NPDES compliance summary report, fiscal year 2016

Massachusetts Water Resources Authority
Environmental Quality, Water and Wastewater
Report 2016-17

Citation:
Pacheco, N. 2017. NPDES compliance summary report, fiscal year 2016.
Boston: Massachusetts Water Resources Authority. Report 2016-17. 155 pp.

NPDES COMPLIANCE SUMMARY REPORT
Fiscal Year 2016

Frederick A. Laskey
Executive Director

Michael J. Hornbrook
Chief Operating Officer

Betsy Reilley, Ph.D.
Director, Environmental Quality, Water and Wastewater

By
Nathan Pacheco

Environmental Quality, Water and Wastewater
Operations Division
Massachusetts Water Resources Authority
Charlestown Navy Yard
100 First Avenue
Boston, MA 02129
(617) 242-6000

Contributors

Maret Smolow
Fang Yu

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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, 2015 to June 30, 2016. 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 MWRA's Deer Island Treatment Plant (DITP) and Combined Sewer Overflow (CSO) facilities.

Deer Island Treatment Plant

MWRA's NPDES permit requires the Authority to monitor its wastewater treatment plant at Deer Island for specific parameters. MWRA currently operates under a permit issued on July 10, 2000 and effective August 9, 2000. The permit calls for secondary treatment of wastewater and monitoring of the effects of the outfall in
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, 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 FY16, comparing the flow with the monthly averages of the previous twenty-two years – FY92 to FY15. From FY99 to FY16 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.

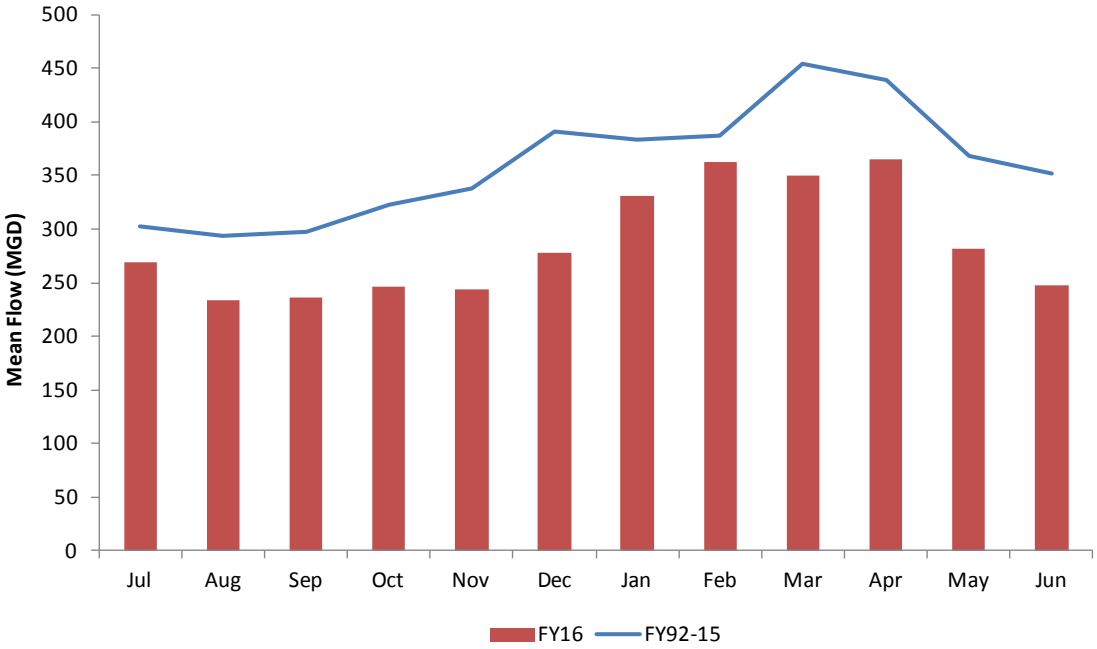


Figure 1. MWRA Flows, FY92-FY16

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 snow melt 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 FY16. The solid line represents the dry day flow limit of 436 mgd for the permit. In FY16, no violations of the dry day flow limit occurred.

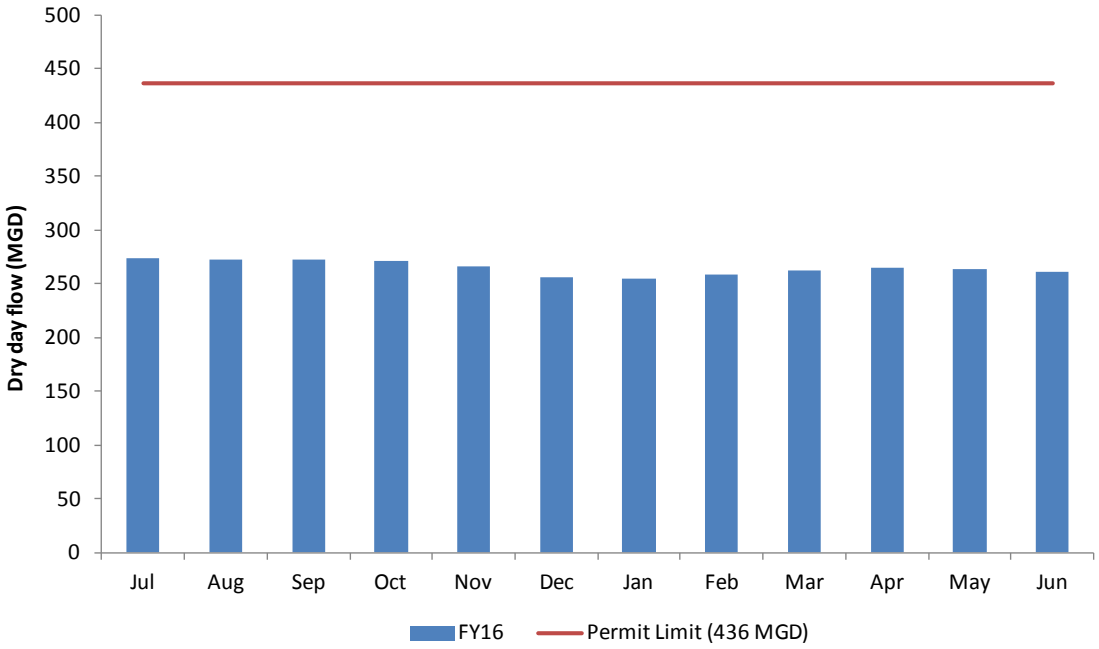


Figure 2. DITP Dry Day Flows, FY16

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 total suspended solids (TSS) and biochemical oxygen demand (BOD) or carbonaceous biochemical oxygen demand (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.[1] 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.

