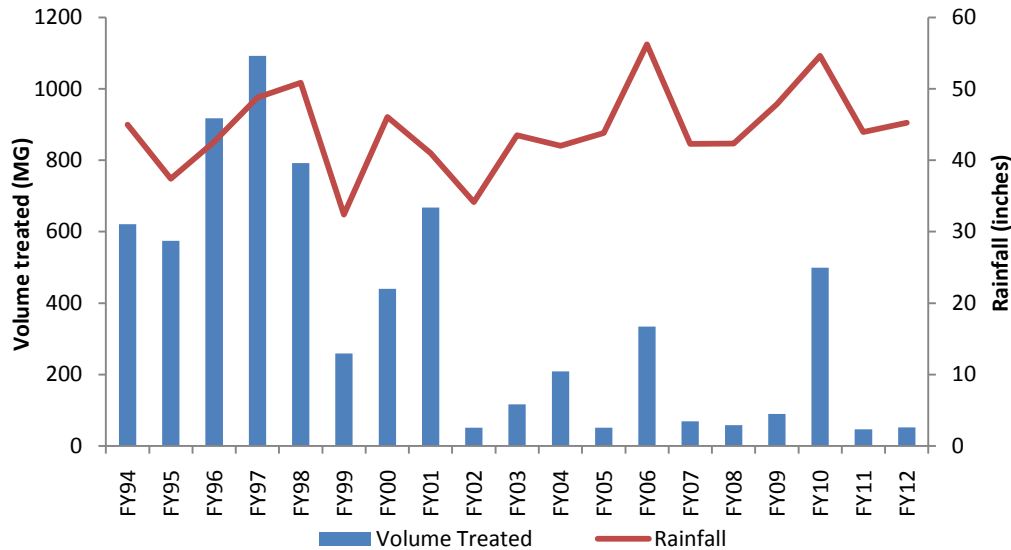
**Table 15. Cottage Farm CSO Activations Summary**

	Activations	Days activated	Total volume treated (MG)	Min flow (MGD)	Mean flow (MGD)	Max flow (MGD)	Total rainfall (inches)
FY99	11	13	259	1.35	19.9	47	32.4
FY00	19	24	440	0.56	18.7	86	46.1
FY01	15	18	667	0.22	37.1	223	41.0
FY02	8	10	51	0.63	5.1	13	34.1
FY03	14	16	117	0.91	7.3	21	43.5
FY04	13	15	209	0.61	14.0	62	42.0
FY05	8	9	51	1.36	5.6	12	43.8
FY06	10	13	335	0.71	27.9	85	56.2
FY07	7	7	73	1.6	10.4	28	42.3
FY08	6	6	59	1.26	9.8	31	42.3
FY09	7	7	89	0.9	12.8	48	47.8
FY10	9	14	499	0.9	35.6	188	54.6
FY11	5	6	47	2.7	9.3	22	44.0
<b>FY12</b>	<b>7</b>	<b>7</b>	<b>52</b>	<b>1.9</b>	<b>7.5</b>	<b>15</b>	<b>45.2</b>

Average flow = Total volume treated divided by the number of days activated.



**Figure 26. Cottage Farm CSO Activations Compared to Precipitation, FY94-FY12**



**Figure 27. Cottage Farm CSO Volume Treated Compared to Precipitation, FY94-FY12**

Table B-1 of Appendix B contains detailed data on conventional parameters in Cottage Farm effluent. Table 16 below summarizes this data. As is the case with all four facilities covered in this chapter, Cottage Farm is a CSO facility that provides floatables control, chlorination, and dechlorination. Such a facility cannot provide the same level of effluent treatment as a full-fledged treatment plant such as Deer Island. CSO effluent pH is often rather low in comparison to effluent from Deer Island or other treatment plants as CSO facilities cannot correct for sewage and/or stormwater that enters the facility with an already low pH.

**Table 16. Cottage Farm CSO Effluent Characteristics, FY12**

Parameter	Minimum	Average	Maximum
TSS (mg/L)	62.3	92.1	122
BOD (mg/L)	37	37.5	38
Fecal Coliform (col/100 mL)	12	159	2114
pH (SU)	6.5		6.7

MWRA also tests CSO effluent for metals and surfactants whenever the CSO facility is sampled. The results of these tests are presented in Appendix B, Tables B-2 and B-3. The target metals were detected in most samples, as seen in Table 17.

**Table 17. Cottage Farm CSO Effluent Metals, FY12**

Parameter	Average Concentration	Times Detected
Aluminum (ug/L)	984.5	2 of 2
Cadmium (ug/L)	0.224	3 of 4
Calcium (ug/L)	9475	2 of 2
Chromium (ug/L)	3.62	1 of 2
Copper (ug/L)	44.3	2 of 2
Lead (ug/L)	40.9	1 of 2
Magnesium (ug/L)	1775	2 of 2
Mercury (ug/L)	0.224	2 of 2
Nickel (ug/L)	2.78	2 of 3
Silver (ug/L)	0.275	1 of 1
Zinc (ug/L)	96.9	2 of 2



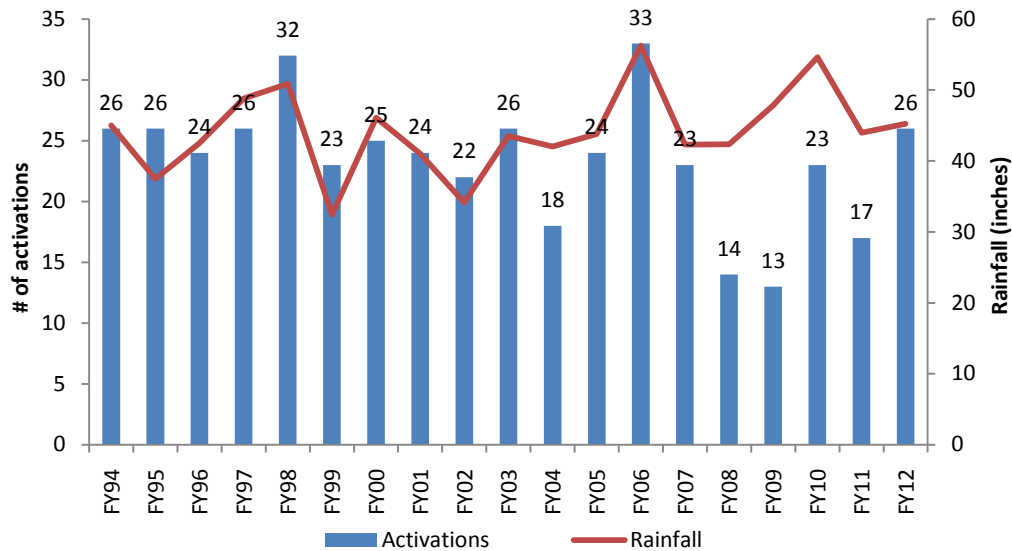
## Prison Point CSO Facility

Activation data for the Prison Point CSO facility are summarized in Table 18 and Figures 28 and 29. Unlike the Cottage Farm facility, Prison Point is not hydraulically connected to the Deer Island Treatment Plant, so choking at the headworks will not affect Prison Point activations; hence they have remained relatively constant since FY94, primarily dependent on rainfall. As expected, activations and total volume increased from FY11 to FY12 due to the increase in rainfall.

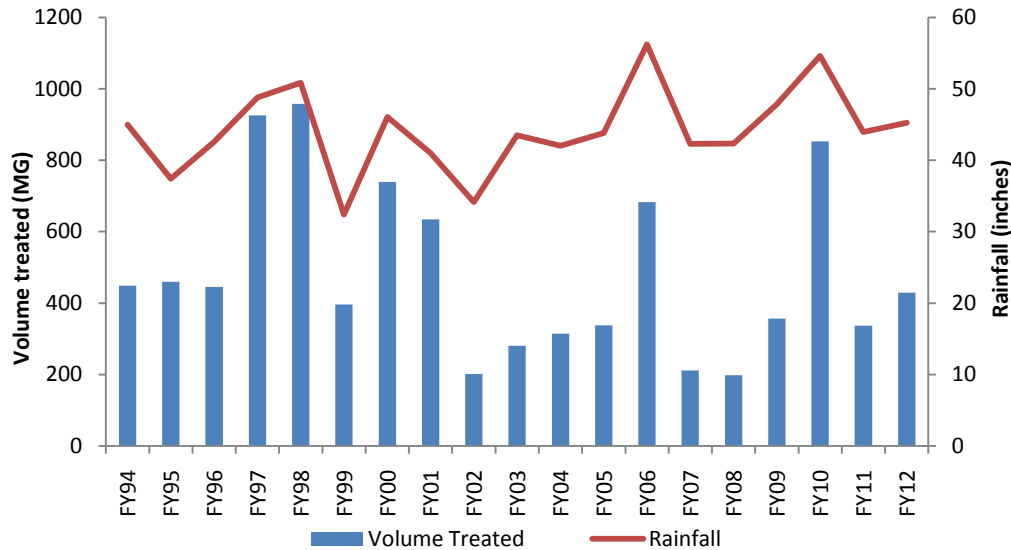
**Table 18. Prison Point CSO Activations Summary**

	Activations	Days activated	Total volume treated (MG)	Min flow (MGD)	Mean flow (MGD)	Max flow (MGD)	Total rainfall (inches)
FY99	23	23	396	1.4	17.2	51	32.4
FY00	25	30	740	2.5	24.7	149	46.1
FY01	24	26	634	1	24.4	188	41.0
FY02	22	27	201	0.41	7.5	25	34.1
FY03	26	27	281	0.47	10.4	31	43.5
FY04	18	21	315	0.79	15.0	98	42.0
FY05	24	31	338	1	11.0	38	43.8
FY06	33	36	683	1.08	19.0	126	56.2
FY07	23	25	261	1.35	10.4	46	42.3
FY08	14	14	199	0.97	14.2	54	42.3
FY09	13	14	356	3.33	25.5	92	47.8
FY10	23	30	853	1.06	28.4	337	54.6
FY11	17	18	337	1.7	19.8	68.8	43.0
<b>FY12</b>	<b>26</b>	<b>27</b>	<b>429</b>	<b>4.1</b>	<b>16.5</b>	<b>44.4</b>	<b>45.2</b>

Average flow = Total volume treated divided by the number of days activated.



**Figure 28. Prison Point CSO Activation Compared to Precipitation, FY94-FY12**



**Figure 29. Prison Point CSO Volume Treated Compared to Precipitation, FY94-FY12**

Conventional parameter data for Prison Point effluent are provided in Appendix C, Tables C-1 and C-2. Table 19 summarizes that data.

**Table 19. Prison Point CSO Effluent Characteristics, FY12**

Parameter	Minimum	Average	Maximum
TSS (mg/L)	46	85.4	197
BOD (mg/L)	13.8	16.1	22
Fecal Coliform (col/100 mL)	85	157	254
pH (SU)	6.3		7.8

The results of priority pollutant testing for Prison Point can be found in Tables C-2 and C-3 of Appendix C. As with Cottage Farm, the target metals were detected in most of the samples. Table 20 summarizes average metals concentrations in FY12 Prison Point effluent.

**Table 20. Prison Point CSO Effluent Metals, FY12**

Parameter	Average Concentration	Times Detected
Aluminum (ug/L)	957	4 of 4
Cadmium (ug/L)	0.494	4 of 4
Chromium (ug/L)	8.74	4 of 4
Copper (ug/L)	40.8	4 of 4
Lead (ug/L)	35.2	3 of 4
Magnesium (ug/L)	1910	4 of 4
Mercury (ug/L)	0.083	4 of 4
Nickel (ug/L)	4.0	3 of 4
Zinc (ug/L)	122	4 of 4

## Somerville Marginal CSO Facility

Table 21 and Figures 30 and 31 summarize activation information for the Somerville Marginal facility. Recently, there has been increased attention to SSOs (Sanitary Sewer Overflows); see the transport systems chapter for more information. MWRA has intensified its monitoring efforts

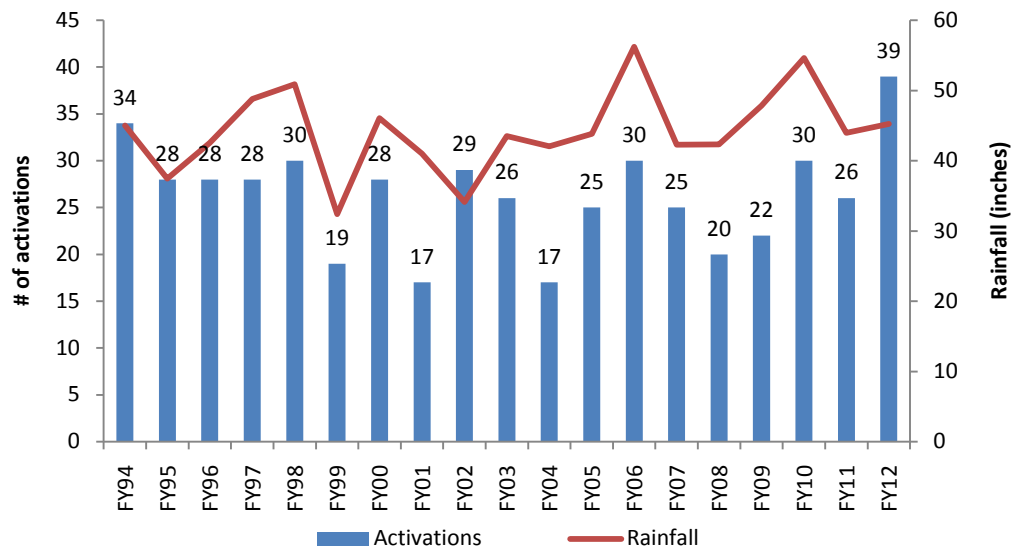
at areas known to overflow where there is a measurable rainfall event. In coordination with this increased SSO monitoring, MWRA has monitored its unmanned gravity CSO facilities of Somerville Marginal, Fox Point, and Commercial Point more frequently. As a result, the statistics for FY98 and after may not be strictly comparable to the earlier years.

Somerville Marginal in FY12 shows a similar pattern to the other facilities – a slight increase in activations and volume discharged due to the increased rainfall in FY12.

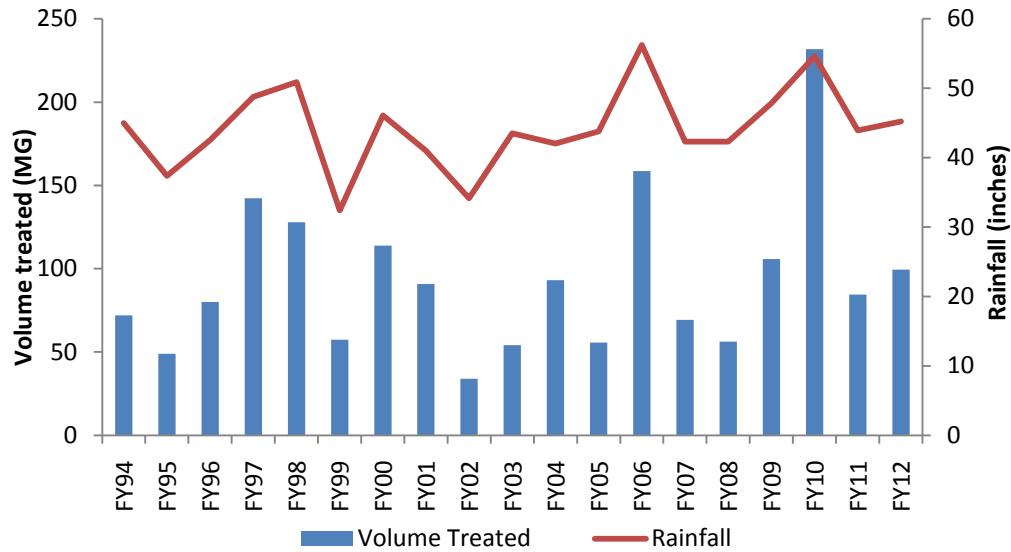
**Table 21. Somerville Marginal CSO Activations Summary**

	Activations	Days activated	Total volume treated (MG)	Min flow (MGD)	Mean flow (MGD)	Max flow (MGD)	Total rainfall (inches)
FY99	19	19	57	0.04	3.0	10	32.4
FY00	28	34	114	0.01	3.4	25	46.1
FY01	17	21	91	0.09	4.3	33	41.0
FY02	29	30	34	0.02	1.2	5	34.1
FY03	26	28	54	0.05	1.9	7	43.5
FY04	17	17	93	0.51	5.5	27	42.0
FY05	25	30	56	0.18	1.9	6	43.8
FY06	30	34	159	0.12	4.7	29	56.2
FY07	25	28	69	0.27	2.5	11	42.3
FY08	20	20	56	0.25	2.8	13	42.3
FY09	22	22	106	0.08	4.8	25	47.8
FY10	30	37	232	0.4	6.3	91	54.6
FY11	26	27	84	0.2	3.3	15.7	43.0
<b>FY12</b>	<b>39</b>	<b>40</b>	<b>100</b>	<b>0.1</b>	<b>2.6</b>	<b>13</b>	<b>45.24</b>

Average flow = Total volume treated divided by the number of days activated.



**Figure 30. Somerville Marginal CSO Activations Compared to Precipitation, FY94-FY12**



**Figure 31. Somerville Marginal CSO Volume Treated Compared to Precipitation, FY94-FY12**

Somerville Marginal conventional parameter data is provided in Appendix D, and summarized below in Table 22.

**Table 22. Somerville Marginal CSO Effluent Characteristics, FY12**

Parameter	Minimum	Average	Maximum
TSS (mg/L)	29.3	66.5	104.8
BOD (mg/L)	9	18	32
Fecal Coliform (col/100 mL)	<10	2	8
pH (SU)	6.0		8.6

The results of Somerville Marginal priority pollutant testing can be found in Appendix D, Tables D-2 and D-3. As with the other CSO facilities, the target metals were detected in most of the samples. Table 23 summarizes the average metals concentration in FY12.

**Table 23. Somerville Marginal CSO Effluent Metals, FY12**

Parameter	Average Concentration	Times Detected
Aluminum (ug/L)	1221	2 of 2
Cadmium (ug/L)	0.091	1 of 1
Calcium (ug/L)	5820	2 of 2
Chromium (ug/L)	9.66	2 of 2
Copper (ug/L)	28.5	1 of 2
Lead (ug/L)	30	2 of 2
Magnesium (ug/L)	1455	2 of 2
Mercury (ug/L)	0.306	2 of 2
Nickel (ug/L)	3.59	2 of 2
Zinc (ug/L)	108	2 of 2

## Union Park CSO Facility

The Union Park CSO facility is a CSO pumping and storage facility in Boston. Physical details of the station can be found in Appendix E. It operates under a different permit than the previous CSO facilities, but is included in this report for completeness purposes. The Union Park CSO facility had its first discharge in FY08. The following table describes activations at Union Park in FY12. For obvious reasons, there are no data prior to FY08. As seen at the other facilities, the number of activations increased due to more rainfall. However, the average amount discharged per activated decreased, perhaps because of the lack of major storms in FY12, as opposed to FY11.

**Table 24. Union Park CSO Activations Summary**

	Activations	Days activated	Total volume treated (MG)	Min flow (MGD)	Mean flow (MGD)	Max flow (MGD)	Total rainfall (inches)
FY08	8	8	73	2.2	9.1	26	42.3
FY09	8	8	62	1.12	7.8	21	47.8
FY10	9	15	161	1.4	10.7	84.1	54.6
FY11	7	7	42	0.9	6.0	17.6	43.0
<b>FY12</b>	12	12	39	0.3	3.3	9.9	45.24
Average flow = Total volume treated divided by the number of days activated.							

Table 25 lists conventional parameters measured in samples of Union Park effluent. More detailed results can be found in Appendix E-1.

**Table 25. Union Park CSO Effluent Characteristics, FY12**

Parameter	Minimum	Average	Maximum
TSS (mg/L)	40	46.5	61
BOD (mg/L)	19	27.8	41
Fecal Coliform (col/100 mL)	<10	13	48
pH (SU)	5.7		5.9

Table 26 shows the results of tests for various metals in Union Park effluent. Detailed results on concentrations and loadings can be found in Appendices E-2 and E-3 respectively.

**Table 26. Union Park CSO Effluent Metals, FY12**

Parameter	Average Concentration	Times Detected
Aluminum (ug/L)	755	2 of 2
Antimony (ug/L)	1.0	0 of 2
Arsenic (ug/L)	3.5	2 of 2
Beryllium (ug/L)	1.75	0 of 2
Cadmium (ug/L)	0.25	0 of 4
Calcium (ug/L)	3405	2 of 2
Chromium (ug/L)	3.5	4 of 4
Copper (ug/L)	38.3	4 of 4
Lead (ug/L)	24.8	4 of 4
Magnesium (ug/L)	1456	2 of 2
Mercury (ug/L)	0.009	1 of 2
Nickel (ug/L)	1.5	2 of 4
Selenium (ug/L)	1.0	0 of 2
Silver (ug/L)	0.5	0 of 2
Thallium (ug/L)	0.5	0 of 2
Zinc (ug/L)	56.3	4 of 4

# Sludge Processing

## Overview

In December 1991, the MWRA ceased discharge of sludge into Boston Harbor. The digested sludge is now sent to a plant located on the Fore River in Quincy for processing into fertilizer pellets.

## Pelletizing Process

The pelletizing process begins at the Deer Island Treatment Plant, where gravity thickeners handle sludge and scum from the plant's primary batteries. Centrifuges thicken secondary sludge and scum, with the help of added polymers. Centrate, or the liquid produced by these processes, is sent back to the head of the plant for treatment.

The thickened product is then transferred to Deer Island's most distinctive feature, the egg-shaped anaerobic digesters. In the digesters, bacteria break down the sludge into methane, carbon dioxide, organic material, and water. The methane is tapped, stored, and used later to generate electrical power or heat for Deer Island. The digested sludge is pumped via a small pipe in the Inter-Island Tunnel across the Harbor to the Fore River Pelletizing facility. This tunnel connection became fully operational in April 2005.

At the biosolids processing plant, centrifuges dewater the sludge into "cake," and dryers further process the sludge into the fertilizer pellets. The centrate from the centrifuges is transferred back to Deer Island for treatment via a second small pipe in the Inter-Island Tunnel by way of the Braintree-Weymouth Intermediate Pump Station. The tunnel replaced the earlier barge service on December 16, 2004. The pellets, marketed as "Bay State Fertilizer," are stored at the facility after production. They can either be packaged on-site, or loaded and shipped out in bulk by rail.

Bay State Fertilizer is available in limited quantities to the general public, and is more widely available to local municipalities and for wholesale purchase.

## Sludge Pellet Regulations

Both the federal government and the Commonwealth of Massachusetts have regulations for the composition of fertilizer pellets. The federal government regulates copper, molybdenum, nickel, zinc, arsenic, cadmium, lead, mercury, and selenium. Massachusetts sets limits for all of the above except arsenic and selenium, while adding limits for boron and chromium. In most cases the Massachusetts standards are tougher than the federal standards. Meeting these regulations has generally not been a problem for the MWRA. Table 27 (next page) summarizes the applicable standards.

**Table 27. Federal and State Limits for Sludge Pellet Metals**

Parameter	Federal Limit (ppm)	Massachusetts Type 1* Limit (ppm)
Arsenic	41	NR
Boron	NR	300
Cadmium	39	14
Chromium	NR	1000
Copper	1500	1000
Lead	300	300
Mercury	17	10
Molybdenum	75	25
Nickel	420	200
Selenium	100	NR
Zinc	2800	2500

NR: Not regulated  
\*: Type 1 pellets are certified for marketing and distribution in Massachusetts by MADEP

Due to the February 19 annual submittal date for sludge data, sludge data is compiled by calendar year. In calendar year 2011 and 2012 (CY11 and CY12, respectively), there were no violations of federal or state standards for sludge pellets. Tables 28 and 29 summarize the analytical results. The plant processed 39,683 tons in CY11 and 37,607 tons in CY12.



**Table 28. Summary of Sludge Pellet Analysis, Calendar Year 2011**

Parameter	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11
Arsenic (mg/kg, dry weight)	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron (mg/kg, dry weight)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium (mg/kg, dry weight)	2.3	2.3	2.9	2.2	2.0	2.1	2.1	2.2	1.7	2.2	2.2	2.2
Chromium (mg/kg, dry weight)	61.4	65.5	76.5	71.5	65.7	61.6	63.7	67.4	63.6	59.7	55.1	53.5
Copper (mg/kg, dry weight)	538.5	597.0	548.4	534.5	531.8	578.4	607.0	648.8	653.3	627.8	567.8	564.3
Lead (mg/kg, dry weight)	105.3	112.5	140.0	136.0	150.5	157.2	159.0	175.0	200.5	194.0	159.6	139.0
Mercury (mg/kg, dry weight)	1.6	1.6	1.7	1.8	1.9	1.9	1.7	2.0	1.9	2.5	1.7	1.6
Molybdenum (mg/kg, dry weight)	15.7	15.5	13.4	11.6	11.6	14.7	19.1	23.8	20.2	17.7	15.0	13.2
Nickel (mg/kg, dry weight)	22.3	21.5	32.0	22.4	24.5	22.4	22.0	23.9	24.0	24.2	23.1	22.0
Selenium (mg/kg, dry weight)	3.6	4.7	3.6	3.8	4.2	4.5	4.5	4.8	5.0	4.7	4.2	4.0
Zinc (mg/kg, dry weight)	1117.5	1230.0	1230.0	1117.5	1132.5	1206.0	1247.5	1304.0	1275.0	1215.0	1148.0	1112.5
ND: No data												
<b>Bold</b> indicates violations of the MADEP (state) limits for Type 1 sludge or federal limits.												

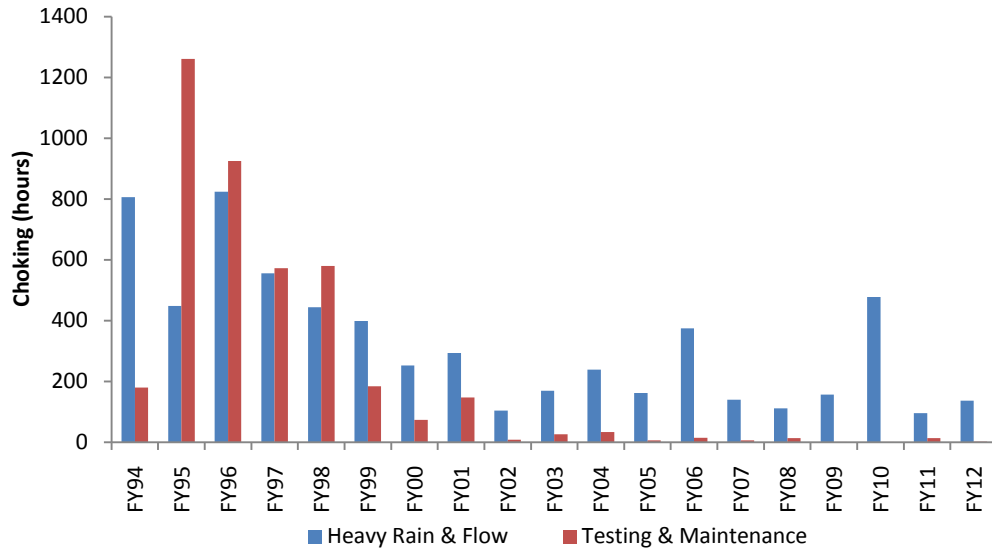
**Table 29. Summary of Sludge Pellet Analysis, Calendar Year 2012**

Parameter	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
Arsenic (mg/kg, dry weight)	ND	ND	ND	ND	ND	ND	3.7	4.1	4.4	4.0	3.9	4.4
Boron (mg/kg, dry weight)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium (mg/kg, dry weight)	2.0	2.2	2.2	2.1	2.6	2.2	2.3	2.2	2.3	2.4	2.8	2.4
Chromium (mg/kg, dry weight)	52.5	54.7	56.8	50.8	52.1	48.5	51.8	55.9	61.1	66.7	74.7	77.4
Copper (mg/kg, dry weight)	555.0	558.6	550.8	553.0	542.8	572.8	608.5	674.8	700.0	673.5	653.0	647.0
Lead (mg/kg, dry weight)	114.3	107.7	99.8	66.8	85.3	121.0	136.5	144.4	138.3	139.3	144.0	122.0
Mercury (mg/kg, dry weight)	1.7	1.4	1.4	1.4	1.6	1.9	1.8	1.8	2.1	2.4	2.1	2.0
Molybdenum (mg/kg, dry weight)	13.3	13.0	12.9	17.1	17.2	16.8	20.9	26.3	30.3	29.2	28.7	28.0
Nickel (mg/kg, dry weight)	21.0	21.7	19.8	18.5	22.3	21.8	22.3	23.3	24.8	26.9	28.9	25.7
Selenium (mg/kg, dry weight)	3.6	4.0	4.3	4.1	3.9	3.6	4.1	4.4	4.0	4.2	3.8	3.8
Zinc (mg/kg, dry weight)	117.5	1152.0	1102.5	1127.5	1060.5	1112.5	1215.0	1324.0	1315.0	1250.0	1226.7	1215.0
ND: No data												
<b>Bold</b> indicates violations of the MADEP (state) limits for Type 1 sludge or federal limits.												

# Transport Systems

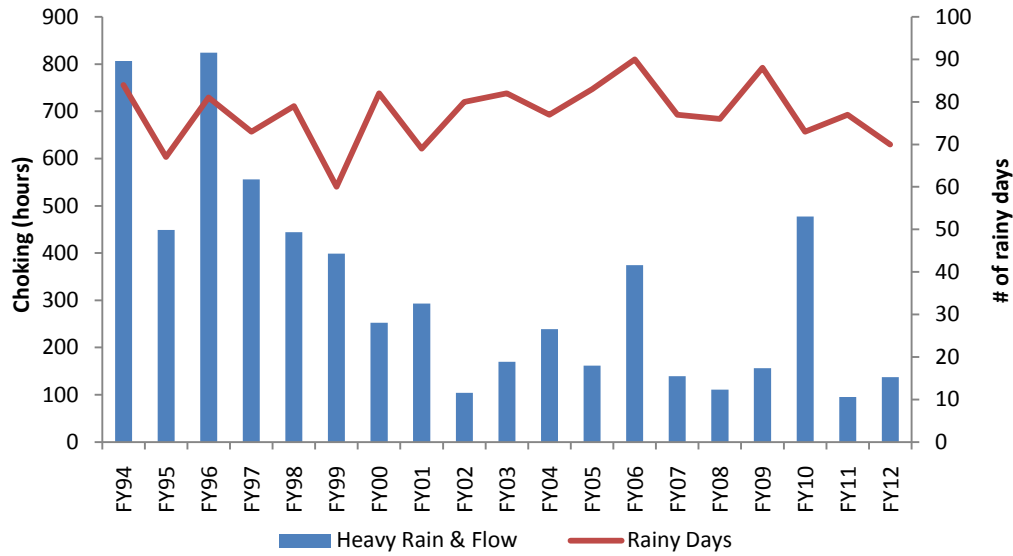
## North System Headworks Choking

Figure 32 below shows the number of hours of maintenance- and rain-related choking at the remote headworks since FY94. Testing and maintenance hours have steadily declined as the MWRA has completed the new DITP.



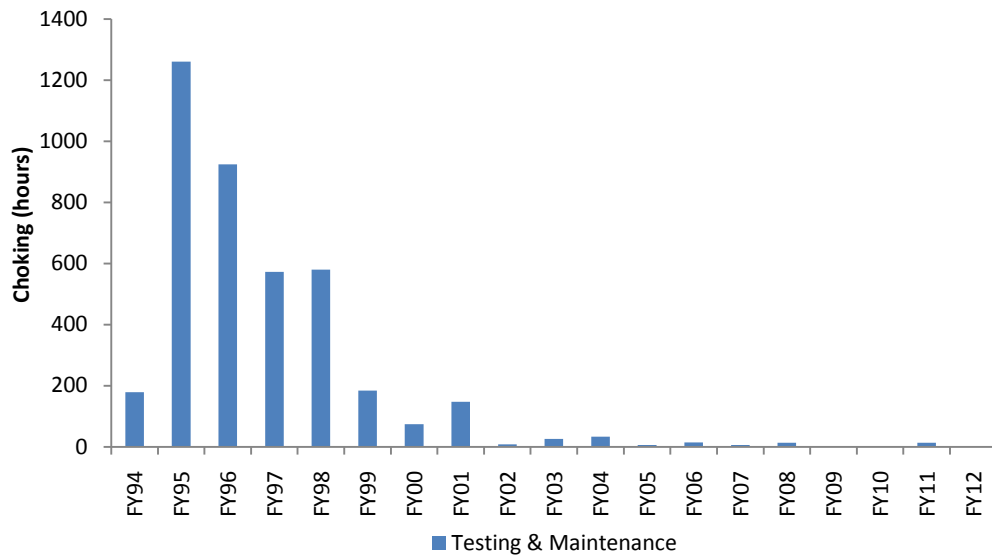
**Figure 32. Choking, FY94-FY12**

Figure 33 shows the influence of the number of rainy days in a year on the hours of rain-related choking. A rainy day is defined as a day with greater than 0.09 inches of rainfall. Differences in storm intensity between the years can explain years that have similar amounts of rainy days yet vastly different choking hours (i.e., FY96 versus FY98 and the compare the years FY02-FY05, which have similar levels of rainfall but differing amounts of choking).



**Figure 33. Rain-Related Choking, FY94-FY12**

Choking for maintenance purposes is plotted in Figure 34. Maintenance choking peaked in FY95 due to the maintenance and testing involved in bringing the new primary treatment plant on-line. From FY96 to FY98 the number of hours of maintenance-related choking continued to be fairly high because of maintenance and testing related to the startup of the new primary and secondary treatment plants. For example, in FY98, of the approximately 580 choking hours related to testing and maintenance, 442 hours were due to testing. Since there were no new systems to test in FY99, there was a significant decrease in the testing/maintenance choking hours from FY98 to FY99. Testing and maintenance increased in FY01 due to the finishing of both secondary Battery C and the outfall tunnel. With no new systems post-FY02, choking due to testing and maintenance fell to minimal levels.



**Figure 34. Testing and Maintenance-Related Choking, FY94-FY12**

## North System Sanitary Sewer Overflows

MWRA monitors sanitary sewer overflows (SSOs) visually and with meters in both the North and South Systems. SSOs occur when extreme rainfall overwhelms the transport system. Note that SSOs differ from CSOs (combined sewer overflows) in that CSO relief points are pipes that were specifically designed to relieve the combined sewer system. When the system becomes overloaded, these CSOs discharge combined sewage and storm water into a receiving body of water, such as the Charles River. SSOs, on the other hand, are weak points in the separate system, such as manholes, which will overflow during or shortly after heavy rain events.

Reported overflows in FY12 for the North System decreased from two in FY11 to none in FY12 (see Table 30). However, this count includes only overflows at MWRA-owned overflow areas. There may be overflows for which the local municipalities are responsible. MWRA monitors these local overflows less frequently, and only when notified by municipalities or concerned citizens. A list of all the known overflow locations in MWRA lines is provided in Appendix G, Table G-6.

**Table 30. Sanitary Sewer Overflows, North System, FY11-FY12**

Location	Number of Overflows	
	FY11	FY12
Section 113, Station 3+24, Winchester (Wedgemere siphon)	1	
Section 152, Station 56+54, Arlington (Mystic Valley Pkwy)	1	

## South System Sanitary Sewer Overflows

There were no reported overflows in the South System in FY12 (see Table 31).

**Table 31. Sanitary Sewer Overflows, South System, FY11-FY12**

Location	Number of Overflows	
	FY11	FY12
--		

## Inflow and Infiltration

Inflow and infiltration (I/I) is a potentially serious problem that affects all sewerage systems. The NPDES permit requires the MWRA to address issues associated with I/I. Inflow is defined as the introduction of non-sanitary sewer water such as stormwater, residential basement pump-out, and industrial cooling water, into sanitary sewers. Infiltration is the leakage of groundwater into sewage lines through cracks, inadequately sealed joints, etc. In both cases, this additional load decreases system capacity, potentially leading to SSOs. I/I poses both a wet and dry weather problem; however, wet weather exacerbates I/I problems.

A summary of all actions minimizing I/I is prepared annually by MWRA. In addition, the MWRA participates in a Regional I/I Task Force responsible for creating a Regional I/I Reduction Plan for both MWRA and local community collection systems. The I/I Task Force includes MWRA staff, state regulators, and representatives from local communities. To reduce I/I, the MWRA “may consider incentive programs, rate structures, grant and loan programs, technical assistance and public education efforts as well as regulatory and enforcement

mechanisms...” (permit section 18.bb.iv) At the end of FY03, MWRA submitted the Regional I/I Reduction Plan for regulatory review.

Find permit-related I/I materials at:

<http://www.mwra.state.ma.us/harbor/html/operations.htm>

# Miscellaneous NPDES Permit Requirements

## Overview

The MWRA's NPDES permit includes a number of other sections other than effluent quality for Deer Island and the CSO facilities, making it one of the most comprehensive permits ever issued by EPA.

## Facility Best Management Practices Plans

Best Management Practices Plans (BMPs) are designed to minimize the environmental impact of MWRA facilities. The MWRA has developed plans for the following facilities:

- Deer Island Treatment Plant
- Nut Island Headworks
- Ward Street Headworks
- Columbus Park Headworks
- Chelsea Creek Headworks
- Cottage Farm CSO facility
- Prison Point CSO facility
- Somerville Marginal CSO facility
- Fox Point CSO facility
- Commercial Point CSO facility
- Biosolids Processing Plant

The objectives of BMPs are “(1) minimize the potential for violations of the permit, (2) protect the designated water uses of the surrounding water bodies, and (3) mitigate pollution from materials storage areas, site runoff, improper use of waste disposal system, accidental spillage, etc.” (permit section 9.a)

BMPs are available at the above facilities or at the MWRA offices in Charlestown.

## Water Conservation and Dry Day Flow Limits

As described in the Executive Summary, one of the requirements of the permit is the adherence to a 436 MGD dry day flow limit. In FY12, the MWRA was well within compliance for this limit. See Figure 2 in the Executive Summary for details. If dry day flow reaches 415 MGD, MWRA cannot accept new connections larger than 1.4 MGD. An annual report documents the MWRA's demand management program. The demand management program, run with the cooperation of member communities, reviews historical water and wastewater use, and looks at the effectiveness of past and future conservation programs.

Find permit-related water conservation and dry day flow limit materials at:  
<http://www.mwra.state.ma.us/harbor/html/flow.htm>

## **Pollution Prevention Program**

The pollution prevention requirement of the permit requires MWRA to develop strategies to reduce pollutant loadings from households and permitted industries in the service area. The main target of the program is polychlorinated biphenyls, or PCBs, a known human carcinogen. Manufacture of PCBs has been banned for several decades; however, quantities remain in the environment. The other main aspect of the program is the development of educational materials regarding domestic household hazardous waste, with the aim of preventing those materials from entering the MWRA sewerage system through proper disposal techniques.

For more information on the MWRA's pollution prevention program, visit:  
<http://www.mwra.state.ma.us/harbor/html/pollution.htm>

## **Groundwater Remediation**

Currently, groundwater remediation site waters cannot be discharged into the MWRA sewer system. If this prohibition is ever relaxed, a comprehensive assessment of its effects on the sewage system and treatment process is required. As of the end of FY12, no action has been taken on this section.

## **Local Limits and Industrial Pretreatment Program**

These two related programs deal exclusively with non-domestic users, which are primarily industry. Under the local limits program, the MWRA develops and enforces specific limits on effluent from industrial users.

The industrial pretreatment program requires the MWRA to inspect and sample industrial users as specified by 40 CFR (Code of Federal Regulations) Part 403. 40 CFR Part 403 is designed as a source reduction program to limit the amount of pollutants in treatment plant influent.

Both programs result in cleaner influent to Deer Island, reducing stress on the plant, improving the efficiency of the treatment process, and reducing "pass-through" of contaminants to the effluent. Additionally, the sludge produced is cleaner and more amenable to safe fertilizer production.

More information on local limits and the pretreatment program is on-line at:  
<http://www.mwra.state.ma.us/harbor/html/local.htm>

## **Reporting**

Finally, the permit also requires the MWRA to provide the public with easy access to permit compliance reports and other information.

MWRA maintains a NPDES permit website at:  
[http://www.mwra.state.ma.us/harbor/html/ditp\\_performance.htm](http://www.mwra.state.ma.us/harbor/html/ditp_performance.htm)

EPA maintains an electronic mailing list for permit-related announcements:

<http://www.epa.gov/region1/eco/mwra/listserv.html>

Finally, there are two library repositories for permit documents:

MWRA Library  
Charlestown Navy Yard  
100 First Avenue  
Boston, MA 02129

Hyannis Public Library  
401 Main Street  
Hyannis, MA 02601



## **Appendix A. Deer Island Treatment Plant**

Table A-1	Deer Island Treatment Plant Operations Summary, FY12
Table A-2	Deer Island Influent Characterization (North & South Systems), FY12
Table A-3	Deer Island Influent Loadings (North & South Systems), FY12
Table A-4	Deer Island Influent Characterization (North System), FY12
Table A-5	Deer Island Influent Loadings (North System), FY12
Table A-6	Deer Island Influent Characterization (South System), FY12
Table A-7	Deer Island Influent Loadings (South System), FY12
Table A-8	Deer Island Effluent Characterization, FY12
Table A-9	Deer Island Effluent Loadings, FY12
Table A-10	Deer Island Influent Characterization (DEC; North & South Systems), FY12
Table A-11	Deer Island Influent Loadings (DEC; North & South Systems), FY12
Table A-12	Deer Island Influent Characterization (DEC; North System), FY12
Table A-13	Deer Island Influent Loadings (DEC; North System), FY12
Table A-14	Deer Island Influent Characterization (DEC; South System), FY12
Table A-15	Deer Island Influent Loadings (DEC; South System), FY12
Table A-16	Deer Island Effluent Characterization (DEC), FY12
Table A-17	Deer Island Effluent Loadings (DEC), FY12

**Table A-1. Deer Island Treatment Plant Operations Summary, FY12**

<b>North System Influent</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Min</b>	<b>Annual Average</b>	<b>Max</b>
Flow (mgd)															
Average	178.9	249.4	242.8	289.3	257.7	255.5	212.8	190.0	189.0	188.0	203.9	206.2		222.0	
Minimum	156.0	163.0	192.0	205.0	205.0	194.0	180.0	167.0	166.0	153.0	161.0	166.0	153.0		
Maximum	270.0	475.0	473.0	545.0	402.0	617.0	383.0	262.0	276.0	452.0	321.0	372.0			617.0
Temperature (deg F)															
Average	70.7	70.8	68.5	64.1	62.8	60.3	58.1	58.1	61.3	61.9	61.9	66.4		63.7	
Minimum	67.5	67.8	64.9	55.4	56.7	53.2	53.1	54.0	54.9	57.4	57.0	59.7	53.1		
Maximum	79.2	73.4	71.4	69.4	68.2	65.8	62.2	63.5	72.1	70.9	68.0	71.4			79.2
pH (SU)															
Average	6.8	6.8	6.7	6.7	6.7	6.7	6.8	6.7	6.8	6.8	6.7	6.7		6.7	
Minimum	6.5	6.5	6.5	6.5	6.4	6.3	6.4	6.5	6.4	6.5	6.5	6.3	6.3		
Maximum	7.0	7.2	7.0	7.0	7.0	6.9	7.4	7.0	7.1	7.0	6.9	6.9			7.4
<b>North System Influent: Conventional Parameters (mg/L)</b>															
	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Min</b>	<b>Annual Average</b>	<b>Max</b>
Total Suspended Solids															
Average	173	162	154	125	148	127	150	172	207	168	173	177		161	
Minimum	107	64	96	56	104	74	55	109	118	46	107	92	46		
Maximum	258	298	251	224	267	192	264	340	476	366	286	314			476
cBOD															
Average	104	81	85	71	89	85	94	105	117	129	102	113		98	
Minimum	67	44	50	38	54	41	70	76	82	84	64	81	38		
Maximum	158	144	128	107	134	139	128	142	176	229	153	162			229
Settleable Solids (mL/L)															
Average	7.0	6.1	5.7	4.2	4.7	4.9	6.3	8.5	10.7	8.2	6.7	11.3		7.0	
Minimum	2.5	2.4	2.4	1.4	2.1	0.8	3.0	4.0	4.2	1.6	2.0	3.5	0.8		
Maximum	15.0	36.4	20.0	7.6	7.5	9.8	11.0	19.0	86.0	15.0	14.0	70.0			86.0
Total Solids															
Average	1703	1520	1351	1213	1182	1075	1379	1329	1296	1401	1270	1601		1360	
Minimum	1170	956	828	760	904	592	980	996	1050	932	680	884	592		
Maximum	2150	2230	1790	1810	1580	1380	2110	1660	1550	2020	1940	2600			2600
Volatile Solids															
Average	464	404	356	287	300	257	327	358	378	375	373	431		359	
Minimum	320	196	212	188	184	144	176	236	240	160	224	260	144		
Maximum	600	604	476	416	536	380	508	516	548	588	552	704			704
Volatile Suspended Solids															
Average	154	141	138	113	133	114	135	156	185	151	158	155		145	
Minimum	96	52	86	50	98	66	48	100	74	46	92	80	46		
Maximum	216	270	216	198	249	176	230	304	438	326	268	256			438

**Table A-1. Deer Island Treatment Plant Operations Summary, FY12 (cont.)**

<b>North System Influent: Conventional Parameters (mg/L; cont.)</b>													<b>Min</b>	<b>Annual Average</b>	<b>Max</b>
	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>			
<b>BOD</b>															
Average	161	141	153	125	153	139	163	184	195	194	162	177		162	
Minimum	106	49	83	77	103	60	92	145	111	138	107	113	49		
Maximum	209	267	225	168	219	217	233	247	261	329	232	224			329
<b>COD</b>															
Average	371	304	314	251	304	283	329	364	422	442	364	385		344	
Minimum	243	167	169	175	209	158	191	269	234	264	250	289	158		
Maximum	579	516	759	372	406	397	461	485	588	1280	841	546			1280
<b>Chloride</b>															
Average	641	585	497	445	422	394	549	484	445	520	446	590		502	
Minimum	397	381	288	245	318	183	375	347	358	304	297	306	183		
Maximum	824	905	746	695	615	552	955	691	604	838	725	1030			1030
<b>North System Influent: Nutrients (mg/L)</b>													<b>Min</b>	<b>Annual Average</b>	<b>Max</b>
	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>			
<b>Ammonia</b>															
Average	22.4	15.4	18.0	15.3	15.0	13.2	21.0	21.2	20.6	24.0	20.1	20.2		18.9	
Minimum	18.0	10.2	13.3	9.2	12.5	7.9	18.9	17.2	19.6	19.5	16.0	14.6	7.9		
Maximum	25.0	20.3	22.9	20.5	18.7	15.5	22.7	25.6	22.9	26.4	24.2	22.6			26.4
<b>Nitrite</b>															
Average	0.19	0.45	0.62	0.51	0.71	0.42	0.29	0.45	0.84	0.15	0.39	0.34		0.45	
Minimum	0.01	0.22	0.40	0.20	0.28	0.25	0.01	0.02	0.48	0.01	0.08	0.01	0.01		
Maximum	0.39	0.64	1.06	0.73	1.21	0.61	0.46	0.83	1.13	0.32	0.68	0.71			1.21
<b>Nitrate</b>															
Average	0.06	0.27	0.68	0.77	0.42	0.46	0.52	0.51	0.37	0.07	0.27	0.22		0.39	
Minimum	0.01	0.06	0.37	0.29	0.12	0.14	0.01	0.16	0.11	0.01	0.07	0.01	0.01		
Maximum	0.16	0.43	1.08	1.06	1.02	0.73	0.76	1.45	0.69	0.17	0.56	0.57			1.45
<b>Total Kjeldahl Nitrogen</b>															
Average	33.8	23.4	31.1	22.2	25.2	21.6	31.3	30.0	33.3	35.4	30.3	30.1		29.0	
Minimum	28.4	16.0	20.1	14.9	21.2	12.9	27.9	23.1	30.8	28.6	24.0	25.1	12.9		
Maximum	44.4	29.8	48.7	28.9	30.2	26.0	33.6	35.3	37.6	39.8	37.4	33.9			48.7
<b>Orthophosphates</b>															
Average	2.1	1.4	1.8	1.4	1.5	1.2	2.1	2.0	2.0	2.2	1.9	1.9		1.8	
Minimum	1.6	0.8	1.3	0.8	1.2	0.7	1.6	1.4	1.8	1.4	1.4	1.5	0.7		
Maximum	2.4	2.0	2.2	1.7	2.0	1.5	2.4	2.6	2.1	2.7	2.5	2.5			2.7
<b>Total Phosphorus</b>															
Average	4.3	3.1	3.5	3.2	3.5	3.2	4.3	3.9	4.4	4.7	3.9	4.4		3.9	
Minimum	4.1	2.2	2.8	2.5	2.9	2.2	3.5	3.1	4.0	3.6	3.0	4.1	2.2		
Maximum	4.6	3.9	4.1	3.7	4.3	3.8	4.8	4.7	4.6	5.4	5.0	4.9			5.4

**Table A-1. Deer Island Treatment Plant Operations Summary, FY12 (cont.)**

<b>South System Influent</b>													<b>Annual</b>		
	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Min</b>	<b>Average</b>	<b>Max</b>
Flow (mgd)															
Average	84.2	104.9	123.7	170.7	160.2	157.2	118.2	104.0	104.6	96.6	111.2	102.4		119.8	
Minimum	74.0	72.0	101.0	119.0	132.0	119.0	102.0	92.0	89.0	82.0	97.0	91.0	72.0		
Maximum	97.0	187.0	213.0	261.0	229.0	301.0	147.0	129.0	129.0	173.0	147.0	118.0			301.0
Temperature (deg F)															
Average	67.8	69.2	68.0	65.3	62.0	58.8	58.3	56.5	58.0	61.0	61.3	64.8		62.6	
Minimum	64.8	67.8	66.7	59.9	58.5	53.4	54.3	54.0	53.8	57.0	55.6	62.4	53.4		
Maximum	77.2	72.7	70.2	70.7	69.8	61.5	70.7	67.6	64.8	71.8	67.3	67.5			77.2
pH (SU)															
Average	6.8	6.8	6.8	6.7	6.5	6.6	6.6	6.7	6.7	6.7	6.6	6.8		6.7	
Minimum	6.5	6.6	6.6	6.3	6.3	6.2	6.3	6.5	6.4	6.4	6.4	6.6	6.2		
Maximum	7.0	7.0	6.9	7.0	6.8	6.8	6.9	6.8	7.0	7.0	6.8	7.0			7.0
<b>South System Influent: Conventional Parameters (mg/L)</b>													<b>Annual</b>		
	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Min</b>	<b>Average</b>	<b>Max</b>
Total Suspended Solids															
Average	224	236	217	183	224	159	185	197	231	277	251	223		217	
Minimum	134	172	136	102	124	82	82	106	110	108	144	148	82		
Maximum	342	357	290	316	366	242	340	320	360	464	458	278			464
cBOD															
Average	122	108	89	76	91	80	95	92	111	129	108	111		101	
Minimum	94	61	54	38	32	30	59	58	75	82	70	76	30		
Maximum	179	170	130	130	168	137	161	132	141	189	151	157			189
Settleable Solids (mL/L)															
Average	8.8	9.5	7.6	5.5	6.1	7.3	7.5	9.4	9.1	8.9	8.5	8.7		8.1	
Minimum	4.0	3.5	4.0	3.6	3.5	3.5	5.1	6.0	6.0	3.8	6.0	3.0	3.0		
Maximum	19.0	51.0	16.0	8.0	15.0	24.0	10.2	27.0	14.7	17.0	13.0	10.4			51.0
Total Solids															
Average	1880	1796	1497	1200	1118	1045	1181	1257	1337	1585	1449	1686		1419	
Minimum	1480	1280	1080	776	900	720	904	996	1070	1140	1160	1320	720		
Maximum	2300	2670	2040	1610	1330	1450	1510	1560	1820	2390	1960	2520			2670
Volatile Solids															
Average	570	541	453	347	367	301	347	373	442	515	493	508		438	
Minimum	404	376	296	248	188	112	224	240	248	372	304	360	112		
Maximum	784	828	592	580	540	472	484	516	748	924	884	624			924
Volatile Suspended Solids															
Average	195	202	190	160	195	152	162	173	202	243	219	192		190	
Minimum	119	146	122	90	110	71	72	100	98	98	132	128	71		
Maximum	302	293	248	284	332	576	270	290	300	412	395	246			576

**Table A-1. Deer Island Treatment Plant Operations Summary, FY12 (cont.)**

<b>South System Influent: Conventional Parameters (mg/L; cont.)</b>													<b>Annual</b>		
	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Min</b>	<b>Average</b>	<b>Max</b>
<b>BOD</b>															
Average	180	188	168	137	160	129	166	172	177	222	180	175		171	
Minimum	128	128	122	68	61	63	87	119	114	135	117	130	61		
Maximum	223	245	224	191	280	194	241	221	263	301	272	236			301
<b>COD</b>															
Average	481	455	397	334	404	304	379	388	457	550	467	469		424	
Minimum	344	326	267	197	200	176	243	287	301	358	345	302	176		
Maximum	829	691	511	495	736	466	565	508	692	762	655	810			829
<b>Chloride</b>															
Average	698	664	534	419	363	352	413	435	441	567	496	611		499	
Minimum	563	444	383	297	300	196	313	326	369	365	390	453	196		
Maximum	824	1070	807	630	448	479	600	570	514	855	719	1040			1070
<b>South System Influent: Nutrients (mg/L)</b>														<b>Annual</b>	
	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Min</b>	<b>Average</b>	<b>Max</b>
<b>Ammonia</b>															
Average	56.8	43.6	39.9	29.2	25.0	32.0	44.3	50.3	50.7	55.7	48.6	48.2		43.7	
Minimum	48.8	33.3	36.5	24.6	17.5	26.8	39.4	38.0	45.6	39.8	37.7	45.1	17.5		
Maximum	62.7	60.2	47.2	35.0	32.5	36.0	48.5	55.9	55.7	62.3	57.7	53.6			62.7
<b>Nitrite</b>															
Average	0.24	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01	0.01	0.01	0.01		0.03	
Minimum	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Maximum	0.91	0.01	0.01	0.01	0.01	0.01	0.01	0.14	0.01	0.01	0.01	0.01			0.91
<b>Nitrate</b>															
Average	0.10	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		0.01	
Minimum	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Maximum	0.39	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01			0.39
<b>Total Kjeldahl Nitrogen</b>															
Average	67.9	52.9	47.7	38.1	37.1	44.1	54.7	61.5	64.4	70.7	62.6	60.2		55.1	
Minimum	64.2	39.1	43.0	31.3	27.9	35.2	49.3	44.1	57.6	53.6	51.6	55.5	27.9		
Maximum	70.0	71.8	56.3	45.1	44.8	53.0	61.4	67.3	68.5	79.7	72.4	69.5			79.7
<b>Orthophosphates</b>															
Average	3.8	2.8	2.7	1.9	1.9	2.2	3.0	3.4	3.6	3.8	3.5	3.7		3.0	
Minimum	3.3	2.1	2.4	1.6	1.3	1.7	2.6	2.5	3.3	2.7	2.9	3.3	1.3		
Maximum	4.0	3.8	3.1	2.4	2.3	2.7	3.4	4.2	4.0	4.3	4.2	4.5			4.5
<b>Total Phosphorus</b>															
Average	7.6	6.1	5.5	4.7	4.9	6.9	6.4	6.8	7.7	15.4	7.8	7.5		7.3	
Minimum	6.8	4.6	4.7	4.1	4.1	4.4	5.7	5.1	7.6	6.3	7.1	7.1	4.1		
Maximum	8.1	8.0	6.0	5.8	5.7	10.9	6.9	7.8	7.9	36.5	8.9	8.4			36.5