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

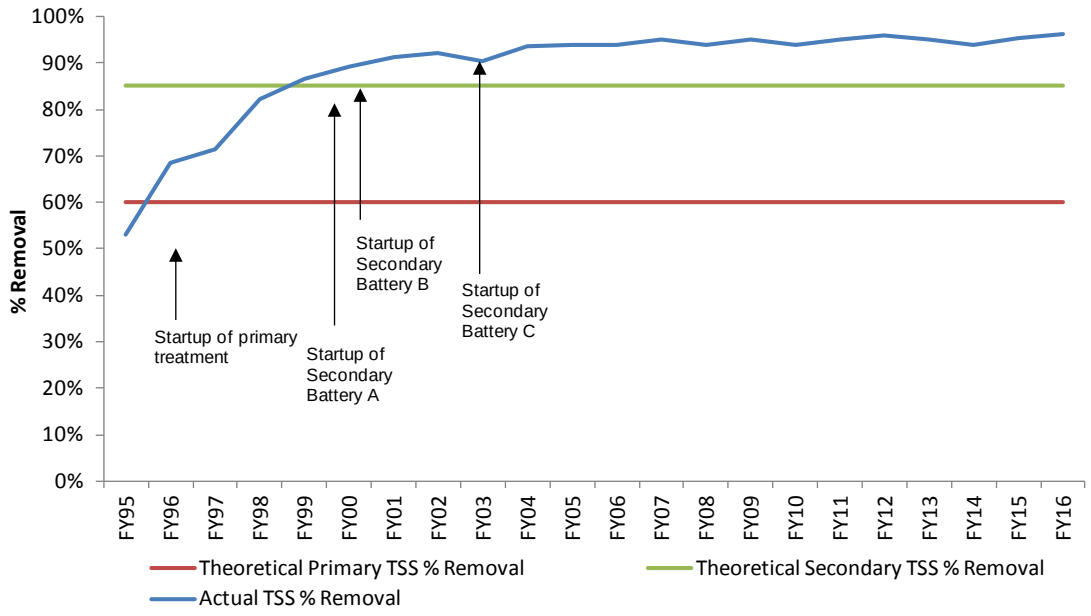


Figure 3. DITP Effluent TSS Removal Rate, FY94-FY16

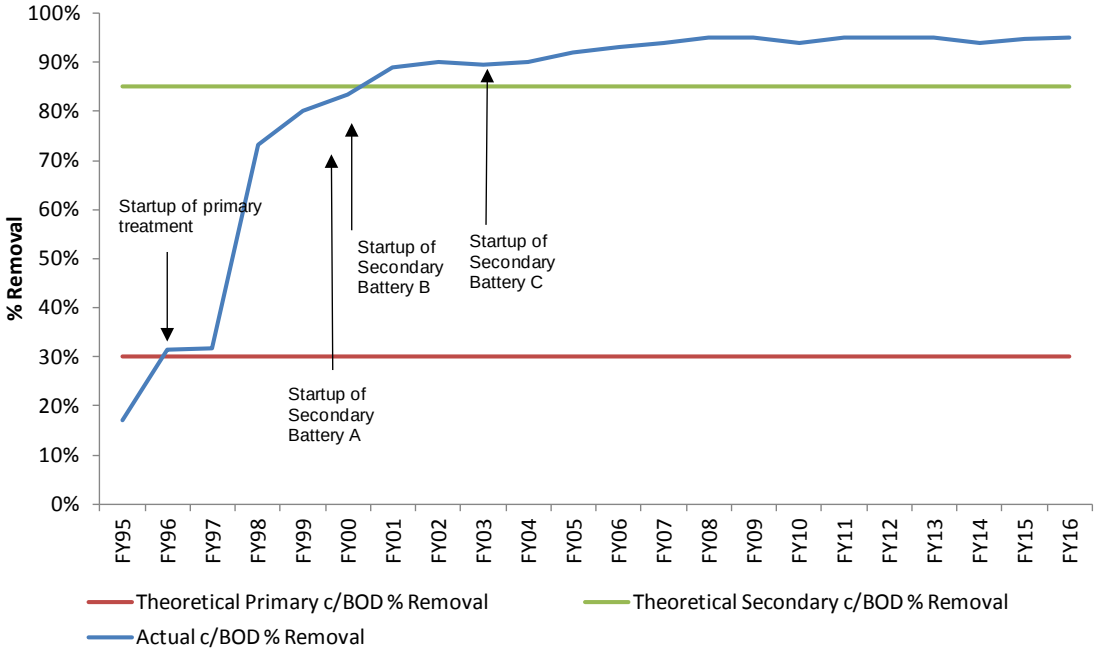


Figure 4. DITP Effluent BOD/cBOD Removal Rate, FY94-FY16

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 FY16 to previous years. No non-toxicity NPDES violations occurred between FY16 and FY05 or in FY00, FY99. 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 FY16, there were also no toxicity violations at DITP.

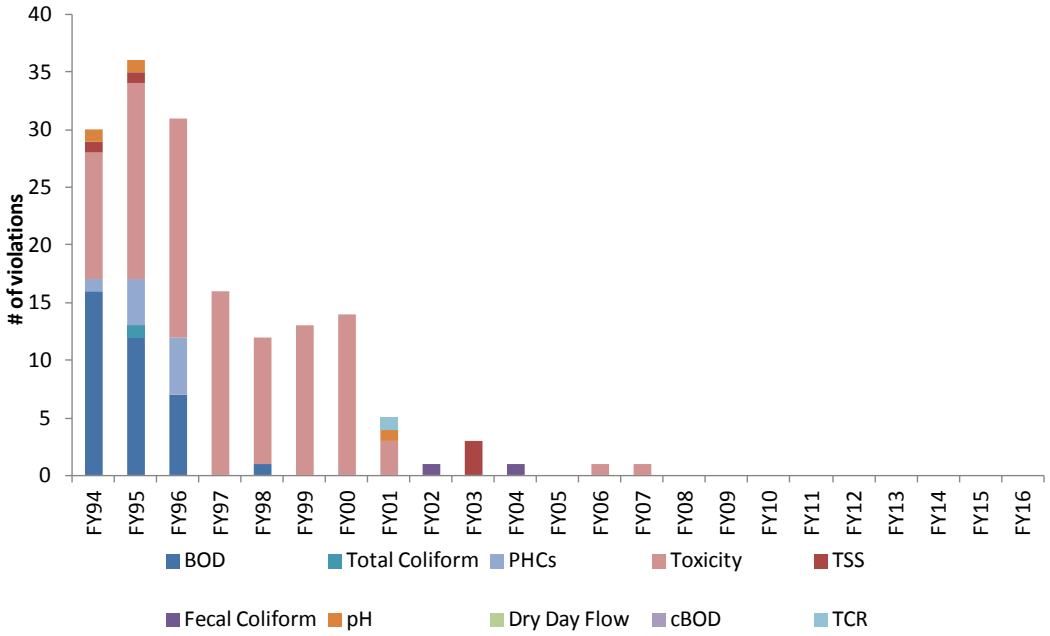


Figure 5. NPDES Violations at DITP, FY94-FY16

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 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 FY16. 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 MWRA's CSO Long Term Control Plan has reduced the volume and number of activations. 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.

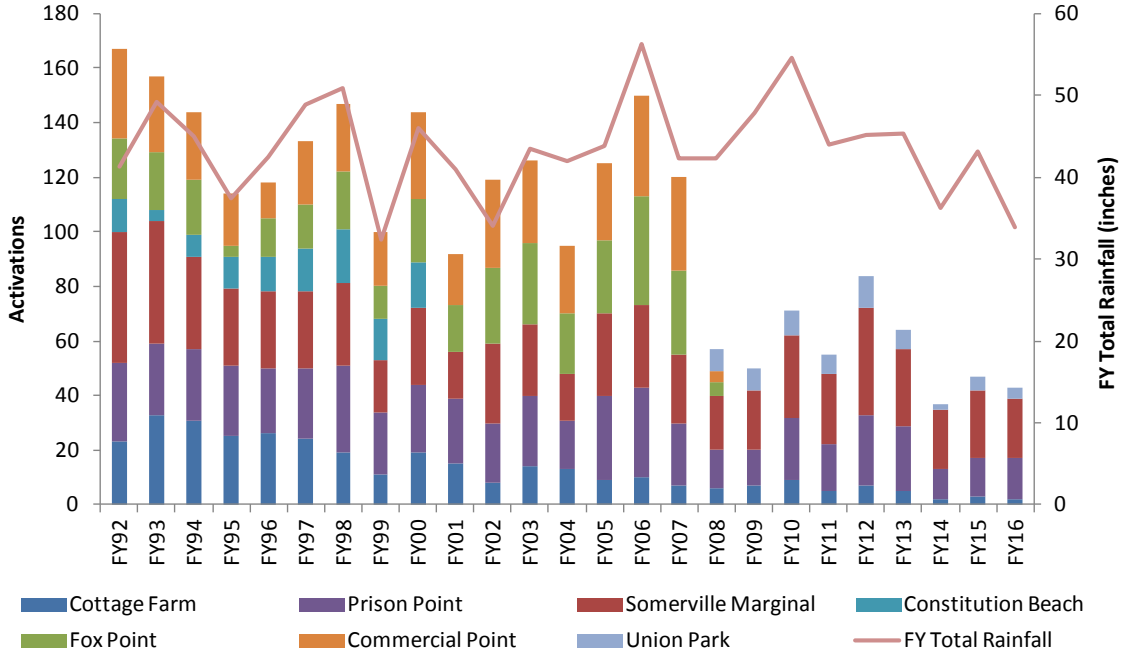


Figure 6. CSO Activations, FY92-FY16

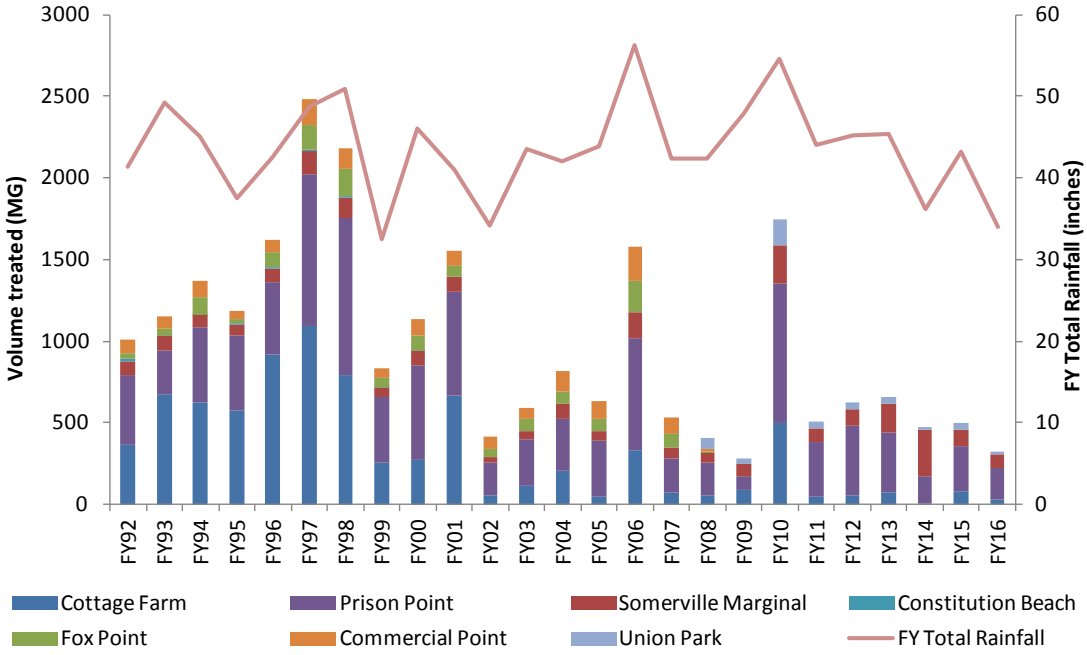


Figure 7. CSO Volume Treated, FY92-FY16

Collection and Transport System

MWRA monitors the capacity of the wastewater collection and transport system. One of the system capacity parameters in the North System is flow restriction, which occurs at the remote headworks. Flow restriction 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 flow restriction has fallen to very low levels since FY01, mainly due to the completion of the Deer Island plant. To minimize flow restriction related to testing and maintenance, MWRA performs maintenance and testing at off-peak times so as not to cause any backups in the system upstream of the headworks.

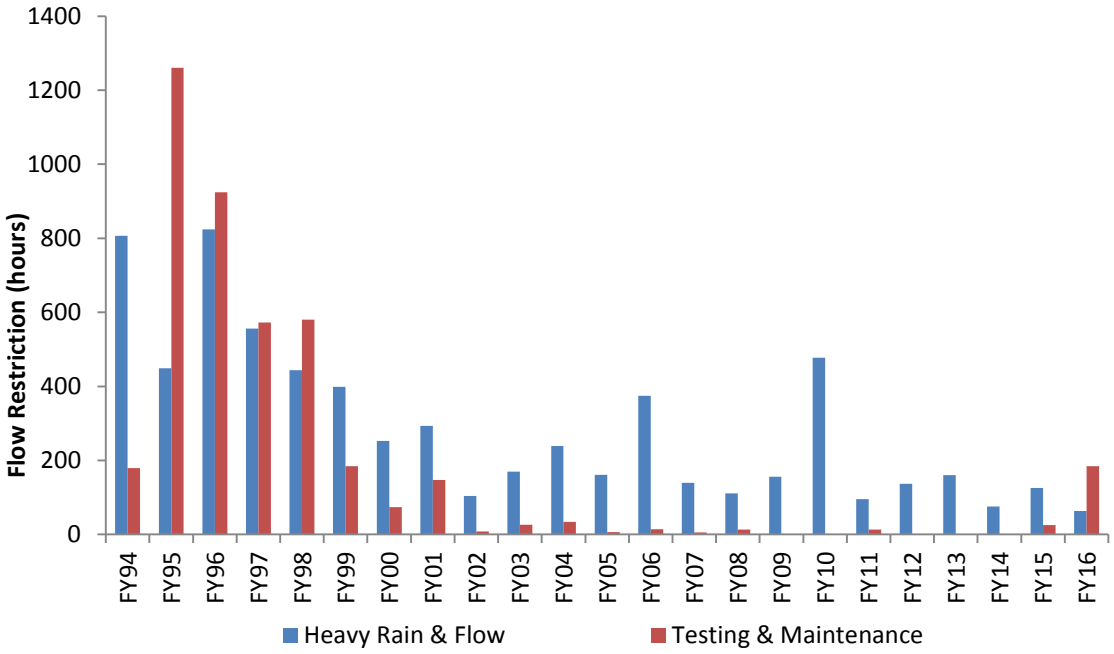


Figure 8. Headworks Flow Restriction, FY92-FY16

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. Notification of SSOs occurring in MWRA's system are also reported on MWRA's website at http://www.mwra.com/harbor/html/sso_reporting.htm. Table 1 on the page lists the SSOs observed by MWRA personnel in FY16.

Table 1. Sanitary Sewer Overflows, FY16

Location	Number of Overflows
North System	
South Boston (Massport Wiggins Terminal)	1
Section 43, Station 79+84, Cambridge (MBTA Red Line Parking Garage)	1
Section 27, Station 17+03, Somerville (Near Railroad Tracks)	1
South System	
Section 662, Station 9+81, Weymouth (Hingham Pump Station Force Main Air Relief Valve Near Back River Bridge)	1

Future Outlook

The startup of the primary treatment plant at Deer Island in January 1995 was just the first of several changes and improvements in 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. 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 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 were made to 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.

Major maintenance projects are underway at DITP too. In January 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.

In May 2014 there were two major maintenance projects at DITP – the Scum Tip Tube Replacement Project and the Valve and Piping Replacement Project. The former will replace the scum tip tubes in both the primary and secondary clarifiers. The latter will replace a number of valves, pipes, and flow meters in the pump stations, headworks, primary and secondary clarifiers, and gravity thickeners at the treatment plant. The work continued through FY16.

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 2015 to June 2016. 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 four CSO facilities. Subsequent sections discuss sludge processing operations at DITP and MWRA's Fore River pelletizing facility, transport systems, 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.

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 FY16 was 286 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.

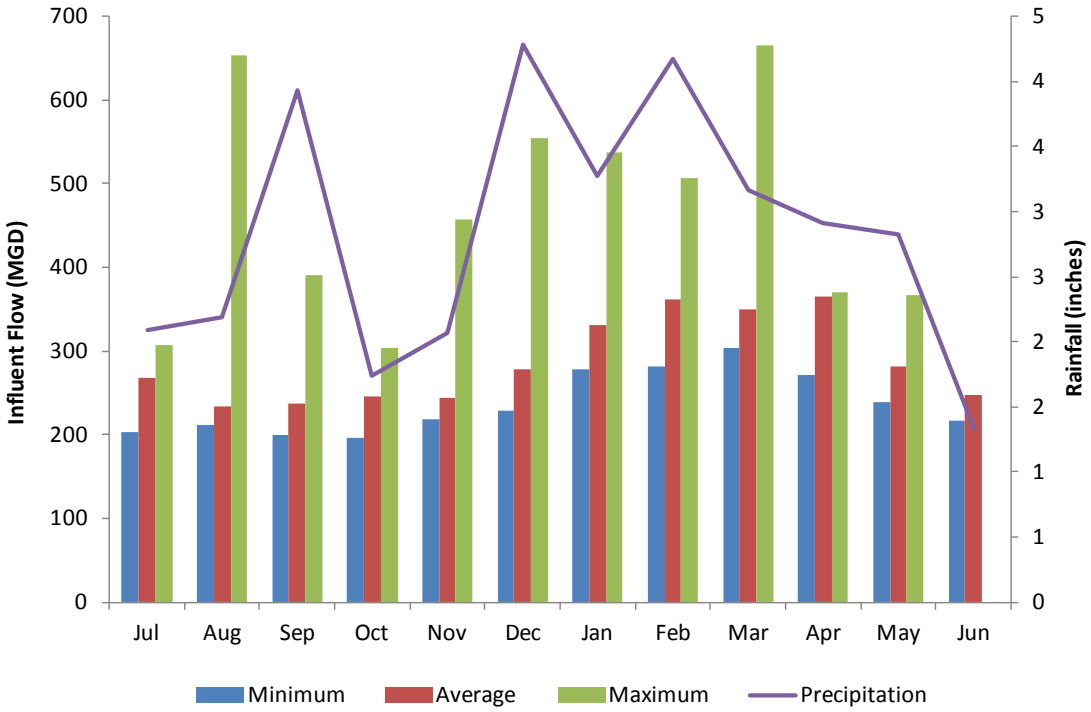


Figure 9. DITP Influent Flow Compared to Precipitation, FY16

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-three 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.