**Table A-1. Deer Island Treatment Plant Operations Summary, FY12 (cont.)**

<b>Flow-Weighted Influent (North+South Systems): Conventional Parameters (mg/L)</b>													<b>Annual</b>		
	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Min</b>	<b>Average</b>	<b>Max</b>
Total Suspended Solids															
Average	189	184	176	147	177	139	162	181	216	205	201	192	139	181	216
cBOD															
Average	110	89	86	73	90	83	94	100	115	129	104	112	73	99	129
Settleable Solids (mL/L)															
Average	7.6	7.1	6.4	4.7	5.2	5.8	6.8	8.8	10.1	8.5	7.3	10.4	4.7	7.4	10.4
Total Solids															
Average	1760	1602	1400	1208	1157	1064	1309	1303	1311	1463	1333	1629	1064	1378	1760
Volatile Solids															
Average	498	445	389	309	325	274	334	363	401	423	416	457	274	386	498
Volatile Suspended Solids															
Average	167	159	156	130	157	128	145	162	191	182	179	167	128	160	191
BOD															
Average	167	155	158	129	156	135	164	180	188	204	168	176	129	165	204
COD															
Average	406	349	342	282	342	291	347	372	434	479	401	413	282	372	479
Chloride															
Average	660	608	509	435	399	378	501	467	444	536	463	597	378	500	660
<b>Flow-Weighted Influent (North+South Systems): Nutrients (mg/L)</b>													<b>Annual</b>		
	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Min</b>	<b>Average</b>	<b>Max</b>
Ammonia															
Average	33.4	23.7	25.4	20.4	18.8	20.4	29.3	31.5	31.3	34.7	30.2	29.5	18.8	27.4	34.7
Nitrite															
Average	0.21	0.32	0.41	0.32	0.44	0.26	0.19	0.30	0.54	0.10	0.26	0.23	0.10	0.30	0.54
Nitrate															
Average	0.07	0.19	0.45	0.48	0.26	0.29	0.33	0.33	0.24	0.05	0.18	0.15	0.05	0.25	0.48
Total Kjeldahl Nitrogen															
Average	44.7	32.1	36.7	28.1	29.8	30.2	39.6	41.2	44.4	47.4	41.7	40.1	28.1	38.0	47.4
Orthophosphates															
Average	2.6	1.8	2.1	1.6	1.6	1.6	2.4	2.5	2.6	2.7	2.4	2.5	1.6	2.2	2.7
Total Phosphorus															
Average	5.3	4.0	4.2	3.7	4.0	4.6	5.0	5.0	5.6	8.3	5.3	5.5	3.7	5.0	8.3

**Table A-1. Deer Island Treatment Plant Operations Summary, FY12 (cont.)**

<b>Final Effluent</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Min</b>	<b>Annual Average</b>	<b>Max</b>
Flow (mgd)															
Average	263.0	354.2	366.4	459.8	418.0	412.8	331.0	293.8	293.7	284.8	315.3	308.5		341.8	
Minimum	230.0	237.0	295.0	332.0	344.0	314.0	284.0	259.0	255.0	237.0	257.0	261.0	230.0		
Maximum	360.0	662.0	686.0	733.0	632.0	819.0	524.0	359.0	401.0	563.0	434.0	489.0			819.0
Temperature (deg F)															
Average	70.0	71.0	69.5	66.1	63.1	61.2	59.3	59.0	59.9	62.5	63.5	66.9		64.3	
Minimum	67.5	69.3	66.9	60.3	60.1	57.4	56.3	57.4	56.1	60.4	59.9	64.0	56.1		
Maximum	72.5	72.7	71.1	69.1	64.8	63.0	61.5	60.8	63.0	65.5	66.4	70.5			72.7
pH (SU)*															
Average	6.6	6.6	6.6	6.6	6.5	6.6	6.5	6.6	6.6	6.6	6.6	6.6		6.6	
Minimum	6.2	6.1	6.1	6.2	6.1	6.1	6.3	6.2	6.3	6.3	6.3	6.2	6.1		
Maximum	7.0	6.9	6.9	6.9	6.7	6.8	6.8	7.0	6.7	6.8	6.8	7.1			7.1
<b>Final Effluent: Conventional Parameters (mg/L)</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Min</b>	<b>Annual Average</b>	<b>Max</b>
Total Suspended Solids															
Average	5.9	7.2	5.3	5.5	5.8	6.0	8.8	8.5	9.3	10.3	5.8	6.4		7.1	
Minimum	2.8	3.4	2.6	2.0	2.8	2.6	5.0	5.4	5.8	2.4	2.8	3.0	2.0		
Maximum	12.0	16.0	13.8	13.8	19.0	20.9	18.0	17.0	13.2	26.3	13.4	15.2			26.3
cBOD															
Average	4.1	4.1	3.4	3.8	4.1	4.0	5.4	4.7	6.1	6.5	4.4	4.4		4.6	
Minimum	2.2	1.7	1.8	1.7	2.3	2.1	2.6	2.6	2.9	2.4	1.9	2.3	1.7		
Maximum	6.7	10.9	7.5	12.5	10.2	12.3	11.7	8.2	9.8	16.8	7.4	12.6			16.8
Settleable Solids (mL/L)															
Average	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		0.1	
Minimum	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
Maximum	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1			0.2
Total Chlorine Residual*															
Average	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04		0.04	
Minimum	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04		
Maximum	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04			0.04
Fecal Coliform (colonies/100mL)*															
Geometric Mean	6	9	15	12	7	7	6	5	6	7	5	7		7	
Minimum	5	5	5	5	5	5	5	5	5	5	5	5	5		
Maximum	32	347	144	77	19	47	34	10	32	24	10	25			347
Total Solids															
Average	1498	1354	1221	1060	958	932	1114	1109	1104	1275	1114	1348		1174	
Minimum	1200	828	748	616	712	496	852	844	920	704	816	1000	496		
Maximum	1890	2050	1730	1420	1230	1240	1670	1520	1350	1870	1570	2140			2140

**Table A-1. Deer Island Treatment Plant Operations Summary, FY12 (cont.)**

<b>Final Effluent: Conventional Parameters (mg/L; cont.)</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Min</b>	<b>Annual Average</b>	<b>Max</b>
<b>Volatile Solids</b>															
Average	294	253	224	165	148	149	162	183	185	220	208	233		202	
Minimum	176	148	104	68	60	60	88	64	64	104	68	136	60		
Maximum	388	500	360	288	304	300	280	404	304	408	304	352			500
<b>Volatile Suspended Solids</b>															
Average	5.2	6.3	4.6	4.9	5.2	5.4	7.9	7.5	8.4	9.2	5.3	5.8		6.3	
Minimum	2.6	2.8	2.2	2.0	3.0	2.6	4.8	4.6	5.4	2.6	2.6	2.8	2.0		
Maximum	10.6	14.6	11.8	12.4	16.5	17.8	17.8	15.0	11.7	23.5	11.4	13.5			23.5
<b>BOD</b>															
Average	16.2	14.2	13.0	13.4	13.8	14.5	18.4	15.0	13.6	18.2	16.8	14.4		15.1	
Minimum	7.8	5.6	7.4	5.0	7.6	6.2	7.9	5.2	6.9	7.3	3.9	7.0	3.9		
Maximum	29.4	34.4	22.0	23.5	28.8	24.5	31.5	31.3	19.0	33.2	31.6	20.4			34.4
<b>COD</b>															
Average	69	57	54	48	45	47	60	60	69	82	56	71		60	
Minimum	54	40	38	32	35	32	43	44	55	54	43	46	32		
Maximum	92	85	80	69	73	65	86	83	92	118	73	222			222
<b>Total Organic Carbon</b>															
Average	12.3	15.0	10.2	9.2	7.7	10.1	11.6	12.5	12.1	17.2	12.5	11.2		11.8	
Minimum	12.1	14.1	9.3	8.1	7.6	9.6	11.5	11.9	10.9	16.8	11.3	10.0	7.6		
Maximum	12.4	15.8	11.1	10.2	7.7	10.6	11.6	13.0	13.3	17.6	13.6	12.4			17.6
<b>Chloride</b>															
Average	635	596	507	442	398	389	495	470	463	553	463	573		499	
Minimum	510	330	293	257	296	184	371	358	382	283	350	406	184		
Maximum	755	923	727	602	534	566	875	661	598	875	706	1000			1000
<b>Fats, Oils, and Grease</b>															
Average	6.9	6.8	7.0	6.8	7.4	7.0	6.9	6.9	7.0	7.0	6.8	6.8		6.9	
Minimum	6.7	6.7	6.7	6.7	6.9	6.7	6.7	6.7	6.9	6.9	6.7	6.7	6.7		
Maximum	7.1	7.1	7.5	7.0	8.5	7.5	7.1	7.2	7.1	7.3	7.0	7.0			8.5



**Table A-1. Deer Island Treatment Plant Operations Summary, FY12 (cont.)**

<b>Final Effluent: Nutrients (mg/L)</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Min</b>	<b>Annual Average</b>	<b>Max</b>
Ammonia															
Average	25.2	21.6	22.9	16.7	15.3	16.7	24.3	26.9	25.5	31.5	23.2	25.3		22.9	
Minimum	16.3	10.8	11.4	13.0	12.0	8.5	17.8	17.7	6.7	22.7	14.9	12.9	6.7		
Maximum	30.7	30.4	29.3	24.7	21.4	21.9	27.6	32.6	32.0	35.9	29.8	32.6			35.9
Nitrite															
Average	0.67	0.37	0.23	0.48	0.38	0.41	0.08	0.24	0.17	0.15	0.19	0.24		0.30	
Minimum	0.45	0.13	0.06	0.11	0.17	0.29	0.07	0.06	0.12	0.02	0.09	0.04	0.02		
Maximum	0.98	0.97	0.49	0.90	0.53	0.47	0.10	0.62	0.26	0.29	0.25	0.49			0.98
Nitrate															
Average	1.03	0.59	0.54	1.36	0.90	0.59	0.19	0.71	0.51	0.53	1.74	0.47		0.76	
Minimum	0.31	0.07	0.29	0.41	0.41	0.19	0.04	0.08	0.05	0.01	0.30	0.05	0.01		
Maximum	1.79	2.42	1.33	2.40	2.28	1.22	0.51	1.39	0.86	1.11	3.72	0.90			3.72
Total Kjeldahl Nitrogen															
Average	26.9	20.4	22.4	17.7	17.0	20.1	25.3	27.9	29.0	31.6	25.6	25.5		24.1	
Minimum	17.0	11.9	11.3	13.0	13.5	15.3	18.9	18.3	14.8	24.0	17.9	13.6	11.3		
Maximum	29.6	25.6	29.2	25.2	22.8	25.5	29.1	34.2	35.7	38.1	30.8	33.8			38.1
Orthophosphates															
Average	2.3	1.4	1.9	1.4	1.2	1.2	1.5	1.4	2.0	1.9	1.4	2.1		1.6	
Minimum	1.9	0.8	1.3	1.1	0.8	1.0	1.3	1.1	1.6	1.0	0.8	1.9	0.8		
Maximum	2.6	1.9	2.2	1.9	1.7	1.6	1.6	1.9	2.3	2.3	1.9	2.4			2.6
Total Phosphorus															
Average	2.9	1.8	2.2	1.9	1.6	1.8	2.1	1.9	2.5	2.5	1.9	2.6		2.1	
Minimum	2.5	1.1	1.7	1.5	1.2	1.4	1.8	1.5	2.1	1.7	1.3	2.4	1.1		
Maximum	3.2	2.3	2.8	2.4	2.2	2.2	2.2	2.7	2.9	2.9	2.7	2.9			3.2

~: No data collected

\*: Effluent pH, TCR, and fecal coliform are sampled multiple times daily. The minimum and maximum are the minimum and maximum daily averages, not single sample minimums and maximums.

Table A-2. Deer Island Influent Characterization (North & South Systems), FY12

Metals (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
ALUMINUM	379	959	414	553	393	401	335	358	444	595	662	524	490	1270	46 of 46
ANTIMONY	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	25	25	25	15.4	25	0 of 46
ARSENIC	1.01	1.94	1.08	1.27	0.4	0.802	0.81	0.892	0.4	0.55	0.4	0.4	0.795	2.18	22 of 46
BERYLLIUM	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0 of 46
BORON	268	231	125	125	125	125	125	125	125	125	125	292	158	317	11 of 46
CADMIUM	0.349	0.508	0.281	0.322	0.269	0.27	0.229	0.26	0.306	0.295	0.273	0.322	0.303	0.658	46 of 46
CHROMIUM	2.37	5.24	2.68	3.11	1.97	2.06	2.04	2.67	2.56	2.3	3.2	2.9	2.7	7.44	46 of 46
COPPER	49.3	90.1	56	56.5	38.6	35.5	49.1	53.6	55.9	60.8	60.9	55.9	53.8	110	46 of 46
IRON	1500	3160	1710	2030	1500	1340	1430	1530	1930	1900	1980	1940	1800	4170	46 of 46
LEAD	5.29	26.9	12.5	23.1	5.21	5.33	5.24	5.03	6.41	7.2	7.21	8.55	9.29	39	46 of 46
MERCURY	0.116	0.228	0.207	0.234	0.0922	0.0715	0.109	0.248	0.104	0.096	0.107	0.0998	0.138	0.408	46 of 46
MOLYBDENUM	5.16	6.24	5.13	4.18	3.88	4.51	3.05	3.75	2.73	2.41	4.69	3.05	4.06	7.05	45 of 46
NICKEL	3.14	4.56	3.77	3.76	2.65	3.54	2.76	3.04	2.55	4.25	4.43	3.92	3.47	5.7	46 of 46
SELENIUM	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0 of 46
SILVER	0.313	0.657	0.421	0.614	0.318	0.393	0.393	0.412	0.347	0.347	0.549	0.355	0.417	0.803	50 of 50
THALLIUM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 46
ZINC	94	212	101	107	76.6	74.3	88.8	94.6	113	124	128	110	107	270	46 of 46

Cyanide (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
CYANIDE	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0 of 48

Oil and Grease, Surfactants, and Petroleum Hydrocarbons (mg/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
FATS OIL AND GREASE	32.9	31.4	28.7	11.2	18.7	25.2	37.9	31.8	27.2	39.4	28.3	31.8	27.2	43.5	48 of 48
MBAS	2.8	3.18	2.3	1.78	1.44	2.63	3.94	2.43	2.77	3.9	3.38	2.88	2.71	4.15	46 of 46
PETROLEUM HYDROCARBONS	1.53	1.47	0.58	0.792	1.76	0.504	0.627	0.338	0.509	1.1	1.07	0.548	0.891	1.95	48 of 48

Organochlorine Pesticides and PCBs (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
4,4'-DDD	0.00328	0.00223	0.00211	0.00211	0.00212	0.00211	0.00211	0.00233	0.00216	0.00214	0.00225	0.00207	0.00223	0.00454	0 of 46
4,4'-DDE	0.00328	0.00223	0.00211	0.00211	0.00212	0.00211	0.00211	0.00233	0.00216	0.00214	0.00225	0.00207	0.00223	0.00454	0 of 46
4,4'-DDT	0.00328	0.00223	0.00211	0.00211	0.00212	0.00211	0.00211	0.00233	0.00216	0.00214	0.00225	0.00207	0.00223	0.00454	0 of 46
ALDRIN	0.00164	0.00111	0.00106	0.00105	0.00106	0.00106	0.00105	0.00117	0.00108	0.00107	0.00112	0.00103	0.00112	0.00227	0 of 46
ALPHA-BHC	0.00164	0.00111	0.00106	0.00105	0.00106	0.00106	0.00105	0.00117	0.00108	0.00107	0.00112	0.00103	0.00112	0.00227	0 of 46
ALPHA-CHLORDANE	0.00164	0.00111	0.00106	0.00105	0.00106	0.00106	0.00105	0.00117	0.00108	0.00107	0.00112	0.00103	0.00112	0.00227	0 of 46
AROCLOR-1016	0.082	0.0557	0.0528	0.0527	0.0531	0.0528	0.0527	0.0584	0.054	0.0536	0.0562	0.0517	0.0558	0.113	0 of 46
AROCLOR-1221	0.164	0.111	0.106	0.105	0.106	0.106	0.105	0.117	0.108	0.107	0.112	0.103	0.112	0.227	0 of 46
AROCLOR-1232	0.082	0.0557	0.0528	0.0527	0.0531	0.0528	0.0527	0.0584	0.054	0.0536	0.0562	0.0517	0.0558	0.113	0 of 46
AROCLOR-1242	0.082	0.0557	0.0528	0.0527	0.0531	0.0528	0.0527	0.0584	0.054	0.0536	0.0562	0.0517	0.0558	0.113	0 of 46
AROCLOR-1248	0.082	0.0557	0.0528	0.0527	0.0531	0.0528	0.0527	0.0584	0.054	0.0536	0.0562	0.0517	0.0558	0.113	0 of 46
AROCLOR-1254	0.082	0.0557	0.0528	0.0527	0.0531	0.0528	0.0527	0.0584	0.054	0.0536	0.0562	0.0517	0.0558	0.113	0 of 46
AROCLOR-1260	0.082	0.0557	1.97	0.0527	0.0531	0.0528	0.0527	0.0584	0.054	0.0536	0.0562	0.0517	0.236	3.99	1 of 46
BETA-BHC	0.00164	0.00111	0.00106	0.00105	0.00106	0.00106	0.00105	0.00117	0.00108	0.00107	0.00112	0.00103	0.00112	0.00227	0 of 46
CHLORDANE (TECHNICAL)	0.164	0.111	0.106	0.105	0.106	0.106	0.105	0.117	0.108	0.107	0.112	0.103	0.112	0.227	0 of 46
DELTA-BHC	0.00164	0.00111	0.00106	0.00105	0.00106	0.00106	0.00105	0.00117	0.00108	0.00107	0.00112	0.00103	0.00112	0.00227	0 of 46
DIELDRIN	0.00328	0.00223	0.00211	0.00211	0.00212	0.00211	0.00211	0.00233	0.00216	0.00214	0.00225	0.00207	0.00223	0.00454	0 of 46
ENDOSULFAN I	0.00164	0.00111	0.00106	0.00105	0.00106	0.00106	0.00105	0.00117	0.00108	0.00107	0.00112	0.00103	0.00112	0.00227	0 of 46
ENDOSULFAN II	0.00328	0.00223	0.00211	0.00211	0.00212	0.00211	0.00211	0.00233	0.00216	0.00214	0.00225	0.00207	0.00223	0.00454	0 of 46
ENDOSULFAN SULFATE	0.00328	0.00223	0.00211	0.00211	0.00212	0.00211	0.00211	0.00233	0.00216	0.00214	0.00225	0.00207	0.00223	0.00454	0 of 46
ENDRIN	0.00328	0.00223	0.00211	0.00211	0.00212	0.00211	0.00211	0.00233	0.00216	0.00214	0.00225	0.00207	0.00223	0.00454	0 of 46
ENDRIN ALDEHYDE	0.00328	0.00223	0.00211	0.00211	0.00212	0.00211	0.00211	0.00233	0.00216	0.00214	0.00225	0.00207	0.00223	0.00454	0 of 46
ENDRIN KETONE	0.00328	0.00223	0.00211	0.00211	0.00212	0.00211	0.00211	0.00233	0.00216	0.00214	0.00225	0.00207	0.00223	0.00454	0 of 46
GAMMA-BHC	0.00164	0.00111	0.00106	0.00105	0.00106	0.00106	0.00105	0.00117	0.00108	0.00107	0.00112	0.00103	0.00112	0.00227	0 of 46
GAMMA-CHLORDANE	0.00164	0.00111	0.00106	0.00105	0.00106	0.00106	0.00105	0.00117	0.00108	0.00107	0.00112	0.00103	0.00112	0.00227	0 of 46
HEPTACHLOR	0.00164	0.00111	0.00106	0.00105	0.00106	0.00106	0.00105	0.00117	0.00108	0.00107	0.00112	0.00103	0.00112	0.00227	0 of 46
HEPTACHLOR EPOXIDE	0.00164	0.00111	0.00106	0.00105	0.00106	0.00106	0.00105	0.00117	0.00108	0.00107	0.00112	0.00103	0.00112	0.00227	0 of 46
HEXACHLOROBENZENE	0.00164	0.00111	0.00106	0.00105	0.00106	0.00106	0.00105	0.00117	0.00108	0.00107	0.00112	0.00103	0.00112	0.00639	1 of 30
METHOXYCHLOR	0.0164	0.0111	0.0106	0.0105	0.0106	0.0106	0.0105	0.0117	0.0108	0.0107	0.0112	0.0103	0.0112	0.0227	0 of 46
TOXAPHENE	0.164	0.111	0.106	0.105	0.106	0.106	0.105	0.117	0.108	0.107	0.112	0.103	0.112	0.227	0 of 46

Notes

~: No data or no samples taken; results in bold indicate one or more detects that month.

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-3. Deer Island Influent Loadings (North & South Systems), FY12

Metals (lbs/day)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
ALUMINUM	849	2290	1250	2190	1620	1230	859	923	1200	1290	1650	1490	1370	3490	46 of 46
ANTIMONY	28	29.9	37.6	49.5	51.7	38.3	32.1	32.2	33.8	54.1	62.2	70.9	43.1	74	0 of 46
ARSENIC	2.26	4.63	3.25	5.05	1.65	2.46	2.08	2.3	1.08	1.19	0.996	1.13	2.22	6.01	22 of 46
BERYLLIUM	0.56	0.598	0.752	0.991	1.03	0.766	0.641	0.645	0.676	0.541	0.622	0.709	0.699	1.07	0 of 46
BORON	602	552	376	495	517	383	321	322	338	271	311	829	441	939	11 of 46
CADMIUM	0.782	1.22	0.845	1.28	1.11	0.826	0.586	0.671	0.826	0.638	0.68	0.913	0.847	1.81	46 of 46
CHROMIUM	5.32	12.5	8.06	12.3	8.13	6.32	5.24	6.89	6.93	4.99	7.96	8.22	7.54	20.5	46 of 46
COPPER	110	215	169	224	159	109	126	138	151	132	152	158	151	302	46 of 46
IRON	3360	7560	5160	8050	6210	4100	3660	3940	5230	4110	4940	5490	5020	11500	46 of 46
LEAD	11.9	64.3	37.5	91.6	21.5	16.3	13.4	13	17.3	15.6	18	24.3	26	107	46 of 46
MERCURY	0.26	0.546	0.624	0.927	0.381	0.219	0.281	0.64	0.282	0.208	0.266	0.283	0.387	1.05	46 of 46
MOLYBDENUM	11.6	14.9	15.5	16.6	16	13.8	7.83	9.68	7.39	5.23	11.7	8.65	11.4	19.4	45 of 46
NICKEL	7.05	10.9	11.3	14.9	10.9	10.9	7.07	7.84	6.89	9.19	11	11.1	9.71	15.7	46 of 46
SELENIUM	1.01	1.08	1.35	1.78	1.86	1.38	1.15	1.16	1.22	0.974	1.12	1.28	1.26	1.93	0 of 46
SILVER	0.702	1.57	1.27	2.43	1.31	1.21	1.01	1.06	0.937	0.752	1.37	1.01	1.17	2.43	50 of 50
THALLIUM	1.12	1.2	1.5	1.98	2.07	1.53	1.28	1.29	1.35	1.08	1.24	1.42	1.4	2.15	0 of 46
ZINC	211	508	303	425	317	228	228	244	305	268	319	312	300	744	46 of 46

Cyanide (lbs/day)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
CYANIDE	11.4	12.2	14.4	21.2	19.3	24.9	12.7	12.8	13.1	10.8	15.4	13.3	15.1	34.2	0 of 48

Oil and Grease, Surfactants, and Petroleum Hydrocarbons (lbs/day)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
FATS OIL AND GREASE	74700	76500	82800	47500	72300	126000	95900	81400	71000	85300	87400	84500	82100	144000	48 of 48
MBAS	6270	7600	6930	7040	5970	8050	10100	6270	7480	8450	8420	8160	7580	10600	46 of 46
PETROLEUM HYDROCARBONS	3480	3570	1670	3360	6810	2510	1590	865	1330	2390	3310	1460	2690	7730	48 of 48

Organochlorine Pesticides and PCBs (lbs/day)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
4,4'-DDD	0.00736	0.00533	0.00635	0.00835	0.00878	0.00647	0.00541	0.00602	0.00584	0.00464	0.0056	0.00587	0.00625	0.01	0 of 46
4,4'-DDE	0.00736	0.00533	0.00635	0.00835	0.00878	0.00647	0.00541	0.00602	0.00584	0.00464	0.0056	0.00587	0.00625	0.01	0 of 46
4,4'-DDT	0.00736	0.00533	0.00635	0.00835	0.00878	0.00647	0.00541	0.00602	0.00584	0.00464	0.0056	0.00587	0.00625	0.01	0 of 46
ALDRIN	0.00368	0.00267	0.00318	0.00418	0.00439	0.00323	0.0027	0.00301	0.00292	0.00232	0.0028	0.00293	0.00312	0.005	0 of 46
ALPHA-BHC	0.00368	0.00267	0.00318	0.00418	0.00439	0.00323	0.0027	0.00301	0.00292	0.00232	0.0028	0.00293	0.00312	0.005	0 of 46
ALPHA-CHLORDANE	0.00368	0.00267	0.00318	0.00418	0.00439	0.00323	0.0027	0.00301	0.00292	0.00232	0.0028	0.00293	0.00312	0.005	0 of 46
AROCLOR-1016	0.184	0.133	0.159	0.209	0.219	0.162	0.135	0.151	0.146	0.116	0.14	0.147	0.156	0.25	0 of 46
AROCLOR-1221	0.368	0.267	0.318	0.418	0.439	0.323	0.27	0.301	0.292	0.232	0.28	0.293	0.312	0.5	0 of 46
AROCLOR-1232	0.184	0.133	0.159	0.209	0.219	0.162	0.135	0.151	0.146	0.116	0.14	0.147	0.156	0.25	0 of 46
AROCLOR-1242	0.184	0.133	0.159	0.209	0.219	0.162	0.135	0.151	0.146	0.116	0.14	0.147	0.156	0.25	0 of 46
AROCLOR-1248	0.184	0.133	0.159	0.209	0.219	0.162	0.135	0.151	0.146	0.116	0.14	0.147	0.156	0.25	0 of 46
AROCLOR-1254	0.184	0.133	0.159	0.209	0.219	0.162	0.135	0.151	0.146	0.116	0.14	0.147	0.156	0.25	0 of 46
AROCLOR-1260	0.184	0.133	0.159	0.209	0.219	0.162	0.135	0.151	0.146	0.116	0.14	0.147	0.156	0.25	0 of 46
BETA-BHC	0.00368	0.00267	0.00318	0.00418	0.00439	0.00323	0.0027	0.00301	0.00292	0.00232	0.0028	0.00293	0.00312	0.005	0 of 46
CHLORDANE (TECHNICAL)	0.368	0.267	0.318	0.418	0.439	0.323	0.27	0.301	0.292	0.232	0.28	0.293	0.312	0.5	0 of 46
DELTA-BHC	0.00368	0.00267	0.00318	0.00418	0.00439	0.00323	0.0027	0.00301	0.00292	0.00232	0.0028	0.00293	0.00312	0.005	0 of 46
DIELDRIN	0.00736	0.00533	0.00635	0.00835	0.00878	0.00647	0.00541	0.00602	0.00584	0.00464	0.0056	0.00587	0.00625	0.01	0 of 46
ENDOSULFAN I	0.00368	0.00267	0.00318	0.00418	0.00439	0.00323	0.0027	0.00301	0.00292	0.00232	0.0028	0.00293	0.00312	0.005	0 of 46
ENDOSULFAN II	0.00736	0.00533	0.00635	0.00835	0.00878	0.00647	0.00541	0.00602	0.00584	0.00464	0.0056	0.00587	0.00625	0.01	0 of 46
ENDOSULFAN SULFATE	0.00736	0.00533	0.00635	0.00835	0.00878	0.00647	0.00541	0.00602	0.00584	0.00464	0.0056	0.00587	0.00625	0.01	0 of 46
ENDRIN	0.00736	0.00533	0.00635	0.00835	0.00878	0.00647	0.00541	0.00602	0.00584	0.00464	0.0056	0.00587	0.00625	0.01	0 of 46
ENDRIN ALDEHYDE	0.00736	0.00533	0.00635	0.00835	0.00878	0.00647	0.00541	0.00602	0.00584	0.00464	0.0056	0.00587	0.00625	0.01	0 of 46
ENDRIN KETONE	0.00736	0.00533	0.00635	0.00835	0.00878	0.00647	0.00541	0.00602	0.00584	0.00464	0.0056	0.00587	0.00625	0.01	0 of 46
GAMMA-BHC	0.00368	0.00267	0.00318	0.00418	0.00439	0.00323	0.0027	0.00301	0.00292	0.00232	0.0028	0.00293	0.00312	0.005	0 of 46
GAMMA-CHLORDANE	0.00368	0.00267	0.00318	0.00418	0.00439	0.00323	0.0027	0.00301	0.00292	0.00232	0.0028	0.00293	0.00312	0.005	0 of 46
HEPTACHLOR	0.00368	0.00267	0.00318	0.00418	0.00439	0.00323	0.0027	0.00301	0.00292	0.00232	0.0028	0.00293	0.00312	0.005	0 of 46
HEPTACHLOR EPOXIDE	0.00368	0.00267	0.00318	0.00418	0.00439	0.00323	0.0027	0.00301	0.00292	0.00232	0.0028	0.00293	0.00312	0.005	0 of 46
HEXACHLOROBENZENE	0.00368	0.00267	0.00318	0.00418	0.00439	0.00323	0.0027	0.00301	0.00292	0.00232	0.0028	0.00293	0.00312	0.005	0 of 46
METHOXYCHLOR	0.0368	0.0267	0.0318	0.0418	0.0439	0.0323	0.027	0.0301	0.0292	0.0232	0.028	0.0293	0.0312	0.05	0 of 46
TOXAPHENE	0.368	0.267	0.318	0.418	0.439	0.323	0.27	0.301	0.292	0.232	0.28	0.293	0.312	0.5	0 of 46

Notes

-: No data or no samples taken; results in bold indicate one or more detects that month.

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-4. Deer Island Inluent Characterization (North System), FY12

Metals (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
ALUMINUM	334	950	318	673	309	465	301	309	413	658	671	527	493	1200	24 of 24
ANTIMONY	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	25	25	25	15.3	25	0 of 24
ARSENIC	1.13	2.02	1.13	1.54	0.4	1.04	0.906	1.01	0.4	0.631	0.4	0.4	0.926	2.28	15 of 24
BERYLLIUM	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0 of 24
BORON	264	197	125	125	125	125	125	125	125	125	125	290	155	320	5 of 24
CADMIUM	0.378	0.506	0.23	0.356	0.233	0.259	0.179	0.234	0.306	0.305	0.279	0.342	0.3	0.628	24 of 24
CHROMIUM	1.61	5.14	2.17	3.69	1.79	2.46	1.72	1.55	2.17	2.12	2.75	2.81	2.54	7.28	24 of 24
COPPER	46.4	78	47.7	61.6	34.2	37.1	45.1	47.2	51.8	53.1	43.2	51.5	49.6	87.8	24 of 24
IRON	1150	2530	1170	2010	1040	1250	1060	1100	1680	1460	1290	1520	1450	3230	24 of 24
LEAD	5.13	30.1	13.6	27.3	4.53	6.48	5.12	5.47	5.71	6.8	5.67	9.29	11	42.5	24 of 24
MERCURY	0.117	0.197	0.149	0.235	0.0671	0.077	0.125	0.317	0.0689	0.072	0.0565	0.0843	0.132	0.556	24 of 24
MOLYBDENUM	6.88	7.34	6.48	6.02	5.62	6.25	4.3	5.08	3.65	2.76	3.83	3.62	5.24	8.8	24 of 24
NICKEL	2.41	4.48	3.21	4.87	2.54	3.79	2.64	2.99	2.28	4.45	3.99	3.83	3.48	6.27	24 of 24
SELENIUM	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0 of 24
SILVER	0.262	0.612	0.346	0.655	0.309	0.502	0.322	0.408	0.273	0.329	0.51	0.385	0.417	0.732	26 of 26
THALLIUM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
ZINC	81.6	176	80.6	123	65.6	80.1	77.6	84.5	105	113	101	103	98.9	210	24 of 24

Cyanide (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
CYANIDE	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0 of 24

Oil and Grease, Surfactants, and Petroleum Hydrocarbons (mg/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
FATS OIL AND GREASE	36.1	28.6	37.5	9.76	23.1	24.5	43.7	37.5	34.6	46.1	32.5	35.4	30.6	49.8	24 of 24
MBAS	2.38	2.81	2.18	1.19	1.57	2.66	3.91	2.49	2.5	3.78	3.22	2.58	2.5	3.95	24 of 24
PETROLEUM HYDROCARBONS	1.45	1.45	0.542	0.634	1.2	0.54	0.649	0.299	0.49	1.22	1.07	0.487	0.813	1.7	24 of 24

Organochlorine Pesticides and PCBs (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
4,4'-DDD	0.00386	0.0022	0.00209	0.00242	0.00213	0.00215	0.00207	0.00243	0.0022	0.00218	0.0022	0.00206	0.00231	0.00572	0 of 24
4,4'-DDE	0.00386	0.0022	0.00209	0.00242	0.00213	0.00215	0.00207	0.00243	0.0022	0.00218	0.0022	0.00206	0.00231	0.00572	0 of 24
4,4'-DDT	0.00386	0.0022	0.00209	0.00242	0.00213	0.00215	0.00207	0.00243	0.0022	0.00218	0.0022	0.00206	0.00231	0.00572	0 of 24
ALDRIN	0.00193	0.0011	0.00104	0.00121	0.00106	0.00107	0.00104	0.00121	0.0011	0.00109	0.0011	0.00103	0.00116	0.00286	0 of 24
ALPHA-BHC	0.00193	0.0011	0.00104	0.00121	0.00106	0.00107	0.00104	0.00121	0.0011	0.00109	0.0011	0.00103	0.00116	0.00286	0 of 24
ALPHA-CHLORDANE	0.00193	0.0011	0.00104	0.00121	0.00106	0.00107	0.00104	0.00121	0.0011	0.00109	0.0011	0.00103	0.00116	0.00286	0 of 24
AROCLOR-1016	0.0964	0.0551	0.0522	0.0604	0.0532	0.0537	0.0518	0.0607	0.0551	0.0545	0.055	0.0516	0.0578	0.143	0 of 24
AROCLOR-1221	0.193	0.11	0.104	0.121	0.106	0.107	0.104	0.121	0.11	0.109	0.11	0.103	0.116	0.286	0 of 24
AROCLOR-1232	0.0964	0.0551	0.0522	0.0604	0.0532	0.0537	0.0518	0.0607	0.0551	0.0545	0.055	0.0516	0.0578	0.143	0 of 24
AROCLOR-1242	0.0964	0.0551	0.0522	0.0604	0.0532	0.0537	0.0518	0.0607	0.0551	0.0545	0.055	0.0516	0.0578	0.143	0 of 24
AROCLOR-1248	0.0964	0.0551	0.0522	0.0604	0.0532	0.0537	0.0518	0.0607	0.0551	0.0545	0.055	0.0516	0.0578	0.143	0 of 24
AROCLOR-1254	0.0964	0.0551	0.0522	0.0604	0.0532	0.0537	0.0518	0.0607	0.0551	0.0545	0.055	0.0516	0.0578	0.143	0 of 24
AROCLOR-1260	0.0964	0.0551	0.0522	0.0604	0.0532	0.0537	0.0518	0.0607	0.0551	0.0545	0.055	0.0516	0.0578	0.143	0 of 24
BETA-BHC	0.00193	0.0011	0.00104	0.00121	0.00106	0.00107	0.00104	0.00121	0.0011	0.00109	0.0011	0.00103	0.00116	0.00286	0 of 24
CHLORDANE (TECHNICAL)	0.193	0.11	0.104	0.121	0.106	0.107	0.104	0.121	0.11	0.109	0.11	0.103	0.116	0.286	0 of 24
DELTA-BHC	0.00193	0.0011	0.00104	0.00121	0.00106	0.00107	0.00104	0.00121	0.0011	0.00109	0.0011	0.00103	0.00116	0.00286	0 of 24
DIELDRIN	0.00386	0.0022	0.00209	0.00242	0.00213	0.00215	0.00207	0.00243	0.0022	0.00218	0.0022	0.00206	0.00231	0.00572	0 of 24
ENDOSULFAN I	0.00193	0.0011	0.00104	0.00121	0.00106	0.00107	0.00104	0.00121	0.0011	0.00109	0.0011	0.00103	0.00116	0.00286	0 of 24
ENDOSULFAN II	0.00386	0.0022	0.00209	0.00242	0.00213	0.00215	0.00207	0.00243	0.0022	0.00218	0.0022	0.00206	0.00231	0.00572	0 of 24
ENDOSULFAN SULFATE	0.00386	0.0022	0.00209	0.00242	0.00213	0.00215	0.00207	0.00243	0.0022	0.00218	0.0022	0.00206	0.00231	0.00572	0 of 24
ENDRIN	0.00386	0.0022	0.00209	0.00242	0.00213	0.00215	0.00207	0.00243	0.0022	0.00218	0.0022	0.00206	0.00231	0.00572	0 of 24
ENDRIN ALDEHYDE	0.00386	0.0022	0.00209	0.00242	0.00213	0.00215	0.00207	0.00243	0.0022	0.00218	0.0022	0.00206	0.00231	0.00572	0 of 24
ENDRIN KETONE	0.00386	0.0022	0.00209	0.00242	0.00213	0.00215	0.00207	0.00243	0.0022	0.00218	0.0022	0.00206	0.00231	0.00572	0 of 24
GAMMA-BHC	0.00193	0.0011	0.00104	0.00121	0.00106	0.00107	0.00104	0.00121	0.0011	0.00109	0.0011	0.00103	0.00116	0.00286	0 of 24
GAMMA-CHLORDANE	0.00193	0.0011	0.00104	0.00121	0.00106	0.00107	0.00104	0.00121	0.0011	0.00109	0.0011	0.00103	0.00116	0.00286	0 of 24
HEPTACHLOR	0.00193	0.0011	0.00104	0.00121	0.00106	0.00107	0.00104	0.00121	0.0011	0.00109	0.0011	0.00103	0.00116	0.00286	0 of 24
HEPTACHLOR EPOXIDE	0.00193	0.0011	0.00104	0.00121	0.00106	0.00107	0.00104	0.00121	0.0011	0.00109	0.0011	0.00103	0.00116	0.00286	0 of 24
HEXACHLOROBENZENE	0.00193	0.0011	0.00104	0.00121	0.00106	0.00107	0.00104	0.00121	0.0011	0.00109	0.0011	0.00103	0.00116	0.00286	0 of 16
METHOXYCHLOR	0.0193	0.011	0.0104	0.0121	0.0106	0.0107	0.0104	0.0121	0.011	0.0109	0.011	0.0103	0.0116	0.286	0 of 24
TOXAPHENE	0.193	0.11	0.104	0.121	0.106	0.107	0.104	0.121	0.11	0.109	0.11	0.103	0.116	0.286	0 of 24

Notes

~: No data or no samples taken; results in **bold** indicate one or more detects that month.

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-5. Deer Island Influent Loadings (North System), FY12

Metals (lbs/day)													Times		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
ALUMINUM	498	1640	608	1640	751	889	481	509	702	929	1080	992	894	2470	24 of 24
ANTIMONY	18.6	21.6	23.9	30.6	30.4	23.9	20	20.6	21.3	35.3	40.4	47.1	27.8	49.9	0 of 24
ARSENIC	1.68	3.48	2.17	3.77	0.972	2	1.45	1.67	0.68	0.89	0.646	0.753	1.68	4.7	15 of 24
BERYLLIUM	0.373	0.432	0.477	0.611	0.607	0.478	0.4	0.411	0.425	0.353	0.404	0.471	0.454	0.673	0 of 24
BORON	394	339	239	306	304	239	200	206	213	177	202	547	280	639	5 of 24
CADMIUM	0.563	0.874	0.439	0.871	0.565	0.495	0.286	0.385	0.52	0.43	0.451	0.644	0.544	1.29	24 of 24
CHROMIUM	2.4	8.87	4.14	9.03	4.36	4.71	2.75	2.56	3.69	3	4.44	5.28	4.6	15	24 of 24
COPPER	69.1	135	91.1	151	83	71	72.2	77.6	88	75.1	69.7	96.9	89.9	181	24 of 24
IRON	1710	4370	2230	4920	2520	2380	1690	1820	2850	2060	2080	2870	2630	6660	24 of 24
LEAD	7.65	52	26	66.7	11	12.4	8.19	8.99	9.71	9.6	9.15	17.5	19.9	87.6	24 of 24
MERCURY	0.174	0.34	0.285	0.575	0.163	0.147	0.2	0.521	0.117	0.102	0.0912	0.159	0.24	0.908	24 of 24
MOLYBDENUM	10.3	12.7	12.4	14.7	13.7	12	6.88	8.35	6.2	3.9	6.19	6.82	9.5	16.5	24 of 24
NICKEL	3.59	7.74	6.14	11.9	6.18	7.26	4.23	4.92	3.88	6.28	6.45	7.22	6.32	13.8	24 of 24
SELENIUM	0.671	0.777	0.859	1.1	1.09	0.861	0.72	0.74	0.765	0.635	0.727	0.847	0.816	1.21	0 of 24
SILVER	0.391	1.06	0.661	1.6	0.75	0.96	0.516	0.671	0.464	0.464	0.824	0.726	0.757	1.61	26 of 26
THALLIUM	0.745	0.863	0.955	1.22	1.21	0.956	0.8	0.822	0.85	0.706	0.808	0.941	0.907	1.35	0 of 24
ZINC	122	304	154	301	159	153	124	139	179	160	162	195	179	433	24 of 24

Cyanide (lbs/day)													Times		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
CYANIDE	7.57	8.81	9.22	12.6	11.4	17.8	7.92	8.17	8.13	7.09	10.9	8.65	9.85	25.8	0 of 24

Oil and Grease, Surfactants, and Petroleum Hydrocarbons (lbs/day)													Times		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
FATS OIL AND GREASE	54700	50400	69100	24500	53000	87100	69200	61300	56200	65300	70700	61200	60200	114000	24 of 24
MBAS	3550	4850	4160	2920	3800	5080	6250	4090	4250	5340	5200	4850	4530	6360	24 of 24
PETROLEUM HYDROCARBONS	2190	2550	1000	1590	2750	1930	1030	489	797	1730	2320	843	1600	3460	24 of 24

Organochlorine Pesticides and PCBs (lbs/day)													Times		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
4,4'-DDD	0.00575	0.0038	0.00399	0.00591	0.00517	0.00411	0.00331	0.00399	0.00375	0.00308	0.00355	0.00388	0.00419	0.00837	0 of 24
4,4'-DDE	0.00575	0.0038	0.00399	0.00591	0.00517	0.00411	0.00331	0.00399	0.00375	0.00308	0.00355	0.00388	0.00419	0.00837	0 of 24
4,4'-DDT	0.00575	0.0038	0.00399	0.00591	0.00517	0.00411	0.00331	0.00399	0.00375	0.00308	0.00355	0.00388	0.00419	0.00837	0 of 24
ALDRIN	0.00287	0.0019	0.002	0.00295	0.00258	0.00205	0.00166	0.002	0.00187	0.00154	0.00178	0.00194	0.0021	0.00419	0 of 24
ALPHA-BHC	0.00287	0.0019	0.002	0.00295	0.00258	0.00205	0.00166	0.002	0.00187	0.00154	0.00178	0.00194	0.0021	0.00419	0 of 24
ALPHA-CHLORDANE	0.00287	0.0019	0.002	0.00295	0.00258	0.00205	0.00166	0.002	0.00187	0.00154	0.00178	0.00194	0.0021	0.00419	0 of 24
AROCLOR-1016	0.144	0.0951	0.0998	0.148	0.129	0.103	0.0829	0.0999	0.0937	0.0769	0.0888	0.0971	0.105	0.209	0 of 24
AROCLOR-1221	0.287	0.19	0.2	0.295	0.258	0.205	0.166	0.2	0.187	0.154	0.178	0.194	0.21	0.419	0 of 24
AROCLOR-1232	0.144	0.0951	0.0998	0.148	0.129	0.103	0.0829	0.0999	0.0937	0.0769	0.0888	0.0971	0.105	0.209	0 of 24
AROCLOR-1242	0.144	0.0951	0.0998	0.148	0.129	0.103	0.0829	0.0999	0.0937	0.0769	0.0888	0.0971	0.105	0.209	0 of 24
AROCLOR-1248	0.144	0.0951	0.0998	0.148	0.129	0.103	0.0829	0.0999	0.0937	0.0769	0.0888	0.0971	0.105	0.209	0 of 24
AROCLOR-1254	0.144	0.0951	0.0998	0.148	0.129	0.103	0.0829	0.0999	0.0937	0.0769	0.0888	0.0971	0.105	0.209	0 of 24
AROCLOR-1260	0.144	0.0951	0.0998	0.148	0.129	0.103	0.0829	0.0999	0.0937	0.0769	0.0888	0.0971	0.105	0.209	0 of 24
BETA-BHC	0.00287	0.0019	0.002	0.00295	0.00258	0.00205	0.00166	0.002	0.00187	0.00154	0.00178	0.00194	0.0021	0.00419	0 of 24
CHLORDANE (TECHNICAL)	0.287	0.19	0.2	0.295	0.258	0.205	0.166	0.2	0.187	0.154	0.178	0.194	0.21	0.419	0 of 24
DELTA-BHC	0.00287	0.0019	0.002	0.00295	0.00258	0.00205	0.00166	0.002	0.00187	0.00154	0.00178	0.00194	0.0021	0.00419	0 of 24
DIELDRIN	0.00575	0.0038	0.00399	0.00591	0.00517	0.00411	0.00331	0.00399	0.00375	0.00308	0.00355	0.00388	0.00419	0.00837	0 of 24
ENDOSULFAN I	0.00287	0.0019	0.002	0.00295	0.00258	0.00205	0.00166	0.002	0.00187	0.00154	0.00178	0.00194	0.0021	0.00419	0 of 24
ENDOSULFAN II	0.00575	0.0038	0.00399	0.00591	0.00517	0.00411	0.00331	0.00399	0.00375	0.00308	0.00355	0.00388	0.00419	0.00837	0 of 24
ENDOSULFAN SULFATE	0.00575	0.0038	0.00399	0.00591	0.00517	0.00411	0.00331	0.00399	0.00375	0.00308	0.00355	0.00388	0.00419	0.00837	0 of 24
ENDRIN	0.00575	0.0038	0.00399	0.00591	0.00517	0.00411	0.00331	0.00399	0.00375	0.00308	0.00355	0.00388	0.00419	0.00837	0 of 24
ENDRIN ALDEHYDE	0.00575	0.0038	0.00399	0.00591	0.00517	0.00411	0.00331	0.00399	0.00375	0.00308	0.00355	0.00388	0.00419	0.00837	0 of 24
ENDRIN KETONE	0.00575	0.0038	0.00399	0.00591	0.00517	0.00411	0.00331	0.00399	0.00375	0.00308	0.00355	0.00388	0.00419	0.00837	0 of 24
GAMMA-BHC	0.00287	0.0019	0.002	0.00295	0.00258	0.00205	0.00166	0.002	0.00187	0.00154	0.00178	0.00194	0.0021	0.00419	0 of 24
GAMMA-CHLORDANE	0.00287	0.0019	0.002	0.00295	0.00258	0.00205	0.00166	0.002	0.00187	0.00154	0.00178	0.00194	0.0021	0.00419	0 of 24
HEPTACHLOR	0.00287	0.0019	0.002	0.00295	0.00258	0.00205	0.00166	0.002	0.00187	0.00154	0.00178	0.00194	0.0021	0.00419	0 of 24
HEPTACHLOR EPOXIDE	0.00287	0.0019	0.002	0.00295	0.00258	0.00205	0.00166	0.002	0.00187	0.00154	0.00178	0.00194	0.0021	0.00419	0 of 24
HEXACHLOROBENZENE	0.00287	0.0019	0.002	0.00295	0.00258	0.00205	0.00166	0.002	0.00187	0.00154	0.00178	0.00194	0.0021	0.00419	0 of 16
METHOXYCHLOR	0.0287	0.019	0.02	0.0295	0.0258	0.0205	0.0166	0.02	0.0187	0.0154	0.0178	0.0194	0.021	0.0419	0 of 24
TOXAPHENE	0.287	0.19	0.2	0.295	0.258	0.205	0.166	0.2	0.187	0.154	0.178	0.194	0.21	0.419	0 of 24

Notes

-: No data or no samples taken; results in **bold** indicate one or more detects that month.

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-6. Deer Island Influent Characterization (South System), FY12

Metals (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
ALUMINUM	467	982	581	628	512	295	392	443	497	477	644	518	527	1470	24 of 24
ANTIMONY	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	25	25	25	15.1	25	0 of 24
ARSENIC	0.771	1.72	0.984	1.07	0.4	0.4	0.65	0.68	0.4	0.4	0.4	0.4	0.67	1.89	9 of 24
BERYLLIUM	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0 of 24
BORON	276	320	125	125	125	125	125	125	125	125	125	296	158	321	6 of 24
CADMIUM	0.292	0.513	0.369	0.325	0.322	0.288	0.311	0.306	0.305	0.276	0.262	0.282	0.318	0.749	24 of 24
CHROMIUM	3.88	5.51	3.57	2.92	2.21	1.4	2.59	4.63	3.23	2.64	4.03	3.08	3.14	7.91	24 of 24
COPPER	54.9	121	70.5	51.4	44.8	32.8	55.7	64.8	62.8	75.2	93.7	64.5	62.1	175	24 of 24
IRON	2190	4810	2660	2280	2160	1490	2050	2270	2370	2720	3260	2750	2470	6990	24 of 24
LEAD	5.6	18.6	10.4	9.4	6.17	3.42	5.45	4.25	7.59	7.97	10.1	7.1	7.7	28.7	24 of 24
MERCURY	0.115	0.31	0.308	0.254	0.128	0.0622	0.0831	0.127	0.164	0.141	0.199	0.13	0.168	0.449	24 of 24
MOLYBDENUM	1.75	3.4	2.8	1.61	1.39	1.62	0.981	1.42	1.19	1.77	6.29	1.92	2.06	7.32	23 of 24
NICKEL	4.61	4.75	4.73	4.49	2.8	3.12	2.95	3.12	3	3.87	5.24	4.08	3.81	6.05	24 of 24
SELENIUM	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0 of 24
SILVER	0.414	0.774	0.551	0.744	0.331	0.213	0.51	0.419	0.472	0.383	0.62	0.294	0.473	1.21	26 of 26
THALLIUM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
ZINC	119	306	135	100	92.2	64.7	107	113	126	144	179	123	125	450	24 of 24

Cyanide (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
CYANIDE	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0 of 24

Oil and Grease, Surfactants, and Petroleum Hydrocarbons (mg/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
FATS OIL AND GREASE	26.3	38.8	13.1	13.3	12.3	27.3	28.3	21.8	15	26.8	18.4	25.2	20.8	42.7	24 of 24
MBAS	3.61	4.14	2.52	1.72	1.27	2.58	4	2.33	3.21	4.13	3.69	3.47	2.82	4.63	24 of 24
PETROLEUM HYDROCARBONS	1.7	1.52	0.648	1.02	2.58	0.413	0.59	0.408	0.54	0.885	1.09	0.662	1.04	3.48	24 of 24

Organochlorine Pesticides and PCBs (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
4,4'-DDD	0.00214	0.00229	0.00215	0.00213	0.00212	0.00205	0.00217	0.00217	0.00209	0.00208	0.00234	0.00208	0.00214	0.00266	0 of 24
4,4'-DDE	0.00214	0.00229	0.00215	0.00213	0.00212	0.00205	0.00217	0.00217	0.00209	0.00208	0.00234	0.00208	0.00214	0.00266	0 of 24
4,4'-DDT	0.00214	0.00229	0.00215	0.00213	0.00212	0.00205	0.00217	0.00217	0.00209	0.00208	0.00234	0.00208	0.00214	0.00266	0 of 24
ALDRIN	0.00107	0.00115	0.00107	0.00106	0.00106	0.00102	0.00108	0.00109	0.00104	0.00104	0.00117	0.00104	0.00107	0.00133	0 of 24
ALPHA-BHC	0.00107	0.00115	0.00107	0.00106	0.00106	0.00102	0.00108	0.00109	0.00104	0.00104	0.00117	0.00104	0.00107	0.00133	0 of 24
ALPHA-CHLORDANE	0.00107	0.00115	0.00107	0.00106	0.00106	0.00102	0.00108	0.00109	0.00104	0.00104	0.00117	0.00104	0.00107	0.00133	0 of 24
AROCLOR-1016	0.0535	0.0574	0.0537	0.0532	0.0529	0.0512	0.0542	0.0543	0.0522	0.052	0.0585	0.052	0.0536	0.0665	0 of 24
AROCLOR-1221	0.107	0.115	0.107	0.106	0.106	0.102	0.108	0.109	0.104	0.104	0.117	0.104	0.107	0.133	0 of 24
AROCLOR-1232	0.0535	0.0574	0.0537	0.0532	0.0529	0.0512	0.0542	0.0543	0.0522	0.052	0.0585	0.052	0.0536	0.0665	0 of 24
AROCLOR-1242	0.0535	0.0574	0.0537	0.0532	0.0529	0.0512	0.0542	0.0543	0.0522	0.052	0.0585	0.052	0.0536	0.0665	0 of 24
AROCLOR-1248	0.0535	0.0574	0.0537	0.0532	0.0529	0.0512	0.0542	0.0543	0.0522	0.052	0.0585	0.052	0.0536	0.0665	0 of 24
AROCLOR-1254	0.0535	0.0574	0.0537	0.0532	0.0529	0.0512	0.0542	0.0543	0.0522	0.052	0.0585	0.052	0.0536	0.0665	0 of 24
AROCLOR-1260	0.0535	0.0574	5.31	0.0532	0.0529	0.0512	0.0542	0.0543	0.0522	0.052	0.0585	0.052	0.519	10.9	1 of 24
BETA-BHC	0.00107	0.00115	0.00107	0.00106	0.00106	0.00102	0.00108	0.00109	0.00104	0.00104	0.00117	0.00104	0.00107	0.00133	0 of 24
CHLORDANE (TECHNICAL)	0.107	0.115	0.107	0.106	0.106	0.102	0.108	0.109	0.104	0.104	0.117	0.104	0.107	0.133	0 of 24
DELTA-BHC	0.00107	0.00115	0.00107	0.00106	0.00106	0.00102	0.00108	0.00109	0.00104	0.00104	0.00117	0.00104	0.00107	0.00133	0 of 24
DIELDRIN	0.00214	0.00229	0.00215	0.00213	0.00212	0.00205	0.00217	0.00217	0.00209	0.00208	0.00234	0.00208	0.00214	0.00266	0 of 24
ENDOSULFAN I	0.00107	0.00115	0.00107	0.00106	0.00106	0.00102	0.00108	0.00109	0.00104	0.00104	0.00117	0.00104	0.00107	0.00133	0 of 24
ENDOSULFAN II	0.00214	0.00229	0.00215	0.00213	0.00212	0.00205	0.00217	0.00217	0.00209	0.00208	0.00234	0.00208	0.00214	0.00266	0 of 24
ENDOSULFAN SULFATE	0.00214	0.00229	0.00215	0.00213	0.00212	0.00205	0.00217	0.00217	0.00209	0.00208	0.00234	0.00208	0.00214	0.00266	0 of 24
ENDRIN	0.00214	0.00229	0.00215	0.00213	0.00212	0.00205	0.00217	0.00217	0.00209	0.00208	0.00234	0.00208	0.00214	0.00266	0 of 24
ENDRIN ALDEHYDE	0.00214	0.00229	0.00215	0.00213	0.00212	0.00205	0.00217	0.00217	0.00209	0.00208	0.00234	0.00208	0.00214	0.00266	0 of 24
ENDRIN KETONE	0.00214	0.00229	0.00215	0.00213	0.00212	0.00205	0.00217	0.00217	0.00209	0.00208	0.00234	0.00208	0.00214	0.00266	0 of 24
GAMMA-BHC	0.00107	0.00115	0.00107	0.00106	0.00106	0.00102	0.00108	0.00109	0.00104	0.00104	0.00117	0.00104	0.00107	0.00133	0 of 24
GAMMA-CHLORDANE	0.00107	0.00115	0.00107	0.00106	0.00106	0.00102	0.00108	0.00109	0.00104	0.00104	0.00117	0.00104	0.00107	0.00133	0 of 24
HEPTACHLOR	0.00107	0.00115	0.00107	0.00106	0.00106	0.00102	0.00108	0.00109	0.00104	0.00104	0.00117	0.00104	0.00107	0.00133	0 of 24
HEPTACHLOR EPOXIDE	0.00107	0.00115	0.00107	0.00106	0.00106	0.00102	0.00108	0.00109	0.00104	0.00104	0.00117	0.00104	0.00107	0.00133	0 of 24
HEXACHLOROBENZENE	0.00107	0.00107	0.00107	0.00781	0.00106	0.00102	0.00108	0.00109	0.00104	0.00104	0.00117	0.00104	0.00224	0.0177	1 of 16
METHOXYCHLOR	0.0107	0.0115	0.0107	0.0106	0.0106	0.0102	0.0108	0.0109	0.0104	0.0104	0.0117	0.0104	0.0107	0.0133	0 of 24
TOXAPHENE	0.107	0.115	0.107	0.106	0.106	0.102	0.108	0.109	0.104	0.104	0.117	0.104	0.107	0.133	0 of 24

Notes

~: No data or no samples taken; results in bold indicate one or more detects that month.

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-7. Deer Island Influent Loadings (South System), FY12

Metals (lbs/day)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
ALUMINUM	351	653	639	984	873	340	378	414	499	359	563	494	546	1350	24 of 24
ANTIMONY	9.4	8.32	13.7	19.6	21.3	14.4	12	11.7	12.5	18.8	21.9	23.9	15.6	24.1	0 of 24
ARSENIC	0.579	1.15	1.08	1.68	0.682	0.46	0.626	0.636	0.401	0.301	0.35	0.382	0.694	2.24	9 of 24
BERYLLIUM	0.188	0.166	0.275	0.392	0.426	0.288	0.241	0.234	0.251	0.188	0.219	0.239	0.259	0.466	0 of 24
BORON	208	213	137	196	213	144	120	117	125	94.1	109	283	163	300	6 of 24
CADMIUM	0.22	0.342	0.406	0.509	0.549	0.332	0.3	0.286	0.306	0.208	0.229	0.269	0.33	0.664	24 of 24
CHROMIUM	2.92	3.66	3.93	4.58	3.78	1.61	2.5	4.33	3.24	1.99	3.52	2.94	3.25	7.16	24 of 24
COPPER	41.3	80.8	77.6	80.5	76.5	37.7	53.7	60.6	63	56.7	81.9	61.5	64.3	121	24 of 24
IRON	1650	3200	2930	3570	3680	1720	1970	2120	2370	2050	2850	2630	2560	4830	24 of 24
LEAD	4.21	12.4	11.5	14.7	10.5	3.93	5.25	3.97	7.62	6	8.81	6.77	7.97	19.8	24 of 24
MERCURY	0.0864	0.206	0.339	0.399	0.218	0.0716	0.0801	0.119	0.165	0.106	0.174	0.124	0.174	0.565	24 of 24
MOLYBDENUM	1.32	2.26	3.08	2.53	2.38	1.86	0.946	1.33	1.19	1.33	5.5	1.83	2.13	6.39	23 of 24
NICKEL	3.46	3.16	5.2	7.03	4.77	3.59	2.84	2.92	3.01	2.91	4.59	3.89	3.95	9.22	24 of 24
SELENIUM	0.338	0.299	0.495	0.705	0.767	0.518	0.434	0.421	0.452	0.339	0.394	0.429	0.466	0.84	0 of 24
SILVER	0.311	0.515	0.606	1.17	0.564	0.245	0.492	0.391	0.474	0.288	0.542	0.28	0.49	1.49	26 of 26
THALLIUM	0.376	0.333	0.55	0.784	0.853	0.575	0.482	0.467	0.502	0.377	0.437	0.477	0.518	0.933	0 of 24
ZINC	89.2	203	149	157	157	74.4	103	105	127	109	156	117	129	311	24 of 24

Cyanide (lbs/day)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
CYANIDE	3.8	3.36	5.2	8.63	7.86	7.06	4.73	4.62	4.93	3.74	4.54	4.64	5.26	9.33	0 of 24

Oil and Grease, Surfactants, and Petroleum Hydrocarbons (mg/L)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
FATS OIL AND GREASE	20000	26000	13700	23000	19300	38500	26700	20200	14800	20000	16700	23300	21800	46800	24 of 24
MBAS	2720	2760	2770	2700	2170	2970	3850	2180	3230	3110	3230	3310	2920	4500	24 of 24
PETROLEUM HYDROCARBONS	1290	1020	674	1760	4060	584	559	377	533	661	986	613	1090	5650	24 of 24

Organochlorine Pesticides and PCBs (lbs/day)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
4,4'-DDD	0.00161	0.00153	0.00236	0.00334	0.00361	0.00236	0.00209	0.00203	0.0021	0.00157	0.00205	0.00198	0.00222	0.00403	0 of 24
4,4'-DDE	0.00161	0.00153	0.00236	0.00334	0.00361	0.00236	0.00209	0.00203	0.0021	0.00157	0.00205	0.00198	0.00222	0.00403	0 of 24
4,4'-DDT	0.00161	0.00153	0.00236	0.00334	0.00361	0.00236	0.00209	0.00203	0.0021	0.00157	0.00205	0.00198	0.00222	0.00403	0 of 24
ALDRIN	0.000804	0.000763	0.00118	0.00167	0.00118	0.00118	0.00105	0.00101	0.00105	0.000783	0.00102	0.000992	0.00111	0.00202	0 of 24
ALPHA-BHC	0.000804	0.000763	0.00118	0.00167	0.00118	0.00118	0.00105	0.00101	0.00105	0.000783	0.00102	0.000992	0.00111	0.00202	0 of 24
ALPHA-CHLORDANE	0.000804	0.000763	0.00118	0.00167	0.00118	0.00118	0.00105	0.00101	0.00105	0.000783	0.00102	0.000992	0.00111	0.00202	0 of 24
AROCLOR-1016	0.0402	0.0382	0.0591	0.0834	0.0902	0.059	0.0523	0.0507	0.0524	0.0392	0.0512	0.0496	0.0554	0.101	0 of 24
AROCLOR-1221	0.0804	0.0763	0.118	0.167	0.118	0.118	0.105	0.101	0.105	0.0783	0.102	0.0992	0.111	0.202	0 of 24
AROCLOR-1232	0.0402	0.0382	0.0591	0.0834	0.0902	0.059	0.0523	0.0507	0.0524	0.0392	0.0512	0.0496	0.0554	0.101	0 of 24
AROCLOR-1242	0.0402	0.0382	0.0591	0.0834	0.0902	0.059	0.0523	0.0507	0.0524	0.0392	0.0512	0.0496	0.0554	0.101	0 of 24
AROCLOR-1248	0.0402	0.0382	0.0591	0.0834	0.0902	0.059	0.0523	0.0507	0.0524	0.0392	0.0512	0.0496	0.0554	0.101	0 of 24
AROCLOR-1254	0.0402	0.0382	0.0591	0.0834	0.0902	0.059	0.0523	0.0507	0.0524	0.0392	0.0512	0.0496	0.0554	0.101	0 of 24
AROCLOR-1260	0.0402	0.0382	5.84	0.0834	0.0902	0.059	0.0523	0.0507	0.0524	0.0392	0.0512	0.0496	0.537	11.6	1 of 24
BETA-BHC	0.000804	0.000763	0.00118	0.00167	0.00118	0.00118	0.00105	0.00101	0.00105	0.000783	0.00102	0.000992	0.00111	0.00202	0 of 24
CHLORDANE (TECHNICAL)	0.0804	0.0763	0.118	0.167	0.118	0.118	0.105	0.101	0.105	0.0783	0.102	0.0992	0.111	0.202	0 of 24
DELTA-BHC	0.000804	0.000763	0.00118	0.00167	0.00118	0.00118	0.00105	0.00101	0.00105	0.000783	0.00102	0.000992	0.00111	0.00202	0 of 24
DIELDRIN	0.00161	0.00153	0.00236	0.00334	0.00361	0.00236	0.00209	0.00203	0.0021	0.00157	0.00205	0.00198	0.00222	0.00403	0 of 24
ENDOSULFAN I	0.000804	0.000763	0.00118	0.00167	0.00118	0.00118	0.00105	0.00101	0.00105	0.000783	0.00102	0.000992	0.00111	0.00202	0 of 24
ENDOSULFAN II	0.00161	0.00153	0.00236	0.00334	0.00361	0.00236	0.00209	0.00203	0.0021	0.00157	0.00205	0.00198	0.00222	0.00403	0 of 24
ENDOSULFAN SULFATE	0.00161	0.00153	0.00236	0.00334	0.00361	0.00236	0.00209	0.00203	0.0021	0.00157	0.00205	0.00198	0.00222	0.00403	0 of 24
ENDRIN	0.00161	0.00153	0.00236	0.00334	0.00361	0.00236	0.00209	0.00203	0.0021	0.00157	0.00205	0.00198	0.00222	0.00403	0 of 24
ENDRIN ALDEHYDE	0.00161	0.00153	0.00236	0.00334	0.00361	0.00236	0.00209	0.00203	0.0021	0.00157	0.00205	0.00198	0.00222	0.00403	0 of 24
ENDRIN KETONE	0.00161	0.00153	0.00236	0.00334	0.00361	0.00236	0.00209	0.00203	0.0021	0.00157	0.00205	0.00198	0.00222	0.00403	0 of 24
GAMMA-BHC	0.000804	0.000763	0.00118	0.00167	0.00118	0.00118	0.00105	0.00101	0.00105	0.000783	0.00102	0.000992	0.00111	0.00202	0 of 24
GAMMA-CHLORDANE	0.000804	0.000763	0.00118	0.00167	0.00118	0.00118	0.00105	0.00101	0.00105	0.000783	0.00102	0.000992	0.00111	0.00202	0 of 24
HEPTACHLOR	0.000804	0.000763	0.00118	0.00167	0.00118	0.00118	0.00105	0.00101	0.00105	0.000783	0.00102	0.000992	0.00111	0.00202	0 of 24
HEPTACHLOR EPOXIDE	0.000804	0.000763	0.00118	0.00167	0.00118	0.00118	0.00105	0.00101	0.00105	0.000783	0.00102	0.000992	0.00111	0.00202	0 of 24
HEXACHLOROBENZENE	0.000804	0.000763	0.00118	0.00167	0.00118	0.00118	0.00105	0.00101	0.00105	0.000783	0.00102	0.000992	0.00111	0.00202	0 of 24
METHOXYCHLOR	0.00804	0.00763	0.0118	0.0167	0.018	0.018	0.0105	0.0101	0.0105	0.00783	0.0102	0.00992	0.0111	0.0202	0 of 24
TOXAPHENE	0.0804	0.0763	0.118	0.167	0.18	0.118	0.105	0.101	0.105	0.0783	0.102	0.0992	0.111	0.202	0 of 24

Notes

~: No data or no samples taken; results in bold indicate one or more detects that month.

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-8. Deer Island Effluent Characterization, FY12

Metals (ug/L)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
ALUMINUM	39	40.5	36.3	40.1	45.5	52.1	33.9	30.3	36.4	33.5	35.6	46.7	40.2	98.9	44 of 94
ANTIMONY	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	25	25	25	15.2	25	0 of 24
ARSENIC	0.84	1.31	0.624	0.973	0.4	0.801	0.4	0.4	0.4	0.4	0.4	0.4	0.626	1.51	8 of 24
BERYLLIUM	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0 of 24
BORON	255	287	125	125	125	125	125	125	125	125	125	294	156	312	6 of 24
CADMIUM	0.068	0.0523	0.0209	0.0454	0.0533	0.0697	0.0236	0.015	0.021	0.015	0.015	0.0195	0.0375	0.0816	25 of 48
CHROMIUM	0.35	0.651	0.571	0.522	0.35	0.896	0.742	0.499	0.452	0.35	0.464	0.504	0.548	1.55	16 of 48
COPPER	4.63	5.43	4.05	5.68	5.47	7.75	6.25	5.42	6.66	7.24	5.08	5.02	5.8	9.45	49 of 49
IRON	168	358	172	186	188	273	215	216	175	271	220	195	219	433	24 of 24
LEAD	0.557	0.603	0.634	0.805	0.713	1.27	0.597	0.566	0.621	0.556	0.556	0.626	0.717	1.69	14 of 48
MERCURY	0.00468	0.00842	0.00502	0.0106	0.00837	0.00955	0.00446	0.00629	0.0062	0.0047	0.00476	0.00819	0.00713	0.0176	23 of 48
MOLYBDENUM	3.62	3.62	3.06	2.74	3.29	3.18	2.77	2.04	2.54	2.61	4.13	2.82	3.06	5.03	48 of 48
NICKEL	2.29	2.71	1.7	2.73	2.05	3.28	2.42	1.84	1.82	2.42	2.92	2.3	2.43	5.31	48 of 48
SELENIUM	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0 of 24
SILVER	0.045	0.0736	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.0787	0.0582	0.056	0.0511	0.193	1 of 50
THALLIUM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
ZINC	16.6	18.8	14.6	15.8	15.7	20	13.4	9.67	22.7	16.9	16.4	18.5	16.8	25.1	47 of 50

Cyanide (ug/L)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
CYANIDE	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0 of 25

Oil and Grease, Surfactants, and Petroleum Hydrocarbons (mg/L)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
FATS OIL AND GREASE	0.685	0.682	0.702	0.679	0.741	0.71	0.687	0.693	0.702	0.695	0.68	0.679	0.696	0.854	0 of 64
MBAS	0.236	0.331	0.159	0.11	0.0688	0.104	0.267	0.109	0.16	0.158	0.204	0.151	0.164	0.503	36 of 36
PETROLEUM HYDROCARBONS	0.0318	0.251	0.207	0.0563	0.274	0.0195	0.0203	0.0568	0.0638	0.02	0.118	0.0198	0.101	0.547	16 of 64

Organochlorine Pesticides and PCBs (ug/L)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
4,4'-DDD	0.00212	0.00216	0.00232	0.00264	0.0025	0.0021	0.00212	0.00224	0.00212	0.00212	0.002	0.00254	0.00229	0.00264	0 of 12
4,4'-DDE	0.00212	0.00216	0.00232	0.00264	0.0025	0.0021	0.00212	0.00224	0.00212	0.00212	0.002	0.00254	0.00229	0.00264	0 of 12
4,4'-DDT	0.00212	0.00216	0.00232	0.00264	0.0025	0.0021	0.00212	0.00224	0.00212	0.00212	0.002	0.00254	0.00229	0.00264	0 of 12
ALDRIN	0.00106	0.00108	0.00116	0.00132	0.00125	0.00105	0.00106	0.00112	0.00106	0.00106	0.001	0.00127	0.00114	0.00132	0 of 12
ALPHA-BHC	0.00106	0.00108	0.00116	0.00132	0.00125	0.00105	0.00106	0.00112	0.00106	0.00106	0.001	0.00127	0.00114	0.00132	0 of 12
ALPHA-CHLORDANE	0.00106	0.00108	0.00116	0.00132	0.00125	0.00105	0.00106	0.00112	0.00106	0.00106	0.001	0.00127	0.00114	0.00132	0 of 12
AROCLOR-1016	0.053	0.054	0.058	0.066	0.0625	0.0525	0.053	0.056	0.053	0.053	0.05	0.0635	0.0572	0.066	0 of 12
AROCLOR-1221	0.106	0.108	0.116	0.132	0.125	0.105	0.106	0.112	0.106	0.106	0.1	0.127	0.114	0.132	0 of 12
AROCLOR-1232	0.053	0.054	0.058	0.066	0.0625	0.0525	0.053	0.056	0.053	0.053	0.05	0.0635	0.0572	0.066	0 of 12
AROCLOR-1242	0.053	0.054	0.058	0.066	0.0625	0.0525	0.053	0.056	0.053	0.053	0.05	0.0635	0.0572	0.066	0 of 12
AROCLOR-1248	0.053	0.054	0.058	0.066	0.0625	0.0525	0.053	0.056	0.053	0.053	0.05	0.0635	0.0572	0.066	0 of 12
AROCLOR-1254	0.053	0.054	0.058	0.066	0.0625	0.0525	0.053	0.056	0.053	0.053	0.05	0.0635	0.0572	0.066	0 of 12
AROCLOR-1260	0.053	0.054	0.058	0.066	0.0625	0.0525	0.053	0.056	0.053	0.053	0.05	0.0635	0.0572	0.066	0 of 12
BETA-BHC	0.00106	0.00108	0.00116	0.00132	0.00125	0.00105	0.00106	0.00112	0.00106	0.00106	0.001	0.00127	0.00114	0.00132	0 of 12
CHLORDANE (TECHNICAL)	0.106	0.108	0.116	0.132	0.125	0.105	0.106	0.112	0.106	0.106	0.1	0.127	0.114	0.132	0 of 12
DELTA-BHC	0.00106	0.00108	0.00116	0.00132	0.00125	0.00105	0.00106	0.00112	0.00106	0.00106	0.001	0.00127	0.00114	0.00132	0 of 12
DIELDRIN	0.00212	0.00216	0.00232	0.00264	0.0025	0.0021	0.00212	0.00224	0.00212	0.00212	0.002	0.00254	0.00229	0.00264	0 of 12
ENDOSULFAN I	0.00106	0.00108	0.00116	0.00132	0.00125	0.00105	0.00106	0.00112	0.00106	0.00106	0.001	0.00127	0.00114	0.00132	0 of 12
ENDOSULFAN II	0.00212	0.00216	0.00232	0.00264	0.0025	0.0021	0.00212	0.00224	0.00212	0.00212	0.002	0.00254	0.00229	0.00264	0 of 12
ENDOSULFAN SULFATE	0.00212	0.00216	0.00232	0.00264	0.0025	0.0021	0.00212	0.00224	0.00212	0.00212	0.002	0.00254	0.00229	0.00264	0 of 12
ENDRIN	0.00212	0.00216	0.00232	0.00264	0.0025	0.0021	0.00212	0.00224	0.00212	0.00212	0.002	0.00254	0.00229	0.00264	0 of 12
ENDRIN ALDEHYDE	0.00212	0.00216	0.00232	0.00264	0.0025	0.0021	0.00212	0.00224	0.00212	0.00212	0.002	0.00254	0.00229	0.00264	0 of 12
ENDRIN KETONE	0.00212	0.00216	0.00232	0.00264	0.0025	0.0021	0.00212	0.00224	0.00212	0.00212	0.002	0.00254	0.00229	0.00264	0 of 12
GAMMA-BHC	0.00106	0.00108	0.00116	0.00132	0.00125	0.00105	0.00106	0.00112	0.00106	0.00106	0.001	0.00127	0.00114	0.00132	0 of 12
GAMMA-CHLORDANE	0.00106	0.00108	0.00116	0.00132	0.00125	0.00105	0.00106	0.00112	0.00106	0.00106	0.001	0.00127	0.00114	0.00132	0 of 12
HEPTACHLOR	0.00106	0.00108	0.00116	0.00132	0.00125	0.00105	0.00106	0.00112	0.00106	0.00106	0.001	0.00127	0.00114	0.00132	0 of 12
HEPTACHLOR EPOXIDE	0.00106	0.00108	0.00116	0.00132	0.00125	0.00105	0.00106	0.00112	0.00106	0.00106	0.001	0.00127	0.00114	0.00132	0 of 12
HEXACHLOROBENZENE	0.00106	0.00108	0.00116	0.00132	0.00125	0.00105	0.00106	0.00112	0.00106	0.00106	0.001	0.00127	0.00114	0.00132	0 of 12
METHOXYCHLOR	0.0106	0.0108	0.0116	0.0132	0.0125	0.0105	0.0106	0.0112	0.0106	0.0106	0.01	0.0127	0.0114	0.0132	0 of 12
TOXAPHENE	0.106	0.108	0.116	0.132	0.125	0.105	0.106	0.112	0.106	0.106	0.1	0.127	0.114	0.132	0 of 12



Table A-8. Deer Island Effluent Characterization, FY12 (cont.)

Volatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,1,1-TRICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,1,2,2-TETRACHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,1,2-TRICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,1-DICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,1-DICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,2-DICHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,2-DICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,2-DICHLOROPROPANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,3-DICHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,4-DICHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
2-BUTANONE	0.5	0.5	0.5	0.5	0.5	0.5	<b>2.86</b>	0.5	0.5	0.5	0.5	0.5	0.659	5.21	1 of 24
2-CHLOROETHYL VINYL ETHER	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
2-HEXANONE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
4-METHYL-2-PENTANONE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
ACETONE	1	<b>30.3</b>	1	1	1	<b>10.7</b>	<b>82</b>	1	1	1	<b>22.8</b>	1	11.9	149	5 of 24
ACROLEIN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 24
ACRYLONITRILE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 24
BENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
BROMODICHLOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
BROMOFORM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
BROMOMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CARBON DISULFIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CARBON TETRACHLORIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CHLOROFORM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CHLOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CIS-1,2-DICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CIS-1,3-DICHLOROPROPENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
DIBROMOCHLOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
ETHYLBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
M,P-XYLENE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 24
METHYLENE CHLORIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
O-XYLENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
STYRENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TETRACHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	<b>4.14</b>	0.5	0.855	7.8	1 of 24
TOLUENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TRANS-1,2-DICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TRANS-1,3-DICHLOROPROPENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TRICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TRICHLOROFLUOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
VINYL ACETATE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
VINYL CHLORIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24

Notes

--: No data or no samples taken; results in **bold** indicate one or more detects that month.

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-9. Deer Island Effluent Loadings, FY12

Metals (lbs/day)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
ALUMINUM	86.5	107	107	147	173	246	84.2	76.2	97.2	71.6	110	125	119	401	44 of 94
ANTIMONY	28.4	30.4	36.1	53	51.7	62.2	31.6	32	32.7	54.1	77.1	66.4	46.3	90.5	0 of 24
ARSENIC	1.91	3.18	1.8	4.12	1.65	3.98	1.01	1.02	1.05	0.866	1.23	1.06	1.91	6.72	8 of 24
BERYLLIUM	0.568	0.608	0.721	1.06	1.03	1.24	0.633	0.64	0.653	0.541	0.771	0.664	0.761	1.71	0 of 24
BORON	581	698	361	530	517	622	316	320	327	271	386	781	476	859	6 of 24
CADMIUM	0.151	0.138	0.0616	0.166	0.203	0.33	0.0585	0.0377	0.056	0.032	0.0462	0.0521	0.111	0.557	25 of 48
CHROMIUM	0.776	1.72	1.68	1.91	1.33	4.24	1.84	1.25	1.2	0.747	1.43	1.35	1.62	6.56	16 of 48
COPPER	10.3	14.4	11.9	20.8	20.8	36.7	15.5	13.6	17.8	15.4	15.6	13.4	17.2	64.6	49 of 49
IRON	383	871	496	789	779	1360	544	554	456	587	678	517	668	2240	24 of 24
LEAD	1.24	1.6	1.87	2.95	2.71	5.99	1.48	1.42	1.66	1.19	1.71	1.67	2.12	10.8	14 of 48
MERCURY	0.0104	0.0223	0.0148	0.0389	0.0319	0.0452	0.0111	0.0158	0.0165	0.01	0.0147	0.0219	0.0211	0.0868	23 of 48
MOLYBDENUM	8.02	9.58	9.01	10.1	12.5	15.1	6.86	5.13	6.77	5.58	12.7	7.53	9.07	23	48 of 48
NICKEL	5.07	7.18	5.02	10	7.81	15.5	5.99	4.63	4.86	5.16	9	6.14	7.2	31.7	48 of 48
SELENIUM	1.02	1.09	1.3	1.91	1.86	2.24	1.14	1.15	1.18	0.974	1.39	1.2	1.37	3.07	0 of 24
SILVER	0.0998	0.195	0.133	0.165	0.171	0.213	0.112	0.113	0.12	0.168	0.179	0.15	0.152	0.395	1 of 50
THALLIUM	1.14	1.22	1.44	2.12	2.07	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.52	3.42	0 of 24
ZINC	36.8	49.7	42.9	58	59.6	94.9	33.2	24.3	60.5	36	50.4	49.5	49.7	155	47 of 50

Cyanide (lbs/day)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
CYANIDE	11.2	10.4	14.2	17.9	19.3	32	12.5	12.7	13.1	11.2	18	13	15.3	34.2	0 of 25

Oil and Grease, Surfactants, and Petroleum Hydrocarbons (mg/L)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
FATS OIL AND GREASE	1520	2070	1930	2260	2450	3180	1830	1650	1710	1750	2010	1850	2020	5090	0 of 64
MBAS	520	935	475	399	258	420	661	272	431	334	591	407	475	1850	36 of 36
PETROLEUM HYDROCARBONS	70.5	763	569	187	907	87.2	54	136	155	50.5	349	54	292	2050	16 of 64

Organochlorine Pesticides and PCBs (lbs/day)													Times Detected		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
4,4'-DDD	0.00483	0.00595	0.00682	0.0124	0.0107	0.00655	0.00544	0.00574	0.00556	0.00455	0.00509	0.00689	0.00671	0.0124	0 of 12
4,4'-DDE	0.00483	0.00595	0.00682	0.0124	0.0107	0.00655	0.00544	0.00574	0.00556	0.00455	0.00509	0.00689	0.00671	0.0124	0 of 12
4,4'-DDT	0.00483	0.00595	0.00682	0.0124	0.0107	0.00655	0.00544	0.00574	0.00556	0.00455	0.00509	0.00689	0.00671	0.0124	0 of 12
ALDRIN	0.00242	0.00297	0.00341	0.0062	0.00537	0.00328	0.00272	0.00287	0.00278	0.00227	0.00255	0.00345	0.00336	0.0062	0 of 12
ALPHA-BHC	0.00242	0.00297	0.00341	0.0062	0.00537	0.00328	0.00272	0.00287	0.00278	0.00227	0.00255	0.00345	0.00336	0.0062	0 of 12
ALPHA-CHLORDANE	0.00242	0.00297	0.00341	0.0062	0.00537	0.00328	0.00272	0.00287	0.00278	0.00227	0.00255	0.00345	0.00336	0.0062	0 of 12
AROCLOR-1016	0.121	0.149	0.17	0.31	0.269	0.164	0.136	0.144	0.139	0.114	0.127	0.172	0.168	0.31	0 of 12
AROCLOR-1221	0.242	0.297	0.341	0.62	0.537	0.328	0.272	0.287	0.278	0.227	0.255	0.345	0.336	0.62	0 of 12
AROCLOR-1232	0.121	0.149	0.17	0.31	0.269	0.164	0.136	0.144	0.139	0.114	0.127	0.172	0.168	0.31	0 of 12
AROCLOR-1242	0.121	0.149	0.17	0.31	0.269	0.164	0.136	0.144	0.139	0.114	0.127	0.172	0.168	0.31	0 of 12
AROCLOR-1248	0.121	0.149	0.17	0.31	0.269	0.164	0.136	0.144	0.139	0.114	0.127	0.172	0.168	0.31	0 of 12
AROCLOR-1254	0.121	0.149	0.17	0.31	0.269	0.164	0.136	0.144	0.139	0.114	0.127	0.172	0.168	0.31	0 of 12
AROCLOR-1260	0.121	0.149	0.17	0.31	0.269	0.164	0.136	0.144	0.139	0.114	0.127	0.172	0.168	0.31	0 of 12
BETA-BHC	0.00242	0.00297	0.00341	0.0062	0.00537	0.00328	0.00272	0.00287	0.00278	0.00227	0.00255	0.00345	0.00336	0.0062	0 of 12
CHLORDANE (TECHNICAL)	0.242	0.297	0.341	0.62	0.537	0.328	0.272	0.287	0.278	0.227	0.255	0.345	0.336	0.62	0 of 12
DELTA-BHC	0.00242	0.00297	0.00341	0.0062	0.00537	0.00328	0.00272	0.00287	0.00278	0.00227	0.00255	0.00345	0.00336	0.0062	0 of 12
DIELDRIN	0.00483	0.00595	0.00682	0.0124	0.0107	0.00655	0.00544	0.00574	0.00556	0.00455	0.00509	0.00689	0.00671	0.0124	0 of 12
ENDOSULFAN I	0.00242	0.00297	0.00341	0.0062	0.00537	0.00328	0.00272	0.00287	0.00278	0.00227	0.00255	0.00345	0.00336	0.0062	0 of 12
ENDOSULFAN II	0.00483	0.00595	0.00682	0.0124	0.0107	0.00655	0.00544	0.00574	0.00556	0.00455	0.00509	0.00689	0.00671	0.0124	0 of 12
ENDOSULFAN SULFATE	0.00483	0.00595	0.00682	0.0124	0.0107	0.00655	0.00544	0.00574	0.00556	0.00455	0.00509	0.00689	0.00671	0.0124	0 of 12
ENDRIN	0.00483	0.00595	0.00682	0.0124	0.0107	0.00655	0.00544	0.00574	0.00556	0.00455	0.00509	0.00689	0.00671	0.0124	0 of 12
ENDRIN ALDEHYDE	0.00483	0.00595	0.00682	0.0124	0.0107	0.00655	0.00544	0.00574	0.00556	0.00455	0.00509	0.00689	0.00671	0.0124	0 of 12
ENDRIN KETONE	0.00483	0.00595	0.00682	0.0124	0.0107	0.00655	0.00544	0.00574	0.00556	0.00455	0.00509	0.00689	0.00671	0.0124	0 of 12
GAMMA-BHC	0.00242	0.00297	0.00341	0.0062	0.00537	0.00328	0.00272	0.00287	0.00278	0.00227	0.00255	0.00345	0.00336	0.0062	0 of 12
GAMMA-CHLORDANE	0.00242	0.00297	0.00341	0.0062	0.00537	0.00328	0.00272	0.00287	0.00278	0.00227	0.00255	0.00345	0.00336	0.0062	0 of 12
HEPTACHLOR	0.00242	0.00297	0.00341	0.0062	0.00537	0.00328	0.00272	0.00287	0.00278	0.00227	0.00255	0.00345	0.00336	0.0062	0 of 12
HEPTACHLOR EPOXIDE	0.00242	0.00297	0.00341	0.0062	0.00537	0.00328	0.00272	0.00287	0.00278	0.00227	0.00255	0.00345	0.00336	0.0062	0 of 12
HEXACHLOROBENZENE	0.00242	0.00297	0.00341	0.0062	0.00537	0.00328	0.00272	0.00287	0.00278	0.00227	0.00255	0.00345	0.00336	0.0062	0 of 12
METHOXYCHLOR	0.242	0.297	0.341	0.62	0.537	0.328	0.272	0.287	0.278	0.227	0.255	0.345	0.336	0.62	0 of 12
TOXAPHENE	0.242	0.297	0.341	0.62	0.537	0.328	0.272	0.287	0.278	0.227	0.255	0.345	0.336	0.62	0 of 12

Table A-9. Deer Island Effluent Loadings, FY12 (cont.)

Volatile Organics (lbs/day)													Times		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
1,1,1-TRICHLOROETHANE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
1,1,2,2-TETRACHLOROETHANE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
1,1,2-TRICHLOROETHANE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
1,1-DICHLOROETHANE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
1,1-DICHLOROETHENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
1,2-DICHLOROBENZENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
1,2-DICHLOROETHANE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
1,2-DICHLOROPROPANE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
1,3-DICHLOROBENZENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
1,4-DICHLOROBENZENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
2-BUTANONE	1.12	1.04	1.42	1.79	1.93	3.2	7.12	1.27	1.31	1.08	1.8	1.3	2.03	13	1 of 24
2-CHLOROETHYL VINYL ETHER	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
2-HEXANONE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
4-METHYL-2-PENTANONE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
ACETONE	2.25	<b>63</b>	2.83	3.58	3.86	<b>68.5</b>	<b>204</b>	2.54	2.61	2.16	<b>82.4</b>	2.6	36.7	372	5 of 24
ACROLEIN	2.25	2.08	2.83	3.58	3.86	6.4	2.49	2.54	2.61	2.16	3.61	2.6	3.08	6.83	0 of 24
ACRYLONITRILE	2.25	2.08	2.83	3.58	3.86	6.4	2.49	2.54	2.61	2.16	3.61	2.6	3.08	6.83	0 of 24
BENZENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
BROMODICHLOROMETHANE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
BROMOFORM	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
BROMOMETHANE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
CARBON DISULFIDE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
CARBON TETRACHLORIDE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
CHLOROBENZENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
CHLOROETHANE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
CHLOROFORM	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
CHLOROMETHANE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
CIS-1,2-DICHLOROETHENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
CIS-1,3-DICHLOROPROPENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
DIBROMOCHLOROMETHANE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
ETHYLBENZENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
M,P-XYLENE	2.25	2.08	2.83	3.58	3.86	6.4	2.49	2.54	2.61	2.16	3.61	2.6	3.08	6.83	0 of 24
METHYLENE CHLORIDE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
O-XYLENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
STYRENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
TETRACHLOROETHENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	<b>14.9</b>	1.3	2.64	28	1 of 24
TOLUENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
TRANS-1,2-DICHLOROETHENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
TRANS-1,3-DICHLOROPROPENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
TRICHLOROETHENE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
TRICHLOROFLUOROMETHANE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
VINYL ACETATE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24
VINYL CHLORIDE	1.12	1.04	1.42	1.79	1.93	3.2	1.25	1.27	1.31	1.08	1.8	1.3	1.54	3.42	0 of 24

Notes

--: No data or no samples taken; results in **bold** indicate one or more detects that month.

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-10. Deer Island Influent Characterization (Low detection limit analyses; North & South Systems), FY12

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-TRICHLOROBENZENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
1,2-DICHLOROBENZENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
1,2-DIPHENYLHYDRAZINE (AS AZOBENZENE)	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
1,3-DICHLOROBENZENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
1,4-DICHLOROBENZENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2,2'-OXYBIS(1-CHLOROPROPANE)	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2,4,5-TRICHLOROPHENOL	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2,4,6-TRICHLOROPHENOL	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2,4-DICHLOROPHENOL	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2,4-DIMETHYLPHENOL	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2,4-DINITROPHENOL	7.38	5.94	5.48	5.3	5.57	5.22	5.25	6.03	5.25	5.34	5.64	5.25	5.61	9.53	0 of 46
2,4-DINITROTOLUENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2,6-DINITROTOLUENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2-CHLORONAPHTHALENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2-CHLOROPHENOL	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2-METHYL-4,6-DINITROPHENOL	7.38	5.94	5.48	5.3	5.57	5.22	5.25	6.03	5.25	5.34	5.64	5.25	5.61	9.53	0 of 46
2-METHYLNAPHTHALENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2-METHYLPHENOL	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2-NITROANILINE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
2-NITROPHENOL	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
3,3'-DICHLOROBENZIDINE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
3-NITROANILINE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
4-BROMOPHENYL PHENYL ETHER	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
4-CHLORO-3-METHYLPHENOL	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
4-CHLOROANILINE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
4-CHLOROPHENYL PHENYL ETHER	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
4-METHYLPHENOL (INCLUDES 3-METHYLPHENOL)	<b>12.1</b>	<b>5.72</b>	2.19	2.12	2.23	2.09	2.1	2.41	2.1	<b>40.8</b>	<b>9.9</b>	<b>5.96</b>	6.67	43	10 of 46
4-NITROANILINE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
4-NITROPHENOL	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
ACENAPHTHENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
ACENAPHTHYLENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
ANILINE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
ANTHRACENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
BENZIDINE	7.38	5.94	5.48	5.3	5.57	5.22	5.25	6.03	5.25	5.34	5.64	5.25	5.61	9.53	0 of 46
BENZO(A)ANTHRACENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
BENZO(A)PYRENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
BENZO(B)FLUORANTHENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
BENZO(G,H,I)PERYLENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
BENZO(K)FLUORANTHENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
BENZOIC ACID	7.38	5.94	5.48	5.3	5.57	5.22	5.25	6.03	5.25	5.34	5.64	5.25	5.61	9.53	0 of 46
BENZYL ALCOHOL	<b>6.21</b>	<b>5.92</b>	2.19	2.12	2.23	2.09	<b>7.17</b>	2.41	<b>6.76</b>	<b>5.87</b>	2.26	<b>5.34</b>	4.07	12.2	6 of 46
BIS(2-CHLOROETHOXY)METHANE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
BIS(2-CHLOROETHYL)ETHER	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
BIS(2-ETHYLHEXYL)PHTHALATE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
BUTYLBENZYLPHTHALATE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
CARBAZOLE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
CHRYSENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
DIBENZO(A,H)ANTHRACENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
DIBENZOFURAN	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
DIETHYLPHTHALATE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
DIMETHYLPHTHALATE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
DI-N-BUTYLPHTHALATE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
DI-N-OCTYLPHTHALATE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
FLUORANTHENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
FLUORENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
HEXACHLOROENZENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
HEXACHLOROBUTADIENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
HEXACHLOROCYCLOPENTADIENE	7.38	5.94	5.48	5.3	5.57	5.22	5.25	6.03	5.25	5.34	5.64	5.25	5.61	9.53	0 of 46
HEXACHLOROETHANE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
INDENO(1,2,3-CD)PYRENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
ISOPHORONE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
NAPHTHALENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
N-DECANE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46

**Table A-10. Deer Island Influent Characterization (Low detection limit analyses; North & South Systems), FY12 (cont.)**

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
	NITROBENZENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82
N-NITROSODIMETHYLAMINE (NDMA)	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
N-NITROSODI-N-PROPYLAMINE (NDPA)	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
N-NITROSODIPHENYLAMINE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
N-OCTADECANE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
PENTACHLOROPHENOL	7.38	5.94	5.48	5.3	5.57	5.22	5.25	6.03	5.25	5.34	5.64	5.25	5.61	9.53	0 of 46
PHENANTHRENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
PHENOL	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46
PYRENE	2.96	2.37	2.19	2.12	2.23	2.09	2.1	2.41	2.1	2.14	2.26	2.1	2.24	3.82	0 of 46

Polycyclic Aromatic Hydrocarbons (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
	1-METHYLNAPHTHALENE		0.191		0.0955		0.175		0.0396		0.0887		0.0863	0.115	0.208
1-METHYLPHENANTHRENE		0.0746		0.0562		0.0418		0.0203		0.0282		0.0123	0.0377	0.0929	21 of 22
2,3,5-TRIMETHYLNAPHTHYLENE		0.141		0.0843		0.0869		0.0341		0.0476		0.0622	0.0757	0.153	22 of 22
2,6-DIMETHYLNAPHTHALENE		0.127		0.0742		0.0887		0.0467		0.0624		0.0627	0.077	0.128	22 of 22
2-METHYLNAPHTHALENE		0.152		0.0883		0.139		0.0365		0.0738		0.0657	0.0934	0.169	22 of 22
ACENAPHTHENE		0.0956		0.0818		0.131		0.0243		0.0575		0.055	0.0755	0.2	22 of 22
ACENAPHTHYLENE		0.124		0.106		0.159		0.00601		0.00668		0.00642	0.0693	0.215	20 of 22
ANTHRACENE		0.0789		0.0781		0.108		0.0254		0.0575		0.0352	0.0642	0.175	22 of 22
BENZO(A)ANTHRACENE		0.278		0.18		0.123		0.0593		0.0933		0.0964	0.135	0.453	22 of 22
BENZO(A)PYRENE		0.349		0.193		0.125		0.0559		0.0927		0.114	0.151	0.576	22 of 22
BENZO(B)FLUORANTHENE		0.42		0.181		0.108		0.0536		0.0846		0.116	0.156	0.692	22 of 22
BENZO(E)PYRENE		0.276		0.132		0.0746		0.0375		0.0589		0.09	0.108	0.457	22 of 22
BENZO(G,H,I)PERYLENE		0.215		0.103		0.0621		0.029		0.0447		0.0608	0.0834	0.353	22 of 22
BENZO(K)FLUORANTHENE		0.273		0.148		0.0889		0.0463		0.0654		0.0881	0.115	0.453	22 of 22
BENZOTHIAZOLE		0.0385		0.0581		0.0434		0.0326		0.0602		0.0224	0.0412	0.0827	22 of 22
BIPHENYL		0.0918		0.0807		0.129		0.0166		0.0369		0.0313	0.0657	0.198	22 of 22
C1-CHRYSENES		0.171		0.129		0.0523		0.026		0.0365		0.0518	0.0744	0.279	22 of 22
C1-DIBENZOTHIOPHENES		0.132		0.0725		0.0582		0.00109		0.104		0.0339	0.064	0.17	18 of 22
C1-FLUORANTHENES/PYRENES		0.299		0.233		0.139		0.0663		0.102		0.114	0.154	0.458	22 of 22
C1-FLUORENES		0.169		0.141		0.11		0.0593		0.0818		0.0808	0.105	0.178	22 of 22
C1-NAPHTHALENES		0.244		0.136		0.227		0.053		0.113		0.108	0.149	0.266	22 of 22
C1-PHENANTHRENES/ANTHRACENES		0.371		0.278		0.212		0.109		0.14		0.109	0.198	0.455	21 of 22
C2-CHRYSENES		0.171		0.427		0.000533		0.00109		0.000527		0.000519	0.084	0.427	5 of 22
C2-DIBENZOTHIOPHENES		0.153		0.0843		0.0665		0.00109		0.0382		0.0548	0.065	0.167	17 of 22
C2-FLUORANTHENES/PYRENES		0.254		0.164		0.0732		0.00109		0.0556		0.0782	0.0999	0.4	18 of 22
C2-FLUORENES		0.18		0.116		0.133		0.018		0.0479		0.000519	0.0812	0.268	15 of 22
C2-NAPHTHALENES		0.427		0.254		0.314		0.125		0.168		0.209	0.251	0.431	22 of 22
C2-PHENANTHRENES/ANTHRACENES		0.327		0.246		0.185		0.0685		0.125		0.127	0.176	0.366	21 of 22
C3-CHRYSENES		0.00115		0.00104		0.000533		0.00109		0.000527		0.000519	0.00079	0.0013	0 of 22
C3-DIBENZOTHIOPHENES		0.126		0.00104		0.012		0.00109		0.000527		0.046	0.0317	0.154	9 of 22
C3-FLUORANTHENES/PYRENES		0.08		0.0642		0.00697		0.00109		0.000527		0.000519	0.023	0.138	4 of 22
C3-FLUORENES		0.282		0.169		0.162		0.00109		0.0699		0.0213	0.115	0.304	13 of 22
C3-NAPHTHALENES		0.907		0.63		0.649		0.408		0.419		0.57	0.598	0.966	22 of 22
C3-PHENANTHRENES/ANTHRACENES		0.573		0.322		0.282		0.00109		0.0418		0.17	0.229	0.688	16 of 22
C4-CHRYSENES		0.292		0.00104		0.000533		0.00109		0.000527		0.000519	0.047	0.329	2 of 22
C4-NAPHTHALENES		0.308		0.209		0.248		0.109		0.144		0.169	0.199	0.325	22 of 22
C4-PHENANTHRENES/ANTHRACENES		0.0811		0.0363		0.0368		0.00109		0.000527		0.0115	0.0276	0.0816	9 of 22
CHRYSENE		0.389		0.219		0.126		0.0636		0.1		0.121	0.165	0.637	22 of 22
DIBENZO(A,H)ANTHRACENE		0.0479		0.0194		0.0112		0.00896		0.0116		0.013	0.0182	0.0792	19 of 22
DIBENZOFURAN		0.0686		0.057		0.0823		0.0339		0.0563		0.0446	0.0576	0.108	22 of 22
DIBENZOTHIOPHENE		0.0541		0.0368		0.0417		0.0137		0.0253		0.0222	0.0322	0.0739	22 of 22
FLUORANTHENE		0.771		0.432		0.366		0.159		0.225		0.213	0.354	1.25	22 of 22
FLUORENE		0.0893		0.0682		0.116		0.0255		0.0486		0.0464	0.067	0.17	22 of 22
INDENO(1,2,3-CD)PYRENE		0.283		0.114		0.0713		0.0285		0.0467		0.0566	0.097	0.468	22 of 22
NAPHTHALENE		0.201		0.141		0.322		0.0622		0.186		0.0806	0.169	0.39	22 of 22
PERYLENE		0.0557		0.0339		0.0246		0.0115		0.015		0.017	0.0257	0.0913	22 of 22
PHENANTHRENE		0.554		0.424		0.493		0.129		0.251		0.204	0.342	0.815	22 of 22
PYRENE		0.625		0.366		0.283		0.134		0.189		0.184	0.291	0.998	22 of 22

Table A-10. Deer Island Influent Characterization (Low detection limit analyses; North & South Systems), FY12 (cont.)

Organochlorine Pesticides and PCBs (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
2,4'-DDD		<b>0.00122</b>		0.000207		<b>0.00202</b>		<b>0.000605</b>		<b>0.00147</b>		<b>0.000449</b>	0.00103	0.00275	9 of 22
2,4'-DDE		0.000233		0.000207		0.000211		0.000234		0.000212		<b>0.000637</b>	0.000298	0.00103	2 of 22
2,4'-DDT		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
4,4'-DDD		<b>0.00396</b>		0.000207		<b>0.000366</b>		<b>0.000702</b>		<b>0.00444</b>		<b>0.00112</b>	0.00171	0.00672	10 of 22
4,4'-DDE		<b>0.0166</b>		0.000207		<b>0.00167</b>		<b>0.00213</b>		<b>0.00111</b>		<b>0.00684</b>	0.00483	0.0286	15 of 22
4,4'-DDT		<b>0.00664</b>		<b>0.0037</b>		<b>0.00539</b>		0.000234		<b>0.00221</b>		<b>0.00112</b>	0.00321	0.00807	14 of 22
ALDRIN		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
ALPHA-CHLORDANE		<b>0.00401</b>		<b>0.0043</b>		<b>0.00362</b>		<b>0.00297</b>		<b>0.00337</b>		<b>0.0051</b>	0.0039	0.00554	22 of 22
BZ 101 PENTACHLOROBIPHENYL		<b>0.00244</b>		<b>0.00157</b>		<b>0.000894</b>		<b>0.000733</b>		<b>0.00165</b>		<b>0.00146</b>	0.00142	0.00309	21 of 22
BZ 105 PENTACHLOROBIPHENYL		0.000233		0.000207		0.000211		<b>0.000591</b>		<b>0.000272</b>		<b>0.00126</b>	0.000486	0.00142	6 of 22
BZ 118 PENTACHLOROBIPHENYL		<b>0.00147</b>		0.000207		<b>0.00109</b>		<b>0.000855</b>		<b>0.00114</b>		<b>0.00209</b>	0.00119	0.00223	20 of 22
BZ 126 PENTACHLOROBIPHENYL		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
BZ 128 HEXACHLOROBIPHENYL		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
BZ 138 HEXACHLOROBIPHENYL		<b>0.00349</b>		<b>0.00223</b>		<b>0.00175</b>		<b>0.00142</b>		<b>0.00167</b>		<b>0.00141</b>	0.00196	0.00408	22 of 22
BZ 153 HEXACHLOROBIPHENYL		<b>0.00253</b>		<b>0.00115</b>		<b>0.000763</b>		<b>0.00067</b>		<b>0.000945</b>		<b>0.00104</b>	0.00116	0.00309	22 of 22
BZ 170 HEPTACHLOROBIPHENYL		<b>0.00125</b>		0.000207		0.000211		0.000234		<b>0.00263</b>		0.000207	0.000387	0.00167	4 of 22
BZ 18 TRICHLOROBIPHENYL		0.000233		<b>0.0036</b>		0.000211		0.000234		<b>0.000539</b>		0.000207	0.000712	0.0036	6 of 22
BZ 180 HEPTACHLOROBIPHENYL		<b>0.00227</b>		<b>0.00106</b>		<b>0.00064</b>		<b>0.00518</b>		<b>0.000614</b>		<b>0.00141</b>	0.00188	0.00975	22 of 22
BZ 187 HEPTACHLOROBIPHENYL		<b>0.00132</b>		<b>0.000591</b>		<b>0.00033</b>		<b>0.000296</b>		<b>0.000288</b>		<b>0.000429</b>	0.000529	0.00156	22 of 22
BZ 195 OCTACHLOROBIPHENYL		0.000233		0.000207		0.000211		<b>0.000364</b>		0.000212		0.000207	0.00024	0.000466	2 of 22
BZ 206 NONACHLOROBIPHENYL		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
BZ 209 DECACHLOROBIPHENYL		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
BZ 28 TRICHLOROBIPHENYL		0.000233		0.000207		0.000211		0.000234		<b>0.000236</b>		0.000207	0.000221	0.000265	1 of 22
BZ 44 TETRACHLOROBIPHENYL		0.000233		<b>0.00198</b>		0.000211		0.000234		<b>0.000563</b>		0.000207	0.000501	0.00198	3 of 22
BZ 52 TETRACHLOROBIPHENYL		<b>0.00136</b>		<b>0.00302</b>		<b>0.000703</b>		<b>0.000565</b>		<b>0.00121</b>		<b>0.00088</b>	0.0012	0.00302	21 of 22
BZ 66 TETRACHLOROBIPHENYL		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
BZ 77 TETRACHLOROBIPHENYL		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
BZ 8 DICHLOROBIPHENYL		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
CIS-NONACHLOR		<b>0.000486</b>		<b>0.000362</b>		<b>0.000587</b>		<b>0.000479</b>		<b>0.000478</b>		<b>0.000583</b>	0.000506	0.00076	18 of 22
DDMU		0.000233		0.000207		0.000211		<b>0.000929</b>		0.000212		0.000207	0.000337	0.00166	1 of 22
DIELDRIN		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
ENDRIN		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
GAMMA-BHC		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
GAMMA-CHLORDANE		<b>0.00329</b>		<b>0.00322</b>		<b>0.00356</b>		<b>0.00312</b>		<b>0.00365</b>		<b>0.00518</b>	0.00372	0.00565	22 of 22
HEPTACHLOR		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
HEPTACHLOR EPOXIDE		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
HEXACHLOROBENZENE		<b>0.000395</b>		<b>0.000203</b>		<b>0.000262</b>		<b>0.00039</b>		<b>0.000795</b>		<b>0.00026</b>	0.000374	0.000882	20 of 22
MIREX		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
OXYCHLORDANE		0.000233		0.000207		0.000211		0.000234		0.000212		0.000207	0.000217	0.00026	0 of 22
TOTAL AMP PCBs		<b>0.0161</b>		<b>0.0151</b>		<b>0.00616</b>		<b>0.0104</b>		<b>0.00886</b>		<b>0.00994</b>	0.0107	0.0197	22 of 22
TOTAL CHLORDANE		<b>0.00614</b>		<b>0.00592</b>		<b>0.00525</b>		<b>0.00466</b>		<b>0.00498</b>		<b>0.00669</b>	0.00561	0.00778	22 of 22
TOTAL DDT		<b>0.028</b>		<b>0.0037</b>		<b>0.00921</b>		<b>0.00305</b>		<b>0.00895</b>		<b>0.00971</b>	0.0105	0.0452	22 of 22
TRANS-NONACHLOR		<b>0.00213</b>		<b>0.00162</b>		<b>0.00163</b>		<b>0.00169</b>		<b>0.00161</b>		<b>0.0016</b>	0.00171	0.00239	22 of 22

**Table A-10. Deer Island Influent Characterization (Low detection limit analyses; North & South Systems), FY12 (cont.)**

Volatiles Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,1,1-TRICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
1,1,2,2-TETRACHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
1,1,2-TRICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
1,1-DICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
1,1-DICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
1,2-DICHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
1,2-DICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
1,2-DICHLOROPROPANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
1,3-DICHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
1,4-DICHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
2-BUTANONE	<b>5.25</b>	<b>8.44</b>	<b>1.73</b>	0.5	<b>1.45</b>	<b>1.06</b>	<b>5.35</b>	<b>3.18</b>	<b>2.94</b>	<b>6.75</b>	0.5	<b>1.39</b>	2.75	9.32	21 of 48
2-CHLOROETHYL VINYL ETHER	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
2-HEXANONE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
4-METHYL-2-PENTANONE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
ACETONE	<b>84</b>	<b>119</b>	<b>58.7</b>	<b>30.4</b>	<b>59.9</b>	<b>112</b>	<b>73.9</b>	<b>92.9</b>	<b>97.4</b>	<b>338</b>	<b>75.5</b>	<b>54.7</b>	92.6	406	47 of 48
ACROLEIN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 48
ACRYLONITRILE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 48
BENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
BROMODICHLOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
BROMOFORM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
BROMOMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
CARBON DISULFIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
CARBON TETRACHLORIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
CHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
CHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
CHLOROFORM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
CHLOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
CIS-1,2-DICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
CIS-1,3-DICHLOROPROPENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
DIBROMOCHLOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
ETHYLBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
M,P-XYLENE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 48
METHYLENE CHLORIDE	<b>4.12</b>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.727	7.76	1 of 48
O-XYLENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
STYRENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
TETRACHLOROETHENE	<b>1.53</b>	<b>2.16</b>	0.5	0.5	0.5	0.5	<b>4.39</b>	<b>4</b>	0.5	0.5	<b>5.02</b>	0.5	1.58	8.39	7 of 48
TOLUENE	<b>1.44</b>	<b>3.52</b>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	<b>3</b>	0.5	0.5	0.911	7.45	5 of 48
TRANS-1,2-DICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
TRANS-1,3-DICHLOROPROPENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
TRICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
TRICHLOROFLUOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
VINYL ACETATE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48
VINYL CHLORIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 48

Notes

DEC is the now-defunct Detailed Effluent Characterization project, which includes low-detection limit methods not approved by the EPA. DEC sampling is now carried out under the NP-EM project.