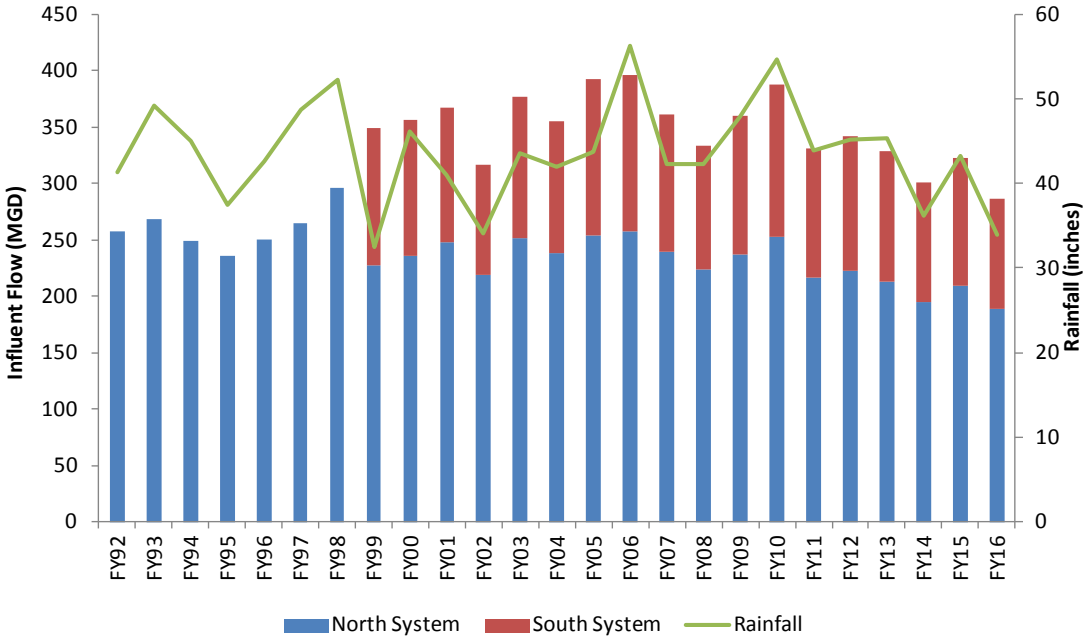


Figure 10. DITP Influent Flow Compared to Precipitation, FY92-FY16

Influent Conventional Parameters and Nutrients

As Table 2 indicates, Deer Island influent in FY16 can be classified as medium.[2]

Table 2. Classification of DITP Influent, FY16

Parameter	Value	Weak	Medium	Strong
TSS (mg/L)	213	100	200	350
TKN (mg/L)	42.2	20	40	85
Ammonia (mg/L)	32.0	12	25	50

A summary of Deer Island influent characteristics from FY99-FY16 is provided in Table 3 on page 12. Note that cBOD only became a measured parameter in August 2000, so no historical data are available previous to FY01.

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

Table 3. Deer Island Influent Characterization, FY99-FY16

Parameter		FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	**FY16**
Flow (mgd)																			
	Minimum	233	219	260	223	238	247	243	230	237	214	235	243	201	230	214	202	209	197
	Average	350	356	367	317	378	356	392	397	362	334	360	388	331	342	329	301	323	287
	Maximum	824	901	1136	773	897	1132	871	1203	1023	963	1031	1262	833	818	939	939	1102	665
Total Suspended Solids (TSS)																			
	Min Conc (mg/L)	43	86	63	157	140	129	145	124	109	118	108	102	114	139	131	138	139	167
	Avg Conc (mg/L)	160	167	176	200	188	234	237	171	174	187	156	166	170	181	209	181	192	213
	Max Conc (mg/L)	564	379	336	255	230	281	329	224	224	231	186	200	206	216	285	216	264	253
	Average Loading (tons/d)	234	248	269	264	296	347	387	283	263	260	234	269	235	258	287	227	259	255
Carbonaceous Biochemical Oxygen Demand (cBOD)																			
	Min Conc (mg/L)	*	*	29	93	80	75	86	65	58	69	76	52	67	73	75	75	78	91
	Avg Conc (mg/L)	*	*	111	124	106	126	118	99	101	115	101	94	109	99	120	116	111	113
	Max Conc (mg/L)	*	*	242	162	131	146	141	132	133	156	123	115	126	129	146	158	145	132
	Average Loading (tons/d)	*	*	170	164	167	187	193	164	152	160	152	152	150	141	165	146	150	135
Settleable Solids																			
	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	3.8	4.6	4.7	6.7
	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	8.1	7.4	7.2	8.1
	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	13.6	10.4	9.8	10.6
	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	11.1	9.3	9.6	9.7
Total Kjeldahl Nitrogen																			
	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	27.7	27.7	24.8	35.8
	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	40.8	41.2	41.5	42.2
	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	51.8	51.2	53.0	48.7
	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	56.0	51.8	55.9	50.5
Ammonia-Nitrogen																			
	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	18.7	20.0	18.5	27.3
	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	29.1	31.0	31.4	32.0
	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	37.6	41.3	43.5	37.8
	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	39.9	38.9	42.2	38.3
Nitrates																			
	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	0.01	0.05	0.01	0.01
	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	0.30	0.25	0.20	0.50	0.24	0.48
	Max Conc (mg/L)	1.21	1.56	1.53	0.26	0.37	0.81	0.70	0.54	0.59	0.72	0.27	1.13	0.90	0.48	0.66	0.90	1.02	1.91
	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	0.27	0.63	0.32	0.57
Nitrites																			
	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	0.10	0.10	0.01	0.20	0.09	0.03
	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	0.30	0.15	0.43	0.34	0.52
	Max Conc (mg/L)	0.45	0.72	0.47	0.35	0.55	0.41	0.62	0.72	0.21	0.40	0.15	0.54	0.55	0.54	0.38	0.62	0.55	1.60
	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	0.21	0.54	0.46	0.62

* 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 H provides a detailed discussion of detection and quantitation limits.

A pollutant is included whether it was detected just once or throughout the 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. Typically, a pollutant that is detected at a concentration below the detection limit is reported as non-detect (zero). However, if that 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 FY16 average influent loadings for several key metals to historical values. 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 FY99-16. Since loadings are calculated using flow, which in turn is affected by rainfall, loadings can also rise and fall with rainfall amounts.

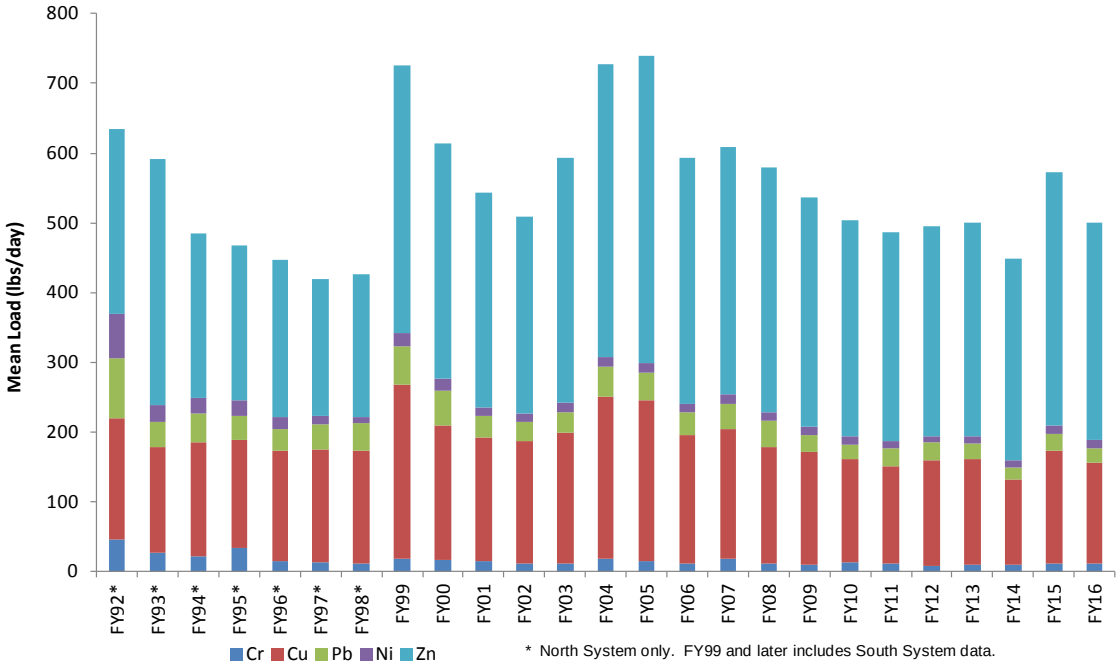


Figure 11. DITP Mean Influent Metals Loadings, FY92-FY16

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.