~: No data or no samples taken

Results in **bold** indicate one or more detects that month

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-11. Deer Island Influent loadings (Low detection limit analyses; North & South Systems), FY12

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-TRICHLOROBENZENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
1,2-DICHLOROBENZENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
1,2-DIPHENYLHYDRAZINE (AS AZOBENZENE)	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
1,3-DICHLOROBENZENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
1,4-DICHLOROBENZENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2,2'-OXYBIS(1-CHLOROPROPANE)	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2,4,5-TRICHLOROPHENOL	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2,4,6-TRICHLOROPHENOL	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2,4-DICHLOROPHENOL	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2,4-DIMETHYLPHENOL	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2,4-DINITROPHENOL	16.5	14.2	16.5	21	23	16	13.5	15.5	14.2	11.6	14.1	14.9	15.7	23.9	0 of 46
2,4-DINITROTOLUENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2,6-DINITROTOLUENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2-CHLORONAPHTHALENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2-CHLOROPHENOL	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2-METHYL-4,6-DINITROPHENOL	16.5	14.2	16.5	21	23	16	13.5	15.5	14.2	11.6	14.1	14.9	15.7	23.9	0 of 46
2-METHYLNAPHTHALENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2-METHYLPHENOL	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2-NITROANILINE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
2-NITROPHENOL	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
3,3'-DICHLOROBENZIDINE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
3-NITROANILINE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
4-BROMOPHENYL PHENYL ETHER	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
4-CHLORO-3-METHYLPHENOL	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
4-CHLOROANILINE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
4-CHLOROPHENYL PHENYL ETHER	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
4-METHYLPHENOL (INCLUDES 3-METHYLPHENOL)	<b>27.1</b>	<b>13.7</b>	6.6	8.41	9.21	6.39	5.39	6.22	5.68	<b>88.4</b>	<b>24.7</b>	<b>16.9</b>	18.6	92.2	10 of 46
4-NITROANILINE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
4-NITROPHENOL	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
ACENAPHTHENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
ACENAPHTHYLENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
ANILINE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
ANTHRACENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
BENZIDINE	16.5	14.2	16.5	21	23	16	13.5	15.5	14.2	11.6	14.1	14.9	15.7	23.9	0 of 46
BENZO(A)ANTHRACENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
BENZO(A)PYRENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
BENZO(B)FLUORANTHENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
BENZO(G,H,I)PERYLENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
BENZO(K)FLUORANTHENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
BENZOIC ACID	16.5	14.2	16.5	21	23	16	13.5	15.5	14.2	11.6	14.1	14.9	15.7	23.9	0 of 46
BENZYL ALCOHOL	<b>13.9</b>	<b>14.2</b>	6.6	8.41	9.21	6.39	<b>18.4</b>	6.22	<b>18.3</b>	<b>12.7</b>	5.62	<b>15.2</b>	11.4	31.4	6 of 46
BIS(2-CHLOROETHOXY)METHANE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
BIS(2-CHLOROETHYL)ETHER	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
BIS(2-ETHYLHEXYL)PHTHALATE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
BUTYLBENZYLPHTHALATE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
CARBAZOLE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
CHRYSENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
DIBENZO(A,H)ANTHRACENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
DIBENZOFURAN	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
DIETHYLPHTHALATE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
DIMETHYLPHTHALATE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
DI-N-BUTYLPHTHALATE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
DI-N-OCTYLPHTHALATE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
FLUORANTHENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
FLUORENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
HEXACHLOROBIENZIENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
HEXACHLOROBUTADIENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
HEXACHLOROCYCLOPENTADIENE	16.5	14.2	16.5	21	23	16	13.5	15.5	14.2	11.6	14.1	14.9	15.7	23.9	0 of 46
HEXACHLOROETHANE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
INDENO(1,2,3-CD)PYRENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
ISOPHORONE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
NAPHTHALENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
N-DECANE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46



Table A-11. Deer Island Influent loadings (Low detection limit analyses; North & South Systems), FY12 (cont.)

Semivolatile Organics (ug/L)													Average	Maximum	Times Detected
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
NITROBENZENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
N-NITROSODIMETHYLAMINE (NDMA)	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
N-NITROSODI-N-PROPYLAMINE (NDPA)	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
N-NITROSODIPHENYLAMINE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
N-OCTADECANE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
PENTACHLOROPHENOL	16.5	14.2	16.5	21	23	16	13.5	15.5	14.2	11.6	14.1	14.9	15.7	23.9	0 of 46
PHENANTHRENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
PHENOL	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
PYRENE	6.63	5.68	6.6	8.41	9.21	6.39	5.39	6.22	5.68	4.63	5.62	5.95	6.28	9.54	0 of 46
Polycyclic Aromatic Hydrocarbons (ug/L)													Average	Maximum	Times Detected
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
1-METHYLNAPHTHALENE		0.457		0.378		0.536		0.102		0.192		0.245	0.313	0.574	22 of 22
1-METHYLPHENANTHRENE		0.178		0.223		0.128		0.0525		0.0611		0.0348	0.103	0.256	21 of 22
2,3,5-TRIMETHYLNAPHTHYLENE		0.336		0.334		0.266		0.0878		0.103		0.176	0.207	0.363	22 of 22
2,6-DIMETHYLNAPHTHALENE		0.304		0.294		0.272		0.12		0.135		0.178	0.21	0.353	22 of 22
2-METHYLNAPHTHALENE		0.363		0.35		0.425		0.0941		0.16		0.186	0.255	0.464	22 of 22
ACENAPHTHENE		0.229		0.324		0.401		0.0627		0.124		0.156	0.206	0.602	22 of 22
ACENAPHTHYLENE		0.296		0.419		0.486		0.0155		0.0145		0.0182	0.189	0.648	20 of 22
ANTHRACENE		0.189		0.309		0.331		0.0654		0.124		0.0999	0.175	0.526	22 of 22
BENZO(A)ANTHRACENE		0.665		0.712		0.378		0.153		0.202		0.273	0.369	1.25	22 of 22
BENZO(A)PYRENE		0.835		0.764		0.382		0.144		0.201		0.324	0.412	1.58	22 of 22
BENZO(B)FLUORANTHENE		1		0.717		0.331		0.138		0.183		0.33	0.427	1.91	22 of 22
BENZO(E)PYRENE		0.66		0.522		0.229		0.0967		0.127		0.255	0.296	1.26	22 of 22
BENZO(G,H,I)PERYLENE		0.515		0.407		0.19		0.0749		0.0969		0.172	0.228	0.971	22 of 22
BENZO(K)FLUORANTHENE		0.652		0.586		0.272		0.119		0.142		0.25	0.314	1.25	22 of 22
BENZOTHAZOLE		0.092		0.23		0.133		0.0841		0.13		0.0635	0.112	0.23	22 of 22
BIPHENYL		0.22		0.32		0.395		0.0429		0.08		0.0887	0.179	0.595	22 of 22
C1-CHRYSENES		0.409		0.509		0.16		0.0672		0.079		0.147	0.203	0.768	22 of 22
C1-DIBENZOTHIOPHENES		0.315		0.287		0.178		0.00281		0.225		0.0963	0.175	0.424	18 of 22
C1-FLUORANTHENES/PYRENES		0.714		0.925		0.425		0.171		0.222		0.323	0.421	1.26	22 of 22
C1-FLUORENES		0.405		0.558		0.337		0.153		0.177		0.229	0.287	0.558	22 of 22
C1-NAPHTHALENES		0.583		0.538		0.695		0.137		0.244		0.306	0.406	0.733	22 of 22
C1-PHENANTHRENES/ANTHRACENES		0.886		1.1		0.648		0.281		0.303		0.308	0.541	1.25	21 of 22
C2-CHRYSENES		0.408		1.69		0.00163		0.00281		0.00114		0.00147	0.229	1.69	5 of 22
C2-DIBENZOTHIOPHENES		0.365		0.334		0.204		0.00281		0.0827		0.155	0.178	0.458	17 of 22
C2-FLUORANTHENES/PYRENES		0.607		0.648		0.224		0.00281		0.12		0.222	0.273	1.1	18 of 22
C2-FLUORENES		0.429		0.459		0.408		0.0463		0.104		0.00147	0.222	0.544	15 of 22
C2-NAPHTHALENES		1.02		1.01		0.962		0.323		0.363		0.592	0.684	1.17	22 of 22
C2-PHENANTHRENES/ANTHRACENES		0.782		0.973		0.565		0.177		0.27		0.362	0.48	1.01	21 of 22
C3-CHRYSENES		0.00274		0.00413		0.00163		0.00281		0.00114		0.00147	0.00216	0.00413	0 of 22
C3-DIBENZOTHIOPHENES		0.302		0.00413		0.0367		0.00281		0.00114		0.131	0.0865	0.424	9 of 22
C3-FLUORANTHENES/PYRENES		0.191		0.255		0.0214		0.00281		0.00114		0.00147	0.0628	0.38	4 of 22
C3-FLUORENES		0.674		0.671		0.497		0.00281		0.151		0.0605	0.313	0.838	13 of 22
C3-NAPHTHALENES		2.17		2.5		1.99		1.05		0.907		1.62	1.63	2.66	22 of 22
C3-PHENANTHRENES/ANTHRACENES		1.37		1.28		0.864		0.00281		0.0905		0.481	0.626	1.89	16 of 22
C4-CHRYSENES		0.697		0.00413		0.00163		0.00281		0.00114		0.00147	0.128	0.728	2 of 22
C4-NAPHTHALENES		0.738		0.829		0.759		0.281		0.313		0.48	0.543	0.829	22 of 22
C4-PHENANTHRENES/ANTHRACENES		0.194		0.144		0.113		0.00281		0.00114		0.0327	0.0755	0.222	9 of 22
CHRYSENE		0.931		0.867		0.387		0.164		0.217		0.342	0.45	1.75	22 of 22
DIBENZO(A,H)ANTHRACENE		0.115		0.077		0.0343		0.0231		0.0252		0.037	0.0496	0.218	19 of 22
DIBENZOFURAN		0.164		0.226		0.252		0.0876		0.122		0.126	0.157	0.325	22 of 22
DIBENZOTHIOPHENE		0.129		0.146		0.128		0.0353		0.0547		0.063	0.0878	0.203	22 of 22
FLUORANTHENE		1.84		1.71		1.12		0.409		0.488		0.604	0.968	3.44	22 of 22
FLUORENE		0.214		0.27		0.355		0.0659		0.105		0.132	0.183	0.51	22 of 22
INDENO(1,2,3-CD)PYRENE		0.674		0.451		0.218		0.0736		0.101		0.161	0.265	1.29	22 of 22
NAPHTHALENE		0.479		0.558		0.987		0.161		0.402		0.229	0.461	1.17	22 of 22
PERYLENE		0.133		0.134		0.0754		0.0298		0.0325		0.0483	0.0703	0.251	22 of 22
PHENANTHRENE		1.33		1.68		1.51		0.332		0.543		0.58	0.933	2.32	22 of 22
PYRENE		1.5		1.45		0.867		0.346		0.41		0.523	0.794	2.75	22 of 22

Table A-11. Deer Island Influent loadings (Low detection limit analyses; North & South Systems), FY12 (cont.)

Organochlorine Pesticides and PCBs (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
2,4'-DDD		<b>0.00293</b>		0.000822		<b>0.00619</b>		<b>0.00156</b>		<b>0.00317</b>		<b>0.00127</b>	0.00282	0.00733	9 of 22
2,4'-DDE		0.000556		0.000822		0.000647		0.000603		0.000459		<b>0.00181</b>	0.000815	0.00306	2 of 22
2,4'-DDT		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
4,4'-DDD		<b>0.00947</b>		0.000822		<b>0.00112</b>		<b>0.00181</b>		<b>0.00961</b>		<b>0.00319</b>	0.00466	0.0185	10 of 22
4,4'-DDE		<b>0.0396</b>		0.000822		<b>0.00513</b>		<b>0.00549</b>		<b>0.00241</b>		<b>0.0194</b>	0.0132	0.0788	15 of 22
4,4'-DDT		<b>0.0159</b>		<b>0.0147</b>		<b>0.0165</b>		0.000603		<b>0.00479</b>		<b>0.00318</b>	0.00878	0.0222	14 of 22
ALDRIN		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
ALPHA-CHLORDANE		<b>0.00958</b>		<b>0.017</b>		<b>0.0111</b>		<b>0.00766</b>		<b>0.00729</b>		<b>0.0145</b>	0.0107	0.017	22 of 22
BZ 101 PENTACHLOROBIPHENYL		<b>0.00583</b>		<b>0.00624</b>		<b>0.00274</b>		<b>0.00189</b>		<b>0.00356</b>		<b>0.00415</b>	0.00387	0.00849	21 of 22
BZ 105 PENTACHLOROBIPHENYL		0.000556		0.000822		0.000647		<b>0.00153</b>		<b>0.000588</b>		<b>0.00357</b>	0.00133	0.0042	6 of 22
BZ 118 PENTACHLOROBIPHENYL		<b>0.00351</b>		0.000822		<b>0.00333</b>		<b>0.00221</b>		<b>0.00246</b>		<b>0.00593</b>	0.00325	0.00661	20 of 22
BZ 126 PENTACHLOROBIPHENYL		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
BZ 128 HEXACHLOROBIPHENYL		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
BZ 138 HEXACHLOROBIPHENYL		<b>0.00834</b>		<b>0.00885</b>		<b>0.00535</b>		<b>0.00366</b>		<b>0.00361</b>		<b>0.004</b>	0.00534	0.0112	22 of 22
BZ 153 HEXACHLOROBIPHENYL		<b>0.00604</b>		<b>0.00454</b>		<b>0.00234</b>		<b>0.00173</b>		<b>0.00205</b>		<b>0.00294</b>	0.00316	0.00849	22 of 22
BZ 170 HEPTACHLOROBIPHENYL		<b>0.003</b>		0.000822		0.000647		0.000603		<b>0.00057</b>		0.000588	0.00106	0.00459	4 of 22
BZ 18 TRICHLOROBIPHENYL		0.000556		<b>0.0143</b>		0.000647		0.000603		<b>0.00117</b>		0.000588	0.00194	0.0143	6 of 22
BZ 180 HEPTACHLOROBIPHENYL		<b>0.00544</b>		<b>0.00419</b>		<b>0.00196</b>		<b>0.0134</b>		<b>0.00133</b>		<b>0.004</b>	0.00512	0.0253	22 of 22
BZ 187 HEPTACHLOROBIPHENYL		<b>0.00315</b>		<b>0.00234</b>		<b>0.00101</b>		<b>0.000763</b>		<b>0.000624</b>		<b>0.00122</b>	0.00144	0.00429	22 of 22
BZ 195 OCTACHLOROBIPHENYL		0.000556		0.000822		0.000647		<b>0.000939</b>		0.000459		0.000588	0.000654	0.00121	2 of 22
BZ 206 NONACHLOROBIPHENYL		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
BZ 209 DECACHLOROBIPHENYL		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
BZ 28 TRICHLOROBIPHENYL		0.000556		0.000822		0.000647		0.000603		<b>0.000512</b>		0.000588	0.000603	0.000822	1 of 22
BZ 44 TETRACHLOROBIPHENYL		0.000556		<b>0.00783</b>		0.000647		0.000603		<b>0.00122</b>		0.000588	0.00137	0.00783	3 of 22
BZ 52 TETRACHLOROBIPHENYL		<b>0.00325</b>		<b>0.012</b>		<b>0.00215</b>		<b>0.00146</b>		<b>0.00262</b>		<b>0.0025</b>	0.00327	0.012	21 of 22
BZ 66 TETRACHLOROBIPHENYL		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
BZ 77 TETRACHLOROBIPHENYL		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
BZ 8 DICHLOROBIPHENYL		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
CIS-NONACHLOR		<b>0.00116</b>		<b>0.00144</b>		<b>0.0018</b>		<b>0.00124</b>		<b>0.00103</b>		<b>0.00166</b>	0.00138	0.0021	18 of 22
DDMU		0.000556		0.000822		0.000647		<b>0.0024</b>		0.000459		0.000588	0.00092	0.00426	1 of 22
DIELDRIN		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
ENDRIN		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
GAMMA-BHC		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
GAMMA-CHLORDANE		<b>0.00786</b>		<b>0.0128</b>		<b>0.0109</b>		<b>0.00804</b>		<b>0.00791</b>		<b>0.0147</b>	0.0101	0.0167	22 of 22
HEPTACHLOR		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
HEPTACHLOR EPOXIDE		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
HEXACHLOROBENZENE		<b>0.000944</b>		<b>0.000804</b>		<b>0.000803</b>		<b>0.001</b>		<b>0.00172</b>		<b>0.000737</b>	0.00102	0.00189	20 of 22
MIREX		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
OXYCHLORDANE		0.000556		0.000822		0.000647		0.000603		0.000459		0.000588	0.000593	0.000822	0 of 22
TOTAL AMP PCBs		<b>0.0384</b>		<b>0.0597</b>		<b>0.0189</b>		<b>0.0268</b>		<b>0.0192</b>		<b>0.0282</b>	0.0293	0.0597	22 of 22
TOTAL CHLORDANE		<b>0.0147</b>		<b>0.0235</b>		<b>0.0161</b>		<b>0.012</b>		<b>0.0108</b>		<b>0.019</b>	0.0153	0.0235	22 of 22
TOTAL DDT		<b>0.067</b>		<b>0.0147</b>		<b>0.0282</b>		<b>0.00787</b>		<b>0.0194</b>		<b>0.0275</b>	0.0286	0.124	22 of 22
TRANS-NONACHLOR		<b>0.00509</b>		<b>0.00641</b>		<b>0.00499</b>		<b>0.00435</b>		<b>0.00349</b>		<b>0.00453</b>	0.00466	0.00641	22 of 22

Table A-11. Deer Island Influent loadings (Low detection limit analyses; North & South Systems), FY12 (cont.)

Volatiles Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,1,1-TRICHLOROETHANE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
1,1,2,2-TETRACHLOROETHANE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
1,1,2-TRICHLOROETHANE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
1,1-DICHLOROETHANE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
1,1-DICHLOROETHENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
1,2-DICHLOROBENZENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
1,2-DICHLOROETHANE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
1,2-DICHLOROPROPANE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
1,3-DICHLOROBENZENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
1,4-DICHLOROBENZENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
2-BUTANONE	<b>11.9</b>	<b>20.5</b>	<b>4.99</b>	2.12	<b>5.62</b>	<b>5.26</b>	<b>13.5</b>	<b>8.13</b>	<b>7.69</b>	<b>14.6</b>	1.54	<b>3.69</b>	8.3	21.4	21 of 48
2-CHLOROETHYL VINYL ETHER	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
2-HEXANONE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
4-METHYL-2-PENTANONE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
ACETONE	<b>191</b>	<b>290</b>	<b>169</b>	<b>129</b>	<b>231</b>	<b>559</b>	<b>187</b>	<b>238</b>	<b>255</b>	<b>731</b>	<b>233</b>	<b>145</b>	280	888	47 of 48
ACROLEIN	2.27	2.43	2.88	4.24	3.86	4.98	2.53	2.56	2.61	2.16	3.08	2.66	3.02	6.83	0 of 48
ACRYLONITRILE	2.27	2.43	2.88	4.24	3.86	4.98	2.53	2.56	2.61	2.16	3.08	2.66	3.02	6.83	0 of 48
BENZENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
BROMODICHLOROMETHANE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
BROMOFORM	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
BROMOMETHANE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
CARBON DISULFIDE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
CARBON TETRACHLORIDE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
CHLOROBENZENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
CHLOROETHANE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
CHLOROFORM	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
CHLOROMETHANE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
CIS-1,2-DICHLOROETHENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
CIS-1,3-DICHLOROPROPENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
DIBROMOCHLOROMETHANE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
ETHYLBENZENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
M,P-XYLENE	2.27	2.43	2.88	4.24	3.86	4.98	2.53	2.56	2.61	2.16	3.08	2.66	3.02	6.83	0 of 48
METHYLENE CHLORIDE	<b>9.37</b>	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	2.2	17.6	1 of 48
O-XYLENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
STYRENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
TETRACHLOROETHENE	<b>3.47</b>	<b>5.26</b>	1.44	2.12	1.93	2.49	<b>11.1</b>	<b>10.2</b>	1.31	1.08	<b>15.5</b>	1.33	4.77	29.7	7 of 48
TOLUENE	<b>3.28</b>	<b>8.56</b>	1.44	2.12	1.93	2.49	1.27	1.28	1.31	<b>6.5</b>	1.54	1.33	2.75	15.7	5 of 48
TRANS-1,2-DICHLOROETHENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
TRANS-1,3-DICHLOROPROPENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
TRICHLOROETHENE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
TRICHLOROFLUOROMETHANE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
VINYL ACETATE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48
VINYL CHLORIDE	1.14	1.22	1.44	2.12	1.93	2.49	1.27	1.28	1.31	1.08	1.54	1.33	1.51	3.42	0 of 48

Notes

DEC is the now-defunct Detailed Effluent Characterization project, which includes low-detection limit methods not approved by the EPA. DEC sampling is now carried out under the NP-EM project.

~: No data or no samples taken

Results in **bold** indicate one or more detects that month

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-12. Deer Island Influent Characterization (Low detection limit analyses; North System), FY12

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-TRICHLOROENZENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
1,2-DICHLOROENZENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
1,2-DIPHENYLHYDRAZINE (AS AZOENZENE)	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
1,3-DICHLOROENZENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
1,4-DICHLOROENZENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2,2'-OXYBIS(1-CHLOROPROPANE)	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2,4,5-TRICHLOROPHENOL	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2,4,6-TRICHLOROPHENOL	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2,4-DICHLOROPHENOL	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2,4-DIMETHYLPHENOL	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2,4-DINITROPHENOL	8.42	6.04	5.58	5.68	5.56	5.2	5.25	6.48	5.27	5.35	5.81	5.23	5.78	11.6	0 of 24
2,4-DINITROTOLUENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2,6-DINITROTOLUENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2-CHLORONAPHTHALENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2-CHLOROPHENOL	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2-METHYL-4,6-DINITROPHENOL	8.42	6.04	5.58	5.68	5.56	5.2	5.25	6.48	5.27	5.35	5.81	5.23	5.78	11.6	0 of 24
2-METHYLNAPHTHALENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2-METHYLPHENOL	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2-NITROANILINE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
2-NITROPHENOL	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
3,3'-DICHLOROENZIDINE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
3-NITROANILINE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
4-BROMOPHENYL PHENYL ETHER	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
4-CHLORO-3-METHYLPHENOL	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
4-CHLOROANILINE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
4-CHLOROPHENYL PHENYL ETHER	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
4-METHYLPHENOL (INCLUDES 3-METHYLPHENOL)	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	40.7	2.33	2.09	4.81	45.4	2 of 24
4-NITROANILINE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
4-NITROPHENOL	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
ACENAPHTHENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
ACENAPHTHYLENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
ANILINE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
ANTHRACENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
BENZIDINE	8.42	6.04	5.58	5.68	5.56	5.2	5.25	6.48	5.27	5.35	5.81	5.23	5.78	11.6	0 of 24
BENZO(A)ANTHRACENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
BENZO(A)PYRENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
BENZO(B)FLUORANTHENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
BENZO(G,H,I)PERYLENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
BENZO(K)FLUORANTHENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
BENZOIC ACID	8.42	6.04	5.58	5.68	5.56	5.2	5.25	6.48	5.27	5.35	5.81	5.23	5.78	11.6	0 of 24
BENZYL ALCOHOL	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
BIS(2-CHLOROETHOXY)METHANE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
BIS(2-CHLOROETHYL)ETHER	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
BIS(2-ETHYLHEXYL)PHTHALATE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
BUTYLBENZYLPHTHALATE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
CARBAZOLE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
CHRYSENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
DIBENZO(A,H)ANTHRACENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
DIBENZOFURAN	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
DIETHYLPHTHALATE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
DIMETHYLPHTHALATE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
DI-N-BUTYLPHTHALATE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
DI-N-OCTYLPHTHALATE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
FLUORANTHENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
FLUORENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
HEXACHLOROENZENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
HEXACHLOROBUTADIENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
HEXACHLOROCCYCLOPENTADIENE	8.42	6.04	5.58	5.68	5.56	5.2	5.25	6.48	5.27	5.35	5.81	5.23	5.78	11.6	0 of 24
HEXACHLOROETHANE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
INDENO(1,2,3-CD)PYRENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
ISOPHORONE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
NAPHTHALENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24
N-DECANE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24

Table A-12. Deer Island Influent Characterization (Low detection limit analyses; North System), FY12 (cont.)

Semivolatile Organics (ug/L)													Average	Maximum	Times Detected	
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun				
NITROBENZENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24	
N-NITROSODIMETHYLAMINE (NDMA)	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24	
N-NITROSODI-N-PROPYLAMINE (NDPA)	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24	
N-NITROSODIPHENYLAMINE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24	
N-OCTADECANE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24	
PENTACHLOROPHENOL	8.42	6.04	5.58	5.68	5.56	5.2	5.25	6.48	5.27	5.35	5.81	5.23	5.78	11.6	0 of 24	
PHENANTHRENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24	
PHENOL	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24	
PYRENE	3.37	2.42	2.23	2.27	2.22	2.08	2.1	2.59	2.11	2.14	2.33	2.09	2.31	4.65	0 of 24	
<b>Polycyclic Aromatic Hydrocarbons (ug/L)</b>																
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected	
1-METHYLNAPHTHALENE		0.214		0.0692		0.218		0.0469		0.108		0.0626	0.118	0.239	12 of 12	
1-METHYLPHENANTHRENE		0.0815		0.0485		0.043		0.02		0.0285		0.0077	0.0389	0.103	11 of 12	
2,3,5-TRIMETHYLNAPHTHALENE		0.143		0.0541		0.103		0.0383		0.0439		0.051	0.0724	0.151	12 of 12	
2,6-DIMETHYLNAPHTHALENE		0.127		0.0449		0.102		0.0486		0.062		0.0468	0.0707	0.134	12 of 12	
2-METHYLNAPHTHALENE		0.172		0.0729		0.178		0.0437		0.091		0.059	0.102	0.195	12 of 12	
ACENAPHTHENE		0.116		0.0736		0.113		0.0278		0.0742		0.0576	0.0775	0.161	12 of 12	
ACENAPHTHYLENE		0.144		0.0858		0.136		0.00509		0.00997		0.00649	0.0683	0.186	12 of 12	
ANTHRACENE		0.0975		0.0732		0.0436		0.0215		0.0654		0.0337	0.0564	0.148	12 of 12	
BENZO(A)ANTHRACENE		0.35		0.207		0.0539		0.0471		0.102		0.0859	0.145	0.564	12 of 12	
BENZO(A)PYRENE		0.444		0.241		0.0616		0.0453		0.103		0.105	0.172	0.722	12 of 12	
BENZO(B)FLUORANTHENE		0.534		0.236		0.0558		0.0469		0.0911		0.11	0.183	0.867	12 of 12	
BENZO(E)PYRENE		0.352		0.17		0.0411		0.0312		0.0638		0.0828	0.127	0.573	12 of 12	
BENZO(G,H,I)PERYLENE		0.272		0.14		0.0346		0.0256		0.0467		0.0539	0.0986	0.44	12 of 12	
BENZO(K)FLUORANTHENE		0.343		0.185		0.0439		0.0379		0.0727		0.0814	0.131	0.562	12 of 12	
BENZOTHAZOLE		0.0441		0.0596		0.038		0.0389		0.0383		0.0142	0.0398	0.074	12 of 12	
BIPHENYL		0.112		0.0728		0.11		0.0173		0.0401		0.0269	0.0651	0.155	12 of 12	
C1-CHRYSENES		0.22		0.141		0.0434		0.0227		0.0404		0.0458	0.0897	0.355	12 of 12	
C1-DIBENZOTHIOPHENES		0.167		0.0552		0.0333		0.00125		0.0948		0.0279	0.0612	0.189	10 of 12	
C1-FLUORANTHENES/PYRENES		0.36		0.233		0.104		0.0579		0.113		0.0984	0.166	0.555	12 of 12	
C1-FLUORENES		0.183		0.107		0.122		0.0654		0.084		0.0756	0.107	0.194	12 of 12	
C1-NAPHTHALENES		0.273		0.106		0.287		0.0623		0.136		0.0852	0.157	0.306	12 of 12	
C1-PHENANTHRENES/ANTHRACENES		0.402		0.233		0.214		0.107		0.137		0.0609	0.196	0.495	11 of 12	
C2-CHRYSENES		0.176		0.273		0.000538		0.00125		0.00053		0.000518	0.0884	0.423	3 of 12	
C2-DIBENZOTHIOPHENES		0.146		0.0651		0.0713		0.00125		0.046		0.0496	0.0643	0.164	10 of 12	
C2-FLUORANTHENES/PYRENES		0.315		0.161		0.066		0.00125		0.0604		0.0687	0.116	0.494	10 of 12	
C2-FLUORENES		0.143		0.081		0.156		0.0213		0.0505		0.000518	0.0771	0.214	9 of 12	
C2-NAPHTHALENES		0.444		0.165		0.375		0.138		0.162		0.159	0.24	0.454	12 of 12	
C2-PHENANTHRENES/ANTHRACENES		0.354		0.186		0.189		0.0934		0.109		0.0971	0.174	0.392	12 of 12	
C3-CHRYSENES		0.00117		0.00112		0.000538		0.00125		0.00053		0.000518	0.000868	0.00145	0 of 12	
C3-DIBENZOTHIOPHENES		0.136		0.00112		0.000538		0.00125		0.00053		0.00053	0.0283	0.168	4 of 12	
C3-FLUORANTHENES/PYRENES		0.11		0.0641		0.000538		0.00125		0.00053		0.000518	0.0319	0.184	3 of 12	
C3-FLUORENES		0.295		0.123		0.161		0.00125		0.0574		0.0319	0.115	0.326	8 of 12	
C3-NAPHTHALENES		0.882		0.439		0.791		0.383		0.349		0.475	0.556	0.957	12 of 12	
C3-PHENANTHRENES/ANTHRACENES		0.577		0.237		0.291		0.00125		0.00053		0.145	0.219	0.687	8 of 12	
C4-CHRYSENES		0.00117		0.00112		0.000538		0.00125		0.00053		0.000518	0.000868	0.00145	0 of 12	
C4-NAPHTHALENES		0.305		0.133		0.247		0.116		0.128		0.146	0.179	0.324	12 of 12	
C4-PHENANTHRENES/ANTHRACENES		0.0863		0.0365		0.0444		0.00125		0.00053		0.000518	0.0297	0.0965	5 of 12	
CHRYSENE		0.491		0.254		0.0697		0.053		0.11		0.111	0.186	0.794	12 of 12	
DIBENZO(A,H)ANTHRACENE		0.0602		0.0325		0.00338		0.00875		0.0132		0.0136	0.0225	0.1	10 of 12	
DIBENZOFURAN		0.0734		0.0454		0.0599		0.0321		0.0548		0.0397	0.0506	0.0949	12 of 12	
DIBENZOTHIOPHENE		0.0627		0.0327		0.0288		0.0141		0.0297		0.0223	0.0318	0.0878	12 of 12	
FLUORANTHENE		0.966		0.452		0.14		0.131		0.238		0.194	0.359	1.55	12 of 12	
FLUORENE		0.102		0.0569		0.0733		0.0267		0.0557		0.0436	0.0599	0.131	12 of 12	
INDENO(1,2,3-CD)PYRENE		0.362		0.167		0.0357		0.0241		0.0511		0.0526	0.119	0.59	12 of 12	
NAPHTHALENE		0.24		0.14		0.353		0.0765		0.255		0.0963	0.19	0.36	12 of 12	
PERYLENE		0.0711		0.0459		0.0113		0.0102		0.0171		0.0158	0.0297	0.115	12 of 12	
PHENANTHRENE		0.676		0.388		0.232		0.124		0.284		0.193	0.32	1	12 of 12	
PYRENE		0.775		0.389		0.136		0.116		0.203		0.168	0.303	1.23	12 of 12	

Table A-12. Deer Island Influent Characterization (Low detection limit analyses; North System), FY12 (cont.)

Organochlorine Pesticides and PCBs (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
2,4'-DDD		0.00024		0.000222		<b>0.00182</b>		0.000244		<b>0.00164</b>		0.000206	0.000685	0.0031	3 of 12
2,4'-DDE		0.00024		0.000222		0.000214		0.000244		0.000213		<b>0.000284</b>	0.000236	0.000357	1 of 12
2,4'-DDT		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
4,4'-DDD		<b>0.00454</b>		0.000222		0.000214		0.000244		<b>0.00421</b>		<b>0.000917</b>	0.00153	0.00745	4 of 12
4,4'-DDE		<b>0.0224</b>		0.000222		<b>0.00131</b>		0.000244		<b>0.00195</b>		<b>0.000966</b>	0.00542	0.0374	7 of 12
4,4'-DDT		<b>0.00848</b>		<b>0.00474</b>		<b>0.00567</b>		0.000244		<b>0.00147</b>		<b>0.000708</b>	0.00371	0.0107	8 of 12
ALDRIN		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
ALPHA-CHLORDANE		<b>0.00317</b>		<b>0.00331</b>		<b>0.00244</b>		<b>0.00158</b>		<b>0.0021</b>		<b>0.00199</b>	0.0025	0.00454	12 of 12
BZ 101 PENTACHLOROBIPHENYL		<b>0.00273</b>		<b>0.00231</b>		<b>0.000854</b>		<b>0.00066</b>		<b>0.00146</b>		<b>0.00118</b>	0.00158	0.00358	12 of 12
BZ 105 PENTACHLOROBIPHENYL		0.00024		0.000222		0.000214		<b>0.000729</b>		<b>0.000304</b>		<b>0.00131</b>	0.000496	0.00155	4 of 12
BZ 118 PENTACHLOROBIPHENYL		<b>0.00151</b>		<b>0.000717</b>		<b>0.0011</b>		<b>0.000944</b>		<b>0.00102</b>		<b>0.00163</b>	0.00114	0.0018	11 of 12
BZ 126 PENTACHLOROBIPHENYL		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
BZ 128 HEXACHLOROBIPHENYL		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
BZ 138 HEXACHLOROBIPHENYL		<b>0.00409</b>		<b>0.00305</b>		<b>0.00202</b>		<b>0.00144</b>		<b>0.00158</b>		<b>0.00129</b>	0.0023	0.00485	12 of 12
BZ 153 HEXACHLOROBIPHENYL		<b>0.00302</b>		<b>0.0018</b>		<b>0.000855</b>		<b>0.000629</b>		<b>0.000815</b>		<b>0.000932</b>	0.00138	0.00368	12 of 12
BZ 170 HEPTACHLOROBIPHENYL		<b>0.00159</b>		<b>0.00077</b>		0.000214		0.000244		<b>0.000292</b>		0.000206	0.000566	0.00204	4 of 12
BZ 18 TRICHLOROBIPHENYL		0.00024		<b>0.00282</b>		0.000214		0.000244		<b>0.000493</b>		0.000206	0.000836	0.00493	3 of 12
BZ 180 HEPTACHLOROBIPHENYL		<b>0.00278</b>		<b>0.00169</b>		<b>0.000715</b>		<b>0.0078</b>		<b>0.000553</b>		<b>0.00129</b>	0.00239	0.0151	12 of 12
BZ 187 HEPTACHLOROBIPHENYL		<b>0.00165</b>		<b>0.000862</b>		<b>0.000395</b>		<b>0.000239</b>		<b>0.000277</b>		<b>0.000395</b>	0.000657	0.00192	12 of 12
BZ 195 OCTACHLOROBIPHENYL		0.00024		0.000222		0.000214		<b>0.000415</b>		0.000213		0.000206	0.000248	0.000546	1 of 12
BZ 206 NONACHLOROBIPHENYL		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
BZ 209 DECACHLOROBIPHENYL		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
BZ 28 TRICHLOROBIPHENYL		0.00024		0.000222		0.000214		0.000244		<b>0.000251</b>		0.000206	0.000228	0.000294	1 of 12
BZ 44 TETRACHLOROBIPHENYL		0.00024		<b>0.00166</b>		0.000214		0.000244		<b>0.000449</b>		0.000206	0.000571	0.00281	2 of 12
BZ 52 TETRACHLOROBIPHENYL		<b>0.00149</b>		<b>0.00262</b>		<b>0.000684</b>		<b>0.000609</b>		<b>0.00106</b>		<b>0.000759</b>	0.00129	0.00404	12 of 12
BZ 66 TETRACHLOROBIPHENYL		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
BZ 77 TETRACHLOROBIPHENYL		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
BZ 8 DICHLOROBIPHENYL		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
CIS-NONACHLOR		<b>0.000491</b>		0.000222		<b>0.00047</b>		<b>0.000295</b>		<b>0.000335</b>		<b>0.000486</b>	0.000378	0.000798	8 of 12
DDMU		0.00024		0.000222		0.000214		<b>0.00133</b>		0.000213		0.000206	0.000386	0.00248	1 of 12
DIELDRIN		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
ENDRIN		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
GAMMA-BHC		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
GAMMA-CHLORDANE		<b>0.00269</b>		<b>0.00242</b>		<b>0.00253</b>		<b>0.00182</b>		<b>0.00237</b>		<b>0.00327</b>	0.00253	0.0035	12 of 12
HEPTACHLOR		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
HEPTACHLOR EPOXIDE		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
HEXACHLOROBENZENE		<b>0.000373</b>		<b>0.000249</b>		<b>0.00024</b>		<b>0.000196</b>		<b>0.000299</b>		<b>0.000202</b>	0.000257	0.000483	11 of 12
MIREX		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
OXYCHLORDANE		0.00024		0.000222		0.000214		0.000244		0.000213		0.000206	0.000223	0.000282	0 of 12
TOTAL AMP PCBs		<b>0.0188</b>		<b>0.0178</b>		<b>0.00663</b>		<b>0.0132</b>		<b>0.00814</b>		<b>0.00879</b>	0.0126	0.0233	12 of 12
TOTAL CHLORDANE		<b>0.00471</b>		<b>0.00461</b>		<b>0.00354</b>		<b>0.00259</b>		<b>0.00315</b>		<b>0.003</b>	0.00368	0.00579	12 of 12
TOTAL DDT		<b>0.0353</b>		<b>0.00474</b>		<b>0.0087</b>		<b>0.00195</b>		<b>0.00796</b>		<b>0.00873</b>	0.0109	0.0556	12 of 12
TRANS-NONACHLOR		<b>0.00154</b>		<b>0.00131</b>		<b>0.00109</b>		<b>0.001</b>		<b>0.00105</b>		<b>0.00101</b>	0.00118	0.00174	12 of 12

**Table A-12. Deer Island Influent Characterization (Low detection limit analyses; North System), FY12 (cont.)**

Volatiles Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,1,1-TRICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,1,2,2-TETRACHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,1,2-TRICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,1-DICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,1-DICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,2-DICHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,2-DICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,2-DICHLOROPROPANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,3-DICHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,4-DICHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
2-BUTANONE	0.5	<b>6.49</b>	0.5	0.5	0.5	0.5	<b>6.64</b>	0.5	0.5	<b>5.81</b>	0.5	0.5	1.68	7.36	6 of 24
2-CHLOROETHYL VINYL ETHER	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
2-HEXANONE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
4-METHYL-2-PENTANONE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
ACETONE	<b>73.8</b>	<b>116</b>	<b>67.7</b>	<b>30.5</b>	<b>65.9</b>	<b>113</b>	<b>96.3</b>	<b>112</b>	<b>91.7</b>	<b>470</b>	<b>87</b>	<b>59.9</b>	106	586	24 of 24
ACROLEIN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 24
ACRYLONITRILE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 24
BENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
BROMODICHLOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
BROMOFORM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
BROMOMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CARBON DISULFIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CARBON TETRACHLORIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CHLOROFORM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CHLOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CIS-1,2-DICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CIS-1,3-DICHLOROPROPENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
DIBROMOCHLOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
ETHYLBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
M,P-XYLENE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 24
METHYLENE CHLORIDE	<b>5.94</b>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.848	11.4	1 of 24
O-XYLENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
STYRENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TETRACHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	<b>3.22</b>	<b>4.62</b>	0.5	0.5	<b>6.9</b>	0.5	1.56	10.9	3 of 24
TOLUENE	0.5	<b>3.1</b>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	<b>2.99</b>	0.5	0.5	0.843	6.78	2 of 24
TRANS-1,2-DICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TRANS-1,3-DICHLOROPROPENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TRICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TRICHLOROFLUOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
VINYL ACETATE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
VINYL CHLORIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24

Notes

DEC is the now-defunct Detailed Effluent Characterization project, which includes low-detection limit methods not approved by the EPA. DEC sampling is now carried out under the NP-EM project.

~: No data or no samples taken

Results in **bold** indicate one or more detects that month

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-13. Deer Island Influent Loadings (Low detection limit analyses; North System), FY12

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-TRICHLOROBENZENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
1,2-DICHLOROBENZENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
1,2-DIPHENYLHYDRAZINE (AS AZOBENZENE)	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
1,3-DICHLOROBENZENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
1,4-DICHLOROBENZENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2,2'-OXYBIS(1-CHLOROPROPANE)	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2,4,5-TRICHLOROPHENOL	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2,4,6-TRICHLOROPHENOL	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2,4-DICHLOROPHENOL	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2,4-DIMETHYLPHENOL	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2,4-DINITROPHENOL	12.5	10.4	10.7	13.9	13.5	9.94	8.41	10.7	8.96	7.55	9.39	9.85	10.5	17	0 of 24
2,4-DINITROTOLUENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2,6-DINITROTOLUENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2-CHLORONAPHTHALENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2-CHLOROPHENOL	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2-METHYL-4,6-DINITROPHENOL	12.5	10.4	10.7	13.9	13.5	9.94	8.41	10.7	8.96	7.55	9.39	9.85	10.5	17	0 of 24
2-METHYLNAPHTHALENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2-METHYLPHENOL	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2-NITROANILINE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
2-NITROPHENOL	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
3,3'-DICHLOROBENZIDINE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
3-NITROANILINE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
4-BROMOPHENYL PHENYL ETHER	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
4-CHLORO-3-METHYLPHENOL	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
4-CHLOROANILINE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
4-CHLOROPHENYL PHENYL ETHER	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
4-METHYLPHENOL (INCLUDES 3-METHYLPHENOL)	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	57.5	3.76	3.94	8.73	63.4	2 of 24
4-NITROANILINE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
4-NITROPHENOL	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
ACENAPHTHENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
ACENAPHTHYLENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
ANILINE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
ANTHRACENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
BENZIDINE	12.5	10.4	10.7	13.9	13.5	9.94	8.41	10.7	8.96	7.55	9.39	9.85	10.5	17	0 of 24
BENZO(A)ANTHRACENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
BENZO(A)PYRENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
BENZO(B)FLUORANTHENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
BENZO(G,H,I)PERYLENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
BENZO(K)FLUORANTHENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
BENZOIC ACID	12.5	10.4	10.7	13.9	13.5	9.94	8.41	10.7	8.96	7.55	9.39	9.85	10.5	17	0 of 24
BENZYL ALCOHOL	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
BIS(2-CHLOROETHOXY)METHANE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
BIS(2-CHLOROETHYL)ETHER	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
BIS(2-ETHYLHEXYL)PHTHALATE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
BUTYLBENZYLPHTHALATE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
CARBAZOLE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
CHRYSENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
DIBENZO(A,H)ANTHRACENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
DIBENZOFURAN	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
DIETHYLPHTHALATE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
DIMETHYLPHTHALATE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
DI-N-BUTYLPHTHALATE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
DI-N-OCTYLPHTHALATE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
FLUORANTHENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
FLUORENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
HEXACHLOROENZENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
HEXACHLOROBUTADIENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
HEXACHLOROCYCLOPENTADIENE	12.5	10.4	10.7	13.9	13.5	9.94	8.41	10.7	8.96	7.55	9.39	9.85	10.5	17	0 of 24
HEXACHLOROETHANE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
INDENO(1,2,3-CD)PYRENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
ISOPHORONE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
NAPHTHALENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
N-DECANE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24



**Table A-13. Deer Island Influent Loadings (Low detection limit analyses; North System), FY12 (cont.)**

Semivolatile Organics (ug/L)													Average	Maximum	Times Detected
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
NITROBENZENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
N-NITROSODIMETHYLAMINE (NDMA)	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
N-NITROSODI-N-PROPYLAMINE (NDPA)	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
N-NITROSODIPHENYLAMINE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
N-OCTADECANE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
PENTACHLOROPHENOL	12.5	10.4	10.7	13.9	13.5	9.94	8.41	10.7	8.96	7.55	9.39	9.85	10.5	17	0 of 24
PHENANTHRENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
PHENOL	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
PYRENE	5.03	4.17	4.26	5.56	5.4	3.98	3.36	4.26	3.58	3.02	3.76	3.94	4.19	6.8	0 of 24
Polycyclic Aromatic Hydrocarbons (ug/L)													Average	Maximum	Times Detected
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
1-METHYLNAPHTHALENE		0.369		0.169		0.418		0.0771		0.152		0.118	0.217	0.493	12 of 12
1-METHYLPHENANTHRENE		0.141		0.119		0.0822		0.0329		0.0402		0.0145	0.0715	0.212	11 of 12
2,3,5-TRIMETHYLNAPHTHYLENE		0.247		0.132		0.198		0.0631		0.062		0.096	0.133	0.285	12 of 12
2,6-DIMETHYLNAPHTHALENE		0.219		0.11		0.196		0.0799		0.0875		0.0881	0.13	0.276	12 of 12
2-METHYLNAPHTHALENE		0.296		0.178		0.341		0.0719		0.128		0.111	0.188	0.402	12 of 12
ACENAPHTHENE		0.2		0.18		0.215		0.0458		0.105		0.108	0.142	0.332	12 of 12
ACENAPHTHYLENE		0.248		0.21		0.26		0.00838		0.0141		0.0122	0.125	0.384	12 of 12
ANTHRACENE		0.168		0.179		0.0834		0.0354		0.0923		0.0634	0.104	0.305	12 of 12
BENZO(A)ANTHRACENE		0.604		0.506		0.103		0.0774		0.144		0.162	0.266	1.16	12 of 12
BENZO(A)PYRENE		0.767		0.59		0.118		0.0746		0.146		0.198	0.315	1.49	12 of 12
BENZO(B)FLUORANTHENE		0.922		0.577		0.107		0.0771		0.129		0.206	0.336	1.79	12 of 12
BENZO(E)PYRENE		0.607		0.416		0.0786		0.0513		0.0901		0.156	0.233	1.18	12 of 12
BENZO(G,H,I)PERYLENE		0.469		0.342		0.0661		0.0421		0.066		0.102	0.181	0.907	12 of 12
BENZO(K)FLUORANTHENE		0.592		0.453		0.0841		0.0623		0.103		0.153	0.241	1.16	12 of 12
BENZOTHAZOLE		0.0761		0.146		0.0727		0.064		0.054		0.0267	0.0732	0.199	12 of 12
BIPHENYL		0.193		0.178		0.211		0.0285		0.0566		0.0506	0.12	0.32	12 of 12
C1-CHRYSENES		0.38		0.345		0.083		0.0374		0.057		0.0862	0.165	0.732	12 of 12
C1-DIBENZOTHIOPHENES		0.288		0.135		0.0638		0.00206		0.134		0.0525	0.113	0.39	10 of 12
C1-FLUORANTHENES/PYRENES		0.622		0.571		0.2		0.0953		0.16		0.185	0.305	1.14	12 of 12
C1-FLUORENES		0.315		0.261		0.233		0.108		0.119		0.142	0.196	0.417	12 of 12
C1-NAPHTHALENES		0.472		0.259		0.548		0.102		0.193		0.16	0.289	0.631	12 of 12
C1-PHENANTHRENES/ANTHRACENES		0.693		0.569		0.41		0.177		0.193		0.115	0.359	1.02	11 of 12
C2-CHRYSENES		0.303		0.666		0.00103		0.00206		0.000748		0.000975	0.162	1.14	3 of 12
C2-DIBENZOTHIOPHENES		0.253		0.159		0.136		0.00206		0.065		0.0933	0.118	0.338	10 of 12
C2-FLUORANTHENES/PYRENES		0.544		0.393		0.126		0.00206		0.0854		0.129	0.213	1.02	10 of 12
C2-FLUORENES		0.246		0.198		0.299		0.035		0.0713		0.000975	0.142	0.396	9 of 12
C2-NAPHTHALENES		0.766		0.404		0.718		0.226		0.229		0.3	0.441	0.936	12 of 12
C2-PHENANTHRENES/ANTHRACENES		0.611		0.456		0.361		0.154		0.154		0.183	0.32	0.808	12 of 12
C3-CHRYSENES		0.00201		0.00274		0.00103		0.00206		0.000748		0.000975	0.00159	0.0028	0 of 12
C3-DIBENZOTHIOPHENES		0.235		0.00274		0.00103		0.00206		0.000748		0.0707	0.0521	0.346	4 of 12
C3-FLUORANTHENES/PYRENES		0.191		0.157		0.00103		0.00206		0.000748		0.000975	0.0587	0.379	3 of 12
C3-FLUORENES		0.51		0.302		0.309		0.00206		0.081		0.0601	0.211	0.672	8 of 12
C3-NAPHTHALENES		1.52		1.07		1.51		0.629		0.493		0.894	1.02	1.95	12 of 12
C3-PHENANTHRENES/ANTHRACENES		0.995		0.58		0.557		0.00206		0.000748		0.273	0.402	1.42	8 of 12
C4-CHRYSENES		0.00201		0.00274		0.00103		0.00206		0.000748		0.000975	0.00159	0.0028	0 of 12
C4-NAPHTHALENES		0.527		0.324		0.473		0.192		0.18		0.275	0.329	0.604	12 of 12
C4-PHENANTHRENES/ANTHRACENES		0.149		0.0893		0.0849		0.00206		0.000748		0.000975	0.0545	0.176	5 of 12
CHRYSENE		0.848		0.622		0.133		0.0872		0.155		0.209	0.342	1.64	12 of 12
DIBENZO(A,H)ANTHRACENE		0.104		0.0794		0.00646		0.0144		0.0186		0.0256	0.0414	0.206	10 of 12
DIBENZOFURAN		0.127		0.111		0.115		0.0529		0.0774		0.0747	0.0929	0.196	12 of 12
DIBENZOTHIOPHENE		0.108		0.0799		0.055		0.0232		0.042		0.0419	0.0584	0.181	12 of 12
FLUORANTHENE		1.67		1.11		1.267		1.15		0.336		0.366	0.66	3.2	12 of 12
FLUORENE		0.176		0.139		0.14		0.0439		0.0787		0.082	0.11	0.27	12 of 12
INDENO(1,2,3-CD)PYRENE		0.625		0.408		0.0684		0.0396		0.0721		0.0991	0.219	1.22	12 of 12
NAPHTHALENE		0.415		0.341		0.676		0.126		0.36		0.181	0.35	0.685	12 of 12
PERYLENE		0.123		0.112		0.0215		0.0168		0.0242		0.0298	0.0546	0.237	12 of 12
PHENANTHRENE		1.17		0.948		0.445		0.204		0.401		0.364	0.588	2.06	12 of 12
PYRENE		1.34		0.951		0.261		0.19		0.286		0.315	0.557	2.54	12 of 12

Table A-13. Deer Island Influent Loadings (Low detection limit analyses; North System), FY12 (cont.)