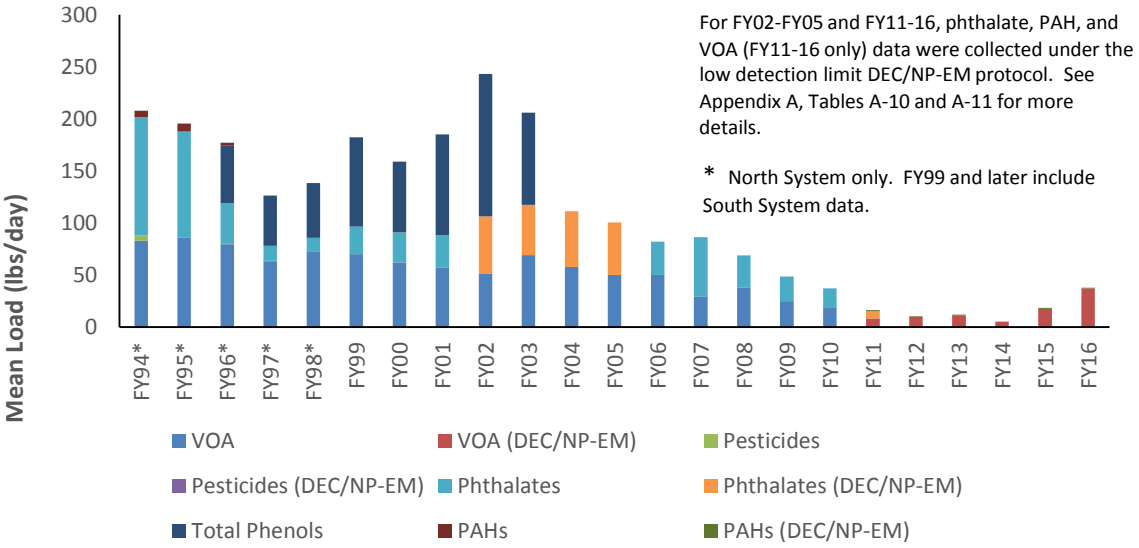


Figure 12. DITP Mean Influent Organics Loadings, FY94-FY16

Effluent Conventional Parameters and Nutrients

Table 4 compares DITP's removal efficiencies for TSS and cBOD with theoretical removal efficiencies.[3] 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, FY16

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.

For the fiscal year, 99.9% of DITP flow went through secondary treatment and removal efficiency for TSS was 96%. For cBOD, the plant achieved 95% removal efficiency.

Table 5 summarizes the conventional parameters and nutrients in Deer Island effluent since FY99.

[3] Metcalf & Eddy, Inc. 1972. *Wastewater Engineering Collection, Treatment, Disposal.* New York. McGraw-Hill Book Company, p. 446.

Table 5. Deer Island Effluent Characterization, FY99-FY16

Parameter		FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	**FY16**
Flow (mgd)																			
	Minimum	237	219	260	222	238	246	243	229	237	214	236	243	201	230	214	202	209	197
	Average	350	356	367	317	377	356	392	396	362	334	360	388	331	342	329	302	322	287
	Maximum	757	900	1136	773	898	1132	871	1203	1023	963	1031	1262	833	819	939	939	1102	665
Total Suspended Solids (TSS)																			
	Min Conc (mg/L)	3	5	4	3	5	5	5	5	5	2	2	2	2	2	3	2	2	3
	Avg Conc (mg/L)	22	18	15	16	18	17	15	9	8	9	8	8	8	7	9	10	9	9
	Max Conc (mg/L)	69	62	47	43	132	78	62	61	49	61	51	49	32	26	42	74	51	40
	Average Loading (tons/d)	31	26	24	21	28	25	25	16	12	13	12	14	11	10	12	13	12	10
Carbonaceous Biochemical Oxygen Demand (cBOD)																			
	Min Conc (mg/L)	*	*	4	3	3	3	2	2	2	2	2	2	2	2	1	2	2	2
	Avg Conc (mg/L)	*	*	12	13	11	12	10	7	5	6	5	5	5	5	6	6	6	6
	Max Conc (mg/L)	*	*	36	40	40	50	38	66	19	23	23	22	29	17	21	19	22	23
	Average Loading (tons/d)	*	*	19	17	17	18	16	11	8	8	8	8	7	7	8	8	8	7
Settleable Solids																			
	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	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	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	3.8	0.3	1.0	0.8
	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	0.2	0.1	0.1	0.1
Total Kjeldahl Nitrogen																			
	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	10.7	5.0	9.9	12.3
	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	25.8	28.3	27.5	29.0
	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	40.0	41.6	44.1	49.5
	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	35.5	35.7	37.0	34.7
Ammonia-Nitrogen																			
	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	7.2	9.6	7.2	10.8
	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	24.0	22.9	25.8	28.2	27.0	29.2
	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	38.5	45.1	46.6	61.3
	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	35.4	35.5	36.3	34.9
Nitrates																			
	Min Conc (mg/L)	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.06	0.15	0.03	0.43	0.04	0.01	0.01	0.01	0.01	0.10
	Avg Conc (mg/L)	0.22	0.69	0.70	0.89	1.50	1.93	2.24	1.25	0.98	1.49	1.25	1.25	1.07	0.76	0.88	0.98	0.84	0.39
	Max Conc (mg/L)	1.93	2.96	4.20	2.86	5.07	3.88	5.77	4.80	3.20	3.48	2.78	3.18	3.08	3.72	3.31	4.26	8.86	2.63
	Average Loading (tons/d)	0.32	1.02	1.07	1.17	2.36	2.87	3.66	2.06	1.48	2.08	1.88	2.02	1.48	1.08	1.21	1.24	1.13	0.47
Nitrites																			
	Min Conc (mg/L)	0.01	0.04	0.00	0.01	0.01	0.01	0.03	0.27	0.35	0.08	0.35	0.09	0.07	0.02	0.03	0.02	0.01	0.01
	Avg Conc (mg/L)	0.30	0.95	0.20	0.34	0.28	0.21	0.54	1.42	1.42	0.79	1.11	0.84	0.62	0.30	0.44	0.32	0.41	0.16
	Max Conc (mg/L)	1.99	3.06	1.10	1.26	0.91	0.69	0.71	2.74	2.96	2.59	2.46	1.61	2.19	0.98	1.65	2.04	1.49	1.01
	Average Loading (tons/d)	0.44	1.41	0.31	0.45	0.44	0.31	0.88	2.34	2.14	1.10	1.67	1.36	0.86	0.43	0.60	0.40	0.55	0.19

* Samples not collected.

A summary of nutrient concentrations in Deer Island effluent from FY94-FY16 is provided in Figure 13. 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_3-N plus organic nitrogen. Effluent NH_3-N concentrations have risen while total Kjeldahl nitrogen (TKN) concentrations have remained relatively stable. Therefore, the proportion of NH_3-N as a TKN component has increased. Elevated levels of NH_3-N are characteristic of the activated sludge process.

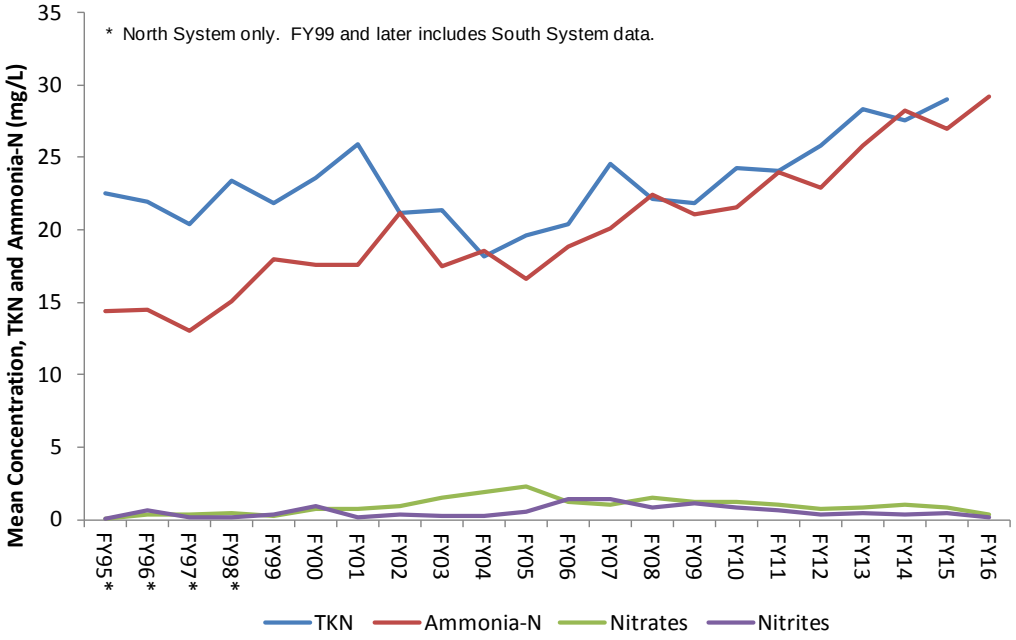


Figure 13. DITP Mean Effluent Nutrients Concentrations, FY94-FY16

Effluent Priority Pollutants

Appendix A, Tables A-8 and A-9 provide a summary of priority pollutant concentrations and loadings in DITP effluent for FY16. 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 27 years are summarized in Figure 14, while Figure 15 on the next page graphs organic pollutants from FY94-FY16. Two factors may explain the long-term decrease in loadings. First, 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.

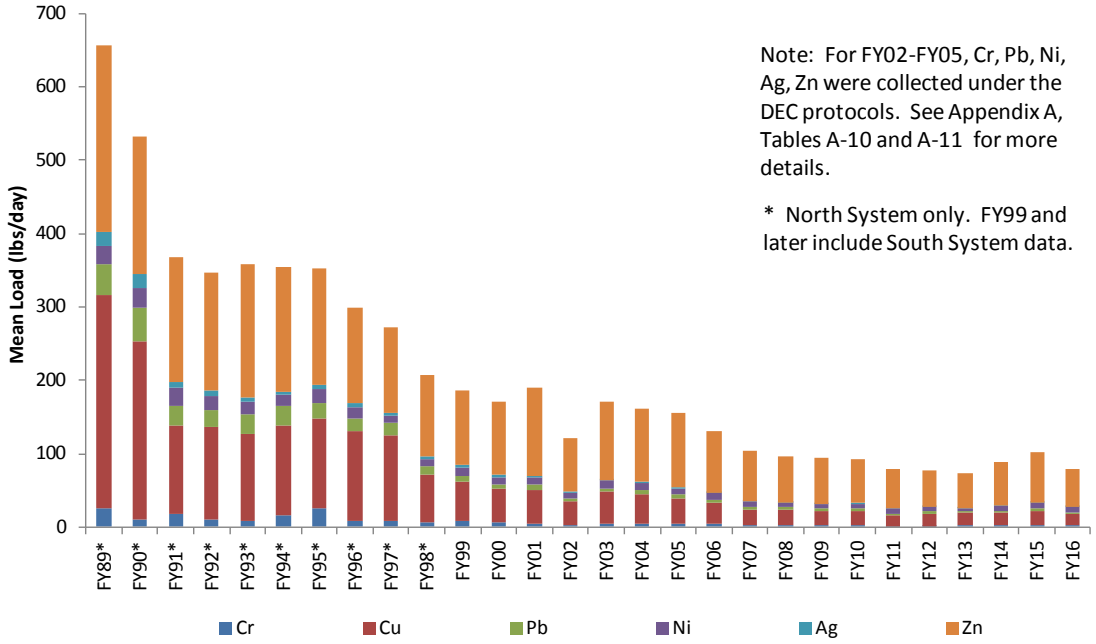


Figure 14. DITP Mean Effluent Metals Loadings, FY89-FY16

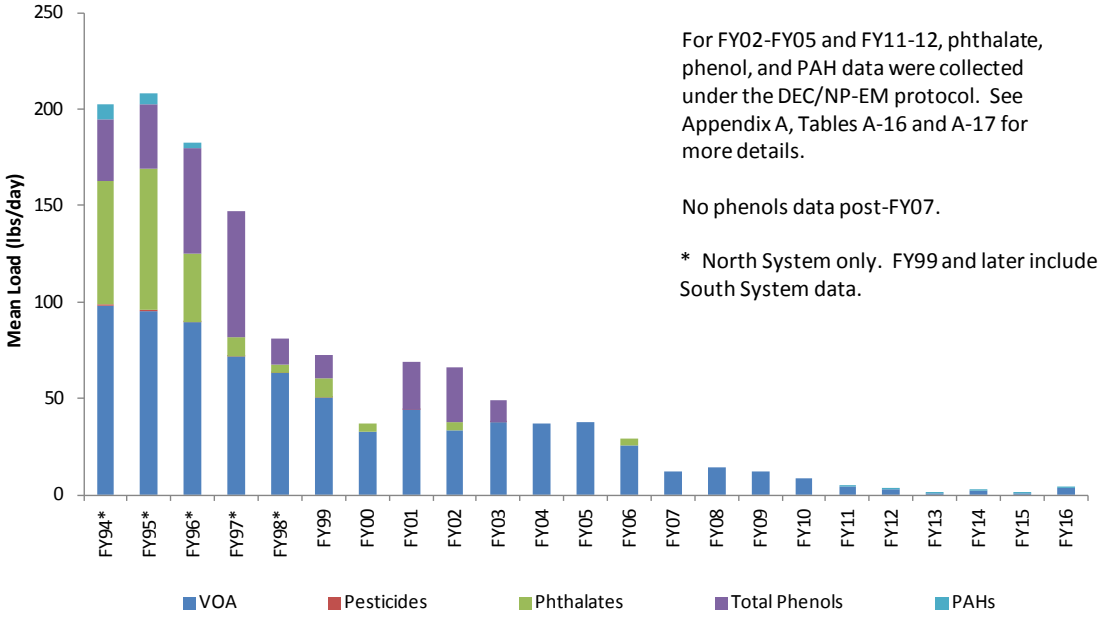


Figure 15. DITP Mean Effluent Organics Loadings, FY94-FY16

Whole Effluent Toxicity

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 FY16, for which 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 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. A 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 exceed the NPDES limit.

Table 6. Deer Island Effluent, Results of Toxicity Testing, FY16

	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	100	100
September	> 100	> 100	100	100
October	> 100	> 100	50	100
November	> 100	> 100	100	50
December	> 100	> 100	100	50
January	> 100	> 100	50	100
February	> 100	> 100	100	50
March	> 100	> 100	100	100
April	> 100	> 100	100	50
May	> 100	> 100	100	100
June	> 100	> 100	100	50
# of Violations	0	0	0	0
Results in **bold** 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 FY16.

Table 7. Deer Island Effluent Quality Compared to Permit Limits, FY16

Parameter	Permit Limits	Range of Values Exceeding Limits	Number of Violations
Carbonaceous Biochemical Oxygen Demand (mg/L)			
Monthly Average	25	--	0

Parameter	Permit Limits	Range of Values Exceeding Limits	Number of Violations
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			**0**

Table 8 on the next page compares the number of NPDES violations in FY16 to previous years.

Table 8. NPDES Violations at Deer Island, FY94-FY16

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

	BOD	PHCs	Settleable solids	Total Coliform	TSS	Fecal coliform	pH	cBOD	Dry day flow	TCR	Toxicity	Total violations
FY12	--	--	--	--	0	0	0	0	0	0	0	0
FY13	--	--	--	--	0	0	0	0	0	0	0	0
FY14	--	--	--	--	0	0	0	0	0	0	0	0
FY15	--	--	--	--	0	0	0	0	0	0	0	0
FY16	--	--	--	--	0	0	0	0	0	0	0	0

The following figures track trends in effluent over FY16. 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.