Organochlorine Pesticides and PCBs (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
2,4'-DDD		0.000415		0.000544		<b>0.00349</b>		0.000401		<b>0.00231</b>		0.000388	0.00126	0.00433	3 of 12
2,4'-DDE		0.000415		0.000544		0.000409		0.000401		0.000301		<b>0.000535</b>	0.000434	0.000713	1 of 12
2,4'-DDT		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
4,4'-DDD		<b>0.00783</b>		0.000544		0.000409		0.000401		<b>0.00594</b>		<b>0.00173</b>	0.00281	0.0154	4 of 12
4,4'-DDE		<b>0.0387</b>		0.000544		<b>0.0025</b>		<b>0.00321</b>		<b>0.00136</b>		<b>0.0134</b>	0.00995	0.0771	7 of 12
4,4'-DDT		<b>0.0146</b>		<b>0.0116</b>		<b>0.0109</b>		0.000401		<b>0.00207</b>		<b>0.00133</b>	0.00682	0.0221	8 of 12
ALDRIN		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
ALPHA-CHLORDANE		<b>0.00547</b>		<b>0.00808</b>		<b>0.00467</b>		<b>0.0026</b>		<b>0.00297</b>		<b>0.00374</b>	0.00459	0.0109	12 of 12
BZ 101 PENTACHLOROBIPHENYL		<b>0.00472</b>		<b>0.00565</b>		<b>0.00163</b>		<b>0.00109</b>		<b>0.00206</b>		<b>0.00222</b>	0.0029	0.00738	12 of 12
BZ 105 PENTACHLOROBIPHENYL		0.000415		0.000544		0.000409		<b>0.0012</b>		<b>0.00043</b>		<b>0.00247</b>	0.000911	0.00274	4 of 12
BZ 118 PENTACHLOROBIPHENYL		<b>0.00261</b>		<b>0.00175</b>		<b>0.00211</b>		<b>0.00155</b>		<b>0.00145</b>		<b>0.00308</b>	0.00209	0.00371	11 of 12
BZ 126 PENTACHLOROBIPHENYL		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
BZ 128 HEXACHLOROBIPHENYL		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
BZ 138 HEXACHLOROBIPHENYL		<b>0.00706</b>		<b>0.00745</b>		<b>0.00387</b>		<b>0.00236</b>		<b>0.00224</b>		<b>0.00243</b>	0.00423	0.01	12 of 12
BZ 153 HEXACHLOROBIPHENYL		<b>0.00522</b>		<b>0.00439</b>		<b>0.00164</b>		<b>0.00103</b>		<b>0.00115</b>		<b>0.00175</b>	0.00253	0.00759	12 of 12
BZ 170 HEPTACHLOROBIPHENYL		<b>0.00275</b>		<b>0.00188</b>		0.000409		0.000401		<b>0.000412</b>		0.000388	0.00104	0.00421	4 of 12
BZ 18 TRICHLOROBIPHENYL		0.000415		<b>0.0069</b>		0.000409		0.000401		<b>0.000697</b>		0.000388	0.00154	0.0133	3 of 12
BZ 180 HEPTACHLOROBIPHENYL		<b>0.00479</b>		<b>0.00414</b>		<b>0.00137</b>		<b>0.0128</b>		<b>0.000781</b>		<b>0.00242</b>	0.00439	0.025	12 of 12
BZ 187 HEPTACHLOROBIPHENYL		<b>0.00285</b>		<b>0.00211</b>		<b>0.000756</b>		<b>0.000393</b>		<b>0.000391</b>		<b>0.000743</b>	0.00121	0.00396	12 of 12
BZ 195 OCTACHLOROBIPHENYL		0.000415		0.000544		0.000409		<b>0.000683</b>		0.000301		0.000388	0.000456	0.000905	1 of 12
BZ 206 NONACHLOROBIPHENYL		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
BZ 209 DECACHLOROBIPHENYL		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
BZ 28 TRICHLOROBIPHENYL		0.000415		0.000544		0.000409		0.000401		<b>0.000354</b>		0.000388	0.000418	0.00056	1 of 12
BZ 44 TETRACHLOROBIPHENYL		0.000415		<b>0.00405</b>		0.000409		0.000401		<b>0.000635</b>		0.000388	0.00105	0.00757	2 of 12
BZ 52 TETRACHLOROBIPHENYL		<b>0.00256</b>		<b>0.0064</b>		<b>0.00131</b>		<b>0.001</b>		<b>0.0015</b>		<b>0.00143</b>	0.00237	0.0109	12 of 12
BZ 66 TETRACHLOROBIPHENYL		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
BZ 77 TETRACHLOROBIPHENYL		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
BZ 8 DICHLOROBIPHENYL		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
CIS-NONACHLOR		<b>0.000847</b>		0.000544		<b>0.000899</b>		<b>0.000485</b>		<b>0.000473</b>		<b>0.000915</b>	0.000694	0.00141	8 of 12
DDMU		0.000415		0.000544		0.000409		<b>0.00219</b>		0.000301		0.000388	0.000709	0.00405	1 of 12
DIELDRIN		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
ENDRIN		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
GAMMA-BHC		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
GAMMA-CHLORDANE		<b>0.00464</b>		<b>0.00591</b>		<b>0.00483</b>		<b>0.00299</b>		<b>0.00335</b>		<b>0.00616</b>	0.00465	0.00657	12 of 12
HEPTACHLOR		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
HEPTACHLOR EPOXIDE		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
HEXACHLOROBENZENE		<b>0.000643</b>		<b>0.000608</b>		<b>0.00046</b>		<b>0.000323</b>		<b>0.000422</b>		<b>0.000379</b>	0.000473	0.000996	11 of 12
MIREX		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
OXYCHLORDANE		0.000415		0.000544		0.000409		0.000401		0.000301		0.000388	0.00041	0.00056	0 of 12
TOTAL AMP PCBs		<b>0.0325</b>		<b>0.0436</b>		<b>0.0127</b>		<b>0.0217</b>		<b>0.0115</b>		<b>0.0165</b>	0.0231	0.0523	12 of 12
TOTAL CHLORDANE		<b>0.00813</b>		<b>0.0113</b>		<b>0.00677</b>		<b>0.00426</b>		<b>0.00445</b>		<b>0.00564</b>	0.00675	0.0145	12 of 12
TOTAL DDT		<b>0.0609</b>		<b>0.0116</b>		<b>0.0166</b>		<b>0.00321</b>		<b>0.0112</b>		<b>0.0164</b>	0.02	0.115	12 of 12
TRANS-NONACHLOR		<b>0.00266</b>		<b>0.0032</b>		<b>0.00209</b>		<b>0.00165</b>		<b>0.00148</b>		<b>0.0019</b>	0.00216	0.00361	12 of 12

**Table A-13. Deer Island Influent Loadings (Low detection limit analyses; North System), FY12 (cont.)**

Volatile Organics (ug/L)													Average	Maximum	Times Detected
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
1,1,1-TRICHLOROETHANE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
1,1,2,2-TETRACHLOROETHANE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
1,1,2-TRICHLOROETHANE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
1,1-DICHLOROETHANE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
1,1-DICHLOROETHENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
1,2-DICHLOROBENZENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
1,2-DICHLOROETHANE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
1,2-DICHLOROPROPANE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
1,3-DICHLOROBENZENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
1,4-DICHLOROBENZENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
2-BUTANONE	0.757	<b>11.4</b>	0.922	1.26	1.14	1.78	<b>10.5</b>	0.817	0.813	<b>8.24</b>	1.09	0.865	3.3	12.1	6 of 24
2-CHLOROETHYL VINYL ETHER	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
2-HEXANONE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
4-METHYL-2-PENTANONE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
ACETONE	<b>112</b>	<b>205</b>	<b>125</b>	<b>76.5</b>	<b>151</b>	<b>403</b>	<b>153</b>	<b>182</b>	<b>149</b>	<b>666</b>	<b>189</b>	<b>104</b>	210	843	24 of 24
ACROLEIN	1.51	1.76	1.84	2.51	2.29	3.56	1.58	1.63	1.63	1.42	2.18	1.73	1.97	5.15	0 of 24
ACRYLONITRILE	1.51	1.76	1.84	2.51	2.29	3.56	1.58	1.63	1.63	1.42	2.18	1.73	1.97	5.15	0 of 24
BENZENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
BROMODICHLOROMETHANE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
BROMOFORM	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
BROMOMETHANE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
CARBON DISULFIDE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
CARBON TETRACHLORIDE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
CHLOROBENZENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
CHLOROETHANE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
CHLOROFORM	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
CHLOROMETHANE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
CIS-1,2-DICHLOROETHENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
CIS-1,3-DICHLOROPROPENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
DIBROMOCHLOROMETHANE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
ETHYLBENZENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
M,P-XYLENE	1.51	1.76	1.84	2.51	2.29	3.56	1.58	1.63	1.63	1.42	2.18	1.73	1.97	5.15	0 of 24
METHYLENE CHLORIDE	<b>8.99</b>	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	1.67	17.2	1 of 24
O-XYLENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
STYRENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
TETRACHLOROETHENE	0.757	0.881	0.922	1.26	1.14	1.78	<b>5.11</b>	<b>7.55</b>	0.813	0.709	<b>15</b>	0.865	3.07	29.2	3 of 24
TOLUENE	0.757	<b>5.47</b>	0.922	1.26	1.14	1.78	0.792	0.817	0.813	<b>4.24</b>	1.09	0.865	1.66	9.9	2 of 24
TRANS-1,2-DICHLOROETHENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
TRANS-1,3-DICHLOROPROPENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
TRICHLOROETHENE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
TRICHLOROFLUOROMETHANE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
VINYL ACETATE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24
VINYL CHLORIDE	0.757	0.881	0.922	1.26	1.14	1.78	0.792	0.817	0.813	0.709	1.09	0.865	0.985	2.58	0 of 24

Notes

DEC is the now-defunct Detailed Effluent Characterization project, which includes low-detection limit methods not approved by the EPA. DEC sampling is now carried out under the NP-EM project.

~: No data or no samples taken

Results in **bold** indicate one or more detects that month

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

**Table A-14. Deer Island Influent Characterization (Low detection limit analyses; South System), FY12**

Semivolatile Organics (ug/L)													Average	Maximum	Times Detected
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
1,2,4-TRICHLOROENZENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
1,2-DICHLOROENZENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
1,2-DIPHENYLHYDRAZINE (AS AZOENZENE)	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
1,3-DICHLOROENZENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
1,4-DICHLOROENZENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2,2'-OXYBIS(1-CHLOROPROPANE)	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2,4,5-TRICHLOROPHENOL	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2,4,6-TRICHLOROPHENOL	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2,4-DICHLOROPHENOL	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2,4-DIMETHYLPHENOL	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2,4-DINITROPHENOL	5.32	5.67	5.32	5.13	5.58	5.25	5.25	5.23	5.22	5.33	5.33	5.28	5.32	6.1	0 of 24
2,4-DINITROTOLUENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2,6-DINITROTOLUENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2-CHLORONAPHTHALENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2-CHLOROPHENOL	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2-METHYL-4,6-DINITROPHENOL	5.32	5.67	5.32	5.13	5.58	5.25	5.25	5.23	5.22	5.33	5.33	5.28	5.32	6.1	0 of 24
2-METHYLNAPHTHALENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2-METHYLPHENOL	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2-NITROANILINE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
2-NITROPHENOL	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
3,3'-DICHLOROENZIDINE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
3-NITROANILINE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
4-BROMOPHENYL PHENYL ETHER	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
4-CHLORO-3-METHYLPHENOL	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
4-CHLOROANILINE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
4-CHLOROPHENYL PHENYL ETHER	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
4-METHYLPHENOL (INCLUDES 3-METHYLPHENOL)	<b>29.4</b>	<b>14.3</b>	2.13	2.05	2.23	2.1	2.1	2.09	2.09	<b>41.1</b>	<b>23.9</b>	<b>13.6</b>	9.19	43.6	8 of 24
4-NITROANILINE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
4-NITROPHENOL	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
ACENAPHTHENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
ACENAPHTHYLENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
ANILINE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
ANTHRACENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
BENZIDINE	5.32	5.67	5.32	5.13	5.58	5.25	5.25	5.23	5.22	5.33	5.33	5.28	5.32	6.1	0 of 24
BENZO(A)ANTHRACENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
BENZO(A)PYRENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
BENZO(B)FLUORANTHENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
BENZO(G,H,I)PERYLENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
BENZO(K)FLUORANTHENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
BENZOIC ACID	5.32	5.67	5.32	5.13	5.58	5.25	5.25	5.23	5.22	5.33	5.33	5.28	5.32	6.1	0 of 24
BENZYL ALCOHOL	<b>11.8</b>	<b>15</b>	2.13	2.05	2.23	2.1	<b>15.6</b>	2.09	<b>14.6</b>	<b>12.9</b>	2.13	<b>11.8</b>	6.85	29.3	6 of 24
BIS(2-CHLOROETHOXY)METHANE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
BIS(2-CHLOROETHYL)ETHER	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
BIS(2-ETHYLHEXYL)PHTHALATE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
BUTYLBENZYLPHTHALATE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
CARBAZOLE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
CHRYSENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
DIBENZO(A,H)ANTHRACENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
DIBENZOFURAN	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
DIETHYLPHTHALATE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
DIMETHYLPHTHALATE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
DI-N-BUTYLPHTHALATE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
DI-N-OCTYLPHTHALATE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
FLUORANTHENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
FLUORENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
HEXACHLOROENZENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
HEXACHLOROBUTADIENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
HEXACHLOROCYCLOPENTADIENE	5.32	5.67	5.32	5.13	5.58	5.25	5.25	5.23	5.22	5.33	5.33	5.28	5.32	6.1	0 of 24
HEXACHLOROETHANE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
INDENO(1,2,3-CD)PYRENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
ISOPHORONE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
NAPHTHALENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24
N-DECANE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24

**Table A-14. Deer Island Influent Characterization (Low detection limit analyses; South System), FY12 (cont.)**

Semivolatile Organics (ug/L)													Average	Maximum	Times Detected	
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun				
NITROBENZENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24	
N-NITROSODIMETHYLAMINE (NDMA)	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24	
N-NITROSODI-N-PROPYLAMINE (NDPA)	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24	
N-NITROSODIPHENYLAMINE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24	
N-OCTADECANE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24	
PENTACHLOROPHENOL	5.32	5.67	5.32	5.13	5.58	5.25	5.25	5.23	5.22	5.33	5.33	5.28	5.32	6.1	0 of 24	
PHENANTHRENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24	
PHENOL	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24	
PYRENE	2.13	2.27	2.13	2.05	2.23	2.1	2.1	2.09	2.09	2.13	2.13	2.11	2.13	2.44	0 of 24	
<b>Polycyclic Aromatic Hydrocarbons (ug/L)</b>																
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected	
1-METHYLNAPHTHALENE		0.133		0.0943		0.103		0.0268		0.0533		0.133	0.0908	0.151	12 of 12	
1-METHYLPHENANTHRENE		0.0568		0.0668		0.0398		0.0209		0.0277		0.0213	0.0413	0.085	12 of 12	
2,3,5-TRIMETHYLNAPHTHYLENE		0.134		0.0927		0.0596		0.0265		0.0544		0.0843	0.0746	0.157	12 of 12	
2,6-DIMETHYLNAPHTHALENE		0.129		0.086		0.0663		0.0433		0.0633		0.0942	0.0788	0.148	12 of 12	
2-METHYLNAPHTHALENE		0.0999		0.0755		0.0726		0.0238		0.0417		0.0789	0.0659	0.111	12 of 12	
ACENAPHTHENE		0.0423		0.0776		0.161		0.0182		0.0261		0.0498	0.0696	0.319	12 of 12	
ACENAPHTHYLENE		0.0726		0.104		0.196		0.00763		0.000523		0.00628	0.0748	0.322	10 of 12	
ANTHRACENE		0.0306		0.114		0.215		0.0321		0.0426		0.0383	0.0905	0.364	12 of 12	
BENZO(A)ANTHRACENE		0.0917		0.316		0.239		0.0809		0.0766		0.117	0.179	0.472	12 of 12	
BENZO(A)PYRENE		0.103		0.356		0.229		0.0745		0.0731		0.131	0.189	0.532	12 of 12	
BENZO(B)FLUORANTHENE		0.124		0.337		0.195		0.0655		0.0723		0.13	0.178	0.5	12 of 12	
BENZO(E)PYRENE		0.0797		0.243		0.13		0.0487		0.0496		0.104	0.127	0.361	12 of 12	
BENZO(G,H,I)PERYLENE		0.0681		0.174		0.108		0.035		0.041		0.0742	0.0958	0.254	12 of 12	
BENZO(K)FLUORANTHENE		0.09		0.258		0.164		0.0611		0.0518		0.101	0.14	0.39	12 of 12	
BENZOTHAZOLE		0.024		0.0341		0.0525		0.0215		0.101		0.0386	0.0437	0.166	12 of 12	
BIPHENYL		0.0403		0.0757		0.16		0.0154		0.0311		0.0399	0.0672	0.316	12 of 12	
C1-CHRYSENES		0.0438		0.161		0.0673		0.0318		0.0292		0.0635	0.0782	0.234	12 of 12	
C1-DIBENZOTHIOPHENES		0.0404		0.0774		0.0995		0.000801		0.122		0.0459	0.0662	0.217	10 of 12	
C1-FLUORANTHENES/PYRENES		0.138		0.307		0.196		0.0811		0.0827		0.144	0.178	0.418	12 of 12	
C1-FLUORENES		0.134		0.148		0.0907		0.0485		0.0778		0.091	0.102	0.174	12 of 12	
C1-NAPHTHALENES		0.167		0.125		0.128		0.0365		0.0677		0.152	0.114	0.188	12 of 12	
C1-PHENANTHRENES/ANTHRACENES		0.29		0.332		0.207		0.112		0.146		0.203	0.226	0.407	12 of 12	
C2-CHRYSENES		0.158		0.447		0.000525		0.000801		0.000523		0.00052	0.134	0.455	4 of 12	
C2-DIBENZOTHIOPHENES		0.169		0.0937		0.0585		0.000801		0.0235		0.0652	0.0676	0.174	9 of 12	
C2-FLUORANTHENES/PYRENES		0.0954		0.235		0.0853		0.000801		0.0465		0.0971	0.109	0.328	10 of 12	
C2-FLUORENES		0.275		0.21		0.0953		0.0121		0.0431		0.00052	0.111	0.441	8 of 12	
C2-NAPHTHALENES		0.382		0.272		0.212		0.103		0.178		0.306	0.24	0.435	12 of 12	
C2-PHENANTHRENES/ANTHRACENES		0.258		0.287		0.177		0.0246		0.155		0.187	0.19	0.323	11 of 12	
C3-CHRYSENES		0.0011		0.00105		0.000525		0.000801		0.000523		0.00052	0.000766	0.00114	0 of 12	
C3-DIBENZOTHIOPHENES		0.101		0.00105		0.031		0.000801		0.000523		0.0628	0.0275	0.113	5 of 12	
C3-FLUORANTHENES/PYRENES		0.0011		0.0894		0.0177		0.000801		0.000523		0.00052	0.027	0.122	3 of 12	
C3-FLUORENES		0.247		0.251		0.163		0.000801		0.0935		0.00052	0.136	0.282	7 of 12	
C3-NAPHTHALENES		0.975		0.597		0.412		0.452		0.549		0.757	0.6	1.02	12 of 12	
C3-PHENANTHRENES/ANTHRACENES		0.563		0.333		0.266		0.000801		0.119		0.218	0.249	0.692	10 of 12	
C4-CHRYSENES		1.05		0.00105		0.000525		0.000801		0.000523		0.00052	0.116	1.05	2 of 12	
C4-NAPHTHALENES		0.316		0.234		0.248		0.0957		0.176		0.215	0.214	0.327	12 of 12	
C4-PHENANTHRENES/ANTHRACENES		0.0676		0.169		0.0242		0.000801		0.000523		0.0333	0.0616	0.209	6 of 12	
CHRYSENE		0.125		0.375		0.221		0.0823		0.0829		0.139	0.199	0.554	12 of 12	
DIBENZO(A,H)ANTHRACENE		0.0159		0.0398		0.0242		0.00934		0.00871		0.012	0.0212	0.0661	11 of 12	
DIBENZOFURAN		0.119		0.0668		0.119		0.0371		0.0592		0.0542	0.0681	0.198	12 of 12	
DIBENZOTHIOPHENE		0.0318		0.0506		0.0633		0.013		0.0169		0.022	0.0364	0.103	12 of 12	
FLUORANTHENE		0.267		0.805		0.742		0.208		0.202		0.249	0.477	1.22	12 of 12	
FLUORENE		0.0563		0.0956		0.187		0.0235		0.0351		0.0519	0.083	0.319	12 of 12	
INDENO(1,2,3-CD)PYRENE		0.0781		0.193		0.13		0.0364		0.0386		0.0646	0.104	0.289	12 of 12	
NAPHTHALENE		0.0971		0.0858		0.27		0.0371		0.057		0.0497	0.105	0.438	12 of 12	
PERYLENE		0.0159		0.0625		0.0468		0.0139		0.0111		0.0194	0.0336	0.0948	12 of 12	
PHENANTHRENE		0.238		0.687		0.926		0.136		0.189		0.227	0.462	1.58	12 of 12	
PYRENE		0.237		0.612		0.527		0.167		0.165		0.217	0.367	0.896	12 of 12	

Table A-14. Deer Island Influent Characterization (Low detection limit analyses; South System), FY12 (cont.)

Organochlorine Pesticides and PCBs (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
2,4'-DDD		<b>0.00377</b>		0.000216		<b>0.00235</b>		<b>0.00124</b>		<b>0.00114</b>		<b>0.000929</b>	0.0014	0.00708	6 of 12
2,4'-DDE		0.000212		0.000216		0.000207		0.000216		0.00021		<b>0.00133</b>	0.00039	0.00244	1 of 12
2,4'-DDT		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
4,4'-DDD		<b>0.00247</b>		0.000216		<b>0.000618</b>		<b>0.00151</b>		<b>0.00486</b>		<b>0.00153</b>	0.00153	0.00603	6 of 12
4,4'-DDE		<b>0.00138</b>		<b>0.00134</b>		<b>0.00228</b>		<b>0.00244</b>		<b>0.00138</b>		<b>0.00631</b>	0.00249	0.0117	9 of 12
4,4'-DDT		<b>0.00185</b>		<b>0.00311</b>		<b>0.0049</b>		0.000216		<b>0.00361</b>		<b>0.00194</b>	0.00274	0.00668	8 of 12
ALDRIN		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
ALPHA-CHLORDANE		<b>0.00619</b>		<b>0.00662</b>		<b>0.00558</b>		<b>0.00541</b>		<b>0.00573</b>		<b>0.0112</b>	0.00681	0.0136	12 of 12
BZ 101 PENTACHLOROBIPHENYL		<b>0.00167</b>		<b>0.000887</b>		<b>0.000961</b>		<b>0.00086</b>		<b>0.00199</b>		<b>0.00202</b>	0.0013	0.00214	11 of 12
BZ 105 PENTACHLOROBIPHENYL		0.000212		0.000216		0.000207		<b>0.000348</b>		0.00021		<b>0.00115</b>	0.000382	0.00208	2 of 12
BZ 118 PENTACHLOROBIPHENYL		<b>0.00134</b>		<b>0.000599</b>		<b>0.00106</b>		<b>0.000697</b>		<b>0.00135</b>		<b>0.00299</b>	0.00126	0.00353	11 of 12
BZ 126 PENTACHLOROBIPHENYL		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
BZ 128 HEXACHLOROBIPHENYL		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
BZ 138 HEXACHLOROBIPHENYL		<b>0.00193</b>		<b>0.00161</b>		<b>0.00129</b>		<b>0.00138</b>		<b>0.00183</b>		<b>0.00165</b>	0.00158	0.00211	12 of 12
BZ 153 HEXACHLOROBIPHENYL		<b>0.00124</b>		<b>0.00097</b>		<b>0.000609</b>		<b>0.000743</b>		<b>0.00119</b>		<b>0.00124</b>	0.000967	0.00131	12 of 12
BZ 170 HEPTACHLOROBIPHENYL		<b>0.000384</b>		0.000216		0.000207		0.000216		0.00021		0.000209	0.000231	0.00055	1 of 12
BZ 18 TRICHLOROBIPHENYL		0.000212		<b>0.000867</b>		0.000207		0.000216		<b>0.000624</b>		0.000209	0.000433	0.000932	4 of 12
BZ 180 HEPTACHLOROBIPHENYL		<b>0.000969</b>		<b>0.000641</b>		<b>0.000515</b>		<b>0.000561</b>		<b>0.000729</b>		<b>0.00165</b>	0.000812	0.00169	12 of 12
BZ 187 HEPTACHLOROBIPHENYL		<b>0.000457</b>		<b>0.000299</b>		<b>0.000396</b>		<b>0.000396</b>		<b>0.00031</b>		<b>0.000498</b>	0.000349	0.000572	11 of 12
BZ 195 OCTACHLOROBIPHENYL		0.000212		0.000216		0.000207		<b>0.000274</b>		0.00021		0.000209	0.000221	0.000326	1 of 12
BZ 206 NONACHLOROBIPHENYL		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
BZ 209 DECACHLOROBIPHENYL		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
BZ 28 TRICHLOROBIPHENYL		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
BZ 44 TETRACHLOROBIPHENYL		0.000212		0.000216		0.000207		0.000216		<b>0.000775</b>		0.000209	0.000283	0.00133	1 of 12
BZ 52 TETRACHLOROBIPHENYL		<b>0.00103</b>		<b>0.000965</b>		<b>0.000734</b>		<b>0.000487</b>		<b>0.00149</b>		<b>0.00112</b>	0.000944	0.00155	11 of 12
BZ 66 TETRACHLOROBIPHENYL		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
BZ 77 TETRACHLOROBIPHENYL		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
BZ 8 DICHLOROBIPHENYL		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
CIS-NONACHLOR		<b>0.000475</b>		<b>0.000934</b>		<b>0.000783</b>		<b>0.000803</b>		<b>0.000745</b>		<b>0.000775</b>	0.000785	0.0011	11 of 12
DDMU		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
DIENDRIN		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
ENDRIN		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
GAMMA-BHC		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
GAMMA-CHLORDANE		<b>0.00484</b>		<b>0.00666</b>		<b>0.00527</b>		<b>0.0054</b>		<b>0.00606</b>		<b>0.00896</b>	0.00629	0.011	12 of 12
HEPTACHLOR		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
HEPTACHLOR EPOXIDE		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
HEXACHLOROBENZENE		<b>0.000452</b>		<b>0.000188</b>		<b>0.000299</b>		<b>0.000729</b>		<b>0.00172</b>		<b>0.000375</b>	0.000544	0.00188	11 of 12
MIREX		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
OXYCHLORDANE		0.000212		0.000216		0.000207		0.000216		0.00021		0.000209	0.000212	0.000222	0 of 12
TOTAL AMP PCBs		<b>0.00893</b>		<b>0.00654</b>		<b>0.00539</b>		<b>0.00543</b>		<b>0.0102</b>		<b>0.0122</b>	0.00777	0.0137	12 of 12
TOTAL CHLORDANE		<b>0.00985</b>		<b>0.00951</b>		<b>0.0081</b>		<b>0.00831</b>		<b>0.0084</b>		<b>0.014</b>	0.00966	0.0167	12 of 12
TOTAL DDT		<b>0.00906</b>		<b>0.00437</b>		<b>0.0101</b>		<b>0.00498</b>		<b>0.0108</b>		<b>0.0116</b>	0.00802	0.0178	12 of 12
TRANS-NONACHLOR		<b>0.00364</b>		<b>0.00288</b>		<b>0.00252</b>		<b>0.00289</b>		<b>0.00266</b>		<b>0.00276</b>	0.00285	0.00488	12 of 12

**Table A-14. Deer Island Influent Characterization (Low detection limit analyses; South System), FY12 (cont.)**

Volatiles Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,1,1-TRICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,1,2,2-TETRACHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,1,2-TRICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,1-DICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,1-DICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,2-DICHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,2-DICHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,2-DICHLOROPROPANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,3-DICHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
1,4-DICHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
2-BUTANONE	<b>14.7</b>	<b>13.5</b>	<b>3.91</b>	0.5	<b>2.84</b>	<b>2.46</b>	<b>3.2</b>	<b>7.91</b>	<b>6.97</b>	<b>8.54</b>	0.5	<b>3.05</b>	4.76	14.9	15 of 24
2-CHLOROETHYL VINYL ETHER	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
2-HEXANONE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
4-METHYL-2-PENTANONE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
ACETONE	<b>104</b>	<b>127</b>	<b>42.7</b>	<b>30.4</b>	<b>51.1</b>	<b>110</b>	<b>36.2</b>	<b>59.8</b>	<b>107</b>	<b>87</b>	<b>48</b>	<b>45</b>	66.7	168	23 of 24
ACROLEIN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 24
ACRYLONITRILE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 24
BENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
BROMODICHLOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
BROMOFORM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
BROMOMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CARBON DISULFIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CARBON TETRACHLORIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CHLOROBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CHLOROETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CHLOROFORM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CHLOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CIS-1,2-DICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
CIS-1,3-DICHLOROPROPENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
DIBROMOCHLOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
ETHYLBENZENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
M,P-XYLENE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 24
METHYLENE CHLORIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
O-XYLENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
STYRENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TETRACHLOROETHENE	<b>3.58</b>	<b>6.52</b>	0.5	0.5	0.5	0.5	<b>6.34</b>	<b>2.91</b>	0.5	0.5	0.5	0.5	1.62	12.9	4 of 24
TOLUENE	<b>3.32</b>	<b>4.61</b>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	<b>3.02</b>	0.5	0.5	1.04	8.96	3 of 24
TRANS-1,2-DICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TRANS-1,3-DICHLOROPROPENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TRICHLOROETHENE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
TRICHLOROFLUOROMETHANE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
VINYL ACETATE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24
VINYL CHLORIDE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 of 24

Notes

DEC is the now-defunct Detailed Effluent Characterization project, which includes low-detection limit methods not approved by the EPA. DEC sampling is now carried out under the NP-EM project.

~: No data or no samples taken

Results in **bold** indicate one or more detects that month

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

**Table A-15. Deer Island Influent Loadings (Low detection limit analyses; South System), FY12**

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-TRICHLOROENZENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
1,2-DICHLOROENZENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
1,2-DIPHENYLHYDRAZINE (AS AZOENZENE)	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
1,3-DICHLOROENZENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
1,4-DICHLOROENZENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2,2'-OXYBIS(1-CHLOROPROPANE)	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2,4,5-TRICHLOROPHENOL	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2,4,6-TRICHLOROPHENOL	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2,4-DICHLOROPHENOL	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2,4-DIMETHYLPHENOL	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2,4-DINITROPHENOL	4	3.77	5.85	8.04	9.51	6.04	5.06	4.88	5.24	4.01	4.66	5.03	5.51	9.9	0 of 24
2,4-DINITROTOLUENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2,6-DINITROTOLUENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2-CHLORONAPHTHALENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2-CHLOROPHENOL	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2-METHYL-4,6-DINITROPHENOL	4	3.77	5.85	8.04	9.51	6.04	5.06	4.88	5.24	4.01	4.66	5.03	5.51	9.9	0 of 24
2-METHYLNAPHTHALENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2-METHYLPHENOL	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2-NITROANILINE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
2-NITROPHENOL	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
3,3'-DICHLOROBENZIDINE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
3-NITROANILINE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
4-BROMOPHENYL PHENYL ETHER	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
4-CHLORO-3-METHYLPHENOL	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
4-CHLOROANILINE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
4-CHLOROPHENYL PHENYL ETHER	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
4-METHYLPHENOL (INCLUDES 3-METHYLPHENOL)	<b>22.1</b>	<b>9.51</b>	2.34	3.22	3.8	2.42	2.02	1.95	2.1	<b>30.9</b>	<b>20.9</b>	<b>13</b>	9.52	33.1	8 of 24
4-NITROANILINE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
4-NITROPHENOL	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
ACENAPHTHENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
ACENAPHTHYLENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
ANILINE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
ANTHRACENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
BENZIDINE	4	3.77	5.85	8.04	9.51	6.04	5.06	4.88	5.24	4.01	4.66	5.03	5.51	9.9	0 of 24
BENZO(A)ANTHRACENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
BENZO(A)PYRENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
BENZO(B)FLUORANTHENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
BENZO(G,H,I)PERYLENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
BENZO(K)FLUORANTHENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
BENZOIC ACID	4	3.77	5.85	8.04	9.51	6.04	5.06	4.88	5.24	4.01	4.66	5.03	5.51	9.9	0 of 24
BENZYL ALCOHOL	<b>8.9</b>	<b>9.99</b>	2.34	3.22	3.8	2.42	<b>15</b>	1.95	<b>14.7</b>	<b>9.7</b>	1.86	<b>11.2</b>	7.09	28	6 of 24
BIS(2-CHLOROETHOXY)METHANE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
BIS(2-CHLOROETHYL)ETHER	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
BIS(2-ETHYLHEXYL)PHTHALATE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
BUTYLBENZYLPHTHALATE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
CARBAZOLE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
CHRYSENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
DIBENZO(A,H)ANTHRACENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
DIBENZOFURAN	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
DIETHYLPHTHALATE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
DIMETHYLPHTHALATE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
DI-N-BUTYLPHTHALATE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
DI-N-OCTYLPHTHALATE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
FLUORANTHENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
FLUORENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
HEXACHLOROENZENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
HEXACHLOROBUTADIENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
HEXACHLOROCYCLOPENTADIENE	4	3.77	5.85	8.04	9.51	6.04	5.06	4.88	5.24	4.01	4.66	5.03	5.51	9.9	0 of 24
HEXACHLOROETHANE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
INDENO(1,2,3-CD)PYRENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
ISOPHORONE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
NAPHTHALENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
N-DECANE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24



**Table A-15. Deer Island Influent Loadings (Low detection limit analyses; South System), FY12 (cont.)**

Semivolatile Organics (ug/L)													Average	Maximum	Times Detected
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
NITROBENZENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
N-NITROSODIMETHYLAMINE (NDMA)	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
N-NITROSODI-N-PROPYLAMINE (NDPA)	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
N-NITROSODIPHENYLAMINE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
N-OCTADECANE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
PENTACHLOROPHENOL	4	3.77	5.85	8.04	9.51	6.04	5.06	4.88	5.24	4.01	4.66	5.03	5.51	9.9	0 of 24
PHENANTHRENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
PHENOL	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
PYRENE	1.6	1.51	2.34	3.22	3.8	2.42	2.02	1.95	2.1	1.6	1.86	2.01	2.2	3.96	0 of 24
Polycyclic Aromatic Hydrocarbons (ug/L)													Average	Maximum	Times Detected
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
1-METHYLNAPHTHALENE		0.0887		0.148		0.119		0.0251		0.0402		0.127	0.0912	0.165	12 of 12
1-METHYLPHENANTHRENE		0.0378		0.105		0.0458		0.0195		0.0209		0.0203	0.0415	0.159	12 of 12
2,3,5-TRIMETHYLNAPHTHALENE		0.0893		0.145		0.0685		0.0248		0.041		0.0805	0.0749	0.167	12 of 12
2,6-DIMETHYLNAPHTHALENE		0.0857		0.135		0.0763		0.0405		0.0477		0.0899	0.0791	0.144	12 of 12
2-METHYLNAPHTHALENE		0.0665		0.118		0.0835		0.0222		0.0314		0.0753	0.0662	0.135	12 of 12
ACENAPHTHENE		0.0281		0.122		0.185		0.017		0.0196		0.0475	0.0699	0.368	12 of 12
ACENAPHTHYLENE		0.0483		0.163		0.226		0.00713		0.000394		0.00599	0.0751	0.372	10 of 12
ANTHRACENE		0.0203		0.179		0.247		0.03		0.0321		0.0365	0.0909	0.42	12 of 12
BENZO(A)ANTHRACENE		0.061		0.496		0.275		0.0756		0.0577		0.112	0.18	0.881	12 of 12
BENZO(A)PYRENE		0.0683		0.558		0.264		0.0697		0.0551		0.125	0.19	0.993	12 of 12
BENZO(B)FLUORANTHENE		0.0827		0.528		0.224		0.0613		0.0545		0.124	0.179	0.933	12 of 12
BENZO(E)PYRENE		0.053		0.381		0.15		0.0455		0.0373		0.0996	0.128	0.674	12 of 12
BENZO(G,H,I)PERYLENE		0.0453		0.273		0.124		0.0327		0.0309		0.0708	0.0962	0.474	12 of 12
BENZO(K)FLUORANTHENE		0.0599		0.405		0.188		0.0571		0.039		0.0967	0.141	0.728	12 of 12
BENZOTHAZOLE		0.016		0.0534		0.0604		0.0201		0.0763		0.0368	0.0438	0.124	12 of 12
BIPHENYL		0.0268		0.119		0.184		0.0144		0.0234		0.0381	0.0675	0.365	12 of 12
C1-CHRYSENES		0.0292		0.252		0.0774		0.0298		0.022		0.0606	0.0785	0.437	12 of 12
C1-DIBENZOTHIOPHENES		0.0269		0.121		0.114		0.000749		0.0917		0.0438	0.0665	0.186	10 of 12
C1-FLUORANTHENES/PYRENES		0.092		0.481		0.225		0.0758		0.0623		0.137	0.179	0.78	12 of 12
C1-FLUORENES		0.0894		0.233		0.104		0.0453		0.0586		0.0868	0.103	0.325	12 of 12
C1-NAPHTHALENES		0.111		0.196		0.147		0.0342		0.051		0.145	0.114	0.224	12 of 12
C1-PHENANTHRENES/ANTHRACENES		0.193		0.52		0.238		0.105		0.11		0.194	0.227	0.759	12 of 12
C2-CHRYSENES		0.105		0.701		0.000604		0.000749		0.000394		0.000496	0.135	0.849	4 of 12
C2-DIBENZOTHIOPHENES		0.112		0.147		0.0673		0.000749		0.0177		0.0622	0.0679	0.194	9 of 12
C2-FLUORANTHENES/PYRENES		0.0635		0.369		0.0982		0.000749		0.035		0.0926	0.11	0.612	10 of 12
C2-FLUORENES		0.183		0.329		0.11		0.0113		0.0324		0.000496	0.111	0.528	8 of 12
C2-NAPHTHALENES		0.254		0.427		0.244		0.0966		0.134		0.292	0.241	0.459	12 of 12
C2-PHENANTHRENES/ANTHRACENES		0.172		0.45		0.204		0.023		0.116		0.179	0.191	0.603	11 of 12
C3-CHRYSENES		0.00073		0.00165		0.000604		0.000749		0.000394		0.000496	0.00077	0.00196	0 of 12
C3-DIBENZOTHIOPHENES		0.0672		0.00165		0.0356		0.000749		0.000394		0.0599	0.0276	0.0781	5 of 12
C3-FLUORANTHENES/PYRENES		0.00073		0.14		0.0203		0.000749		0.000394		0.000496	0.0272	0.228	3 of 12
C3-FLUORENES		0.164		0.394		0.188		0.000749		0.0704		0.000496	0.136	0.526	7 of 12
C3-NAPHTHALENES		0.649		0.935		0.474		0.422		0.413		0.722	0.603	1	12 of 12
C3-PHENANTHRENES/ANTHRACENES		0.374		0.521		0.307		0.000749		0.0897		0.208	0.25	0.653	10 of 12
C4-CHRYSENES		0.695		0.00165		0.000604		0.000749		0.000394		0.000496	0.117	0.725	2 of 12
C4-NAPHTHALENES		0.21		0.366		0.285		0.0895		0.132		0.205	0.215	0.418	12 of 12
C4-PHENANTHRENES/ANTHRACENES		0.045		0.265		0.0278		0.000749		0.000394		0.0317	0.0619	0.39	6 of 12
CHRYSENE		0.0832		0.588		0.254		0.0769		0.0625		0.133	0.2	1.03	12 of 12
DIBENZO(A,H)ANTHRACENE		0.0106		0.0623		0.0279		0.00873		0.00656		0.0114	0.0213	0.123	11 of 12
DIBENZOFURAN		0.0373		0.105		0.137		0.0347		0.0446		0.0517	0.0684	0.229	12 of 12
DIBENZOTHIOPHENE		0.0212		0.0792		0.0729		0.0122		0.0127		0.021	0.0365	0.13	12 of 12
FLUORANTHENE		0.177		1.26		0.853		0.194		0.152		0.237	0.479	2.24	12 of 12
FLUORENE		0.0375		0.15		0.215		0.022		0.0264		0.0495	0.0833	0.368	12 of 12
INDENO(1,2,3-CD)PYRENE		0.052		0.303		0.15		0.034		0.0291		0.0616	0.105	0.539	12 of 12
NAPHTHALENE		0.0646		0.134		0.311		0.0346		0.0429		0.0474	0.106	0.506	12 of 12
PERYLENE		0.0106		0.098		0.0538		0.013		0.00833		0.0185	0.0337	0.177	12 of 12
PHENANTHRENE		0.158		1.08		1.07		0.128		0.142		0.216	0.464	1.87	12 of 12
PYRENE		0.157		0.96		0.606		0.156		0.124		0.207	0.368	1.67	12 of 12

Table A-15. Deer Island Influent Loadings (Low detection limit analyses; South System), FY12 (cont.)

Organochlorine Pesticides and PCBs (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
2,4'-DDD		<b>0.00251</b>		0.000338		<b>0.0027</b>		<b>0.00116</b>		<b>0.00086</b>		<b>0.000887</b>	0.00141	0.00489	6 of 12
2,4'-DDE		0.000141		0.000338		0.000238		0.000202		0.000158		<b>0.00127</b>	0.000392	0.00235	1 of 12
2,4'-DDT		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
4,4'-DDD		<b>0.00164</b>		0.000338		<b>0.000711</b>		<b>0.00141</b>		<b>0.00366</b>		<b>0.00146</b>	0.00154	0.00458	6 of 12
4,4'-DDE		<b>0.000915</b>				<b>0.0021</b>		<b>0.00228</b>		<b>0.00104</b>		<b>0.00602</b>	0.0025	0.0113	9 of 12
4,4'-DDT		<b>0.00123</b>		<b>0.00488</b>		<b>0.00564</b>		0.000202		<b>0.00272</b>		<b>0.00185</b>	0.00275	0.00766	8 of 12
ALDRIN		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
ALPHA-CHLORDANE		<b>0.00412</b>		<b>0.0104</b>		<b>0.00641</b>		<b>0.00506</b>		<b>0.00432</b>		<b>0.0107</b>	0.00684	0.0146	12 of 12
BZ 101 PENTACHLOROBIPHENYL		<b>0.00111</b>		<b>0.00139</b>		<b>0.00111</b>		<b>0.000804</b>		<b>0.0015</b>		<b>0.00193</b>	0.00131	0.00252	11 of 12
BZ 105 PENTACHLOROBIPHENYL		0.000141		0.000338		0.000238		<b>0.000326</b>		0.000158		<b>0.0011</b>	0.000383	0.002	2 of 12
BZ 118 PENTACHLOROBIPHENYL		<b>0.000895</b>		<b>0.000939</b>		<b>0.00122</b>		<b>0.000652</b>		<b>0.00102</b>		<b>0.00286</b>	0.00126	0.0034	11 of 12
BZ 126 PENTACHLOROBIPHENYL		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
BZ 128 HEXACHLOROBIPHENYL		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
BZ 138 HEXACHLOROBIPHENYL		<b>0.00129</b>		<b>0.00253</b>		<b>0.00148</b>		<b>0.00129</b>		<b>0.00138</b>		<b>0.00157</b>	0.00159	0.00265	12 of 12
BZ 153 HEXACHLOROBIPHENYL		<b>0.000824</b>		<b>0.00152</b>		<b>0.000701</b>		<b>0.000695</b>		<b>0.000896</b>		<b>0.00119</b>	0.000971	0.0016	12 of 12
BZ 170 HEPTACHLOROBIPHENYL		<b>0.000255</b>		0.000338		0.000238		0.000202		0.000158		0.000199	0.000232	0.000414	1 of 12
BZ 18 TRICHLOROBIPHENYL		0.000141		<b>0.00136</b>		0.000238		0.000202		0.000158		0.000199	0.000435	0.00174	4 of 12
BZ 180 HEPTACHLOROBIPHENYL		<b>0.000645</b>		<b>0.001</b>		<b>0.000593</b>		<b>0.000525</b>		<b>0.000549</b>		<b>0.00157</b>	0.000815	0.00163	12 of 12
BZ 187 HEPTACHLOROBIPHENYL		<b>0.000304</b>		<b>0.000469</b>		<b>0.000255</b>		<b>0.000371</b>		<b>0.000233</b>		<b>0.000475</b>	0.000351	0.000551	11 of 12
BZ 195 OCTACHLOROBIPHENYL		0.000141		0.000338		0.000238		<b>0.000256</b>		0.000158		0.000199	0.000222	0.000414	1 of 12
BZ 206 NONACHLOROBIPHENYL		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
BZ 209 DECACHLOROBIPHENYL		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
BZ 28 TRICHLOROBIPHENYL		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
BZ 44 TETRACHLOROBIPHENYL		0.000141		0.000338		0.000238		0.000202		<b>0.000584</b>		0.000199	0.000284	0.00101	1 of 12
BZ 52 TETRACHLOROBIPHENYL		<b>0.000683</b>		<b>0.00151</b>		<b>0.000844</b>		<b>0.000455</b>		<b>0.00112</b>		<b>0.00107</b>	0.000948	0.00194	11 of 12
BZ 66 TETRACHLOROBIPHENYL		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
BZ 77 TETRACHLOROBIPHENYL		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
BZ 8 DICHLOROBIPHENYL		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
CIS-NONACHLOR		<b>0.000316</b>		<b>0.00146</b>		<b>0.000901</b>		<b>0.00075</b>		<b>0.000561</b>		<b>0.00074</b>	0.000789	0.00205	11 of 12
DDMU		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
DIENDRIN		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
ENDRIN		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
GAMMA-BHC		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
GAMMA-CHLORDANE		<b>0.00322</b>		<b>0.0104</b>		<b>0.00606</b>		<b>0.00505</b>		<b>0.00456</b>		<b>0.00855</b>	0.00631	0.0147	12 of 12
HEPTACHLOR		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
HEPTACHLOR EPOXIDE		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
HEXACHLOROBENZENE		<b>0.000301</b>		<b>0.000295</b>		<b>0.000344</b>		<b>0.000682</b>		<b>0.0013</b>		<b>0.000358</b>	0.000546	0.0014	11 of 12
MIREX		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
OXYCHLORDANE		0.000141		0.000338		0.000238		0.000202		0.000158		0.000199	0.000213	0.000414	0 of 12
TOTAL AMP PCBs		<b>0.00594</b>		<b>0.0103</b>		<b>0.0062</b>		<b>0.00507</b>		<b>0.00768</b>		<b>0.0117</b>	0.0078	0.0132	12 of 12
TOTAL CHLORDANE		<b>0.00655</b>		<b>0.0149</b>		<b>0.00932</b>		<b>0.00777</b>		<b>0.00632</b>		<b>0.0133</b>	0.0097	0.0209	12 of 12
TOTAL DDT		<b>0.00602</b>		<b>0.00685</b>		<b>0.0116</b>		<b>0.00465</b>		<b>0.00814</b>		<b>0.0111</b>	0.00805	0.0171	12 of 12
TRANS-NONACHLOR		<b>0.00242</b>		<b>0.00452</b>		<b>0.0029</b>		<b>0.0027</b>		<b>0.00201</b>		<b>0.00263</b>	0.00286	0.00623	12 of 12

**Table A-15. Deer Island Influent Loadings (Low detection limit analyses; South System), FY12 (cont.)**

Volatile Organics (ug/L)													Times		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
1,1,1-TRICHLOROETHANE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
1,1,2,2-TETRACHLOROETHANE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
1,1,2-TRICHLOROETHANE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
1,1-DICHLOROETHANE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
1,1-DICHLOROETHENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
1,2-DICHLOROBENZENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
1,2-DICHLOROETHANE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
1,2-DICHLOROPROPANE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
1,3-DICHLOROBENZENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
1,4-DICHLOROBENZENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
2-BUTANONE	<b>11.2</b>	<b>9.09</b>	<b>4.07</b>	<b>0.863</b>	<b>4.47</b>	<b>3.48</b>	<b>3.03</b>	<b>7.31</b>	<b>6.88</b>	<b>6.39</b>	0.454	<b>2.83</b>	5	11.4	15 of 24
2-CHLOROETHYL VINYL ETHER	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
2-HEXANONE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
4-METHYL-2-PENTANONE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
ACETONE	<b>79.3</b>	<b>85.2</b>	<b>44.4</b>	<b>52.5</b>	<b>80.4</b>	<b>155</b>	<b>34.3</b>	<b>55.3</b>	<b>105</b>	<b>65.1</b>	<b>43.6</b>	<b>41.7</b>	70.2	228	23 of 24
ACROLEIN	0.76	0.671	1.04	1.73	1.57	1.41	0.946	0.924	0.987	0.747	0.907	0.927	1.05	1.87	0 of 24
ACRYLONITRILE	0.76	0.671	1.04	1.73	1.57	1.41	0.946	0.924	0.987	0.747	0.907	0.927	1.05	1.87	0 of 24
BENZENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
BROMODICHLOROMETHANE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
BROMOFORM	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
BROMOMETHANE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
CARBON DISULFIDE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
CARBON TETRACHLORIDE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
CHLOROBENZENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
CHLOROETHANE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
CHLOROFORM	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
CHLOROMETHANE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
CIS-1,2-DICHLOROETHENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
CIS-1,3-DICHLOROPROPENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
DIBROMOCHLOROMETHANE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
ETHYLBENZENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
M,P-XYLENE	0.76	0.671	1.04	1.73	1.57	1.41	0.946	0.924	0.987	0.747	0.907	0.927	1.05	1.87	0 of 24
METHYLENE CHLORIDE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
O-XYLENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
STYRENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
TETRACHLOROETHENE	<b>2.72</b>	<b>4.38</b>	0.52	0.863	0.786	0.706	<b>6</b>	<b>2.69</b>	0.493	0.374	0.454	0.464	1.7	11.5	4 of 24
TOLUENE	<b>2.52</b>	<b>3.09</b>	0.52	0.863	0.786	0.706	0.473	0.462	0.493	<b>2.26</b>	0.454	0.464	1.09	5.84	3 of 24
TRANS-1,2-DICHLOROETHENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
TRANS-1,3-DICHLOROPROPENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
TRICHLOROETHENE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
TRICHLOROFLUOROMETHANE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
VINYL ACETATE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24
VINYL CHLORIDE	0.38	0.336	0.52	0.863	0.786	0.706	0.473	0.462	0.493	0.374	0.454	0.464	0.526	0.933	0 of 24

Notes

DEC is the now-defunct Detailed Effluent Characterization project, which includes low-detection limit methods not approved by the EPA. DEC sampling is now carried out under the NP-EM project.

~: No data or no samples taken

Results in **bold** indicate one or more detects that month

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-16. Deer Island Effluent Characterization (Low detection limit analyses), FY12

Organochlorine Pesticides and PCBs (ug/L)	Average												Maximum		Times
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
2,4'-DDD	0.000998	0.000527	0.000106	0.000111	0.000106	0.000285	0.000103	0.000111	0.000223	0.000104	0.000154	0.00011	0.000231	0.00123	15 of 48
2,4'-DDE	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
2,4'-DDT	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
4,4'-DDD	0.000107	0.000262	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000333	0.000297	0.000152	0.000416	10 of 48
4,4'-DDE	0.000127	0.000229	0.000106	0.000111	0.000118	0.000301	0.000144	0.000111	0.000289	0.000299	0.000341	0.000147	0.000196	0.0005	20 of 48
4,4'-DDT	0.0011	0.00115	0.000798	0.000794	0.000653	0.000595	0.00058	0.000111	0.000509	0.000884	0.000892	0.000663	0.000718	0.00225	37 of 48
ALDRIN	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
ALPHA-CHLORDANE	0.000493	0.000616	0.000892	0.000773	0.000713	0.000868	0.000553	0.00057	0.000574	0.000591	0.000856	0.000432	0.000686	0.00126	48 of 48
BZ 101 PENTACHLOROBIPHENYL	0.000154	0.000271	0.000237	0.000174	0.000116	0.000188	0.000134	0.000267	0.000204	0.000266	0.000252	0.00011	0.000194	0.000442	37 of 48
BZ 105 PENTACHLOROBIPHENYL	0.000107	0.0000958	0.000106	0.000111	0.000106	0.00011	0.000103	0.000111	0.000103	0.000103	0.0000954	0.00011	0.000106	0.000124	4 of 48
BZ 118 PENTACHLOROBIPHENYL	0.000175	0.000219	0.000249	0.000229	0.0000986	0.000201	0.000247	0.000131	0.000161	0.000184	0.000177	0.00011	0.000182	0.000486	34 of 48
BZ 126 PENTACHLOROBIPHENYL	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
BZ 128 HEXACHLOROBIPHENYL	0.000107	0.000105	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	1 of 48
BZ 138 HEXACHLOROBIPHENYL	0.000318	0.000313	0.000251	0.000465	0.000208	0.000345	0.000266	0.000288	0.0003	0.000316	0.000431	0.000109	0.000306	0.000801	37 of 48
BZ 153 HEXACHLOROBIPHENYL	0.000101	0.00024	0.000112	0.000131	0.000111	0.000165	0.000118	0.000109	0.000151	0.00017	0.000142	0.000113	0.000139	0.000285	40 of 48
BZ 170 HEPTACHLOROBIPHENYL	0.000107	0.000108	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.0000943	0.00011	0.000106	0.000119	2 of 48
BZ 18 TRICHLOROBIPHENYL	0.000107	0.000107	0.000106	0.000111	0.000106	0.000192	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000118	0.000337	1 of 48
BZ 180 HEPTACHLOROBIPHENYL	0.000108	0.00017	0.00011	0.000121	0.0000753	0.000115	0.000103	0.00185	0.0000904	0.000104	0.000103	0.00011	0.000232	0.00703	20 of 48
BZ 187 HEPTACHLOROBIPHENYL	0.000107	0.000119	0.0000936	0.000111	0.0000949	0.0000855	0.000103	0.000111	0.000103	0.000104	0.0000981	0.00011	0.000102	0.00013	11 of 48
BZ 195 OCTACHLOROBIPHENYL	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.0000869	0.000104	0.000107	0.00011	0.000106	0.000119	1 of 48
BZ 206 NONACHLOROBIPHENYL	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
BZ 209 DECACHLOROBIPHENYL	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
BZ 28 TRICHLOROBIPHENYL	0.000107	0.000105	0.000106	0.000153	0.000106	0.000135	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000115	0.000252	4 of 48
BZ 44 TETRACHLOROBIPHENYL	0.000107	0.000121	0.000106	0.000126	0.000106	0.000107	0.000103	0.000111	0.000112	0.000104	0.00011	0.00011	0.000111	0.000164	7 of 48
BZ 52 TETRACHLOROBIPHENYL	0.000157	0.0002	0.000194	0.000213	0.000172	0.000203	0.000124	0.000201	0.000161	0.000266	0.000225	0.000259	0.000198	0.000339	43 of 48
BZ 66 TETRACHLOROBIPHENYL	0.000107	0.000107	0.000106	0.000297	0.000106	0.000107	0.000103	0.000211	0.000103	0.000104	0.000107	0.00011	0.000133	0.00055	3 of 48
BZ 77 TETRACHLOROBIPHENYL	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
BZ 8 DICHLOROBIPHENYL	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
CIS-NONACHLOR	0.0000997	0.000126	0.000106	0.000111	0.000103	0.000133	0.000103	0.0000913	0.0000956	0.0000925	0.000132	0.00011	0.00011	0.000158	16 of 48
DDMU	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
DIELDRIN	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
ENDRIN	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
GAMMA-BHC	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000316	0.00876	2 of 48
GAMMA-CHLORDANE	0.000398	0.000633	0.00079	0.000705	0.000566	0.00076	0.000516	0.000486	0.000542	0.000539	0.000769	0.000348	0.000608	0.00108	48 of 48
HEPTACHLOR	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
HEPTACHLOR EPOXIDE	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
HEXACHLOROBENZENE	0.0000838	0.0000935	0.000106	0.000111	0.0000985	0.0000864	0.0000955	0.000111	0.000124	0.000155	0.0000895	0.0000667	0.0001	0.000202	27 of 48
MIREX	0.000107	0.000107	0.000106	0.000111	0.000485	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000148	0.000607	3 of 48
OXYCHLORDANE	0.000107	0.000107	0.000106	0.000111	0.000106	0.000107	0.000103	0.000111	0.000103	0.000104	0.000107	0.00011	0.000107	0.000119	0 of 48
TOTAL AMP PCBs	0.000902	0.00171	0.001	0.00156	0.000615	0.00139	0.000758	0.00269	0.00106	0.00123	0.00137	0.000345	0.00122	0.00788	48 of 48
TOTAL CHLORDANE	0.000693	0.000908	0.00108	0.00117	0.00102	0.00124	0.000825	0.00143	0.000805	0.00115	0.00127	0.000635	0.00104	0.00231	48 of 48
TOTAL DDT	0.00215	0.002	0.000798	0.000794	0.000665	0.00106	0.000645	0.000111	0.00102	0.00118	0.00167	0.00106	0.00107	0.00298	40 of 48
TRANS-NONACHLOR	0.0002	0.000292	0.000244	0.000447	0.000338	0.000371	0.000272	0.000863	0.000231	0.000557	0.000411	0.000203	0.000368	0.00115	43 of 48

Semivolatile Organics (ug/L)	Average												Maximum		Times
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
1,2,4-TRICHLOROBENZENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
1,2-DICHLOROBENZENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
1,2-DIPHENYLHYDRAZINE (AS AZOBENZENE)	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
1,3-DICHLOROBENZENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
1,4-DICHLOROBENZENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
2,2'-OXYBIS(1-CHLOROPROPANE)	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
2,4,5-TRICHLOROPHENOL	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
2,4,6-TRICHLOROPHENOL	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
2,4-DICHLOROPHENOL	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
2,4-DIMETHYLPHENOL	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
2,4-DINITROPHENOL	5.48	5.44	5.72	5.13	5.42	5.65	5.76	5.57	6.07	5.53	5.41	6.52	5.61	6.95	0 of 24
2,4-DINITROTOLUENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
2,6-DINITROTOLUENE	2.19	2.17	2.2												

Table A-16. Deer Island Effluent Characterization (Low detection limit analyses), FY12 (cont.)