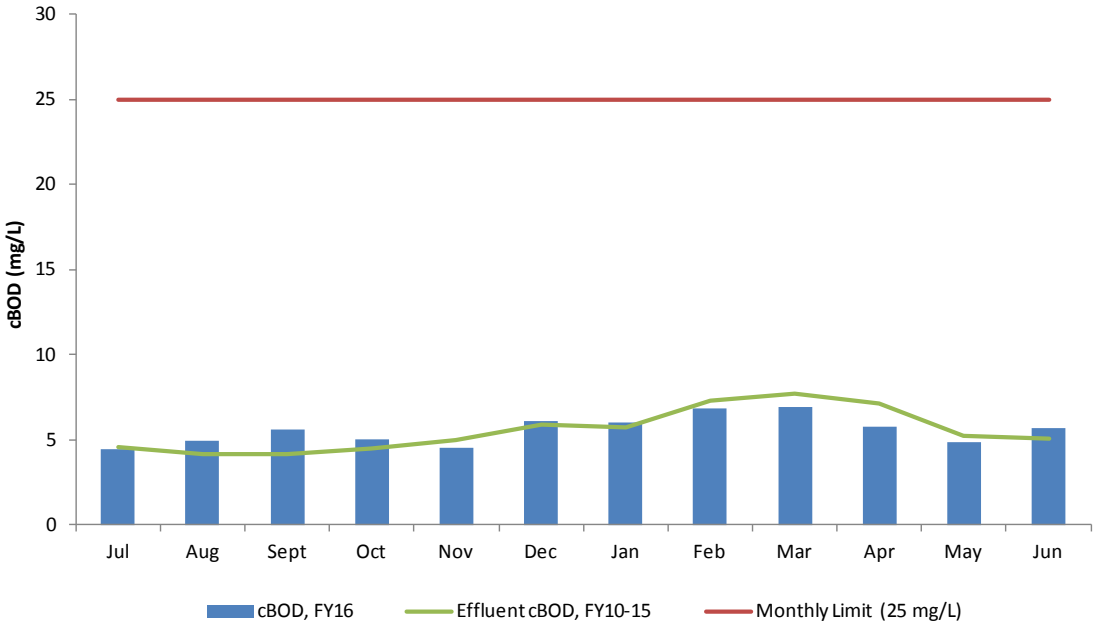


Figure 16. DITP Effluent cBOD (Monthly Average), FY16

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

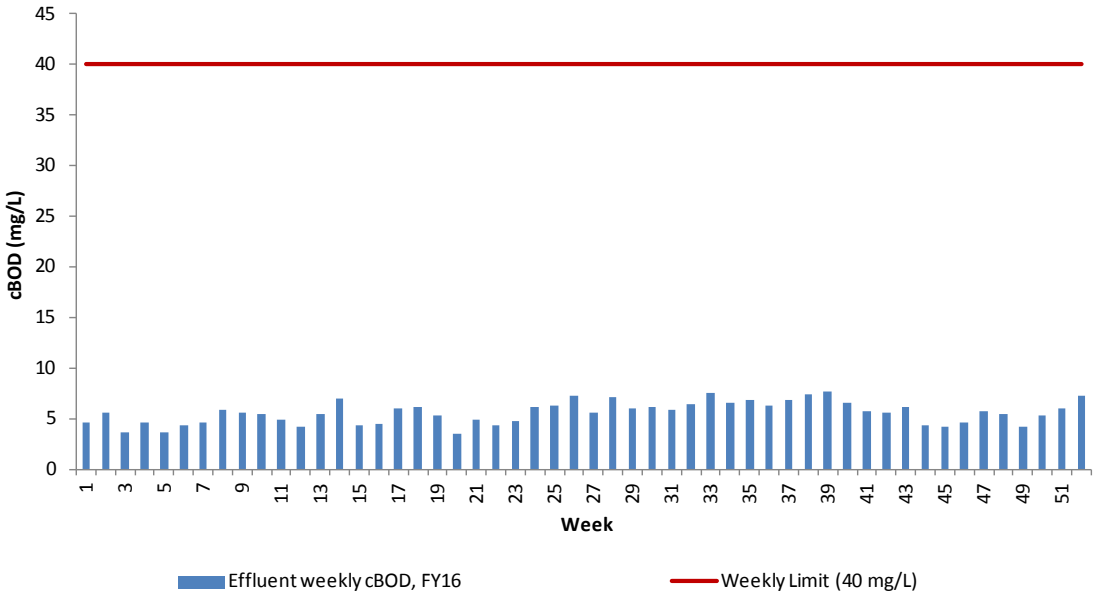


Figure 17. DITP Effluent cBOD (Weekly Average), FY16

Figure 18 shows FY16 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.

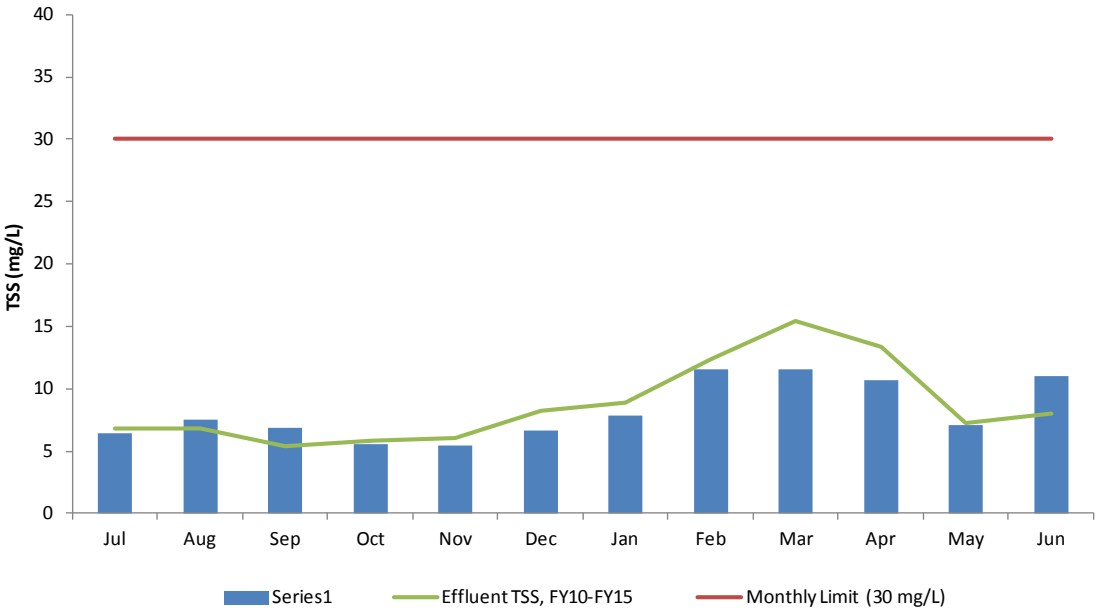


Figure 18. DITP Effluent TSS (Monthly Average), FY16

Figure 19 graphs the weekly averages for effluent TSS in FY16. The regulatory limit for weekly TSS averages is 45 mg/L. In FY16 values remained well below this limit.

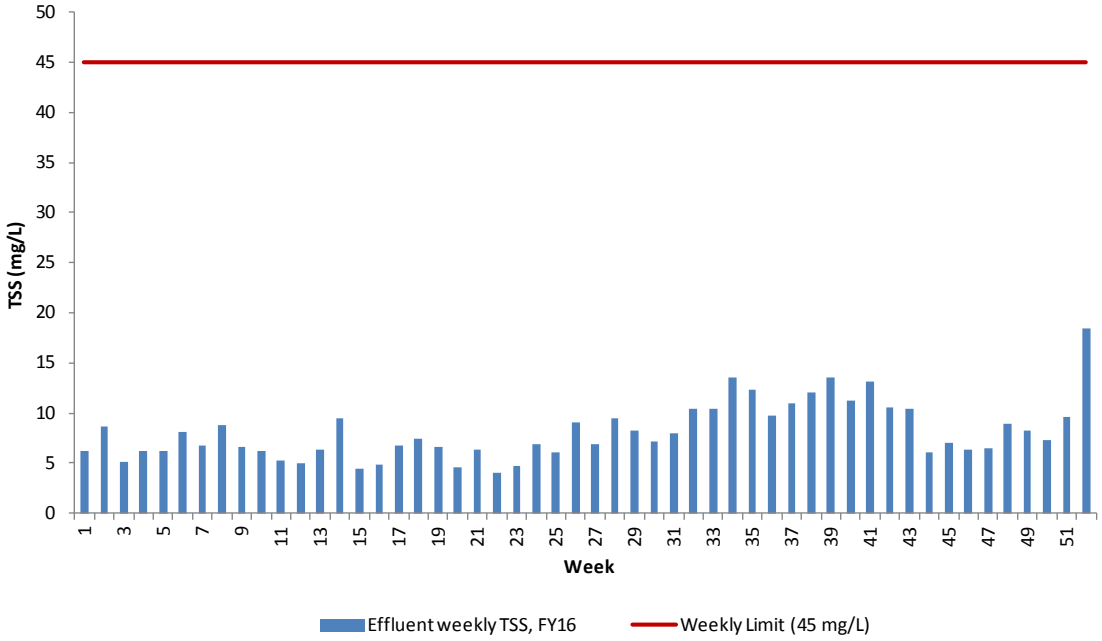


Figure 19. DITP Effluent TSS (Weekly Average), FY16

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 FY16 on a logarithmic scale. Note that 5 colonies/100mL is the detection limit for the fecal coliform test so there will not be results below that number.