Semivolatile Organics (ug/L)													Average	Maximum	Times Detected
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
2-METHYL-4,6-DINITROPHENOL	5.48	5.44	5.72	5.13	5.42	5.65	5.76	5.57	6.07	5.53	5.41	6.52	5.61	6.95	0 of 24
2-METHYLNAPHTHALENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
2-METHYLPHENOL	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
2-NITROANILINE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
2-NITROPHENOL	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
3,3'-DICHLOROBENZIDINE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
3-NITROANILINE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
4-BROMOPHENYL PHENYL ETHER	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
4-CHLORO-3-METHYLPHENOL	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
4-CHLOROANILINE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
4-CHLOROPHENYL PHENYL ETHER	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
4-METHYLPHENOL (INCLUDES 3-METHYLPHENOL)	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
4-NITROANILINE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
4-NITROPHENOL	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
ACENAPHTHENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
ACENAPHTHYLENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
ANILINE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
ANTHRACENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
BENZIDINE	5.48	5.44	5.72	5.13	5.42	5.65	5.76	5.57	6.07	5.53	5.41	6.52	5.61	6.95	0 of 24
BENZO(A)ANTHRACENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
BENZO(A)PYRENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
BENZO(B)FLUORANTHENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
BENZO(G,H,I)PERYLENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
BENZO(K)FLUORANTHENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
BENZOIC ACID	5.48	5.44	5.72	5.13	5.42	5.65	5.76	5.57	6.07	5.53	5.41	6.52	5.61	6.95	0 of 24
BENZYL ALCOHOL	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
BIS(2-CHLOROETHOXY)METHANE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
BIS(2-CHLOROETHYL)ETHER	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
BIS(2-ETHYLHEXYL)PHTHALATE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
BUTYLBENZYLPHTHALATE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
CARBAZOLE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
CHRYSENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
DIBENZO(A,H)ANTHRACENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
DIBENZOFURAN	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
DIETHYLPHTHALATE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
DIMETHYLPHTHALATE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
DI-N-BUTYLPHTHALATE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
DI-N-OCTYLPHTHALATE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
FLUORANTHENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
FLUORENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
HEXACHLOROBENZENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
HEXACHLOROBUTADIENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
HEXACHLOROCYCLOPENTADIENE	5.48	5.44	5.72	5.13	5.42	5.65	5.76	5.57	6.07	5.53	5.41	6.52	5.61	6.95	0 of 24
HEXACHLOROETHANE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
INDENO(1,2,3-CD)PYRENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
ISOPHORONE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
NAPHTHALENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
N-DECANE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
NITROBENZENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
N-NITROSODIMETHYLAMINE (NDMA)	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
N-NITROSODI-N-PROPYLAMINE (NDPA)	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
N-NITROSODIPHENYLAMINE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
N-OCTADECANE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
PENTACHLOROPHENOL	5.48	5.44	5.72	5.13	5.42	5.65	5.76	5.57	6.07	5.53	5.41	6.52	5.61	6.95	0 of 24
PHENANTHRENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
PHENOL	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24
PYRENE	2.19	2.17	2.29	2.05	2.17	2.26	2.3	2.23	2.43	2.21	2.16	2.61	2.25	2.78	0 of 24

Table A-16. Deer Island Effluent Characterization (Low detection limit analyses), FY12 (cont.)

Polycyclic Aromatic Hydrocarbons (ug/L)	Monthly Data											Average	Maximum	Times Detected	
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May				Jun
1-METHYLNAPHTHALENE	0.00328	0.006	0.00413	0.00274	0.00213	0.011	0.00318	0.00293	0.00323	0.00227	0.00425	0.00186	0.00428	0.019	48 of 48
1-METHYLPHENANTHRENE	0.00264	0.00432	0.00266	0.00159	0.00103	0.00694	0.00368	0.00207	0.00433	0.0039	0.00264	0.0019	0.00324	0.0089	46 of 48
2,3,5-TRIMETHYLNAPHTHALENE	0.00181	0.00659	0.00647	0.00199	0.00568	0.0148	0.00883	0.00474	0.0113	0.0083	0.00859	0.00485	0.00733	0.022	44 of 48
2,6-DIMETHYLNAPHTHALENE	0.00187	0.0033	0.00856	0.00137	0.000873	0.00688	0.00251	0.0018	0.00316	0.00503	0.00352	0.00159	0.00349	0.0168	45 of 48
2-METHYLNAPHTHALENE	0.00457	0.00632	0.00669	0.00344	0.00197	0.0163	0.00738	0.00754	0.0102	0.00842	0.0104	0.00434	0.00759	0.0249	48 of 48
ACENAPHTHENE	0.00275	0.00517	0.00525	0.00276	0.000857	0.0158	0.00395	0.0034	0.00417	0.00526	0.00703	0.00124	0.00531	0.0219	38 of 48
ACENAPHTHYLENE	0.00255	0.007	0.00384	0.00434	0.000528	0.0194	0.00052	0.000612	0.000719	0.000535	0.000552	0.000566	0.00434	0.028	17 of 48
ANTHRACENE	0.00281	0.0047	0.00563	0.00227	0.00237	0.0114	0.00275	0.00179	0.00313	0.00408	0.00306	0.00306	0.00428	0.0154	47 of 48
BENZO(A)ANTHRACENE	0.00488	0.0081	0.00839	0.00349	0.00383	0.0164	0.0039	0.00328	0.00695	0.0085	0.00431	0.0049	0.00682	0.0247	48 of 48
BENZO(A)PYRENE	0.00396	0.00764	0.00721	0.00293	0.00359	0.0163	0.00304	0.00286	0.0056	0.00624	0.00348	0.00436	0.00611	0.0247	48 of 48
BENZO(B)FLUORANTHENE	0.00445	0.00897	0.00864	0.00308	0.00432	0.0172	0.00368	0.00429	0.00826	0.00666	0.00472	0.00569	0.00714	0.0258	48 of 48
BENZO(E)PYRENE	0.00427	0.00576	0.00242	0.00272	0.00238	0.0122	0.0022	0.00242	0.00485	0.00454	0.00331	0.00309	0.00453	0.0185	48 of 48
BENZO(G,H,I)PERYLENE	0.00332	0.00437	0.00669	0.00206	0.00383	0.0107	0.00254	0.00203	0.00381	0.00336	0.00301	0.00409	0.00451	0.0154	47 of 48
BENZO(K)FLUORANTHENE	0.00372	0.00677	0.00774	0.00312	0.00344	0.014	0.00321	0.00341	0.00563	0.00592	0.00342	0.00396	0.00577	0.0217	48 of 48
BENZOTHAZOLE	0.2	0.0679	0.0867	0.0608	0.0268	0.0847	0.06	0.0497	0.0411	0.0587	0.0404	0.1	0.0704	0.289	48 of 48
BIPHENYL	0.00254	0.00604	0.00555	0.00276	0.000896	0.0156	0.00191	0.00142	0.00153	0.00202	0.002	0.00126	0.00426	0.022	43 of 48
C1-CHRYSENES	0.00176	0.00363	0.00162	0.00138	0.00121	0.00703	0.00153	0.00148	0.00256	0.00298	0.00214	0.00207	0.00264	0.00999	48 of 48
C1-DIBENZOTHIOPHENES	0.0243	0.0106	0.0391	0.00332	0.00139	0.0201	0.00324	0.00478	0.0184	0.00841	0.0054	0.00812	0.0122	0.0528	46 of 48
C1-FLUORANTHENES/PYRENES	0.0109	0.0153	0.00986	0.00733	0.00665	0.0224	0.00974	0.00621	0.0114	0.0134	0.00888	0.0106	0.0114	0.0319	48 of 48
C1-FLUORENES	0.0457	0.017	0.0485	0.01	0.00916	0.0305	0.0196	0.0134	0.0166	0.0132	0.0123	0.00923	0.0203	0.06	47 of 48
C1-NAPHTHALENES	0.00574	0.00987	0.00904	0.00496	0.00339	0.0219	0.00825	0.00726	0.00955	0.00891	0.0102	0.00574	0.00929	0.0366	48 of 48
C1-PHENANTHRENES/ANTHRACENES	0.0112	0.02	0.0134	0.00892	0.00738	0.0348	0.0193	0.0125	0.021	0.0207	0.0154	0.0129	0.017	0.0456	48 of 48
C2-CHRYSENES	0.000579	0.00053	0.000563	0.000505	0.000528	0.000559	0.00052	0.000612	0.000543	0.000535	0.000552	0.000566	0.000548	0.000835	0 of 48
C2-DIBENZOTHIOPHENES	0.0102	0.0207	0.0109	0.00672	0.00498	0.0178	0.00502	0.00342	0.0107	0.0116	0.00966	0.00981	0.0103	0.0271	43 of 48
C2-FLUORANTHENES/PYRENES	0.00637	0.0123	0.00651	0.00477	0.00521	0.0147	0.00549	0.000612	0.00461	0.00683	0.005	0.00603	0.00692	0.0203	41 of 48
C2-FLUORENES	0.029	0.0331	0.0264	0.0182	0.0187	0.0585	0.00592	0.0162	0.0237	0.0258	0.0211	0.0178	0.0262	0.0992	45 of 48
C2-NAPHTHALENES	0.0179	0.0145	0.0167	0.00731	0.00433	0.0361	0.0152	0.0109	0.0159	0.0166	0.0159	0.00838	0.0156	0.0581	48 of 48
C2-PHENANTHRENES/ANTHRACENES	0.0225	0.0337	0.0232	0.0139	0.0181	0.0418	0.0262	0.0157	0.0277	0.0293	0.0184	0.0179	0.0245	0.0542	48 of 48
C3-CHRYSENES	0.000579	0.00053	0.000563	0.000505	0.000528	0.000559	0.00052	0.000612	0.000543	0.000535	0.000552	0.000566	0.000548	0.000835	0 of 48
C3-DIBENZOTHIOPHENES	0.00755	0.0162	0.00447	0.000505	0.000528	0.000559	0.00052	0.000612	0.00489	0.00672	0.00472	0.00388	0.00378	0.0194	17 of 48
C3-FLUORANTHENES/PYRENES	0.000579	0.00053	0.000563	0.000505	0.000528	0.000559	0.00052	0.000612	0.000543	0.000535	0.000552	0.000566	0.000548	0.000835	0 of 48
C3-FLUORENES	0.0337	0.0454	0.0265	0.0218	0.0248	0.0477	0.00761	0.000612	0.0281	0.0257	0.000552	0.0129	0.0242	0.0698	34 of 48
C3-NAPHTHALENES	0.0413	0.0382	0.0302	0.0153	0.0114	0.0759	0.038	0.0193	0.0345	0.0326	0.0453	0.0203	0.0348	0.122	48 of 48
C3-PHENANTHRENES/ANTHRACENES	0.0211	0.035	0.0201	0.0124	0.0177	0.0436	0.0319	0.0266	0.0363	0.0392	0.0141	0.0261	0.0269	0.059	48 of 48
C4-CHRYSENES	0.000579	0.00053	0.000563	0.000505	0.000528	0.000559	0.00052	0.000612	0.000543	0.000535	0.000552	0.000566	0.000548	0.000835	0 of 48
C4-NAPHTHALENES	0.0264	0.0463	0.0566	0.0178	0.0237	0.0634	0.0528	0.0264	0.037	0.0363	0.0329	0.0337	0.0385	0.127	48 of 48
C4-PHENANTHRENES/ANTHRACENES	0.00285	0.00927	0.000563	0.000505	0.000528	0.0111	0.00052	0.000612	0.000543	0.000535	0.000552	0.000566	0.00274	0.0158	10 of 48
CHRYSENE	0.00686	0.0116	0.0104	0.00543	0.00512	0.0217	0.00516	0.00488	0.00987	0.0098	0.00645	0.0075	0.0093	0.0333	48 of 48
DIBENZO(A,H)ANTHRACENE	0.000579	0.00112	0.00417	0.000505	0.00153	0.00213	0.00102	0.000747	0.000971	0.000535	0.000552	0.0015	0.00135	0.00636	18 of 48
DIBENZOFURAN	0.00572	0.00862	0.00977	0.00444	0.00316	0.0161	0.00814	0.00394	0.00673	0.00742	0.00802	0.0057	0.00766	0.0207	48 of 48
DIBENZOTHIOPHENE	0.00131	0.00382	0.00258	0.00202	0.000719	0.00669	0.00415	0.00299	0.00353	0.00343	0.00339	0.00296	0.00324	0.00852	42 of 48
FLUORANTHENE	0.0201	0.0292	0.0209	0.0137	0.0111	0.0633	0.0172	0.0146	0.0272	0.0319	0.0213	0.0217	0.0258	0.0902	48 of 48
FLUORENE	0.00626	0.0101	0.0105	0.00439	0.00236	0.0192	0.00866	0.00476	0.00818	0.00746	0.00859	0.00709	0.00855	0.0246	47 of 48
INDENO(1,2,3-CD)PYRENE	0.00247	0.00527	0.00667	0.00177	0.00296	0.0119	0.00222	0.002	0.00395	0.00314	0.0027	0.00382	0.00448	0.0168	48 of 48
NAPHTHALENE	0.0099	0.0166	0.0156	0.00856	0.00395	0.0376	0.0131	0.013	0.0142	0.00921	0.0194	0.00546	0.015	0.05	48 of 48
PERYLENE	0.000579	0.00115	0.000563	0.000505	0.000528	0.00345	0.00052	0.000768	0.000674	0.00108	0.000552	0.000566	0.00103	0.0503	9 of 48
PHENANTHRENE	0.0086	0.0155	0.0118	0.00707	0.00483	0.0457	0.0116	0.00956	0.0162	0.0195	0.0165	0.011	0.0161	0.0647	48 of 48
PYRENE	0.0275	0.0335	0.0267	0.0155	0.0154	0.0525	0.0196	0.0165	0.027	0.0312	0.0245	0.023	0.0269	0.0735	48 of 48

Notes

DEC is the now-defunct Detailed Effluent Characterization project, which includes low-detection limit methods not approved by the EPA. DEC sampling is now carried out under the NP-EM project.

--: No data or no samples taken

Results in bold indicate one or more detects that month

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

Table A-16. Deer Island Effluent Loadings (Low detection limit analyses), FY12

Organochlorine Pesticides and PCBs (ug/L)													Times		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
2,4'-DDD	0.00221	0.0014	0.000313	0.000405	0.000404	0.00135	0.000256	0.000279	0.000594	0.000223	0.000474	0.000294	0.000683	0.00389	15 of 48
2,4'-DDE	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
2,4'-DDT	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
4,4'-DDD	0.000237	0.000692	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.00102	0.000794	0.00045	0.0015	10 of 48
4,4'-DDE	0.000283	0.000606	0.000313	0.000405	0.00045	0.00142	0.000358	0.000279	0.00077	0.000639	0.00105	0.000394	0.000581	0.00268	20 of 48
4,4'-DDT	0.00245	0.00305	0.00235	0.00291	0.00248	0.00281	0.00144	0.000279	0.00136	0.00189	0.00275	0.00177	0.00213	0.0106	37 of 48
ALDRIN	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
ALPHA-CHLORDANE	0.00109	0.00163	0.00263	0.00283	0.00271	0.00411	0.00137	0.00143	0.00153	0.00126	0.00264	0.00115	0.00203	0.00861	48 of 48
BZ 101 PENTACHLOROBIPHENYL	0.000341	0.000718	0.0007	0.000636	0.00044	0.000892	0.000332	0.000672	0.000543	0.000568	0.000777	0.000294	0.000576	0.00212	37 of 48
BZ 105 PENTACHLOROBIPHENYL	0.000237	0.000254	0.000313	0.000405	0.000404	0.000521	0.000256	0.000279	0.000275	0.00022	0.000294	0.000294	0.000313	0.00071	4 of 48
BZ 118 PENTACHLOROBIPHENYL	0.000389	0.00058	0.000733	0.000838	0.000376	0.000951	0.000612	0.000331	0.000429	0.000394	0.000545	0.000294	0.000539	0.00228	34 of 48
BZ 126 PENTACHLOROBIPHENYL	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
BZ 128 HEXACHLOROBIPHENYL	0.000237	0.000277	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	1 of 48
BZ 138 HEXACHLOROBIPHENYL	0.000705	0.000827	0.000739	0.0017	0.000791	0.00163	0.00066	0.000725	0.000801	0.000674	0.00133	0.00029	0.000906	0.00368	37 of 48
BZ 153 HEXACHLOROBIPHENYL	0.000224	0.000636	0.000331	0.000478	0.000423	0.000779	0.000293	0.000275	0.000404	0.000363	0.000438	0.000302	0.000412	0.00163	40 of 48
BZ 170 HEPTACHLOROBIPHENYL	0.000237	0.000287	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000291	0.000294	0.000314	0.00071	2 of 48
BZ 18 TRICHLOROBIPHENYL	0.000237	0.000282	0.000313	0.000405	0.000404	0.000907	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.00035	0.0023	1 of 48
BZ 180 HEPTACHLOROBIPHENYL	0.00024	0.00045	0.000323	0.000442	0.000287	0.000546	0.000256	0.00464	0.000241	0.000223	0.000316	0.000294	0.000688	0.0177	20 of 48
BZ 187 HEPTACHLOROBIPHENYL	0.000237	0.000316	0.000276	0.000405	0.000361	0.000405	0.000256	0.000279	0.000275	0.000223	0.000302	0.000294	0.000302	0.000602	11 of 48
BZ 195 OCTACHLOROBIPHENYL	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000232	0.000223	0.000331	0.000294	0.000314	0.00071	1 of 48
BZ 206 NONACHLOROBIPHENYL	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
BZ 209 DECAHLOROBIPHENYL	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
BZ 28 TRICHLOROBIPHENYL	0.000237	0.000277	0.000313	0.000559	0.000404	0.00064	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000341	0.00124	4 of 48
BZ 44 TETRACHLOROBIPHENYL	0.000237	0.00032	0.000313	0.00046	0.000404	0.000509	0.000256	0.000279	0.000299	0.000223	0.00034	0.000294	0.000328	0.00077	7 of 48
BZ 52 TETRACHLOROBIPHENYL	0.000348	0.000528	0.000571	0.000779	0.000653	0.000961	0.000309	0.000507	0.000431	0.000569	0.000695	0.000692	0.000587	0.00184	43 of 48
BZ 66 TETRACHLOROBIPHENYL	0.000237	0.000282	0.000313	0.00109	0.000404	0.000509	0.000256	0.000531	0.000275	0.000223	0.000331	0.000294	0.000395	0.00258	3 of 48
BZ 77 TETRACHLOROBIPHENYL	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
BZ 8 DICHLOROBIPHENYL	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
CIS-NONACHLOR	0.000221	0.000333	0.000313	0.000405	0.000391	0.000629	0.000256	0.00023	0.000255	0.000197	0.000406	0.000294	0.000327	0.00106	16 of 48
DDMU	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
DIELDRIN	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
ENDRIN	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
GAMMA-BHC	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000938	0.0228	2 of 48
GAMMA-CHLORDANE	0.000884	0.00168	0.00233	0.00258	0.00215	0.0036	0.00128	0.00122	0.00144	0.00115	0.00237	0.000931	0.0018	0.00731	48 of 48
HEPTACHLOR	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
HEPTACHLOR EPOXIDE	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
HEXACHLOROBENZENE	0.000186	0.000247	0.000313	0.000405	0.000375	0.000409	0.000237	0.000279	0.00033	0.000332	0.000276	0.000178	0.000297	0.00068	27 of 48
MIREX	0.000237	0.000282	0.000313	0.000405	0.00185	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000438	0.00258	3 of 48
OXYCHLORDANE	0.000237	0.000282	0.000313	0.000405	0.000404	0.000509	0.000256	0.000279	0.000275	0.000223	0.000331	0.000294	0.000317	0.00071	0 of 48
TOTAL AMP PCBs	0.002	0.00452	0.00295	0.0057	0.00234	0.00656	0.00188	0.00677	0.00282	0.00262	0.00423	0.000923	0.00361	0.0199	48 of 48
TOTAL CHLORDANE	0.00154	0.0024	0.00319	0.00428	0.0039	0.00587	0.00204	0.00361	0.00215	0.00245	0.00391	0.0017	0.00309	0.0123	48 of 48
TOTAL DDT	0.00477	0.00529	0.00235	0.00291	0.00253	0.00501	0.0016	0.000279	0.00272	0.00253	0.00514	0.00282	0.00316	0.0112	40 of 48
TRANS-NONACHLOR	0.000443	0.000773	0.000718	0.00164	0.00129	0.00175	0.000674	0.00217	0.000616	0.00119	0.00127	0.000543	0.00109	0.00516	43 of 48

Semivolatile Organics (ug/L)

Semivolatile Organics (ug/L)													Times		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Detected
1,2,4-TRICHLOROBENZENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
1,2-DICHLOROBENZENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
1,2-DIPHENYLHYDRAZINE (AS AZOBENZENE)	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
1,3-DICHLOROBENZENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
1,4-DICHLOROBENZENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
2,2'-OXYBIS(1-CHLOROPROPANE)	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
2,4,5-TRICHLOROPHENOL	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
2,4,6-TRICHLOROPHENOL	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
2,4-DICHLOROPHENOL	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
2,4-DIMETHYLPHENOL	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
2,4-DINITROPHENOL	12.5	13.2	16.5	21.7	22.4	28.1	14.6	14.3	15.9	12	16.7	17.3	17.1	35.9	0 of 24
2,4-DINITROTOLUENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
2,6-DINITROTOLUENE	4.99	5.29	6.6	8.69	8.97	11.2	5.								

Table A-16. Deer Island Effluent Loadings (Low detection limit analyses), FY12 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
2-METHYL-4,6-DINITROPHENOL	12.5	13.2	16.5	21.7	22.4	28.1	14.6	14.3	15.9	12	16.7	17.3	17.1	35.9	0 of 24
2-METHYLNAPHTHALENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
2-METHYLPHENOL	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
2-NITROANILINE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
2-NITROPHENOL	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
3,3'-DICHLOROBENZIDINE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
3-NITROANILINE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
4-BROMOPHENYL PHENYL ETHER	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
4-CHLORO-3-METHYLPHENOL	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
4-CHLOROANILINE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
4-CHLOROPHENYL PHENYL ETHER	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
4-METHYLPHENOL (INCLUDES 3-METHYLPHENOL)	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
4-NITROANILINE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
4-NITROPHENOL	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
ACENAPHTHENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
ACENAPHTHYLENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
ANILINE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
ANTHRACENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
BENZIDINE	12.5	13.2	16.5	21.7	22.4	28.1	14.6	14.3	15.9	12	16.7	17.3	17.1	35.9	0 of 24
BENZO(A)ANTHRACENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
BENZO(A)PYRENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
BENZO(B)FLUORANTHENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
BENZO(G,H,I)PERYLENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
BENZO(K)FLUORANTHENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
BENZOIC ACID	12.5	13.2	16.5	21.7	22.4	28.1	14.6	14.3	15.9	12	16.7	17.3	17.1	35.9	0 of 24
BENZYL ALCOHOL	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
BIS(2-CHLOROETHOXY)METHANE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
BIS(2-CHLOROETHYL)ETHER	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
BIS(2-ETHYLHEXYL)PHTHALATE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
BUTYLBENZYLPHTHALATE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
CARBAZOLE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
CHRYSENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
DIBENZO(A,H)ANTHRACENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
DIBENZOFURAN	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
DIETHYLPHTHALATE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
DIMETHYLPHTHALATE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
DI-N-BUTYLPHTHALATE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
DI-N-OCTYLPHTHALATE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
FLUORANTHENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
FLUORENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
HEXACHLOROBENZENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
HEXACHLOROBUTADIENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
HEXACHLOROCYCLOPENTADIENE	12.5	13.2	16.5	21.7	22.4	28.1	14.6	14.3	15.9	12	16.7	17.3	17.1	35.9	0 of 24
HEXACHLOROETHANE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
INDENO(1,2,3-CD)PYRENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
ISOPHORONE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
NAPHTHALENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
N-DECANE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
NITROBENZENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
N-NITROSODIMETHYLAMINE (NDMA)	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
N-NITROSODI-N-PROPYLAMINE (NDPA)	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
N-NITROSODIPHENYLAMINE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
N-OCTADECANE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
PENTACHLOROPHENOL	12.5	13.2	16.5	21.7	22.4	28.1	14.6	14.3	15.9	12	16.7	17.3	17.1	35.9	0 of 24
PHENANTHRENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
PHENOL	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24
PYRENE	4.99	5.29	6.6	8.69	8.97	11.2	5.83	5.71	6.35	4.79	6.67	6.93	6.84	14.3	0 of 24



Table A-16. Deer Island Effluent Loadings (Low detection limit analyses), FY12 (cont.)

Polycyclic Aromatic Hydrocarbons (ug/L)	Monthly Loadings (ug/L)												Average	Maximum	Times Detected
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
1-METHYLNAPHTHALENE	0.00728	0.0159	0.0122	0.01	0.00813	0.052	0.00788	0.00737	0.00862	0.00484	0.0131	0.00498	0.0127	0.13	48 of 48
1-METHYLPHENANTHRENE	0.00587	0.0114	0.00783	0.00584	0.00391	0.0329	0.00912	0.0052	0.0116	0.00832	0.00815	0.00509	0.0096	0.0608	46 of 48
2,3,5-TRIMETHYLNAPHTHALENE	0.00402	0.0174	0.0191	0.0073	0.0216	0.0699	0.0219	0.0119	0.0303	0.0177	0.0265	0.013	0.0217	0.15	44 of 48
2,6-DIMETHYLNAPHTHALENE	0.00414	0.00873	0.0252	0.00503	0.00332	0.0326	0.00622	0.00453	0.00844	0.0107	0.0108	0.00426	0.0103	0.0751	45 of 48
2-METHYLNAPHTHALENE	0.0101	0.0167	0.0197	0.0126	0.00749	0.0773	0.0183	0.019	0.0273	0.018	0.0319	0.0116	0.0225	0.17	48 of 48
ACENAPHTHENE	0.00609	0.0137	0.0155	0.0101	0.00326	0.0746	0.00981	0.00856	0.0111	0.0112	0.0217	0.0033	0.0157	0.15	38 of 48
ACENAPHTHYLENE	0.00565	0.0185	0.0113	0.0159	0.00201	0.092	0.00129	0.00154	0.00192	0.00114	0.0017	0.00151	0.0129	0.191	17 of 48
ANTHRACENE	0.00624	0.0124	0.0166	0.0083	0.00902	0.0538	0.00681	0.0045	0.00836	0.00871	0.00942	0.00818	0.0127	0.105	47 of 48
BENZO(A)ANTHRACENE	0.0108	0.0214	0.0247	0.0128	0.0146	0.0774	0.00968	0.00824	0.0185	0.0181	0.0133	0.0131	0.0202	0.169	48 of 48
BENZO(A)PYRENE	0.00877	0.0202	0.0213	0.0107	0.0137	0.0772	0.00755	0.0072	0.0149	0.0133	0.0107	0.0116	0.0181	0.169	48 of 48
BENZO(B)FLUORANTHENE	0.00987	0.0237	0.0255	0.0113	0.0164	0.0813	0.00912	0.0108	0.022	0.0142	0.0145	0.0152	0.0212	0.176	48 of 48
BENZO(E)PYRENE	0.00948	0.0152	0.00715	0.00995	0.00904	0.0577	0.00545	0.00609	0.0129	0.00969	0.0102	0.00825	0.0134	0.126	48 of 48
BENZO(G,H,I)PERYLENE	0.00737	0.0116	0.0197	0.00754	0.0146	0.0506	0.0063	0.00511	0.0102	0.00717	0.00929	0.0109	0.0134	0.105	47 of 48
BENZO(K)FLUORANTHENE	0.00826	0.0179	0.0228	0.0114	0.0131	0.0665	0.00797	0.00858	0.015	0.0126	0.0105	0.0106	0.0171	0.148	48 of 48
BENZOTHAZOLE	0.443	0.18	0.256	0.223	0.102	0.401	0.149	0.125	0.11	0.125	0.124	0.268	0.209	1.04	48 of 48
BIPHENYL	0.00563	0.016	0.0164	0.0101	0.00341	0.0738	0.00473	0.00357	0.00408	0.0043	0.00617	0.00336	0.0126	0.15	43 of 48
C1-CHRYSENES	0.00391	0.0096	0.00478	0.00506	0.0046	0.0333	0.00379	0.00371	0.00684	0.00636	0.00658	0.00552	0.00784	0.0682	48 of 48
C1-DIBENZOTHIOPHENES	0.0539	0.028	0.115	0.0121	0.00527	0.0953	0.00805	0.012	0.0492	0.0179	0.0166	0.0217	0.0363	0.303	46 of 48
C1-FLUORANTHENES/PYRENES	0.0242	0.0405	0.0291	0.0269	0.0253	0.106	0.0241	0.0156	0.0305	0.0285	0.0274	0.0283	0.0339	0.218	48 of 48
C1-FLUORENES	0.101	0.0449	0.143	0.0367	0.0349	0.144	0.0486	0.0337	0.0443	0.0281	0.0379	0.0247	0.0602	0.264	47 of 48
C1-NAPHTHALENES	0.0127	0.0261	0.0266	0.0182	0.0129	0.104	0.0205	0.0182	0.0255	0.019	0.0314	0.0153	0.0275	0.25	48 of 48
C1-PHENANTHRENES/ANTHRACENES	0.0249	0.0529	0.0394	0.0327	0.0281	0.165	0.0478	0.0315	0.0561	0.0442	0.0476	0.0345	0.0504	0.311	48 of 48
C2-CHRYSENES	0.00128	0.0014	0.00166	0.00185	0.00201	0.00265	0.00129	0.00154	0.00145	0.00114	0.0017	0.00151	0.00162	0.00392	0 of 48
C2-DIBENZOTHIOPHENES	0.0226	0.0547	0.032	0.0246	0.019	0.0842	0.0124	0.0086	0.0285	0.0249	0.0298	0.0262	0.0306	0.15	43 of 48
C2-FLUORANTHENES/PYRENES	0.0141	0.0325	0.0192	0.0175	0.0198	0.0696	0.0136	0.00154	0.0123	0.0146	0.0154	0.0161	0.0205	0.139	41 of 48
C2-FLUORENES	0.0643	0.0875	0.0777	0.0667	0.071	0.277	0.0147	0.0407	0.0633	0.0551	0.0651	0.0477	0.0776	0.678	45 of 48
C2-NAPHTHALENES	0.0398	0.0383	0.0493	0.0268	0.0165	0.171	0.0377	0.0273	0.0423	0.0354	0.0491	0.0224	0.0463	0.397	48 of 48
C2-PHENANTHRENES/ANTHRACENES	0.05	0.0891	0.0683	0.051	0.0689	0.198	0.0649	0.0394	0.0739	0.0625	0.0566	0.0478	0.0725	0.37	48 of 48
C3-CHRYSENES	0.00128	0.0014	0.00166	0.00185	0.00201	0.00265	0.00129	0.00154	0.00145	0.00114	0.0017	0.00151	0.00162	0.00392	0 of 48
C3-DIBENZOTHIOPHENES	0.0168	0.0428	0.0132	0.00185	0.00201	0.00265	0.00129	0.00154	0.013	0.0143	0.0146	0.0104	0.0112	0.0581	17 of 48
C3-FLUORANTHENES/PYRENES	0.00128	0.0014	0.00166	0.00185	0.00201	0.00265	0.00129	0.00154	0.00145	0.00114	0.0017	0.00151	0.00162	0.00392	0 of 48
C3-FLUORENES	0.0749	0.12	0.0782	0.0798	0.0945	0.226	0.0189	0.00154	0.0751	0.0549	0.0017	0.0345	0.0717	0.417	34 of 48
C3-NAPHTHALENES	0.0915	0.101	0.089	0.0561	0.0432	0.359	0.0942	0.0484	0.0922	0.0695	0.139	0.0543	0.103	0.833	48 of 48
C3-PHENANTHRENES/ANTHRACENES	0.0468	0.0926	0.0593	0.0456	0.0673	0.206	0.0791	0.067	0.097	0.0836	0.0435	0.0697	0.0798	0.403	48 of 48
C4-CHRYSENES	0.00128	0.0014	0.00166	0.00185	0.00201	0.00265	0.00129	0.00154	0.00145	0.00114	0.0017	0.00151	0.00162	0.00392	0 of 48
C4-NAPHTHALENES	0.0585	0.122	0.167	0.065	0.0901	0.3	0.131	0.0663	0.0987	0.0775	0.102	0.0901	0.114	0.531	48 of 48
C4-PHENANTHRENES/ANTHRACENES	0.00632	0.0245	0.00166	0.00185	0.00201	0.0526	0.00129	0.00154	0.00145	0.00114	0.0017	0.00151	0.00813	0.108	10 of 48
CHRYSENE	0.0152	0.0307	0.0307	0.0199	0.0195	0.103	0.0128	0.0123	0.0263	0.0209	0.0199	0.02	0.0276	0.227	48 of 48
DIBENZO(A,H)ANTHRACENE	0.00128	0.00295	0.0123	0.00185	0.00582	0.0101	0.00254	0.00188	0.00259	0.00114	0.0017	0.00402	0.00401	0.0189	18 of 48
DIBENZOFURAN	0.0127	0.0228	0.0288	0.0163	0.012	0.076	0.0202	0.00991	0.0179	0.0158	0.0247	0.0152	0.0227	0.141	48 of 48
DIBENZOTHIOPHENE	0.00291	0.0101	0.0076	0.00741	0.00274	0.0316	0.0103	0.00752	0.00941	0.00733	0.0104	0.00792	0.00961	0.0582	42 of 48
FLUORANTHENE	0.0446	0.0772	0.0618	0.05	0.0422	0.3	0.0426	0.0367	0.0725	0.0681	0.0655	0.0581	0.0766	0.616	48 of 48
FLUORENE	0.0139	0.0267	0.031	0.0161	0.00897	0.0908	0.0215	0.012	0.0218	0.0159	0.0265	0.0189	0.0253	0.168	47 of 48
INDENO(1,2,3-CD)PYRENE	0.00548	0.014	0.0197	0.00649	0.0113	0.0563	0.0055	0.00502	0.0105	0.0067	0.00833	0.0102	0.0133	0.115	48 of 48
NAPHTHALENE	0.022	0.0439	0.0459	0.0314	0.0151	0.178	0.0325	0.0328	0.038	0.0197	0.0599	0.0146	0.0445	0.342	48 of 48
PERYLENE	0.00128	0.00305	0.00166	0.00185	0.00201	0.0163	0.00129	0.00193	0.0018	0.0023	0.0017	0.00151	0.00306	0.0344	9 of 48
PHENANTHRENE	0.0191	0.0409	0.0348	0.0259	0.0184	0.217	0.0288	0.024	0.0433	0.0416	0.0507	0.0294	0.0478	0.442	48 of 48
PYRENE	0.0611	0.0887	0.0786	0.0569	0.0586	0.249	0.0486	0.0414	0.072	0.0666	0.0754	0.0615	0.0798	0.502	48 of 48

Notes

DEC is the now-defunct Detailed Effluent Characterization project, which includes low-detection limit methods not approved by the EPA. DEC sampling is now carried out under the NP-EM project.

~: No data or no samples taken

Results in **bold** indicate one or more detects that month

Yearly averages are calculated from individual results collected during the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

## **Appendix B. Cottage Farm CSO Facility**

Table B-1 Cottage Farm CSO Facility Operations Summary, FY12

Table B-2 Cottage Farm Effluent Characterization, FY12

Table B-3 Cottage Farm Effluent Loadings, FY12

**Table B-1. Cottage Farm CSO Facility Operations Summary, FY12**

Date	Rainfall (inches)	Discharge Duration (hrs)	Total Volume (MG)	Peak Flow (MG)	pH (SU)	EFFLUENT			Chlorine residual (mg/L)	
						BOD (mg/L)	TSS (mg/L)	Fecal coliform (col/100mL)		
<b>July</b>										
	NA									
<b>August</b>										
7	1.06	1	1.9	49.1						
10	0.73	4.5	14.5	130	6.71	38	112	580	<0.02	
							138	4400	<0.02	
							116	3700	<0.02	
27	0.77	2.3	7.3	120						
28	0.91	1.7	4.2	69						
<b>September</b>										
8	1.17	3.2	10.4	105						
<b>October</b>										
4	1.12	1.5	2.8	99						
<b>November</b>										
	NA									
<b>December</b>										
	NA									
<b>January</b>										
	NA									
<b>February</b>										
	NA									
<b>March</b>										
	NA									
<b>April</b>										
23	1.48	4.3	11.3	87	6.5	37	85	171	<0.02	
							70	54	<0.02	
							63	36	<0.02	
							64	18	<0.02	
							63	<10	<0.02	
							67	72	<0.02	
							50	<10	<0.02	
							36	<10	<0.02	
<b>May</b>										
	NA									
<b>June</b>										
	NA									
<b>Total</b>		18.5	52.4							
<b>Average</b>		1.03	2.64	7.49	94.16	6.6	37.50	92.13	159	<0.02
<b>Minimum</b>		0.73	1.00	1.90	49	6.5	37.00	62.25	12	<0.02
<b>Maximum*</b>		1.48	4.50	14.50	130	6.7	38.00	122.00	2114	<0.02

**Number of CSO events**

7

NA = No activation

† = Flow data taken from 15 minute discharge data from meter tag #

\* = Per the NPDES permit, maximum chlorine residual is the highest single sample.

Boxed dates indicate a single event spread out over multiple days.

**Table B-2. Cottage Farm CSO Facility Effluent Characterization, FY12**

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
<b>Metals (ug/L)</b>															
ALUMINUM	NA	<b>1350</b>	~	~	NA	NA	NA	NA	NA	<b>619</b>	NA	NA	984.5	1350	2 of 2
CADMIUM	NA	<b>0.27</b>	~	~	NA	NA	NA	NA	NA	<b>0.178</b>	NA	NA	0.224	0.27	3 of 4
CALCIUM	NA	<b>10500</b>	~	~	NA	NA	NA	NA	NA	<b>8450</b>	NA	NA	9475	10500	2 of 2
CHROMIUM	NA	<b>5.24</b>	~	~	NA	NA	NA	NA	NA	<b>2</b>	NA	NA	3.62	5.24	1 of 2
COPPER	NA	<b>51.6</b>	~	~	NA	NA	NA	NA	NA	<b>36.9</b>	NA	NA	44.3	51.6	2 of 2
LEAD	NA	<b>69.2</b>	~	~	NA	NA	NA	NA	NA	<b>12.5</b>	NA	NA	40.9	69.2	1 of 2
MAGNESIUM	NA	<b>2000</b>	~	~	NA	NA	NA	NA	NA	<b>1550</b>	NA	NA	1775	2000	2 of 2
MERCURY	NA	<b>0.182</b>	~	~	NA	NA	NA	NA	NA	<b>0.266</b>	NA	NA	0.224	0.266	2 of 2
NICKEL	NA	<b>3.43</b>	~	~	NA	NA	NA	NA	NA	<b>2.13</b>	NA	NA	2.78	3.43	2 of 3
SILVER	NA	<b>0.275</b>	~	~	NA	NA	NA	NA	NA	~	NA	NA	0.275	0.275	1 of 1
ZINC	NA	<b>111</b>	~	~	NA	NA	NA	NA	NA	<b>82.7</b>	NA	NA	96.9	111	2 of 2
<b>Surfactants and Total Organic Carbon (mg/L)</b>															
SURFACTANTS	NA	<b>0.841</b>	~	~	NA	NA	NA	NA	NA	<b>0.724</b>	NA	NA	0.783	0.841	2 of 2
TOTAL ORGANIC CARBON	NA	<b>11.9</b>	~	~	NA	NA	NA	NA	NA	<b>12.3</b>	NA	NA	12.1	12.3	2 of 2

**Table B-3. Cottage Farm CSO Facility Effluent Loadings, FY12**

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
<b>Metals (lbs/day)</b>															
ALUMINUM	NA	<b>163.3</b>	~	~	NA	NA	NA	NA	NA	<b>58.3</b>	NA	NA	110.80	163.26	2 of 2
CADMIUM	NA	<b>0.033</b>	~	~	NA	NA	NA	NA	NA	<b>0.017</b>	NA	NA	0.02	0.03	3 of 4
CALCIUM	NA	<b>1270</b>	~	~	NA	NA	NA	NA	NA	<b>796.3</b>	NA	NA	1033.05	1269.77	2 of 2
CHROMIUM	NA	<b>0.634</b>	~	~	NA	NA	NA	NA	NA	<b>0.19</b>	NA	NA	0.41	0.63	1 of 2
COPPER	NA	<b>6.24</b>	~	~	NA	NA	NA	NA	NA	<b>3.48</b>	NA	NA	4.86	6.24	2 of 2
LEAD	NA	<b>8.37</b>	~	~	NA	NA	NA	NA	NA	<b>1.18</b>	NA	NA	4.77	8.37	1 of 2
MAGNESIUM	NA	<b>241.9</b>	~	~	NA	NA	NA	NA	NA	<b>146.1</b>	NA	NA	193.97	241.86	2 of 2
MERCURY	NA	<b>0.022</b>	~	~	NA	NA	NA	NA	NA	<b>0.025</b>	NA	NA	0.02	0.03	2 of 2
NICKEL	NA	<b>0.415</b>	~	~	NA	NA	NA	NA	NA	<b>0.201</b>	NA	NA	0.31	0.41	2 of 3
SILVER	NA	<b>0.033</b>	~	~	NA	NA	NA	NA	NA	~	NA	NA	0.03	0.03	1 of 1
ZINC	NA	<b>13.4</b>	~	~	NA	NA	NA	NA	NA	<b>7.79</b>	NA	NA	10.61	13.42	2 of 2
<b>Surfactants and Total Organic Carbon (lbs/day)</b>															
SURFACTANTS	NA	<b>101.7</b>	~	~	NA	NA	NA	NA	NA	<b>68.2</b>	NA	NA	84.97	101.70	2 of 2
TOTAL ORGANIC CARBON	NA	<b>1439</b>	~	~	NA	NA	NA	NA	NA	<b>1159</b>	NA	NA	1299.12	1439.07	2 of 2

NA = No activation

~ = Activation that month, but no data or no sample taken

Results in bold indicate one or more detects in the month.

Yearly averages are calculated from individual results collected in the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

## **Appendix C. Prison Point CSO Facility**

Table C-1	Prison Point CSO Facility Operations Summary, FY12
Table C-2	Prison Point Effluent Characterization, FY12
Table C-3	Prison Point Effluent Loadings, FY12

**Table C-1. Prison Point CSO Facility Operations Summary, FY12**

Date	Rainfall (inches)	Discharge Duration (hrs)	Total Volume (MG)	Peak Flow (MG)	pH (SU)	EFFLUENT			
						BOD (mg/L)	TSS (mg/L)	Fecal coliform (col/100mL)	Chlorine residual (mg/L)
<b>July</b>									
	NA								
<b>August</b>									
2	0.6	2.8	5.5	84					
7	1.06	5.7	19	280					
9	1.21	6.7	34	207					
15	1.43	4.2	9	73					
19	0.03	2.5	9.4	155					
27	0.77	7	31	322					
28	0.91	9.8	25	184					
<b>September</b>									
8	1.17	5.5	30.7	227	6.44	15.6	100	<10	1.51
							47	3200	<0.02
							33	2200	0.02
							28	198	0.02
24	0.43	2.4	8	131	7.81	15.2	327	135	<0.02
							67	54	<0.02
29	0.94	3.7	15	174					
<b>October</b>									
4	1.12	2.4	12.9	229					
13	0.93	4.5	14.6	114					
19	1.17	4.3	15	144	6.43	13.8	98	2500	<0.02
							108	230	<0.02
							80	18	0.02
							42	18	<0.02
20	0.47	3.3	10.8	203			50	330	0.06
							38	126	<0.02
							66	171	<0.02
<b>November</b>									
10	1.05	1.6	4.1	110					
16	0.78	2.4	5.7	94.8	6.3	22	78		<0.02
							90		0.02
23	1.46	6.3	25.3	135.9	6.5	14	65	694	<0.02
							59	180	<0.02
							21	153	<0.02
							44	330	<0.02
							27	153	<0.02
							60	280	<0.02
30	0.7	3.5	11.3	81.6					
<b>December</b>									
7	1.6	2	31.1	80					
8	0.89	7.3							
<b>January</b>									
12	0.92	4.3	11.9	137					
<b>February</b>									
	NA								
<b>March</b>									
	NA								
<b>April</b>									
23	1.48	7.3	44.4	258					
<b>May</b>									
10	0.85	4.8	11	141					
<b>June</b>									
2	1.13	2.4	9.2	148					
8	0.31	1.7	4.1	129.5					
23	1.19	2.2	8.3	277					
25	0.93	6.8	22.9	220					
<b>Total</b>		117.4	429.2						
<b>Average</b>	0.95	4.35	16.51	166.92	6.7	16.12	85.39	157	0.08
<b>Minimum</b>	0.03	1.60	4.10	73.00	6.3	13.80	46.00	85	<0.02
<b>Maximum*</b>	1.60	9.80	44.40	322.00	7.8	22.00	197.00	254	1.51
<b>Number of CSO events</b>			26						

NA = No activation

\* = Per the NPDES permit, maximum chlorine residual is the highest single sample.

Boxed dates indicate a single event spread out over multiple days.

**Table C-2. Prison Point CSO Facility Effluent Characterization, FY12**

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
<b>Metals (ug/L)</b>															
ALUMINUM	NA	~	<b>1085</b>	<b>793</b>	<b>866</b>	~	~	NA	NA	~	~	~	957	1120	4 of 4
CADMIUM	NA	~	<b>0.429</b>	<b>0.714</b>	<b>0.404</b>	~	~	NA	NA	~	~	~	0.494	0.714	4 of 4
CHROMIUM	NA	~	<b>9.99</b>	<b>6.69</b>	<b>8.28</b>	~	~	NA	NA	~	~	~	8.74	10.5	4 of 4
COPPER	NA	~	<b>37.7</b>	<b>32.6</b>	<b>55.3</b>	~	~	NA	NA	~	~	~	40.8	55.3	4 of 4
LEAD	NA	~	<b>48.5</b>	12.5	<b>31.3</b>	~	~	NA	NA	~	~	~	35.2	52.4	3 of 4
MAGNESIUM	NA	~	<b>1340</b>	<b>1650</b>	<b>3310</b>	~	~	NA	NA	~	~	~	1910	3310	4 of 4
MERCURY	NA	~	<b>0.102</b>	<b>0.048</b>	<b>0.081</b>	~	~	NA	NA	~	~	~	0.083	0.110	4 of 4
NICKEL	NA	~	<b>5.05</b>	1.50	<b>4.40</b>	~	~	NA	NA	~	~	~	4.00	6.72	3 of 4
ZINC	NA	~	<b>117</b>	<b>101</b>	<b>152</b>	~	~	NA	NA	~	~	~	122	152	4 of 4
<b>Surfactants and Total Organic Carbon (mg/L)</b>															
SURFACTANTS	NA	~	<b>0.488</b>	<b>0.640</b>	<b>0.537</b>	~	~	NA	NA	~	~	~	0.538	0.711	4 of 4
TOTAL ORGANIC CARBON	NA	~	<b>6.97</b>	<b>10.7</b>	<b>18.0</b>	~	~	NA	NA	~	~	~	10.7	18.0	4 of 4

**Table C-3. Prison Point CSO Facility Effluent Loadings, FY12**

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
<b>Metals (lbs/day)</b>															
ALUMINUM	NA	~	<b>172</b>	<b>99.2</b>	<b>41.2</b>	~	~	NA	NA	~	~	~	121	269	4 of 4
CADMIUM	NA	~	<b>0.064</b>	<b>0.089</b>	<b>0.019</b>	~	~	NA	NA	~	~	~	0.059	0.096	4 of 4
CHROMIUM	NA	~	<b>1.66</b>	<b>0.837</b>	<b>0.394</b>	~	~	NA	NA	~	~	~	1.14	2.69	4 of 4
COPPER	NA	~	<b>6.39</b>	<b>4.08</b>	<b>2.63</b>	~	~	NA	NA	~	~	~	4.87	10.5	4 of 4
LEAD	NA	~	<b>8.20</b>	1.56	<b>1.49</b>	~	~	NA	NA	~	~	~	4.86	13.4	3 of 4
MAGNESIUM	NA	~	<b>218</b>	<b>206</b>	<b>157</b>	~	~	NA	NA	~	~	~	200	348	4 of 4
MERCURY	NA	~	<b>0.017</b>	<b>0.006</b>	<b>0.004</b>	~	~	NA	NA	~	~	~	0.011	0.028	4 of 4
NICKEL	NA	~	<b>0.657</b>	0.19	<b>0.209</b>	~	~	NA	NA	~	~	~	0.428	0.865	3 of 4
ZINC	NA	~	<b>18.2</b>	<b>12.6</b>	<b>7.23</b>	~	~	NA	NA	~	~	~	14.1	28.2	4 of 4
<b>Surfactants and Total Organic Carbon (lbs/day)</b>															
SURFACTANTS	NA	~	<b>57.6</b>	<b>80.1</b>	<b>25.5</b>	~	~	NA	NA	~	~	~	55.2	80.1	4 of 4
TOTAL ORGANIC CARBON	NA	~	<b>1138</b>	<b>1339</b>	<b>856</b>	~	~	NA	NA	~	~	~	1117	1820	4 of 4

NA = No activation

~ = Activation that month, but no data or no sample taken

Results in bold indicate one or more detects in the month.

Yearly averages are calculated from individual results collected in the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

## **Appendix D. Somerville Marginal CSO Facility**

Table D-1	Somerville Marginal CSO Facility Operations Summary, FY12
Table D-2	Somerville Marginal Effluent Characterization, FY12
Table D-3	Somerville Marginal Effluent Loadings, FY12



Table D-1. Somerville Marginal CSO Facility Operations Summary, FY12

Date	Rainfall (inches)	Discharge Duration (hrs)	Total Volume (MG)	Peak Flow (MG)	pH (SU)	EFFLUENT			
						BOD (mg/L)	TSS (mg/L)	Fecal coliform (col/100mL)	Chlorine residual (mg/L)
<b>July</b>									
13	0.45	0.9	0.7	49					
14	0.72	1.9	0.7	26.5					
<b>August</b>									
2	0.6	5.7	1.7	31					
7	1.06	2.5	3.8	113					
8	0.29	0.6	0.5	47					
9	1.21	4.6	12.9	150					
15	1.43	0.7	0.7	46.4	5.98		63	<10	
19	0.03	0.7	0.69	57					
22	0.59	1	1.1	89.4					
27	0.77	4.7	8.3	150					
28	0.91	11.6	4.8	27.8					
<b>September</b>									
6	0.68	1	0.4	ND					
8	1.17	5.6	7.1	103.3					
23	0.47	1	0.4	17					
24	0.43	4.4	2.2	44					
29	0.94	5.2	4.7	78					
<b>October</b>									
1	0.34	0.8	0.5	21					
4	1.12	6.1	2.2	42.1					
13	0.93	3.1	2.9	50					
14	0.58	2.5	1.8	38					
19	1.17	7.1	4	30.5					
20	0.47	2.4	1.4	28.8					
27	1.02	0.8	0.8	4.9					
<b>November</b>									
10	1.05	2.4	0.9	22.6					
16	0.78	1.8	0.8	54.7	6.7		59		<0.02
23	1.46	6.6	2.6	42	8.6	13	37	<10	2.08
							33	<10	<0.02
							29	<10	<0.02
							15	9	<0.02
							33		<0.02
							29		<0.02
30	0.7	1.8	1.6	80					
<b>December</b>									
7	1.6	2.9	7.8	43.7					
8	0.89	5.7							
22	0.58	1.1	0.6	35.9					
<b>January</b>									
12	0.92	2	1.8	41	7.62	32	154	72	<0.03
							68	<10	<0.03
							50	<10	1.1
							147	45	4.8
27	0.89	0.6	0.3	33.4					
<b>February</b>									
	NA								
<b>March</b>									
	NA								
<b>April</b>									
23	1.48	7.4	9.7	76	6.8	9	125	<10	0.11
							61	<10	<0.02
							46	<10	<0.02
							61	<10	<0.02
							119	<10	<0.02
							123	<10	<0.02
							141	9	<0.02
							95	<10	<0.02
							54	<10	<0.02
							64	<10	<0.02
							73	9	<0.02
							48	<10	<0.02
							37	<10	<0.02
							24	9	<0.02
<b>May</b>									
10	0.85	5.9	3.1	36.6					
14	0.09	1.8	0.1	23					
29	0.17	0.9	0.1	ND					
<b>June</b>									
2	1.13	1.9	1.6	64					
8	0.31	1.3	0.07	14.2					
23	1.19	2.6	2.9	93.8					
25	0.93	3.9	1.22	36					
<b>Total</b>		125.5	99.48						
<b>Average</b>	0.81	3.14	2.55	52.48	7.1	18.00	66.52	2	0.47
<b>Minimum</b>	0.03	0.60	0.07	4.90	6.0	9.00	29.33	<10	<0.02
<b>Maximum*</b>	1.60	11.60	12.90	150.00	8.6	32.00	104.75	8	4.80
<b>Number of CSO events</b>			39						

NA = No activation, ND = No data

\* = Per the NPDES permit, maximum chlorine residual is the highest single sample.

Boxed dates indicate a single event spread out over multiple days.

**Table D-2. Somerville Marginal CSO Facility Effluent Characterization, FY12**

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
<b>Metals (ug/L)</b>															
ALUMINUM	~	~	~	~	<b>652</b>	~	<b>1790</b>	NA	NA	~	~	~	1221	1790	2 of 2
CADMIUM	~	~	~	~	<b>0.091</b>	~	~	NA	NA	~	~	~	0.091	0.091	1 of 1
CALCIUM	~	~	~	~	<b>5000</b>	~	<b>6640</b>	NA	NA	~	~	~	5820	6640	2 of 2
CHROMIUM	~	~	~	~	<b>5.51</b>	~	<b>13.8</b>	NA	NA	~	~	~	9.66	13.8	2 of 2
COPPER	~	~	~	~	5	~	<b>51.9</b>	NA	NA	~	~	~	28.5	51.9	1 of 2
LEAD	~	~	~	~	<b>10.6</b>	~	<b>49.3</b>	NA	NA	~	~	~	30.0	49.3	2 of 2
MAGNESIUM	~	~	~	~	<b>1110</b>	~	<b>1800</b>	NA	NA	~	~	~	1455	1800	2 of 2
MERCURY	~	~	~	~	<b>0.033</b>	~	<b>0.578</b>	NA	NA	~	~	~	0.306	0.578	2 of 2
NICKEL	~	~	~	~	<b>2.01</b>	~	<b>5.16</b>	NA	NA	~	~	~	3.59	5.16	2 of 2
ZINC	~	~	~	~	<b>44.7</b>	~	<b>172</b>	NA	NA	~	~	~	108	172	2 of 2
<b>Surfactants and Total Organic Carbon (mg/L)</b>															
SURFACTANTS	~	~	~	~	0.003	~	<b>0.540</b>	NA	NA	~	~	~	0.272	0.54	1 of 2
TOTAL ORGANIC CARBON	~	~	~	~	<b>8.95</b>	~	<b>20.5</b>	NA	NA	~	~	~	14.7	20.5	2 of 2

**Table D-3. Somerville Marginal CSO Facility Effluent Loadings, FY12**

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
<b>Metals (lbs/day)</b>															
ALUMINUM	~	~	~	~	<b>14.1</b>	~	<b>26.9</b>	NA	NA	~	~	~	20.5	26.9	2 of 2
CADMIUM	~	~	~	~	<b>0.002</b>	~	~	NA	NA	~	~	~	0.002	0.002	1 of 1
CALCIUM	~	~	~	~	<b>108</b>	~	<b>99.7</b>	NA	NA	~	~	~	104	108	2 of 2
CHROMIUM	~	~	~	~	<b>0.119</b>	~	<b>0.207</b>	NA	NA	~	~	~	0.163	0.207	2 of 2
COPPER	~	~	~	~	0.11	~	<b>0.779</b>	NA	NA	~	~	~	0.444	0.779	1 of 2
LEAD	~	~	~	~	<b>0.230</b>	~	<b>0.740</b>	NA	NA	~	~	~	0.485	0.74	2 of 2
MAGNESIUM	~	~	~	~	<b>24.1</b>	~	<b>27.0</b>	NA	NA	~	~	~	25.5	27.0	2 of 2
MERCURY	~	~	~	~	<b>0.001</b>	~	<b>0.009</b>	NA	NA	~	~	~	0.005	0.009	2 of 2
NICKEL	~	~	~	~	<b>0.044</b>	~	<b>0.077</b>	NA	NA	~	~	~	0.061	0.077	2 of 2
ZINC	~	~	~	~	<b>0.969</b>	~	<b>2.58</b>	NA	NA	~	~	~	1.78	2.58	2 of 2
<b>Surfactants and Total Organic Carbon (lbs/day)</b>															
SURFACTANTS	~	~	~	~	0.07	~	<b>8.11</b>	NA	NA	~	~	~	4.09	8.11	1 of 2
TOTAL ORGANIC CARBON	~	~	~	~	<b>194</b>	~	<b>308</b>	NA	NA	~	~	~	251	308	2 of 2

NA = No activation

~ = Activation that month, but no data or no sample taken

Results in bold indicate one or more detects in the month.

Yearly averages are calculated from individual results collected in the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

## **Appendix E. Union Park CSO Facility**

Table E-1	Union Park CSO Facility Operations Summary, FY12
Table E-2	Union Park Effluent Characterization, FY12
Table E-3	Union Park Effluent Loadings, FY12

**Table E-1. Union Park CSO Facility Operations Summary, FY12**

Date	Rainfall (inches)	Discharge Duration (hrs)	Total Volume (MG)	Peak Flow (MG)	pH (SU)	BOD (mg/L)	EFFLUENT			Chlorine residual (mg/L)
							TSS (mg/L)	Fecal coliform (col/100mL)	Enterococci (col/100mL)	
<b>July</b>										
	NA									
<b>August</b>										
7	1.06	1.4	1.3	89.4	5.39	41	40	20	90	0.01
					5.93			20	60	0.1
9	1.21	4.7	7.8	97.3	6.59	19	40	50	80	0.01
					5.46			73	30	0.01
					5.91			20	10	0.01
					5.8			70	10	0.01
19	0.03	1.2	0.5	28.7						
27	0.77	0.7	0.3	19.2						
28	0.91	2.4	1.6	63						
<b>September</b>										
8	1.17	2.2	4.1	64.9		27	45	<10	<10	0
								<10	<10	0
<b>October</b>										
4	1.12	2.5	2.3	58.7						
20	0.47	2.6	1.7	29.5						
<b>November</b>										
23	1.46	3.4	2.6	29.6						
<b>December</b>										
8	0.89	3	2.3	30.5						
<b>January</b>										
	NA									
<b>February</b>										
	NA									
<b>March</b>										
	NA									
<b>April</b>										
23	1.48	5.1	9.9	73.2						
<b>May</b>										
	NA									
<b>June</b>										
25	0.93	2.2	4.7	258.9	5.6	24	60	34	<10	0.01
					5.9		62	29	<10	0.01
<b>Total</b>		31.4	39.1							
<b>Average</b>		0.96	3.26	70.24	5.8	27.75	46.50	13	6	0.02
<b>Minimum</b>		0.03	0.30	19.20	5.7	19	40	<10	<10	0
<b>Maximum*</b>		1.48	9.90	258.90	5.9	41.00	61.00	48	73	0.1
<b>Number of CSO events</b>		12								

NA = No activation

\* = Per the NPDES permit, maximum chlorine residual is the highest single sample.

Boxed dates indicate a single event spread out over multiple days.

Table E-2. Union Park CSO Facility Effluent Characterization, FY12

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
<b>Metals (ug/L)</b>															
ALUMINUM	NA	<b>580</b>	<b>930</b>	~	~	~	NA	NA	NA	~	NA	~	755	930	2 of 2
ANTIMONY	NA	1.0	1.0	~	~	~	NA	NA	NA	~	NA	~	1.0	1.0	0 of 2
ARSENIC	NA	<b>3.0</b>	<b>4.0</b>	~	~	~	NA	NA	NA	~	NA	~	3.5	4.0	2 of 2
BERYLLIUM	NA	2.5	1.0	~	~	~	NA	NA	NA	~	NA	~	1.75	2.5	0 of 2
CADMIUM	NA	0.25	0.25	~	~	~	NA	NA	NA	~	NA	~	0.25	0.25	0 of 4
CALCIUM	NA	<b>9.3</b>	<b>6800</b>	~	~	~	NA	NA	NA	~	NA	~	3405	6800	2 of 2
CHROMIUM	NA	<b>3.0</b>	<b>4.0</b>	~	~	~	NA	NA	NA	~	NA	~	3.5	4.0	4 of 4
COPPER	NA	<b>44.0</b>	<b>32.5</b>	~	~	~	NA	NA	NA	~	NA	~	38.3	44.0	4 of 4
LEAD	NA	<b>26.5</b>	<b>23.0</b>	~	~	~	NA	NA	NA	~	NA	~	24.8	26.5	4 of 4
MAGNESIUM	NA	<b>12.0</b>	<b>2900</b>	~	~	~	NA	NA	NA	~	NA	~	1456	2900	2 of 2
MERCURY	NA	0.005	<b>0.013</b>	~	~	~	NA	NA	NA	~	NA	~	0.009	0.013	1 of 2
NICKEL	NA	1.0	<b>2.0</b>	~	~	~	NA	NA	NA	~	NA	~	1.5	2.0	2 of 4
SELENIUM	NA	1.0	1.0	~	~	~	NA	NA	NA	~	NA	~	1.0	1.0	0 of 2
SILVER	NA	0.5	0.5	~	~	~	NA	NA	NA	~	NA	~	0.5	0.5	0 of 2
THALLIUM	NA	0.5	0.5	~	~	~	NA	NA	NA	~	NA	~	0.5	0.5	0 of 2
ZINC	NA	<b>61.5</b>	<b>51.0</b>	~	~	~	NA	NA	NA	~	NA	~	56.3	61.5	4 of 4
<b>Surfactants and Total Organic Carbon (mg/L)</b>															
SURFACTANTS	NA	<b>0.48</b>	<b>0.079</b>	~	~	~	NA	NA	NA	~	NA	~	0.28	0.48	3 of 3
TOTAL ORGANIC CARBON	NA	<b>6.1</b>	<b>6.5</b>	~	~	~	NA	NA	NA	~	NA	~	6.3	6.5	2 of 2

Table E-3. Union Park CSO Facility Effluent Loadings, FY12

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
<b>Metals (lbs/day)</b>															
ALUMINUM	NA	<b>37.7</b>	<b>31.8</b>	~	~	~	NA	NA	NA	~	NA	~	34.8	37.7	2 of 2
ANTIMONY	NA	0.065	0.034	~	~	~	NA	NA	NA	~	NA	~	0.050	0.065	0 of 2
ARSENIC	NA	<b>0.195</b>	<b>0.137</b>	~	~	~	NA	NA	NA	~	NA	~	0.166	0.195	2 of 2
BERYLLIUM	NA	0.163	0.034	~	~	~	NA	NA	NA	~	NA	~	0.098	0.163	0 of 2
CADMIUM	NA	0.016	0.009	~	~	~	NA	NA	NA	~	NA	~	0.012	0.016	0 of 4
CALCIUM	NA	<b>0.605</b>	<b>233</b>	~	~	~	NA	NA	NA	~	NA	~	117	233	2 of 2
CHROMIUM	NA	<b>0.195</b>	<b>0.137</b>	~	~	~	NA	NA	NA	~	NA	~	0.166	0.195	4 of 4
COPPER	NA	<b>2.86</b>	<b>1.11</b>	~	~	~	NA	NA	NA	~	NA	~	1.99	2.86	4 of 4
LEAD	NA	<b>1.72</b>	<b>0.786</b>	~	~	~	NA	NA	NA	~	NA	~	1.26	1.72	4 of 4
MAGNESIUM	NA	<b>0.781</b>	<b>99.2</b>	~	~	~	NA	NA	NA	~	NA	~	50.0	99.2	2 of 2
MERCURY	NA	0.0003	<b>0.0004</b>	~	~	~	NA	NA	NA	~	NA	~	0.0004	0.0004	1 of 2
NICKEL	NA	0.065	<b>0.068</b>	~	~	~	NA	NA	NA	~	NA	~	0.067	0.068	2 of 4
SELENIUM	NA	0.065	0.034	~	~	~	NA	NA	NA	~	NA	~	0.050	0.065	0 of 2
SILVER	NA	0.033	0.017	~	~	~	NA	NA	NA	~	NA	~	0.025	0.033	0 of 2
THALLIUM	NA	0.033	0.017	~	~	~	NA	NA	NA	~	NA	~	0.025	0.033	0 of 2
ZINC	NA	<b>4.00</b>	<b>1.74</b>	~	~	~	NA	NA	NA	~	NA	~	2.87	4.00	4 of 4
<b>Surfactants and Total Organic Carbon (lbs/day)</b>															
SURFACTANTS	NA	<b>31.2</b>	<b>2.70</b>	~	~	~	NA	NA	NA	~	NA	~	17.0	31.2	3 of 3
TOTAL ORGANIC CARBON	NA	<b>397</b>	<b>222</b>	~	~	~	NA	NA	NA	~	NA	~	310	397	2 of 2

NA = No activation

~ = Activation that month, but no data or no sample taken

Results in bold indicate one or more detects in the month.

Yearly averages are calculated from individual results collected in the fiscal year.

Non-detected compounds are assumed to equal one half of the detection limit for metals and inorganics and one tenth of the reporting limit for organic compounds.

## **Appendix F. NPDES Monitoring Requirements**

### **Overview**

The Environmental Protection Agency (EPA) mandates that any discharge to a body of water must be permitted through the National Pollutant Discharge Elimination System (NPDES). The EPA and the Massachusetts Department of Environmental Protection (DEP) jointly issued a NPDES permit to MWRA for the Deer Island treatment plant and six CSO treatment facilities: Cottage Farm, Prison Point, Somerville Marginal, Constitution Beach, Fox Point, and Commercial Point. The Union Park CSO facility operates under a separate NPDES permit jointly issued to the MWRA and the Boston Water and Sewer Commission (BWSC).

The limits set in the MWRA NPDES permit are limitations for secondary treatment plants. In March 2001, secondary Battery C underwent start-up at Deer Island, substantially finishing the construction process at the plant. Before the completion of Battery C, though, plant effluent was already largely in compliance with the new permit. Additionally, in September of 2000, Constitution Beach, one of the CSO facilities, shut down, leaving five permitted and operational CSO facilities. Union Park came on-line at the beginning of FY08. In November 2007, the Fox Point and Commercial Point facilities were decommissioned following the completion of a sewer separation project in the Dorchester area.

In addition, MWRA monitors the influent quality of wastewater. Those monitoring results provide the basis for determining the adequacy of existing local limits to protect the treatment plants and Boston Harbor. Local Limits, enforced by MWRA's Toxic Reduction and Control (TRAC) department, allow the discharge of toxic chemicals from industrial sources to be regulated. The MWRA submitted proposed local limits in FY00 reflecting the new secondary treatment requirements. Regulators approved the new local limits and they became effective in June 2003, at the end of FY03. Under the pretreatment program requirements, local limits must be re-evaluated every five years.

MWRA not only monitors to comply with the NPDES effluent requirements, but also has its own monitoring programs, including monitoring at DITP, Boston Harbor, and Massachusetts Bay. These monitoring programs serve to assure appropriate control of discharges to the system, to assure the most cost-effective wastewater treatment while meeting water quality standards, and to assure the quality of life of the organisms and health of the animal communities living in the receiving waters.

MWRA's current NPDES permit for DITP and the non-Union Park CSO facilities expired in August 2005. MWRA has applied for a new permit. However, as of the end of FY12, EPA has not issued a new NPDES permit. In lieu of a new permit, the limits of the old permit remain in force.

### **NPDES Permit**

Under the NPDES permit, "in compliance with the provisions of the Clean Water Act, as amended, 33 U.S.C. §§ 1251 et seq., and the Massachusetts Clean Water Act, as amended, Mass. Gen. Laws, ch. 21, §§ 26-53, Massachusetts Water Resources Authority is authorized to discharge from MWRA Publicly Owned Treatment Works, Deer Island Treatment Plant, Deer Island, Boston, MA 02152 (Discharge serial number T01), which discharges to receiving waters

located in Massachusetts Bay, which is adjacent to Cape Cod Bay, and a part of the Gulf of Maine; and from Combined Sewer Overflow Outfalls, which discharge to the Charles River, Inner Harbor, Mystic River, Boston Harbor, Dorchester Bay, Alewife Brook; in accordance with effluent limitations, monitoring requirements and other conditions set in the permit...”

## **Monitoring Requirements and Effluent Limitations**

The NPDES permit establishes monitoring requirements for the new Deer Island outfall tunnel (T01). The permit also regulates CSO treatment facility outfalls at Cottage Farm (MWR201), Prison Point (MWR203), Somerville Marginal (which has two outfalls from a single facility, the primary outfall, MWR205, and the relief outfall, MWR205A), Constitution Beach (MWR207, now closed), Fox Point (MWR209, now closed), and Commercial Point (MWR211, now closed). The permit also establishes a comprehensive receiving water monitoring plan, the Ambient Monitoring Plan, in Massachusetts Bay. MWRA’s joint permit with BWSC for Union Park regulates the outfall for the Union Park CSO facility (MWR215).

## **Reporting Requirements**

In addition to Deer Island and CSO monitoring requirements, the NPDES permit requires numerous reports on the state of MWRA sewerage and operational systems. These include reports on infiltration/inflow, CSO facilities and collection systems maintenance and inspection, operational upsets, dry weather and sanitary sewer overflows, operational bypasses, monthly Discharge Monitoring Reports (DMRs), and reporting on the effects of discharges through the Ambient Monitoring Plan. In addition, the Contingency Plan mandates a number of additional thresholds and stipulates actions needed if they are exceeded. Table F-1 presents a summary of the permit limits and monitoring requirements for Deer Island and Table F-2 does the same for the CSOs.

**Table F-1. Effluent Limitations and Monitoring Requirements for DITP Outfall T01**

Effluent Characteristic	Discharge Limitation		
	Average Monthly	Average Weekly	Maximum Daily
Flow	Report*	N/A	Report
Dry Day Flow	436 MGD	N/A	Report
cBOD	25 mg/L	40 mg/L	Report
TSS	30 mg/L	45 mg/L	Report
pH	Not less than 6.0 nor greater than 9.0 at any time.		
Fecal Coliform <sup>a</sup>	N/A	14,000 colonies/100mL	14,000 colonies/100mL
Chlorine, Total Residual	456 µg/L	N/A	631 µg/L
PCBs, Arochlors: 1016, 1221, 1232, 122, 1248, 1254, 1260	0.000045 µg/L	N/A	Report
Settleable Solids	N/A	Report	Report
Chlorides, Influent	N/A	N/A	Report
Mercury	Report	N/A	Report
Chlordane	Report	N/A	Report
4,4-DDT	Report	N/A	Report
Dieldrin	Report	N/A	Report
Heptachlor	Report	N/A	Report
Ammonia-Nitrogen	Report	N/A	N/A
Total Kjeldahl Nitrogen	Report	N/A	N/A
Total Nitrate	Report	N/A	N/A
Total Nitrite	Report	N/A	N/A
Cyanide, Total	Report	N/A	Report
Copper, Total	Report	N/A	Report
Arsenic, Total	Report	N/A	Report
Hexachlorobenzene	Report	N/A	Report
Aldrin	Report	N/A	Report
Heptachlor Epoxide	Report	N/A	Report
PCBs, Total	Report	N/A	Report
Volatile Organic Compounds	Report	N/A	Report
LC50 <sup>b</sup>	Tests involve using mysid shrimp ( <i>Mysidopsis bahia</i> ) and inland silverside ( <i>Menidia beryllina</i> ) in 48 hour acute toxicity tests. LC50 must be achieved in a solution that is 50% effluent.		
C-NOEC <sup>c</sup>	C-NOEC tests involve larval inland silverside ( <i>Menidia beryllina</i> ) and sea urchin ( <i>Arbacia punctulata</i> ). <i>Menidia</i> tests involve a week's worth of exposure to various effluent concentrations. The <i>Arbacia</i> toxicity test tests fertilization in the test organism. In both cases, no chronic effects must be observed in a solution composed of 1.5% effluent.		
Footnotes * , a, b, and c are listed underneath Table G-2.			



**Table F-2. Effluent Limitations and Monitoring Requirements for CSO Outfalls**

Effluent Characteristic	Discharge Limitation	
	Average Monthly	Average Weekly
Rainfall	Report*	Report
Flow	Report	Report
TSS	Report	Report
BOD	Report	Report
Chlorine, Total Residual	0.1 mg/L	0.25 mg/L max hourly
pH	Not less than 6.5 nor greater than 8.3 or 8.5 <sup>†</sup>	
Fecal Coliform	Must meet Massachusetts Water Quality Standards	
LC50 <sup>b</sup>	Since Cottage Farm and Somerville Marginal's relief outfall both discharge in freshwater, acute toxicity tests are required with daphnids ( <i>Ceriodaphnia dubia</i> ) and fathead minnows ( <i>Pimephales promelas</i> ). There is no limit to effluent concentration used to determine LC50, but results are reportable.	
	All other CSO facilities discharge to marine waters, so the acute test organisms are mysid shrimp ( <i>Mysidopsis bahia</i> ) and inland silverside ( <i>Menidia beryllina</i> ). LC50 results are reportable.	
* No limit, but values reported to EPA and DEP.		
<sup>†</sup> 8.3 S.U. is the limit for facilities discharging to freshwater (Cottage Farm and the Somerville Marginal relief outfall). 8.5 S.U. is the limit for saltwater discharge (Prison Point, Somerville Marginal, and Union Park).		
<sup>a</sup> There are two other fecal coliform limits. The first is that not more than 10% of the individual samples collected in a month can have a count higher than 14,000 colonies/100mL. Typically, given 3 samples a day, this means no more than 9 samples can have a count higher than 14,000 in a given month. The second limit is that no more than 3 consecutive samples can exceed 14,000 colonies/100mL.		
<sup>b</sup> LC50: the concentration of effluent in a sample that causes mortality in 50% of the test population at a specific time of observation.		
<sup>c</sup> C-NOEC: Chronic No Observed Effect Concentration is the highest concentration of effluent to which organisms are exposed in a life cycle or partial life cycle test which has no adverse effects (on growth, survival and reproduction).		

## Monitoring Programs

In FY12, MWRA conducted several monitoring programs. However, this report presents only the influent and effluent monitoring programs. The receiving water monitoring programs are too complex to cover in a single document. More information on monitoring in Massachusetts Bay and Boston Harbor can be found at: <http://www.mwra.com/harbor/html/bhrecov.htm>

## Treatment Plant Monitoring

Monitoring at DITP has two main components: influent monitoring and effluent monitoring.

Influent monitoring characterizes the influent to the Deer Island Treatment Plant. Monitoring for conventional parameters is necessary for some parameters to meet NPDES reporting requirements, but monitoring many other parameters is critical for process control to ensure optimal plant functioning. Influent monitoring data provides influent loading rates and the basis for determining treatment plant efficiency. Influent monitoring for non-conventional parameters is an important part of MWRA's source reduction and Local Limits program run by TRAC.

Effluent monitoring characterizes the quality of the effluent discharged to Massachusetts Bay. With the addition of whole effluent toxicity (WET) testing, the parameters measured in the effluent are similar to those measured in the influent. The NPDES permit requires effluent monitoring and imposes permit limits on both conventional and priority pollutants to ensure the health of the receiving water. Additionally, the permit also requires the reporting of non-priority pollutants such as nutrients, although no limits are set on them.

Table F-3 lists the treatment plant monitoring program parameters, including sample type, sampling frequency and analytical procedures used.

### **Combined Sewer Overflow Facilities Monitoring Program**

The CSO Monitoring Program includes influent and effluent monitoring at the three operational CSO facilities (Constitution Beach was closed in early FY01 and Fox Point and Commercial Point were closed in early FY08) as well as Union Park. Influent and effluent samples are collected and tested for conventional parameters at all CSO facilities. Selected priority pollutants and metals are also analyzed in the effluent. Table F-4 lists the CSO monitoring program parameters, including sample type, sampling frequency and analytical procedures used.

### **Sewer System Monitoring Program**

The sewer system monitoring program, which attempts to identify Sanitary Sewer Overflows (SSOs), involves conducting visual inspections of areas in the separate sewer system that have a history of discharging during or shortly after a heavy rainfall event. Because of the hydraulics of the South System, discharges occur in manholes or other low-lying areas, while discharges in the North System are the result of combined sewage overwhelming sewage system capacity.

### **Treatment of Results**

It can be difficult to interpret laboratory results to ensure that they are representative of the sample, especially when the results are at or below method detection levels. For the conventional parameters measured in these monitoring programs, calculating the average concentration of a particular parameter is straightforward: the arithmetic average is used. However, the concentrations of metals, pesticides and organics are frequently below method detection levels, and data are manipulated. Appendix H gives a brief description of method detection limits and how measurements below detection limits are treated in this report.

Daily loadings (in lbs/day) were calculated using the formula:

$$\text{Loading} = Q \times C \times 8.34$$

Q = flow (mgd)  
C = concentration (mg/L)  
8.34 = unit conversion factor

To calculate monthly average concentrations for priority pollutants (metals, cyanide, pesticides/PCBs and organic compounds), the loadings of the pollutant during each sampling event for that month were added and then divided by the total flow during those events.

Average annual concentrations were calculated using the same method, taking each individual sampling event into account in the calculation.

It should be kept in mind that with the large flows going through the Deer Island Treatment Plant, taking one small sample might not always be truly representative. It is also important to keep in

mind that certain parameters (conventional) were analyzed daily while other parameters (priority pollutants) were analyzed only two or three times per month.

**Table F-3. POTW Monitoring Program**

Parameter	Sample Type <sup>1</sup>	Sampling Frequency		Analytical Method <sup>2</sup>
		Influent	Effluent	
<b>Metals</b>				
Aluminum	Composite	2 x month	Weekly	200.7
Antimony	Composite	2 x month	2 x month	200.7
Arsenic	Composite	2 x month	2 x month	200.7, 206.2
Beryllium	Composite	2 x month	2 x month	200.7
Boron	Composite	2 x month	2 x month	200.7
Cadmium	Composite	2 x month	Weekly	200.7, 213.2
Chromium	Composite	2 x month	Weekly	200.7, 218.2
Chromium (Hexavalent)	Composite	2 x month	2 x month	3500-CRD3
Copper	Composite	2 x month	Weekly	200.7, 200.8, 220.2
Iron	Composite	2 x month	2 x month	200.7
Lead	Composite	2 x month	Weekly	200.7, 239.2
Mercury	Composite	2 x month	Weekly	245.2, 1631
Molybdenum	Composite	2 x month	Weekly	200.7, 246.2
Nickel	Composite	2 x month	Weekly	200.7, 249.2
Selenium	Composite	2 x month	2 x month	200.7, 270.2
Silver	Composite	2 x month	Weekly	200.7, 272.2
Thallium	Composite	2 x month	2 x month	200.7, 279.2
Zinc	Composite	2 x month	Weekly	200.7
<b>Organics and Other Compounds</b>				
Cyanide	Grab	2 x month	4 x month	335.2
Fats, Oils, and Grease	Grab	2 x month	Weekly	1664
MBAS	Composite	2 x month	2 x month	425.1
PAHs	Composite	2 x month	Weekly	
PCBs	Composite	2 x month	Weekly	8080 MOD
Pesticides	Composite	2 x month	Weekly	608
Petroleum Hydrocarbons	Grab	2 x month	Weekly	418.1
Phenol	Composite	2 x month	Weekly	420.2 MO
Semi-volatile Organics	Composite	2 x month	2 x month	625
Sulfate	Composite	2 x month	*	300.0
Total Organic Carbon	Composite	*	2 x month	415.1
Volatile Organics	Grab	2 x month	2 x month	624
Whole Effluent Toxicity	Composite	*	1 x month	WET Test Protocols
<b>Conventional</b>				
Biochemical O2 Demand	Composite	Daily	Daily	5210 B3
Carbonaceous BOD	Composite	Daily	Daily	5210 B3
Chemical O2 Demand	Composite	Daily	Daily	HACH 8000
Chlorides	Composite	Daily	Daily	300.0
Enterococci	Grab	*	Daily	9230 C3
Fecal Coliform	Grab	*	3 x Daily	9222 D3
pH	Grab	Daily	Daily	150.1
Settleable Solids	Grab	Daily	Daily	160.5
Temperature	Grab	Daily	Daily	170.1
Total Chlorine Residual	Grab	*	3 x Daily	330.5
Total Coliform	Grab	*	3 x Daily	9222 B <sup>3</sup>
Total Suspended Solids	Composite	Daily	Daily	160.2
<b>Nutrients</b>				
Alkalinity	Composite	Weekly	*	310.1
Ammonia	Composite	Weekly	Weekly	350.1
Nitrates	Composite	Weekly	Weekly	353.2
Nitrate/Nitrite	Composite	*	Weekly	353.2
Nitrites	Composite	Weekly	Weekly	353.2
Orthophosphorus	Composite	Weekly	*	365.1
Total Kjeldahl Nitrogen	Composite	Weekly	Weekly	351.2
Total Phosphorus	Composite	Weekly	*	365.1
* No sampling.				
<sup>1</sup> Influent and effluent composite samples are 24-hour time composite samples.				
<sup>2</sup> EPA Methods.				
<sup>3</sup> Standard Methods.				

**Table F-4. CSO Monitoring Program**

Parameter	Sample Type	Sampling Frequency	Analytical Method <sup>1</sup>
Biochemical O <sub>2</sub> Demand	Grab/Composite <sup>3</sup>	4 x year	5210 B <sup>2</sup>
Fecal Coliform	Grab <sup>4</sup>	4 x year	9222 D <sup>2</sup>
pH	Grab	4 x year	150.1
Total Chlorine Residual	Grab <sup>3</sup>	4 x year	330.5
Total Suspended Solids	Grab <sup>3</sup>	4 x year	160.2
Whole Effluent Toxicity	Composite <sup>5</sup>	2 x year	WET Test Protocols
<sup>1</sup> EPA Methods. <sup>2</sup> Standard Methods. <sup>3</sup> A grab sample must be collected within the first 2 hours of activation (30 minutes for Somerville Marginal in the first permit year) and then hourly samples are to be taken for the duration of the overflow, for not longer than 24 hours. All BOD samples are then composited. <sup>4</sup> A grab sample must be collected within the first 2 hours of activation (30 minutes for Somerville Marginal in the first permit year) and then hourly samples are to be taken for the duration of the overflow, for not longer than 24 hours. During the first permit year, the first sample is held and subsampled hourly for fecal coliforms. <sup>5</sup> Cottage Farm and the Somerville Marginal relief outfall discharge to freshwater so the organisms used for toxicity testing are the daphnid <i>Ceriodaphnia dubia</i> and the fathead minnow <i>Pimephales promelas</i> . The other facilities discharge to marine waters, so the test organisms are the inland silverside <i>Menidia beryllina</i> and the mysid shrimp <i>Mysidopsis bahia</i> .			

## Appendix G. An Overview of the MWRA Sewerage System and Facilities

### Overview

The MWRA is responsible for the collection, transport, pumping, treatment, and disposal of sewage in Boston and the greater Boston area. In addition to the Deer Island Treatment Plant, the MWRA operates another treatment plant, serving the town of Clinton and the Lancaster Sewer District, under special arrangements that originated when the Metropolitan District Commission (MDC) acquired land in Clinton for the Wachusett Reservoir. The Clinton Treatment Plant operates under a separate permit from the Boston NPDES permit and is not discussed in this report.

The MWRA serves 43 communities with a total population of about two million people, 5,500 businesses, and 1,400 industries. More than 5,400 miles of town- and city-owned local sewers connect at over 1,800 points to over 230 miles of MWRA interceptor sewers. Also included in the vast sewerage system are sixteen pumping stations, five headworks, over 80 combined sewer relief overflows and four operational CSO treatment facilities. Table G-1 lists the MWRA treatment facilities and relevant information pertaining to each facility.

The Deer Island Treatment Plant in Winthrop serves the 43 communities in the metropolitan Boston sewerage system and is allowed to discharge under the Boston NPDES Permit. The sewerage system is divided into two major regions: the North and the South Systems. Table G-2 lists the sewerage service area population by community.

**Table G-1. List of CSO Treatment Facilities and Discharge Locations**

Facility	Location	First Year of Operation	Treatment Process	Design Flow (mgd)	Interceptors / Sewer Lines In	Receiving Water	Outfall Number
Cottage Farm	Memorial Dr. near Boston University bridge, Cambridge, MA	1971	Screening Settling Chlorination	233	N. Charles Relief S. Charles Relief Brookline Connection	Charles River	MWR201
		2001	Dechlorination				
Prison Point	Near Museum of Science bridge, Cambridge, MA	1980	Screening Settling Chlorination	385	Cambridge Marginal	Boston Inner Harbor	MWR203
		2001	Dechlorination				
Somerville Marginal	McGrath Highway under I-93, Somerville, MA	1973	Screening Chlorination	245	Somerville-Medford Branch	Mystic River	MWR205
		2001	Dechlorination				
Union Park	Malden St., South End, Boston, MA	2007	Screening Settling Chlorination Dechlorination	330	BWSC New Albany St. BWSC Malden St.	Fort Point Channel, Boston Harbor	MWR215

**Table G-2. Sewerage Service Area Population by Community**

Town	Population <sup>1</sup>		MWRA Sewerage System	
	Total Community	Sewered	North	South
Arlington	41,144	40,733	x	
Ashland	15,796	11,847		x
Bedford	13,146	12,357	x	
Belmont	23,356	22,912	x	
Boston	608,352	607,744	x	x
Braintree	34,422	34,388		x
Brookline	54,809	54,699	x	x
Burlington	25,034	25,009	x	
Cambridge	101,388	101,287	x	
Canton	21,916	14,355		x
Chelsea	38,203	38,203	x	
Dedham	24,132	22,684		x
Everett	37,269	37,269	x	
Framingham	64,786	59,603		x
Hingham	7,555	6,869		x
Holbrook	10,663	8,991		x
Lexington	30,332	30,211	x	
Malden	55,712	55,656	x	
Medford	55,565	55,509	x	
Melrose	26,782	26,755	x	
Milton	26,272	24,433	x	x
Natick	31,975	27,786		x
Needham	28,263	27,246		x
Newton	83,271	82,022	x	x
Norwood	28,172	27,665		x
Quincy	91,622	91,613		x
Randolph	30,168	30,138		x
Reading	23,129	22,158	x	
Revere	55,341	55,286	x	
Somerville	74,405	74,405	x	
Stoneham	21,508	21,121	x	
Stoughton	26,951	17,922		x
Wakefield	24,706	23,965	x	
Walpole	23,086	16,391		x
Waltham	60,325	60,265	x	
Watertown	32,521	32,521	x	
Wellesley	26,985	26,364		x
Westwood	14,010	13,310		x
Weymouth	53,272	51,088		x
Wilmington	21,679	4,032	x	
Winchester	21,137	21,116	x	
Winthrop	20,154	20,154	x	
Woburn	37,042	35,190	x	
<b>TOTAL</b>	<b>2,146,356</b>	<b>2,073,272</b>		

<sup>1</sup> Community population data are from MWRA's I/I program, August 2011 report.

## North System

The North System serves a population of about 1.3 million and is located to the north and west of Boston. It covers an area of about 168 square miles. Most of the North System is a separate system – different conduits carry sanitary wastewater and storm water. However, portions of Boston, Cambridge, Somerville, and Chelsea still have combined sewers, where the same conduits carry sanitary and storm water. Combined sewers serve about 20 percent of the North System service area. Community sewer lines tie into the MWRA system through interceptor lines that feed into the four headworks facilities in the North System.

Two deep rock tunnels, the Boston Main Drainage Tunnel (BMDT) and the North Facilities Metropolitan Relief Tunnel (North Metro Relief), connect the three remote headworks to the North Main Pump Station (NMPS) on Deer Island. The seven-mile BMDT originates at the Ward Street Headworks, continues to the Columbus Park Headworks, and runs under Boston Harbor to the NMPS. The four-mile North Metro Relief Tunnel connects the Chelsea Creek Headworks to the NMPS. The two tunnels combined can handle approximately 800 mgd, matching the combined peak flow capacity of 788 mgd from the three remote headworks.

A fourth headworks facility, the Winthrop Terminal, is located on Deer Island and receives flows from the city of Winthrop and the East Boston (Caruso) Pump Station through the North Metro Trunk Sewer. Figure G-1 on the next page shows the North System schematics.

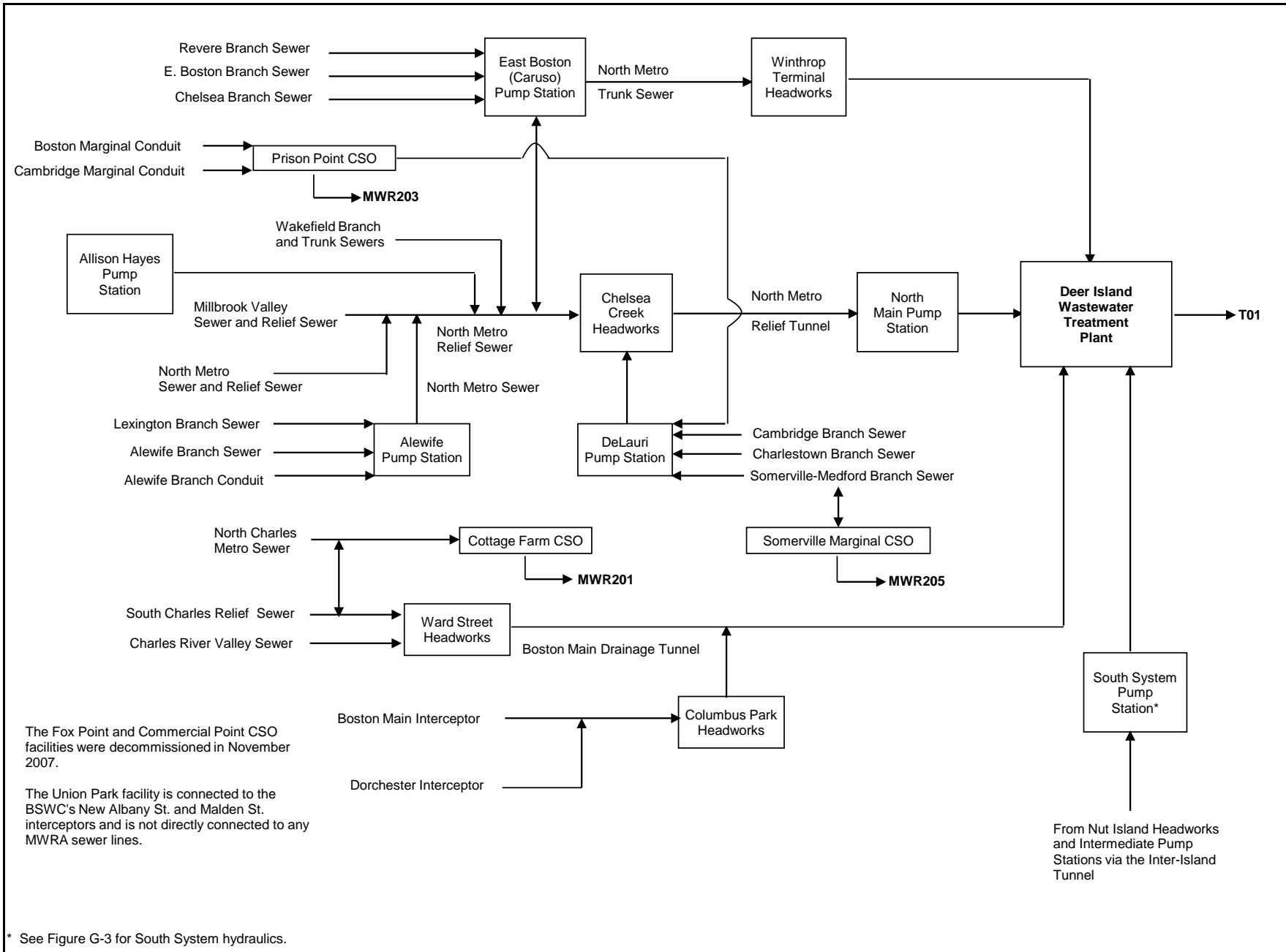
## North System Pump Stations

The MWRA North System has four pump stations. The Alewife Brook (64 mgd), Caruso (110 mgd), DeLauri (90 mgd), and Allison Hayes (11 mgd) pump stations convey wastewater to the headworks facilities. The four pump stations receive flow from interceptor lines as follows in Table G-3.

**Table G-3. Relationship Between North System Pump Stations and Interceptors**

Pump Station	Interceptor
Alewife Brook Pump Station	Lexington Branch Sewer Alewife Branch Sewer Alewife Branch Conduit
Caruso Pump Station	Revere Branch Sewer East Boston Branch Sewer North Metro Relief Sewer*
DeLauri Pump Station	Cambridge Branch Sewer Charlestown Branch Sewer Medford-Somerville Branch Sewer Prison Point Pump Station Somerville Marginal CSO Overflow**
Allison Hayes Pump Station	Wakefield Branch Sewer
*: When flow to the Chelsea Creek Headworks is held back, wastewater is diverted to the Caruso Pump Station.	
**: During low-intensity rainfall when line capacity is not exceeded, the combined wastewater is pumped back to the trunk sewers and ultimately to the DeLauri station.	

Figure G-1. North System Pump Stations, Headworks, CSOs and Tunnel Hydraulic Schematic





## North System Headworks

The Deer Island Treatment Plant receives North System flow from three remote headworks and the Winthrop Terminal headworks. The three remote headworks: Ward Street Headworks (256 mgd) located in Roxbury, Columbus Park Headworks (182 mgd) in South Boston, and Chelsea Creek Headworks (350 mgd) in Chelsea, have a combined pumping capacity of 788 mgd. The Winthrop Terminal Headworks (125 mgd) is located on Deer Island. The four North System headworks receive flows from interceptor lines or pump stations as follows:

**Table G-4. Sources of Flow for North System Headworks**

Headworks	Source
Ward Street Headworks	South Charles Relief Sewer Charles River Valley Sewer North Charles Metro Sewer* Cottage Farm CSO*
Columbus Park Headworks	Boston Main Interceptor Dorchester Interceptor
Chelsea Creek Headworks	Alewife Pump Station North Metro Relief Sewer DeLauri Pump Station Caruso Pump Station Overflow
Winthrop Terminal Headworks	Winthrop Sewer Caruso Pump Station**
*: During low intensity rainfall when line or holding capacity is not exceeded, the combined wastewater is pumped back to the trunk sewers and ultimately to the Ward Street Headworks.	
**: Overflow from the Caruso Pump Station.	

## Combined Sewer Overflow Facilities

The conditions for discharge of effluent from six CSO chlorination facilities are also included in MWRA's Boston NPDES permit. Over time, some of these facilities have been closed due to improvement projects in the MWRA system. Constitution Beach in East Boston, was closed in September 2000, and Fox Point and Commercial Point in Boston, were closed in autumn 2007, leaving three active permitted CSO facilities. These three facilities, Cottage Farm and Prison Point in Cambridge, and Somerville Marginal in Somerville, discharge to the Charles River, the Inner Harbor, and the Mystic River, respectively.

Also included in this section is the Union Park CSO facility, which opened at the beginning of FY08. The Union Park facility is permitted jointly with the Boston Water and Sewer Commission and discharges to the Fort Point Channel in Boston.

Discharge of combined wastewater from a CSO treatment facility outfall to a receiving body of water is defined in this report as a CSO activation. Discharge of combined wastewater to a non-facility CSO outfall pipe is defined as a CSO overflow. CSO overflows will not be discussed in this report. In general, CSO activations occur as a result of heavy rain, snowmelt, or choking at the headworks.

Choking is the process by which the headworks restrict the flow to Deer Island. During wet weather, when the wastewater volume exceeds the hydraulic capacity of the treatment plant, the headworks "choke" the flow and hold the wastewater in the lines. As a result, the combined wastewater backs up into the system, forcing the combined wastewater to overflow to CSO treatment facilities and non-facility CSO outfall pipes, resulting in potential CSO activations and overflow as well as potential SSOs. In addition to choking in response to hydraulic demand on the system, the headworks may choke so that emergency repairs, system testing, or maintenance

work can be performed at the treatment plant. Choking at Ward Street and Columbus Park Headworks influences Cottage Farm activations. Backups at the DeLauri Pumping Station brought about by choking at the Chelsea Headworks can activate the Somerville Marginal CSO.

At the CSO facilities, the combined wastewater is screened and chlorinated prior to discharge. Of the four active (as of the end of FY12) CSO facilities, Cottage Farm, Prison Point, and Union Park have tank storage capacity. This allows the wastewater to be held at these facilities. The facility only discharges when the storage capacity is exceeded; when that happens, the treated wastewater overflows and is discharged to the river. Somerville Marginal is a gravity CSO facility, which means that combined wastewater arrives and leaves the CSO facility by gravity. This type of facility provides disinfection and allows the chlorinated combined wastewater to overflow to the receiving water as quickly as the wastewater arrives at the facility.

The CSO facilities provide treatment for approximately 73% of the CSO volume.

### **Cottage Farm CSO Facility**

During dry weather conditions, wastewater arrives at the Ward Street Headworks where it is pumped to the Deer Island Plant. Under storm conditions, wastewater backs up into sewer lines and into the Cottage Farm CSO facility. Cottage Farm detains wastewater up to a volume of 1.3 MG. Any excess flow is screened, settled, chlorinated, and discharged to the Charles River through outfall MWR201. Combined wastewater that is held back is pumped back to the Ward Street Headworks. This facility, on-line since 1971, has a design pumping capacity of 233 mgd. An upgrade completed in FY01 added a dechlorination system for the effluent.

### **Prison Point CSO Facility**

Prison Point is both a dry weather and storm water pumping station. The dry weather phase is a five-mgd capacity sewer pumping station that receives flow from the Boston Marginal Conduit and the Cambridge Marginal Conduit. Prison Point feeds into the DeLauri Pumping Station.

The storm water phase has a maximum pumping capacity of 385 mgd. Treatment includes screening, disinfection, and detention. During wet weather, if the dry pumping capacity is exceeded, the combined flow is screened, chlorinated, and held in detention basins. Once the basins fill, treated flow is discharged downstream below the Charles River Dam at outfall MWR203. Combined wastewater volume that is held back, up to 1.2 MG, is pumped back to the DeLauri Station. This facility came on-line in 1980 and was upgraded with a dechlorination system in 2001.

### **Somerville Marginal CSO Facility**

Somerville Marginal CSO is an unmanned gravity facility with a design capacity of 245 mgd. It receives wet weather flow from the northeast portion of Somerville and part of Medford. Normally, dry weather flow from these areas arrives at the DeLauri Station via the Somerville-Medford trunk sewers. During wet weather, combined sewer flow backs up to the Somerville CSO facility. Unlike Cottage Farm or Prison Point, this facility does not provide any large-scale detention capacity during storm conditions. Treatment consists of screening and chlorination. Effluent is discharged to the lower Mystic River basin at outfall numbers MWR205. The relief outfall, MWR205A, discharges to freshwater above the dam. MWR205A only activates under specific conditions and the vast majority of discharges are released through MWR205. During low-intensity rainfall when line capacity is not exceeded, the combined wastewater is pumped back from a wet well to the DeLauri Station. This facility came on-line in 1973 and was upgraded in 2001 with a dechlorination system.

Figure G-2 on the following page shows a representative gravity CSO schematic applicable to Somerville Marginal as well as the now decommissioned Fox Point and Commercial Point facilities.

### **Fox Point CSO Facility**

Fox Point is an unmanned gravity facility with a design capacity of 119 mgd. It receives wet weather flows from the Dorchester Interceptor sewer line. Operation of this facility parallels that of the Somerville Marginal CSO; treatment includes screening and disinfection. Effluent is discharged to Dorchester Bay through outfall number MWR209. This facility came on-line in 1989, and a dechlorination system was added in 2001. Fox Point was decommissioned in December 2008 following the completion of a sewer separation project in the south Dorchester tributary area.

### **Commercial Point CSO Facility**

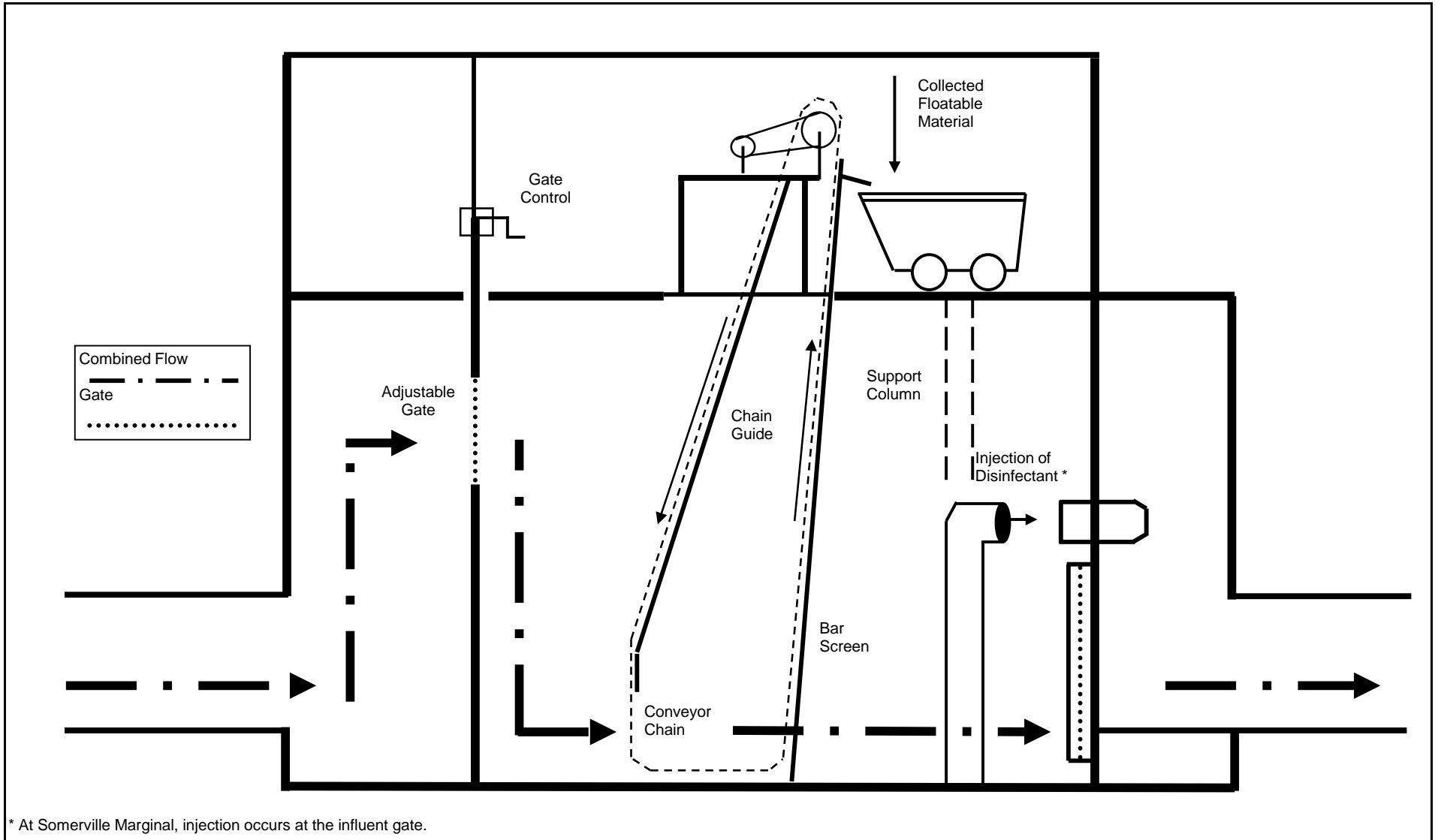
Commercial Point is an unmanned gravity CSO with a design capacity of 194 mgd. This facility also receives wet weather backups from the Dorchester Interceptor. Treatment includes screening and disinfection. Effluent is discharged to Dorchester Bay through outfall number MWR211. This facility came on-line in 1991 and was upgraded in 2001 with a dechlorination system. Like Fox Point, Commercial Point was also decommissioned in December 2008 following the completion of a sewer separation project in the south Dorchester tributary area.

### **Union Park CSO Facility**

The Union Park Facility enables flow which was previously discharged untreated to outfall BOS070 (a CSO overflow) and the Fort Point Channel to be routed to a 2.2 million gallon detention/treatment facility. Flow is treated by high-rate sedimentation, screening, and disinfection followed by dechlorination. Any stored volume is pumped back to the interceptor system at the end of the storm. This project was completed in April 2007, and the first recorded discharge was in June 2007.

The operation and maintenance of the new Union Park CSO facility at present is contracted to Woodard & Curran. MWRA is ultimately responsible for permit compliance and thus reviews operational data, and retains the authority to conduct facility inspections and environmental audits.

Figure G-2. Typical Gravity Combined Sewer Overflow Treatment Facility



## **South System**

The South System serves a population of about 700,000 people and is located to the south and southwest of Boston. The South System covers an area of approximately 237 square miles. Figure G-3 on the following page illustrates the South System hydraulic schematic. Community sewer lines tie into the South System through MWRA interceptor lines. The Framingham Extension Sewer, Wellesley Extension Sewer, Upper Neponset Valley Sewer, Wellesley Extension Relief Sewer, Neponset Valley Sewer, Walpole Extension Sewer, Stoughton Extension Sewer, Braintree-Randolph Trunk Sewer, and several other branch sewers discharge to the South System High Level Sewer. The High Level Sewer has a capacity of 360 mgd. Pump stations move the wastewater through the High Level Sewer to the Nut Island Headworks for preliminary treatment and grit removal. The South System flows are then conveyed to the South System Pump Station at Deer Island through the 4.7-mile Inter-Island Tunnel for treatment at the Deer Island Treatment Plant.

In 2004 the MWRA completed the Braintree-Weymouth Intermediate Pump Station (IPS) in North Weymouth. The IPS pumps sewage from the North Weymouth Relief Interceptor directly into the Inter-Island Tunnel, bypassing Nut Island. The IPS also acts as a headworks with bar screens and grit collectors. The IPS was designed to increase South System capacity, helping to alleviate some of the overflows in the South System. Additionally, the IPS will pump by-products between the fertilizer pelletizing plant in Quincy and Deer Island. Sewage sludge will flow from Deer Island to Quincy for conversion to fertilizer and centrate from the fertilizer production process will return to Deer Island via the IPS and Inter-Island Tunnel.

Once at Deer Island, the South System flow can be pumped to one of two locations. The South System flow is normally discharged to the effluent channel of the Grit Facility, where it is combined with the North System and recycle flows, then split between Primary Clarifier Batteries A through D. The alternate discharge location is directly to the Primary Clarifier Battery D influent channel, which allows the South System flow to be isolated.

## **South System Pump Stations**

Eight MWRA pump stations move wastewater from low-lying areas to the High Level Sewer: Hingham Pump Station (16.5 mgd), Braintree-Weymouth Pump Station (60 mgd), Braintree-Weymouth IPS (45 mgd), Squantum Pump Station (12 mgd), Houghs Neck Lift Station (2.8 mgd), Neponset Pump Station (90 mgd), Framingham Pump Station (48 mgd) and Quincy Pump Station (52 mgd).

The eight pumping stations receive flow from interceptor or community lines as follows:

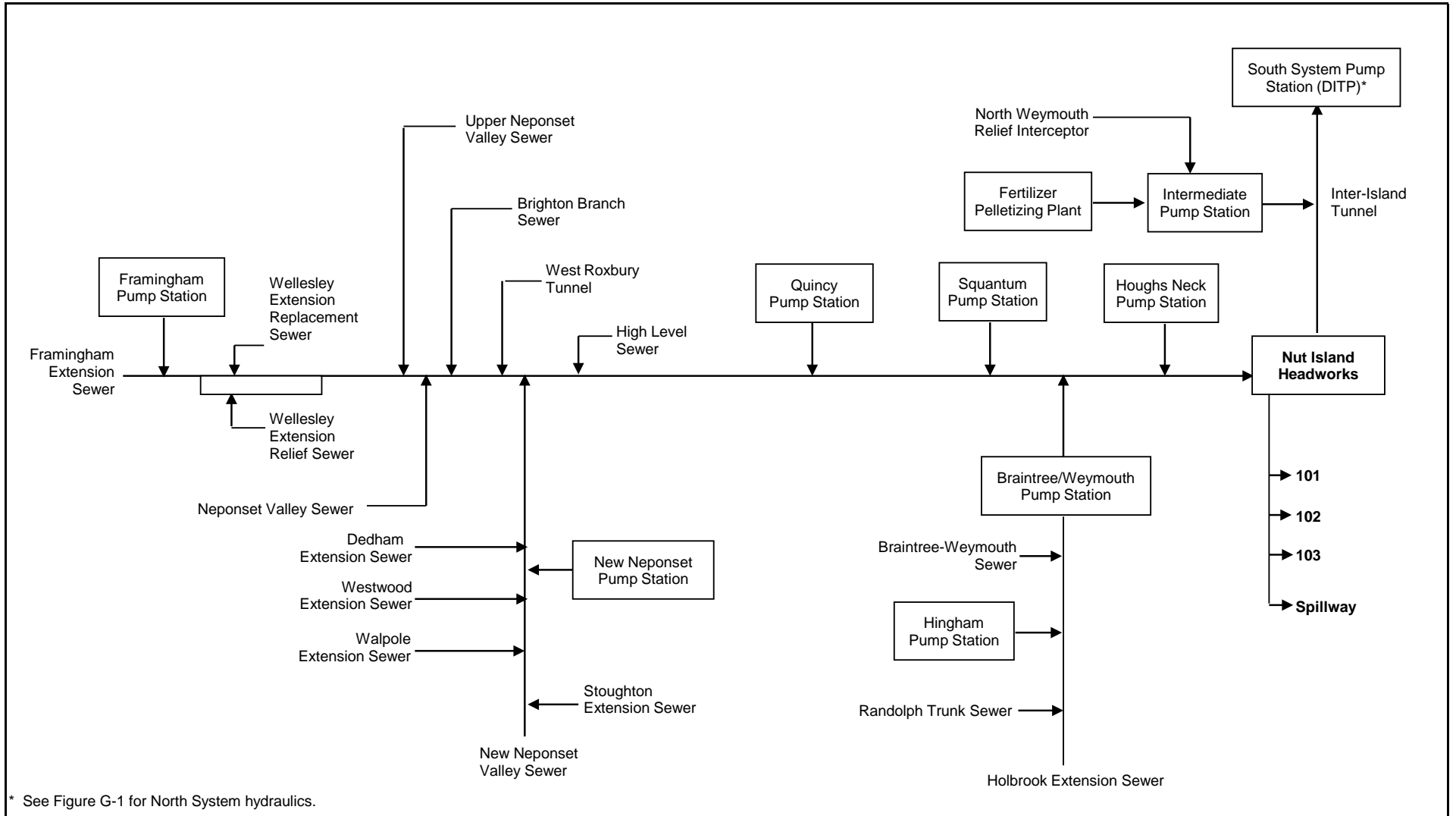
**Table G-5. Relationship Between North System Pump Stations and Interceptors**

Pump Station	Interceptor
Hingham Pump Station	Weymouth-Hingham Sewer Lines
Braintree-Weymouth Pump Station	Braintree-Randolph Trunk Sewer Braintree-Weymouth Extension Sewer Holbrook Extension Sewer Hingham Pump Station
Braintree-Weymouth IPS	North Weymouth Relief Interceptor Quincy Pelletizing Plant (see Chapter 4)
Squantum Pump Station	Squantum Sewers
Houghs Neck Lift Station	Houghs Neck Sewer
Neponset Pump Station	Neponset Valley Sewer
Framingham Pump Station	Framingham Sewers
Quincy Pump Station	Quincy and Upstream Sewers

### South System Headworks

The Deer Island Treatment Plant receives South System flow from the Nut Island Headworks. The Nut Island Headworks went on-line on July 7, 1998. It is located in Quincy and has a capacity of 360 mgd. Vortex grit separators similar to those used on Deer Island in the North System Grit Facility provide grit removal for South System flows.

**Figure G-3. South System Pump Station, Headworks, and Tunnel Hydraulic Schematic**



## Deer Island Treatment Plant

Until July 8, 1998, wastewater flows from the North System were treated at the Deer Island Treatment Plant and flows from the South System were treated at the Nut Island Treatment Plant. In July 1998, the Nut Island Treatment Plant was decommissioned and all flows were treated at Deer Island.

Four lines convey sewage to the Deer Island Treatment Plant. North System wastewater is delivered to the plant via the Boston Main Drainage Tunnel (from the Ward Street and Columbus Park Headworks), the North Metropolitan Relief Tunnel (from the Chelsea Creek Headworks), and the North Metropolitan Trunk Sewer. South System wastewater is transferred to the plant from the Nut Island Headworks and Braintree-Weymouth Intermediate Pump Station via the Inter-Island Tunnel.

The Deer Island Treatment Plant receives wastewater at the North Main Pump Station (NMPS), the Winthrop Terminal, and the South System Pump Station (SSPS). The North Metro Relief Tunnel and the Boston Main Drainage Tunnel connect to the NMPS, which consists of ten pumps, each rated at 110 mgd, for a total pumping capacity of 1,100 mgd. The North Metro Trunk Sewer connects to the Winthrop Terminal. The Inter-Island Tunnel connects to the SSPS, which consists of eight pumps, each rated at 66.7 mgd, for a total capacity of 534 mgd.

Grit removal and screening (preliminary treatment), which remove heavy particles and debris, is provided at the remote headworks and on-site at Deer Island. Flow from the South System receives preliminary treatment at the Nut Island Headworks. Grit and screenings are landfilled off-site.

The upgraded primary treatment plant came on-line on January 21, 1995. The first battery of secondary treatment was initiated at Deer Island on August 1, 1997. Battery B came on-line on March 1, 1998, and the third and final secondary treatment battery, Battery C, started up on March 8, 2001.

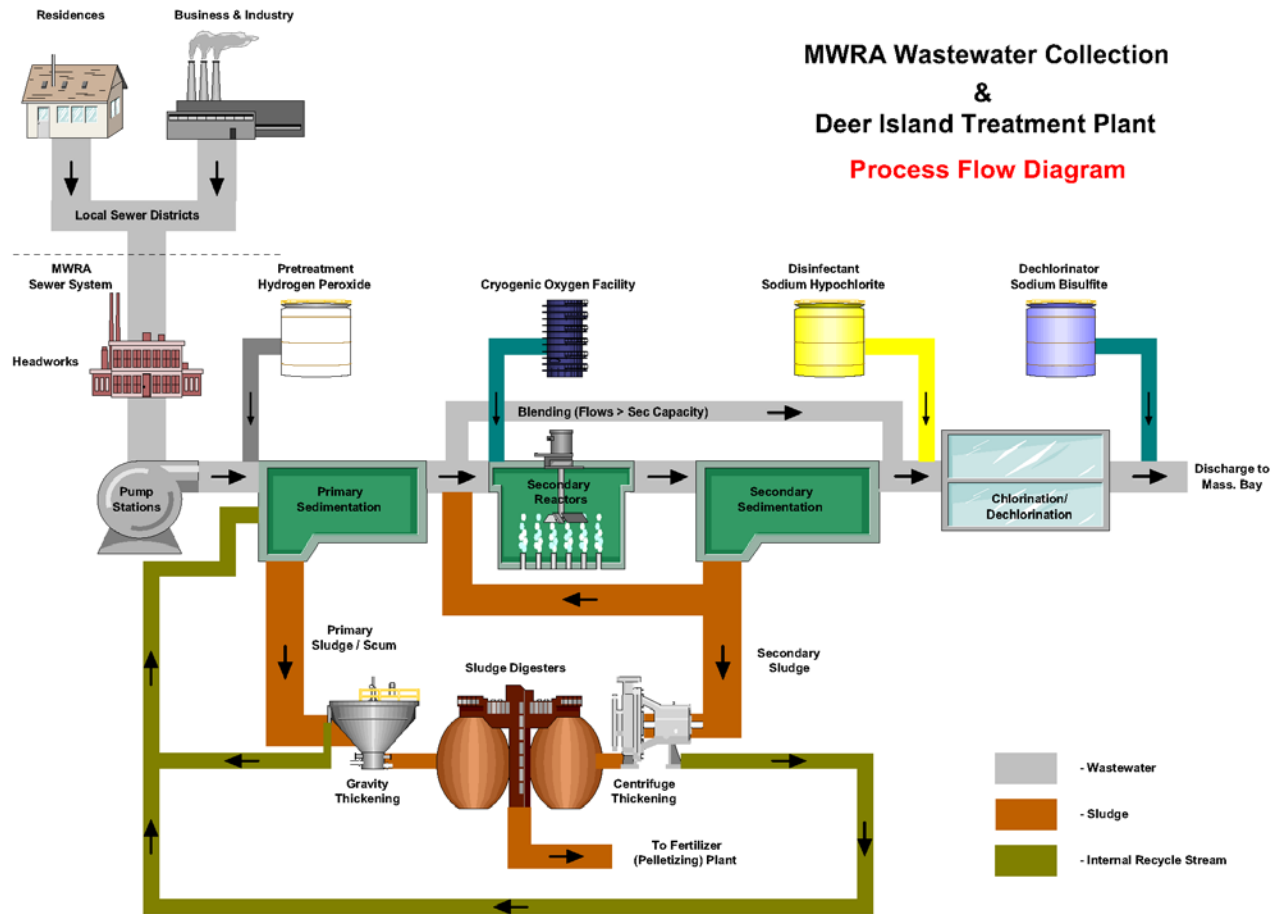
Wastewater from the North System flows through the grit chambers for additional grit removal. It, along with South System wastewater, then flows to the primary settling tanks where floatables, consisting mainly of oil, grease, and plastics rise to the surface while the sludge of heavy solid particles settles to the bottom. The majority of the primary effluent (the allowable capacity for secondary treatment) is sent to secondary treatment, while any remaining portion from high flow conditions due to rainfall bypasses secondary and is sent directly to the disinfection basins to be treated with sodium hypochlorite. Effluent from secondary treatment is then, if necessary, blended with primary effluent that bypassed secondary, and then sent to the disinfection basins, where it is chlorinated, detained, and then dechlorinated before discharge.

The scum (floatables) is skimmed off the top of the primary and secondary settling tanks while the sludge (settled solids) is scraped from the bottom of the tanks. Primary scum is pumped to the scum concentrator while the primary sludge is pumped to the gravity sludge thickeners. Scum and sludge from the secondary batteries are concentrated using centrifuges. After the scum and sludge are concentrated and thickened, they are conveyed to the anaerobic digesters for further treatment. The digested sludge/scum is sent via the Inter-Island Tunnel to the Fore River Pelletizing Plant, where it is converted into fertilizer. Methane from the digestion process is stored and used to generate power and heat for DITP.

Figure G-4 on the following page presents the Deer Island plant process flow diagram.



Figure G-4. Deer Island Treatment Plant Process Flow



## **Deer Island Treatment Plant Outfalls**

On September 6, 2000, effluent from Deer Island was diverted to the new 9.5 mile outfall tunnel into Massachusetts Bay. Effluent is discharged through 53 operational risers over the last 1.25 miles of the tunnel. The tunnel has a capacity of 1,270 mgd, slightly greater than the old harbor outfall system. Before the effluent enters the outfall it is used to run a hydroelectric facility linked to the Deer Island power grid. Although sealed and non-operational, the old Deer Island harbor outfalls are subject to periodic inspections and remain available for emergency use. If opened for emergency use, effluent would be channeled through a common conduit to four potential outfall pipes: 001, 002, 004, and 005

## **Nut Island Outfalls**

The former Nut Island Treatment Plant discharged treated wastewater through four outfalls. Although the Nut Island Treatment Plant no longer exists, outfalls 101, 102 and 103 remain operational in case of emergency at the Nut Island Headworks. These outfalls discharge to Boston Harbor; the new emergency spillway built concurrently with the new headworks discharges to Hingham Bay.

## **Collection and Transport Systems**

An issue of concern in both the North System and the South System is the occurrence of Sanitary Sewer Overflows (SSOs). These occur during extreme rainfall events, when inflow and infiltration from heavy rains exceeds the capacity of the pipes, causing certain areas to become inundated. Whenever there is a high amount of rainfall, a crew from the Transport Department investigates a number of critical areas to visually monitor potential overflow sites. While some of these critical areas are the MWRA's responsibility, most of them are the responsibility of the local communities. A list of these areas belonging to the MWRA is included in Table G-6. Not all of these areas are checked during every rainfall, and some are monitored by the MWRA only during extreme storm events. Table G-7 shows areas identified by MWRA staff as having the potential to overflow under certain conditions. SSOs have not, as of yet, occurred in these areas.

**Table G-6. Known MWRA Sanitary Sewer Overflow Locations\***

System	Location	Description
North	Arlington, Section 80 (Station 3+89)	Dudley St., manual plug
	Arlington, Section 80 (Station 19+73)	Brattle Court, manual plug
	Arlington, Section 152 (Station 56+54)	Manhole on Mystic Valley Pkwy., west easement
	Charlestown, Section 25.5 (Station 0+61)	Manhole
	East Boston, 477 Meridian Street	
	Malden, Section 20A (Station 15+22)	20 Pearl St., Edgeworth Branch upstream manhole
	Medford, Section 19 (Station 4+25)	Malden River siphon, upstream headhouse
	Medford, Section 107 (Station 1+00)	Overflow weir, Mystic River Pkwy., near James St.
	Medford, Section 152 (Station 31+24)	Section 91B: downstream headhouse off Lakeview Rd.
	Melrose, Section 51 (Station 10+75)	Brunswick Park, Roosevelt School
	Melrose, Section 60 (Station 15+91)	Tremont St. @ Ell Pond, west side
	Somerville, Section 155 (Station 9+12)	Section 43.5: Boston Ave. (upstream headhouse)
	Somerville, Section 176A (Station 131+21)	Section C: manhole weir, Auburn St. between curb and Mystic River
	Somerville, Section 176C (Station 0+35)	Alewife Brook pump station
	Stoneham, Section 42 (Station 30+50)	Manhole on West Wyoming Ave. @ town boundary
	Waltham, Section 212 (Station 401+78)	Old Section 4A: Elm St. @ Charles River
	Winchester, Section 45 (Station 35+00)	Manhole off Cross St.
	Winchester, Section 113B (Station 2+06)	Wedgemere siphon, downstream headhouse @ T station
Winchester, Section 113B (Station 3+24)	Wedgemere siphon, upstream headhouse @ Bacon St.	
South	Boston/Roslindale, Section 570 (Station 10+89)	High Level Sewer: overflow relief structure @ Bradeen St., north gates
	Boston/Roslindale, Section 570 (Station 10+89)	High Level Sewer: overflow relief structure @ Bradeen St., south gates
	Boston/Roslindale, Section 571 (Station 13+51)	High Level Sewer @ Arboretum, South St.
	Braintree, Section 626 (Station 54+06)	Smelt Brook siphon, upstream headhouse
	Braintree, Section 628 (Station 13+73)	Pearl St. siphon, new manhole with gate
	Braintree, Section 628 (Station 16+30)	Pearl St. siphon, pump out manhole
	Braintree, Section 628 (Station 17+07)	Pearl St. siphon, downstream headhouse
	Braintree, Section 628 (Station 17+64)	Pearl St. siphon, upstream headhouse
	Braintree, Section 655 (Station 84+28)	Randolph Trunk siphon, downstream headhouse
	Newton, Section 530 (Station 52+13)	Upper Neponset Valley Sewer @ Vine and Hollywood Sts.
	Quincy, Section 543B (Station 3+15)	Nut Island Headworks emergency outfall: gates 17//18
	Quincy, Section 680 (Station 0+40)	Nut Island Headworks emergency spillway
	Randolph, Section 655 (Station 85+14)	Randolph Trunk siphon (upstream headhouse)
	Squantum, Section 539A	Force main
	Section 669 (Station 42+55)	Manhole

\* Known SSOs occurring in MWRA lines from January 1, 1996 onwards.

**Table G-7. Potential MWRA Sanitary Sewer Overflow Locations**

System	Location	Description
South	Boston, Section 564	High Level Sewer, Neponset River at Monponset St.
	Canton, Section 614	New Neponset Valley Relief Sewer Pump Station
	Hingham, Section 562	Hingham Pump Station
	Quincy, Section 543	Nut Island emergency outfall
	Quincy, Section 543	Nut Island emergency spillway
	Quincy, Section 551B	Quincy Pump Station
	Quincy, Section 621	Braintree-Weymouth Pump Station influent
	Squantum, Section 550B	Squantum Pump Station
	West Roxbury, Section 637A	West Roxbury Tunnel and High Level Sewer junction
	West Roxbury, Section 637A	West Roxbury Tunnel and High Level Sewer junction

## **Appendix H. Instrument Detection Limits, Method Detection Limits, and Quantitation Limits**

### **Overview**

An understanding of the detection limits of analysis is essential to reviewing the data from chemical analyses. There are three different types of detection limits that are most often encountered:

- Instrument Detection Limits
- Method Detection Limits
- Quantitation Limits, also known as Reporting Limits.

### **Instrument Detection Limits**

Instrument detection limits (IDL) reflect the capability of the instrument. This limit will be the lowest of the three detection limits. The IDL will not take into account the losses of the pollutant associated with the matrix (soil or wastewater) and extraction procedure. This discrepancy is known as matrix interference.

### **Method Detection Limits**

Method detection limits (MDL) are the smallest amount of a substance that can be detected above background noise using a particular method. The MDL is statistically determined by running a series of analyses using various low concentrations of a pollutant. Using a Student's "T" test, the smallest concentration that has a 99% probability of being detected above the background is designated the MDL for that pollutant. The EPA, using several private laboratories, has determined the MDLs for most priority pollutants using their approved methods. These are published in the 40 CFR.

### **Quantitation Limits**

In general, if a plot is made of pollutant concentration versus instrument response, it will show a linear relationship. As the pollutant concentration approaches zero, the linearity of the relationship is lost. The point where the linearity is lost is called the Quantitation Limit (QL) or sometimes the Reporting Limit. In other words, the smallest concentration where the linear relationship holds is the smallest concentration that can be quantified. Generally, the QL is about five times the MDL. Quantitative limits are relevant to GC/MS analyses, that is, methods 608 (for pesticides), 624 (for volatile organics), and 625 (for semi-volatile organics). Specific limits are highly matrix-dependent.

### **Detection limits, Non-Detects, and Reporting**

In short, the IDL is the lowest concentration that a particular instrument can detect. The MDL is the lowest concentration that can be detected using a particular method. The QL is the smallest concentration that can be confidently considered to be accurate.

Reported concentrations that are between the MDL and the QL indicate that a pollutant is present, but at a concentration too low to be accurately quantified. For example, using EPA method 624, chloroform has an MDL of 1.6 µg/L and a QL of 10 µg/L. If the concentration from an analysis is reported as 5 µg/L then it can be inferred that although the actual chloroform concentration in the wastewater is uncertain, 5 µg/L is a best guess. The EPA requires that these intermediate values be flagged with a “J” on any reports submitted to them. Therefore, these are sometimes simply called “J-values.”

For non-detects in analyses of metals, cyanide, petroleum hydrocarbons, etc., it is customary for “less than the MDL” to be listed as a result. For a non-detect in the 608, 624, and 625 analyses, “less than the QL” is typically listed.

Often it becomes necessary to estimate a concentration for below detection limit values, specifically when calculating the average yearly concentration of a pollutant. A well-established method is to assume the actual concentration of a non-detected pollutant is simply one half of the MDL. While no scientific theory supports this assumption, it is more reasonable than assuming that the concentration is zero, or the MDL itself. The EPA and DEP also accept it as a standard practice that can be applied to any series of tests.

This technique is utilized in this report. For the organic compounds – methods 608, 624, and 625 – one tenth of the QL, or half the MDL, was assumed for all non-detects (i.e. values below QL). For all metals, cyanide, petroleum hydrocarbons, etc., half the MDL was assumed for all non-detects (i.e. values below MDL).

In Table H-1 is a list of the parameters regularly tested for in MWRA effluent. The required EPA method number, and the MDLs and reporting limits attained by the MWRA’s Central Laboratory are included.

**Table H-1. List of Parameters Tested**

Parameter	EPA Method Number	MWRA MDL (µg/L)	MWRA QL (µg/L)
<b>Metals</b>			
Aluminum	200.7	90	<90
Antimony	200.7	0.8	<0.9
Arsenic	206.2	0.8	<0.8
	200.7	43.8	<45
Beryllium	200.7	0.3	<0.5
Boron	200.7	9.5	<250
Cadmium	200.7	1.1	<2
	213.2	.03	<0.03
Chromium	200.7	4.0	<4
	218.2	0.7	<0.7
Copper	200.7	10.5	<10
	220.2	0.6	<1
	200.8	†	†
Hexavalent Chromium	SM 3500-CR D <sup>2</sup>	1.8	<5
Iron	200.7	3	<30
Lead	200.7	12.0	<15
	239.2	2.4	<2.4
Mercury	245.2	0.01	<0.01
	1631	†	†
Molybdenum	200.7	3.4	<5
	246.2	1.2	<1
Nickel	200.7	3.0	<3
	249.2	0.7	<0.7
Selenium	200.7	48.2	<50
	270.2	0.9	<0.9
Silver	200.7	1.4	<2
	272.2	0.09	<0.09
Thallium	200.7	58.3	<60
	279.2	1.0	<1
Zinc	200.7	5.7	<6
<b>Other Inorganic Chemicals<sup>4</sup></b>			
Cyanide	335.2	0.004	<0.01
Fats, Oil, and Grease (mg/L)	1664A	2.0	<7
Petroleum hydrocarbons (mg/L)		†	†
Phenol (mg/L)	420.2 MO	0.003	<0.01
Sulfate (mg/L)	300.0	0.2	<1
Total Organic Carbon (mg/L)	415.1	0.06	<0.3
Surfactants (mg/L)	425.1	0.03	<0.03
<b>Pesticides (ng/L)</b>			
4,4'-DDD	608	6.8	<20
4-4'-DDE	608	8.8	<20
4-4'-DDT	608	15.8	<20
Aldrin	608	3.5	<20
alpha-BHC	608	6.3	<20
alpha-Chlordane	608	3.6	<20
beta-BHC	608	6.3	<20
Chlordane (Technical)	608	†	†
delta-BHC	608	6.7	<20
Dieldrin	608	5.5	<20
Endosulfan I	608	5.3	<20
Endosulfan II	608	4.0	<20
Endosulfan sulfate	608	16.7	<20
Endrin	608	13.7	<20
Endrin aldehyde	608	9.1	<20
Endrin ketone	608	5.4	<20
gamma-BHC (Lindane)	608	4.2	<20
Heptachlor	608	9.7	<20
Heptachlor epoxide	608	8.8	<20
Hexachlorobenzene	612	†	†
Methoxychlor	608	52.0	<200
Toxaphene	608	†	†

**Table H-1. List of Parameters Tested (cont.)**

PCBs (all in ng/L)			
Arochlor-1016	608	31.0	<500
Arochlor-1221	608	21.0	<1000
Arochlor-1232	608	14.0	<500
Arochlor-1242	608	1	1
Arochlor-1248	608	1	1
Arochlor-1254	608	10.0	<500
Arochlor-1260	608	32.0	<500
Volatile Organics			
1,1,1-trichloroethane	624	1.0	<5
1,1,2,2-tetrachloroethane	624	1.3	<5
1,1,2-trichloroethane	624	0.6	<5
1,1-dichloroethane	624	0.8	<5
1,1-dichloroethene	624	1.3	<5
1,2-dichlorobenzene	624	0.4	<5
1,2-dichloroethane	624	0.6	<5
1,2-dichloropropane	624	0.4	<5
1,3-dichlorobenzene	624	0.5	<5
1,4-dichlorobenzene	624	0.4	<5
2-butanone	624	1.8	<5
2-chloroethylvinylether	624	0.8	<5
2-hexanone	624	1.5	<5
4-methyl-2-pentanone	624	1.3	<5
Acetone	624	16	<5
Acrolein	624	5.4	<5
Acrylonitrile	624	4.2	<5
Benzene	624	0.5	<5
Bromodichloromethane	624	0.4	<5
Bromoform	624	0.4	<5
Bromomethane	624	1.1	<5
Carbon disulfide	624	1.4	<5
Carbon tetrachloride	624	1.0	<5
Chlorobenzene	624	0.4	<5
Chloroethane	624	1.0	<5
Chloroform	624	0.5	<5
Chloromethane	624	0.7	<5
cis-1,2-dichloroethene	624	0.5	<5
cis-1,3-dichloropropane	624	0.3	<5
Dibromochloromethane	624	0.6	<5
Ethylbenzene	624	0.5	<5
m,p-xylene	624	1.4	<5
Methylene chloride	624	0.6	<5
o-xylene	624	0.5	<5
Styrene	624	0.4	<5
Tetrachloroethene	624	0.8	<5
Toluene	624	0.5	<5
trans-1,2-dichloroethene	624	1.1	<5
trans-1,3-dichloropropene	624	0.3	<5
Trichloroethene	624	1.0	<5
Trichlorofluoromethane	624	0.8	<5
Vinyl acetate	624	0.8	<5
Vinyl chloride	624	1.0	<5
Semi-Volatiles			
1,2,4-trichlorobenzene	625	6.1	<10
1,2-dichlorobenzene	625	3.7	<10
1,2-diphenylhydrazine	625	8.7	<10
1,3-dichlorobenzene	625	2.9	<10
1,4-dichlorobenzene	625	3.2	<10
2,2'-oxybis(1-chloropropane)	625	3.9	<10
2,4,5-trichlorophenol	625	8.4	<10
2,4,6-trichlorophenol	625	9.6	<10
2,4-dichlorophenol	625	9.0	<10
2,4-dimethylphenol	625	8.1	<10
2,4-dinitrophenol	625	12.4	<20

**Table H-1. List of Parameters Tested (cont.)**

Semi-Volatiles (cont.)			
2,4-dinitrotoluene	625	7.6	<10
2,6-dinitrotoluene	625	10.0	<10
2-chloronaphthalene	625	9.2	<10
2-chlorophenol	625	4.2	<10
2-methyl-4,6-dinitrophenol	625	7.9	<100
2-methylnaphthalene	625	4.5	<10
2-methylphenol	625	7.5	<10
2-nitroaniline	625	6.9	<10
2-nitrophenol	625	6.2	<10
3-3'-dichlorobenzidine	625	8.4	<20
3-nitroaniline	625	8.6	<10
4-bromophenyl phenyl ether	625	7.8	<10
4-chloro-3-methylphenol	625	7.4	<10
4-chloroaniline	625	8.2	<10
4-chlorophenyl phenyl ether	625	9.0	<10
4-methylphenol (includes 3-methylphenol)	625	7.2	<10
4-nitroaniline	625	8.0	<10
4-nitrophenol	625	6.3	<20
Acenaphthene	625	6.8	<10
Acenaphthylene	625	7.2	<10
Aniline	625	6.6	<10
Anthracene	625	5.8	<10
Benzindine	625	0.5	<10
Benzo(a)anthracene	625	5.4	<10
Benzo(a)pyrene	625	5.4	<10
Benzo(b)fluoranthene	625	7.8	<10
Benzo(ghi)perylene	625	5.2	<10
Benzo(k)fluoranthene	625	4.1	<10
Benzoic acid	625	7.2	<20
Benzyl alcohol	625	5.8	<10
bis(2-chloroethoxy) methane	625	6.7	<10
bis(2-chloroethyl) ether	625	4.1	<10
bis(2-ethylhexyl) phthalate	625	4.9	<10
Butyl benzyl phthalate	625	6.6	<10
Chrysene	625	6.2	<10
di-n-butylphthalate	625	5.4	<10
di-n-octylphthalate	625	4.6	<10
Dibenzo(a,h)anthracene	625	5.2	<10
Dibenzofuran	625	6.8	<10
Diethyl phthalate	625	9.1	<10
Dimethyl phthalate	625	9.9	<10
Fluoranthene	625	5.1	<10
Fluorene	625	8.1	<10
Hexachlorobenzene	625	8.8	<10
Hexachlorobutadiene	625	6.2	<10
Hexachlorocyclopentadiene	625	10.7	<50
Hexachloroethane	625	3.5	<10
Indeno(1,2,3-cd) pyrene	625	6.4	<10
Isophrone	625	7.5	<10
n-nitroso-di-n-propylamine	625	3.1	<10
n-nitrosodimethylamine	625	4.3	<10
n-nitrosodiphenylamine	625	7.9	<10
Naphthalene	625	5.7	<10
Nitrobenzene	625	6.3	<10
Pentachlorophenol	625	6.9	<30
Phenanthrene	625	5.8	<1
Phenol	625	2.2	<20
Pyrene	625	6.0	<10
<sup>1</sup> Data unavailable. <sup>2</sup> Standard Methods. <sup>3</sup> Native concentration too high for MDL determination. <sup>4</sup> Some expressed in mg/L as noted.			



## Appendix I. Priority Pollutant List and Other Parameters

**Table I-1. EPA List of 128 Priority Pollutants**

<p><b><u>Chlorinated Benzenes</u></b>            Chlorobenzene            1,2-dichlorobenzene            1,3-dichlorobenzene            1,4-dichlorobenzene            1,2,4-trichlorobenzene            Hexachlorobenzene</p>	<p><b><u>Chlorinated Ethanes</u></b>            Chloroethane            1,1-dichloroethane            1,2-dichloroethane            1,1,1-trichloroethane            1,1,2,2-tetrachloroethane            Hexachloroethane</p>	<p><b><u>Chlorinated Phenols</u></b>            2-chlorophenol            2,4-dichlorophenol            2,4,6-trichlorophenol            Parametachlorocresol (4-chloro-3-methyl phenol)</p>
<p><b><u>DDT and Metabolites</u></b>            4,4-DDT            4,4-DDE (p,p-DDX)            4,4-DDD (p,p-DDE)</p>	<p><b><u>Haloethers</u></b>            4-chlorophenyl phenyl ether            2-bromophenyl phenyl ether            Bis(2-chloroisopropyl) ether</p>	<p><b><u>Halomethanes</u></b>            Methylene chloride (dichloromethane)            Methyl chloride (chloromethane)            Methyl bromide (bromomethane)            Bromoform (tribromomethane)            Dichlorobromomethane            Chlorodibromomethane</p>
<p><b><u>Inorganics</u></b>            Antimony            Arsenic            Asbestos            Beryllium            Cadmium            Chromium (III)            Chromium (VI)            Copper            Cyanide, total            Lead            Mercury            Nickel            Selenium            Silver            Thallium            Zinc</p>	<p><b><u>Nitroamines</u></b>            N-nitrosodimethylamine            N-nitrosodiphenylamine            N-nitrosodi-n-propylamine</p>	<p><b><u>Pesticides and Metabolites</u></b>            Aldrin            Dieldrin            Chlordane (technical mixture and metabolites)            Alpha-endosulfan            Beta-endosulfan            Endosulfan sulfate            Endrin            Endrin aldehyde            Heptachlor            Heptachlor epoxide (BHC-hexachlorocyclohexane)            Alpha-BHC            Beta-BHC            Gamma-BHC (Lindane)            Delta-BHC            Toxaphene</p>
<p><b><u>Phenols (other than chlorinated)</u></b>            2-nitrophenol            4-nitrophenol            2,4-dinitrophenol            4,6-dinitro-o-cresol (4,6-dinitro-2-methylphenol)            Pentachlorophenol            Phenol            2,4-dimethylphenol</p>	<p><b><u>Phthalate Esters</u></b>            Bis(2-ethylhexyl)phthalate            Butyl benzyl phthalate            Di-n-butyl phthalate            Di-n-octyl phthalate            Diethyl phthalate            Dimethyl phthalate</p>	<p><b><u>Polychlorinated Biphenyls (PCBs)</u></b>            PCB-1242 (Aroclor 1242)            PCB-1254 (Aroclor 1254)            PCB-1221 (Aroclor 1221)            PCB-1232 (Aroclor 1232)            PCB-1248 (Aroclor 1248)            PCB-1260 (Aroclor 1260)            PCB-1016 (Aroclor 1016)</p>
<p><b><u>Polynuclear Aromatic Hydrocarbons (PAHs)</u></b>            Acenaphthene            1,2-benzanthracene (benzo(a)anthracene)            Benzo(a)pyrene (3,4-benzo-pyrene)            3,4-benzofluoranthene (benzo(b)fluoranthene)            11,12-benzofluoranthene (benzo(k)fluoranthene)            Chrysene            Acenaphthylene            Anthracene            1,12-benzoperylene (benzo(ghi)perylene)            Fluorene            Fluoranthene            Phenanthrene            1,2,5,6-dibenzanthracene (dibenzo(a,h)anthracene)            Indeno (1,2,3-cd) pyrene (2,3-o-phenylene pyrene)            Pyrene</p>	<p><b><u>Other Chlorinated Organics</u></b>            Chloroform (trichloromethane)            Carbon tetrachloride (tetrachloromethane)            Bis(2-chloroethoxy)methane            Bis(2-chloroethyl)ether            2-chloroethyl vinyl ether (mixed)            2-chloronaphthalene            3,3'-dichlorobenzidine            1,1-dichlorethylene            1,2-trans-dichloroethylene            1,2-dichloropropane            1,2-dichloropropylene (1,3-dichloropropene)            Tetrachloroethylene            Trichloroethylene            Vinyl chloride (chloroethylene)            Hexachlorobutadiene            Hexachlorocyclopentadiene            2,3,7,8-tetrachloro-dibenzo-p-dioxin (TCDD)</p>	<p><b><u>Other Organics</u></b>            Acrolein            Acrylonitrile            Benzene            Benzidine            2,4-dinitrotolulene            2,6-dinitrotolulene            Ethylbenzene            Isophrone            Naphthalene            Nitrobenzene            Tolulene</p>

**Table I-2. NPDES Permit Application Testing Requirements  
(40 CFR 122, Appendix D, Tables II and III)**

<u>Volatile Organics</u>	<u>Organic Pesticides</u>	<u>Organic Base/Neutrals</u>
acrolein acrylonitrile benzene bromoform carbon tetrachloride chlorobenzene chlorodibromomethane chloroethane 2-chloroethylvinyl ether chloroform dichlorobromomethane 1,1-dichloroethane 1,2-dichloroethane 1,1-dichloroethylene 1,2-dichloropropane 1,3-dichloropropylene ethyl benzene methyl bromide methyl chloride methylene chloride 1,1,2,2-tetrachloroethane tetrachloroethylene toluene 1,2-trans-dichloroethylene 1,1,1-trichloroethane 1,1,2-trichloroethane trichloroethylene vinyl chloride	aldrin alpha-BHC beta-BHC gamma-BHC delta-BHC chlordane 4,4'-DDT 4,4'-DDE 4,4'-DDD dieldrin alpha-endosulfan beta-endosulfan endosulfan sulfate endrin endrin aldehyde heptachlor heptachlor epoxide PCB-1242 PCB-1254 PCB-1221 PCB-1232 PCB-1248 PCB-1260 PCB-1016 toxaphene	acenaphthene acenaphthylene anthracene benzidine benzo(a)anthracene benzo(a)pyrene 3,4-benzofluoranthracene benzo(ghi)perylene benzo(k)fluoranthene bis(2-chloroethoxy)methane bis(2-chloroethyl)ether bis(2-ethylhexyl)phthalate 4-bromophenyl phenyl ether butylbenzyl phthalate 2-chloronaphthalene 4-chlorophenyl phenyl ether chrysene dibenzo(a,h)anthracene 1,2-dichlorobenzene 1,3-dichlorobenzene 1,4-dichlorobenzene 3-3'-dichlorobenzidine diethyl phthalate dimethyl phthalate di-n-butyl phthalate 2,4-dinitrotoluene 2,6-dinitrotoluene di-n-octyl phthalate 1,2-diphenylhydrazine fluoranthene fluorene hexachlorobenzene hexachlorobutadiene hexachlorocyclopentadiene hexachloroethane indeno(1,2,3-cd)pyrene isophorone naphthalene nitrobenzene N-nitrosodimethylamine N-nitrosodi-n-propylamine N-nitrosodiphenylamine phenanthrene pyrene 1,2,4-trichlorobenzene
<u>Organic Acids</u> 2-chlorophenol 2,4-dichlorophenol 2,4-dimethylphenol 4,6-dinitro-o-cresol (2-methyl-4,6-dinitrophenol) 2,4-dinitrophenol 2-nitrophenol 4-nitrophenol p-chloro-m-cresol (4-chloro-m-cresol) pentachlorophenol phenol 2,4,6-trichlorophenol	<u>Metals</u> antimony, total arsenic, total beryllium, total cadmium, total chromium, total copper, total lead, total mercury, total nickel, total selenium, total silver, total thallium, total zinc, total cyanide, total phenols, total	<u>Cyanide and Phenols</u> cyanide, total phenol, total

## Appendix J. Glossary, Abbreviations/Acronyms, and Units

### Glossary

**40 CFR Part 122** - Code of Federal Regulations: Protection of the Environment. Part 122 is Administered Permit Programs: The National Pollutant Discharge Elimination System. (Appendix D of 40 CFR 122 lists the Permit Application Requirements.)

**Acid Base Neutrals (ABNs)** - A category of organic chemical pollutants also called semi-volatile organics. See Appendix I.

**Acute** - A stimulus severe enough to rapidly induce an effect; in aquatic toxicity tests, an effect observed in 96 hours or less is typically considered acute. When referring to aquatic toxicology or human health, an acute effect is not always measured in terms of lethality.

**Acute Criteria-** The maximum concentration of a constituent in water that an organism may be exposed to for a total of one hour, once over three years, without dying.

**Acute Static Toxicity Test** - Test designed to measure water quality effect on mortality. It measures the effect of the whole effluent sample on an organism. Animals are put in a vial with effluent, and the fatal effects are monitored. To calculate water quality standards, the test is run on sensitive animals. The concentration that shows a 95% mortality rate is then multiplied by two.

**Activation** - An event when the wastewater flow exceeds the holding capacity of the sewer lines and the hydraulic capacity of the treatment plant, causing a diversion of flow to the CSO facilities.

**Aeration** - The process of adding air to a liquid (e.g. wastewater).

**Aliquot** - A measured portion of a sample.

**Anaerobic Digester** - The structure where organic material is broken down by organisms in the absence of oxygen.

**Anoxia** - The absence of oxygen.

**Average Monthly Discharge Limitation** - The highest allowable average of “daily discharge” over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured.

**Average Weekly Discharge Limitation** - The highest allowable average of “daily discharge” over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

**Bar Screen** - A screen made of bars designed to catch large debris (e.g. rags, wood, shoes) in waterways.

**Below Detection Limit/Level (BDL)** - Values below the Reporting or Quantitation Limit. For further explanation see Appendix H.

**Bioaccumulation** - The process in which industrial waste, toxic chemicals, and other pollutants gradually build up in living tissues and organs.

**Biochemical** - Having to do with a chemical change resulting from the metabolic activities of living organisms.

**Biochemical Oxygen Demand (BOD)** - The amount of oxygen needed to oxidize inorganic materials and to degrade organic materials by *biochemical reactions* in a certain time at a certain temperature. BOD is used as a measure of organic pollution.

**Biomagnification** - The process by which the concentration of a compound increases in species occupying successive trophic levels.

**BDL** - See Below Detection Limit

**Bloom** - A large mass of algae (microscopic and or macroscopic) in water.

**BOD** - See Biochemical Oxygen Demand.

**Buffering Capacity** - Measures the ability of certain water bodies to resist changes in pH from addition of acidic or caustic substances.

**CFR**- See Code of Federal Regulations

**Chemical Oxygen Demand (COD)** - The amount of oxygen needed for the *chemical oxidation* of chemicals in water. COD is used to measure the suitability of water for organisms that require oxygen.

**Chlorination** - The addition of chlorine or chlorine compounds to wastewater. Chlorination is most often done for disinfection purposes.

**Choking** - A process by which flows that cannot be handled by existing pumps are “choked back” into the sewer system, frequently leading to local overflows.

**Chronic** - A stimulus that lingers or continues for a relatively long period of time, often one-tenth of the life span or more. Chronic should be considered a relative term depending on the life span of an organism. The measurement of a chronic effect can be reduced growth, reduced reproduction, etc., in addition to lethality.

**Chronic Criteria** - The maximum concentration of a constituent in water that an organism may be exposed to for a total of four days over three years without showing long term, harmful effects, short of mortality. Chronic criteria involve sublethal effects on, among other things, the growth, reproductivity, and fertility of organisms.

**Chronic Reproduction Test** - A test designed to measure the chronic effects of wastewater on reproduction and fertility.

**Chronic Survival and Growth Test** - Test designed to see if any mortality occurs after the chronic criteria have been passed. After the organisms have survived, the size of the animals are measured after seven days and statistically compared to controls.

**Clean Water Act (CWA)** - Formally referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972. Pub. L. 92-500, as amended by Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117: 33 U.S.C.1251 et seq.

**COD** - See Chemical Oxygen Demand

**Code of Federal Regulations (CFR)** - Codification of the general and permanent rules of the federal government. CFR 40 covers environmental protection.

**Combined Sewer** - A sewer receiving both sanitary wastewater and stormwater runoff.

**Combined Sewer Overflow Facility** - A place where overflow from combined sewers is screened, settled, and chlorinated before being discharged.

**Combined Sewer Overflow Pipe** - A pipe that discharges overflow from combined sewers in order to prevent back-ups in the sewerage system.

**Composite Sample** - A sample consisting of a minimum of eight grab samples collected at equal intervals during a 24-hour period (or lesser period if specified) and combined proportional to flow, or a sample continuously collected proportionally to flow over that same time period.

**Conventional Parameters/Pollutants** - Those pollutants and constituents that are removed from wastewater by conventional treatment. Generally these constituents are settleable solids, biochemical oxygen demand, total suspended solids, oil and grease, total coliform, fecal coliform, residual chlorine, and chlorides.

**Conventional Treatment** - Well-known or well-established water or wastewater treatment methods, usually consisting of primary and secondary processes and may include advanced or tertiary treatment.

**Criteria** - The numerical and or narrative elements of water quality standards.

**Critical Dilution** - Dilution of the effluent required to meet Water Quality Standards.

**CWA** - See Clean Water Act.

**Daily Discharge** - The discharge of a pollutant measured during a calendar day or any 24-hours period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of

measurements, the daily discharge is calculated as the average measurement of the pollutant over the day.

**Designated Use** - Specified use of a body of water included in state water quality standards.

**Digester** - A place where organic matter is broken down either with oxygen (aerobically) or without oxygen (anaerobically).

**Disinfection** - The destruction of pathogens (e.g. fecal coliform bacteria) in a water source or wastewater.

**Effluent** - The wastewater or other water coming out of a treatment facility or process.

**Effluent Limitation** - Any restriction imposed by the Director (the person authorized to sign NPDES permits by EPA and/or the State) on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean.

**Eutrophication** - The natural process by which a body of water ages. Nutrients stimulate plant growth and lakes, estuaries, and bays evolve into bogs or marshes. Effluents high in nutrients cause excessive plant growth that accelerates eutrophication.

**Fecal Coliform** - Bacteria found in the wastes of warm-blooded animals. Fecal coliform is used as an indicator that disease causing bacteria and viruses are present. It is a component of Total Coliform.

**Floatables** - Constituents of wastewater that rise to the surface in the settling process, consisting mainly of oil, grease, and plastics.

**Grab Sample** - An individual sample collected in a period of less than 15 minutes.

**Gravity Facility** - A combined sewer overflow facility that receives flows by gravity (descending gradients from source to outfall) and requires no pumping.

**Grit** - Heavy suspended mineral matter in wastewater like sand and gravel.

**Grit Chamber** - A detention tank where grit is separated by sedimentation (grit settles to the bottom). The settling is controlled by the velocity of the water.

**Headworks** - A structure where wastewater are screened out and grit and other solids are trapped before the wastewater is pumped to a treatment facility.

**Human Health Criteria** - Estimated concentrations or quantities of chemicals that can be expected to occur in the environment in water, sediment, or food and that are not likely to pose a significant risk to the exposed human population. Human health criteria are published under section 304(a) of the CWA and are based on the latest scientific information. This information is updated and issued to the states to serve as guidance for the development of criteria.

**Hydrocarbons** - Chemical compounds only containing hydrogen and carbon.

**Hypochlorite** - The chemical used for chlorine disinfection of wastewater (either calcium, sodium, or lithium hypochlorite).

**Hypoxia** - The state of very low oxygen concentration.

**IDL** - See Instrument Detection Limit.

**I/I** - Infiltration and Inflow. See separate entries for each.

**Infiltration** - Groundwater that enters sewer pipes through cracks.

**Inflow** - Water that enters sewer pipes through illegal connections and storm water runoff.

**Inorganic** - Not containing carbon.

**Influent** - Wastewater or other water going into treatment facility or process.

**Instrument Detection Limit (IDL)** - The smallest amount of a substance a particular instrument is capable of detecting. See Appendix H for further explanation.

**Interceptor** - A large sewerage line collecting water from smaller sewerage pipes.

**J values** - Values between the Method Detection Limit and the Quantitation (or Reporting) Limit. See Appendix H for further explanation.

**Lethal Concentration 50% (LC50)** - The concentration of effluent in a sample that causes mortality to 50% of the test population at a specific time of observation.

**Limiting Nutrient** - In a given ecosystem, the limiting nutritional factor that controls the growth of plants or animals. Usually the limiting nutrient for plant growth is nitrogen in the marine environment and phosphorus in the fresh water environment. The limiting nutrient can also be thought of as the specific nutrient that will have the most impact on a receiving body of water (for example, the accelerated eutrophication of fresh water bodies caused by phosphorus in wastewater effluent).

**Local Limits** - The development of specific limits as part of MWRA's General Pretreatment Program: "The permittee shall develop and enforce specific effluent limits for industrial users, and all other users, as appropriate, pursuant to 40 CFR 403.5."

**Lowest Observed Effect Concentration (LOEC)** - The lowest concentration of effluent to which organisms are exposed in a life cycle or partial life cycle test which contains an adverse effect (on survival, growth, and reproduction).

**Maximum Acceptable Toxicant Concentration (MATC)**- The effluent concentration that may be present in a receiving water body without causing significant harm to productivity or other uses. The MATC is determined by the results of chronic tests of either a partial life cycle with sensitive life stages or a full life cycle of the test organism. The MATC is the geometric mean of the No Observed Effect Concentration and the Lowest Observed Effect Concentration.

**Maximum Daily Discharge Limitation** - The highest allowable daily discharge.

**MBAS** - See Methylene Blue Anion Surfactant

**MDL** - See Method Detection Limit

**Metals** - A group of priority pollutants. See Appendix I for a complete list.

**Method Detection Limit (MDL)** - The smallest amount of a substance that can be detected above background noise by following a particular method of analysis. See Appendix H for further explanation.

**Methylene Blue Anion Surfactant** - A specific type of surfactant. See surfactant.

**Mixing Zone** - Area where discharged effluent is first diluted. The area is extended to cover the secondary mixing in the ambient water body. A mixing zone is an allocated impact zone where water quality criteria can be exceeded as long as toxic conditions are prevented.

**National Pollutant Discharge Elimination System (NPDES)** - The national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, and 405 of the Clean Water Act (CWA). The term includes an "approved program."

**Nine Minimum Controls** - Part of the EPA's CSO Policy. The Nine Minimum Controls are:

- 1) Proper operation and regular maintenance (O&M) programs for the sewer system and combined sewer overflow points
- 2) Maximum use of the collection system for storage
- 3) Review and modification of the pretreatment programs to assure CSO impacts are minimized
- 4) Maximization of flow to the POTW for treatment
- 5) Prohibition of CSO discharges during dry weather
- 6) Control of solid and floatable materials in CSO discharges
- 7) Pollution prevention programs that focus on contaminant reduction activities
- 8) Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts
- 9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

**Nitrification** - The conversion of ammonia and nitrite to nitrate.

**No Observed Acute Level (NOAL)** - The highest concentration of effluent to which organisms are exposed in a short-term test in which at least 90% of the test organisms survive.

**No Observed Effect Concentration (NOEC)** - The highest concentration of effluent to which organisms are exposed in a life cycle or partial life cycle test which contains no adverse effects (on growth, survival, and reproduction).

**NPDES** - See National Pollutant Discharge Elimination System

**Nutrient** - Any element or compound essential as raw material for organism growth and development. Examples: phosphorus and nitrogen.

**Oil and Grease** - Fats, oils, and grease from animal and plant derivation. Also called FOGs.

**Organic Compounds** - Volatiles, Acid Compounds, Base/Neutral, and Pesticides. Organics are listed in 40 CFR Ch. 1 Appendix D under CWA Section 307(a). See Appendix I for a complete list.

**Orthophosphorus** - A form of phosphorus, included in nutrients.

**Outfall** - the site of initial discharge

**PAH** - See Polynuclear Aromatic Hydrocarbon

**Pesticides/PCBs** - Subdivision of priority pollutants. See Appendix I for a complete list.

**Petroleum Hydrocarbon (PHC)** - Oil and grease from petroleum derivation.

**pH** - The negative log of the hydrogen ion concentration used to express acidity (<7) and alkalinity (>7).

**PHC** - See Petroleum Hydrocarbon.

**Pollutant** - Dredged soil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemicals wastes, biological materials, radioactive materials, (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

It does not mean: (a) Sewage from vessels; or (b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed or in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

**Polynuclear Aromatic Hydrocarbon (PAH)** - A type of semi-volatile organic. Also known as polycyclic aromatic hydrocarbons.

**POTW** - See Publicly Owned Treatment Work.

**Preaeration** - The process by which air is added to primary influent to help in the removal of gases, floatation of grease, addition of oxygen, and in the settling or coagulation of wastewater.

**Prechlorination** - The addition of chlorine to primary influent at or near the beginning of the treatment facility/process.

**Primary Settling** - The detention of wastewater as part of primary treatment to settle out solids (sludge) and collect floatables (scum).

**Primary Treatment** - Screening and settling of wastewater.

**Priority Pollutants** - Refers to some of the chemicals listed in 40 CFR Ch. 1 Appendix D under Section 307(a) of the CWA. There are 65 compounds and families of compounds that are among the most persistent, prevalent, and toxic of chemicals known to man. These 65 compounds or families of compounds have been translated into 126 individual pollutants. See Appendix I, Table I-2 for the complete list.

**Priority Pollutant Scan** - A series of chemical analyses to identify the presence of priority pollutants.

**Publicly Owned Treatment Work (POTW)** - Any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of liquid nature that is owned by a "State" or a "municipality." This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

**Pumping Station** - Structures where wastewater from low-lying areas is pumped.

**Quantitation Limit** - See Reporting Limit.

**Removal Rate** - or Percent Removal. Defined as the influent concentration minus the effluent concentration, divided by the influent concentration.

**Reporting Limit** - The smallest concentration that can be quantified. On a graph of pollutant concentration versus instrument response, the reporting limit is the smallest concentration where the linear relationship holds before starting to curve as the pollutant concentration goes to zero. Also called the Quantitation Limit. See Appendix H for further explanation.

**Residuals** - Matter left over by treatment processes including screenings, scum, and sludge.

**Screening** - The process by which sewage from interceptors first goes through headworks where grit and large objects like leaves, sticks, and hygiene products (like tampon applicators and condoms) are screened out.

**Screenings** - The objects that are collected by the process of screening.

**Scum** - Solids that float to the top of wastewater.

**Secondary Treatment** - The treatment of wastewater beyond solids and grit removal. The process decreases the organic load.

**Sedimentation** - The process by which solids are allowed to settle by gravity.

**Sedimentation Tank** - Tanks used to detain wastewater while the solids settle out.

**Semi-Volatile Organics** - Also known as Acid Base Neutrals (ABNs). A subcategory of organic pollutants. See Appendix I for a complete list.

**Separate Sewer** - A sewerage system divided into a storm sewer and a sanitary sewer.

**Settleable Solids** - The estimated amount of sludge that will settle by sedimentation. It is a fraction of the suspended-solids.

**Settled Solids** - Sludge. (See sludge.)

**Sewage** - Any wastes, including wastes from humans, households, commercial establishments, industries, and storm water runoff, that are discharged to or otherwise enter a POTW.

**Sludge** - Solids, residues, and precipitate separated from or created in sewage by the unit processes of a POTW.

**SOP** - See System Optimization Plan or Standard Operating Procedures

**Stratification** - The separation of water into layers characterized by thermal differences.

**Standard Operating Procedures (SOP)** - Documented protocols for plant operation, laboratory procedures, etc.

**Surcharging** - When the capacity of the sewer is insufficient and sewage escapes through a manhole.

**Surfactant** - Surface-active agent. Large organic molecules that cause foaming. They are usually found in detergents.

**System Optimization Plan (SOP)** - Hydraulic improvements that, in conjunction with ongoing programs of municipal sewerage agencies, might promote a balanced hydraulic system. The SOP may include optimization of the collector/interceptor system upstream of regulators, to ensure that the storage and transport capacity of the system is maximized within constraints unalterable except for major structural modifications.

**Thickener** - The structure where sludge is sent to be thickened by removing water.

**TKN** - See Total Kjeldahl Nitrogen.

**Total Coliform** - Bacteria found in decaying matter, feces, and soil. It used as an indicator of pathogens that are present in wastewater.

**Total Kjeldahl Nitrogen (TKN)** - The total organic and ammonia nitrogen.

**Total Phosphorus** - A measure of all the forms of phosphorus, a nutrient, found in water (orthophosphates, polyphosphates, and organic phosphates).

**Total Suspended Solids (TSS)** - The sum of insoluble solids that either float on the surface of, or are in suspension in water, wastewater, or other liquids.

**Toxic Pollutant** - Any pollutant listed as toxic in Appendix D of 40 CFR Part 122, under Section 307(a)(1) of CWA.

**Toxics** - Pollutants that have a toxic effect on living organisms. The “priority pollutants” of CWA Section 307(a) are a subset of this group of pollutants.



**Toxicity Test** - A procedure to determine the toxicity of a chemical or an effluent using living organisms. A toxicity test measures the degree of effect on exposed test organisms of a specific chemical or effluent.

**TSS** - See Total Suspended Solids.

**Twelve Month Running Average** - The monthly average computed using the specific month and the previous 11 months.

**Unregulated Community** - Dischargers not required to have Permits to discharge into MWRA sewerage system. They are not regulated or required to meet Local Limits, nor are they regulated under the Local Limits Discharge Program.

**Vertical Mixing** - The vertical movement of the water column caused by wind, and/or density and/or temperature differences.

**Volatile Organic Acid (VOA)** - Same as Volatile Organic Compound.

**Volatile Organic Compound (VOC)** - Same as Volatile Organic Acid.

**Volatile Solids** - Those solids of a suspended solid sample that are burned off in a muffle oven at  $550\pm 50$  °C.

**Water Quality** - The chemical, biological, and physical conditions of a body of water.

**Water Quality Criteria** - Specific levels of pollutants that would make a body of water unsuitable for its designated use (i.e. harmful if used for drinking, swimming, farming, fishing, or industrial processes).

**Water Quality Standard** - A law or regulation that consists of: the beneficial designated use or uses of a water body; the numeric and narrative water quality criteria that are necessary to protect the use or uses of that particular water body; and an antidegradation statement.

**Whole Effluent Toxicity (WET)** - The total toxic effect of effluent, not chemical specific but rather the cumulative effect, whether it be synergistic or antagonistic, of the chemicals found in the effluent.

## Abbreviations and Acronyms

**ABNs** - Acids Bases Neutrals

**BDL** - Below Detection Limit

**BOD** - Biochemical Oxygen Demand

**BWSC** - Boston Water and Sewer Commission

**cBOD** - Carbonaceous Biochemical Oxygen Demand

**CFR** - Code of Federal Regulations

**CSO** - Combined Sewer Overflow

**CWA** - Clean Water Act

**DEP** - Massachusetts Department of Environmental Protection

**DITP** - Deer Island Treatment Plant

**EnQual** - Environmental Quality, Water and Wastewater

**EPA** - United States Environmental Protection Agency

**FY** - Fiscal Year

**IDL** - Instrument Detection Level

**I/I** - Infiltration and Inflow

**LC50** - Median Lethal Concentration

**LD50** - Median Lethal Dose

**LOAEL** - Lowest Observed Adverse Effect Level

**LOEC** - Lowest Observed Effect Concentration

**MATC** - Maximum Acceptable Toxicant Concentration

**MDC** - Metropolitan District Commission

**MDL** - Method Detection Limit

**MPN** - Most Probable Number  
**MWRA** - Massachusetts Water Resources Authority  
**NITP** - Nut Island Treatment Plant  
**NOAL** - No Observed Acute Level  
**NOEC** - No Observed Effect Concentration  
**NPDES** - National Pollutant Discharge Elimination System  
**PAH** - Polycyclic (or Polynuclear) Aromatic Hydrocarbon  
**PCB** - Polychlorinated Biphenyl  
**PHC** - Petroleum Hydrocarbon  
**POTW** - Publicly Owned Treatment Work  
**SD** - Standard Deviation  
**SOP** - Standard Operating Procedures or System Optimization Plan  
**SSO** - Sanitary Sewer Overflow  
**TKN** - Total Kjeldahl Nitrogen  
**TRAC** - Toxic Reduction and Control Department  
**TSS** - Total Suspended Solids  
**VOA** - Volatile Organic Acid  
**VOC** - Volatile Organic Compound  
**WET** - Whole Effluent Toxicity [test]

### **Units of Measurement**

**in/yr** - inches per year  
**L** - liter  
**lbs** - pounds  
**lbs/day** - pounds per day  
**mL/L** - milliliters per liter  
**MG** - million gallons  
**mgd** - million gallons per day  
**mg/L** - milligrams per liter  
**µg/L (or ug/L)** - micrograms per liter



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