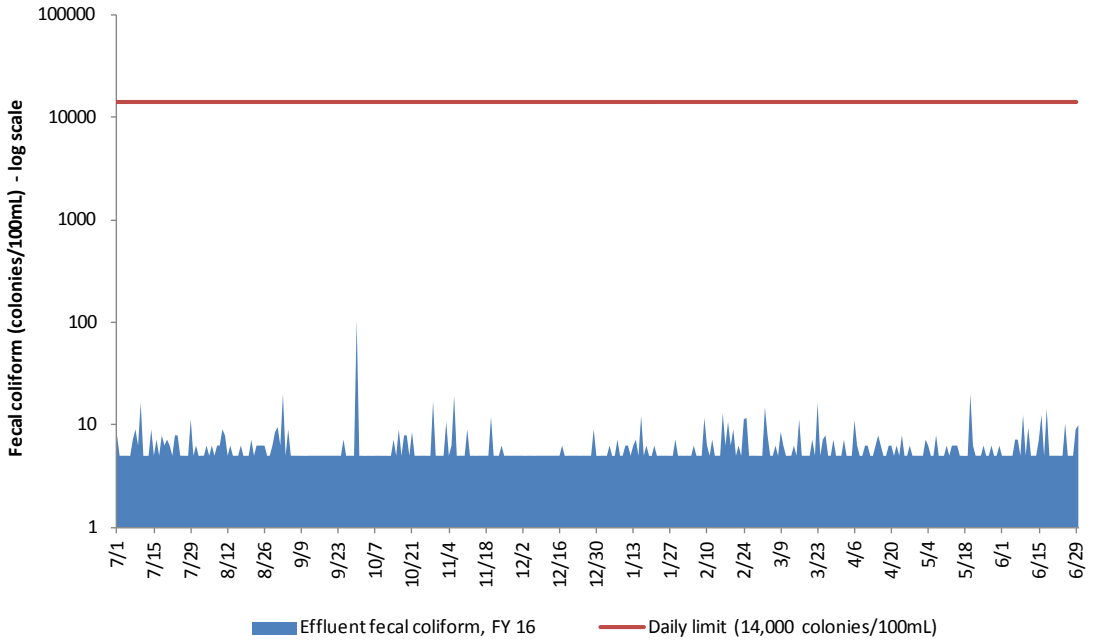


Figure 20. DITP Effluent Fecal Coliform (Daily Geometric Mean), FY16

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.

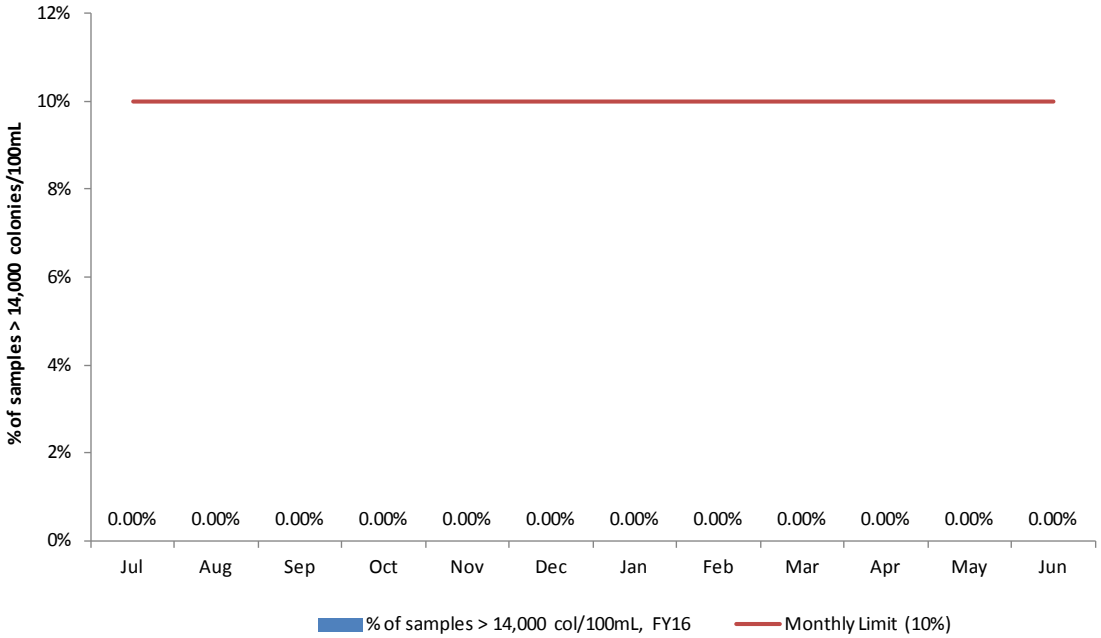


Figure 21. DITP Effluent Fecal Coliform (High Sample Counts), FY16

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 FY16, the pH of the effluent was always within this range. Figure 22 shows the monthly minimums and maximums throughout FY16.

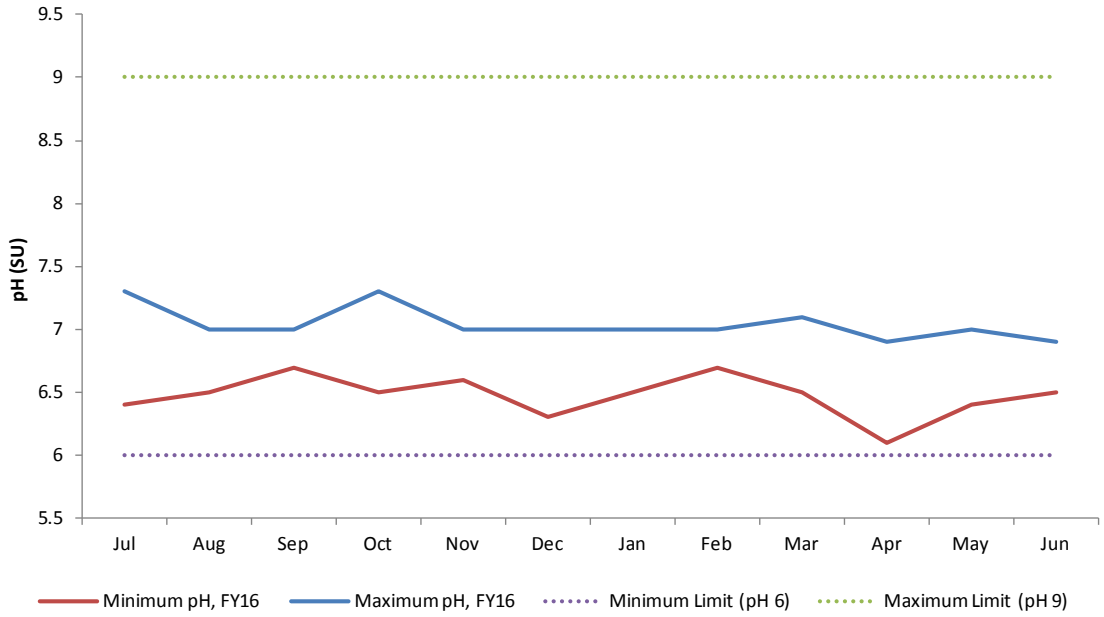


Figure 22. DITP Effluent pH (Monthly Min and Max), FY16

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 exceeded, or even approached in FY16.

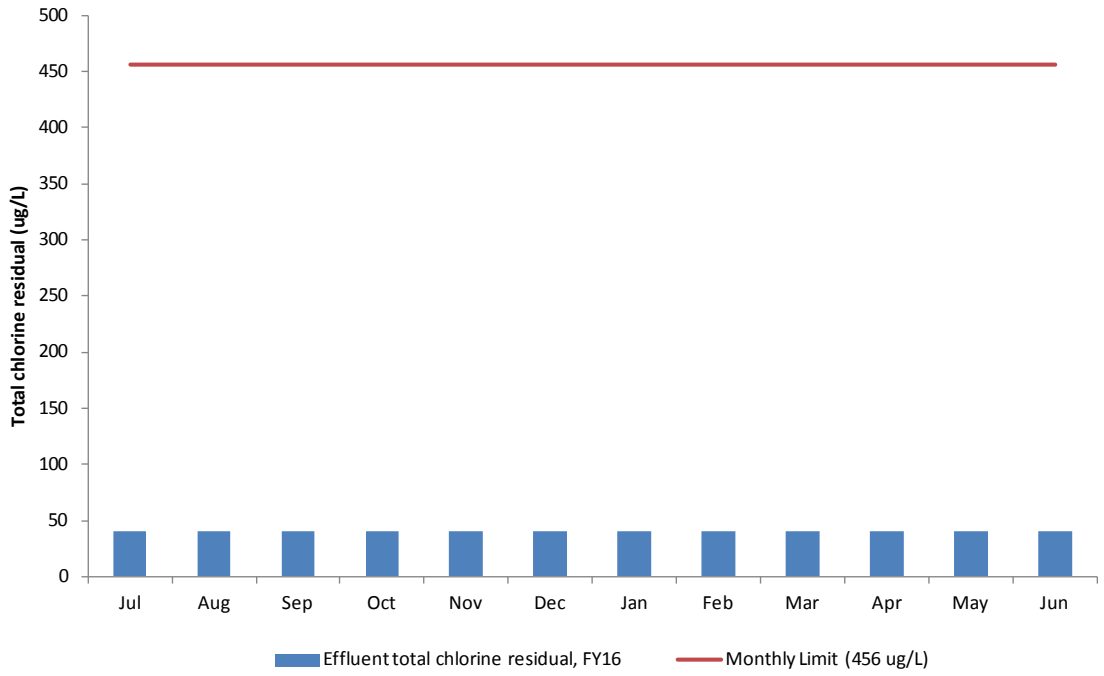


Figure 23. DITP Effluent Total Chlorine Residual (Monthly Average), FY16

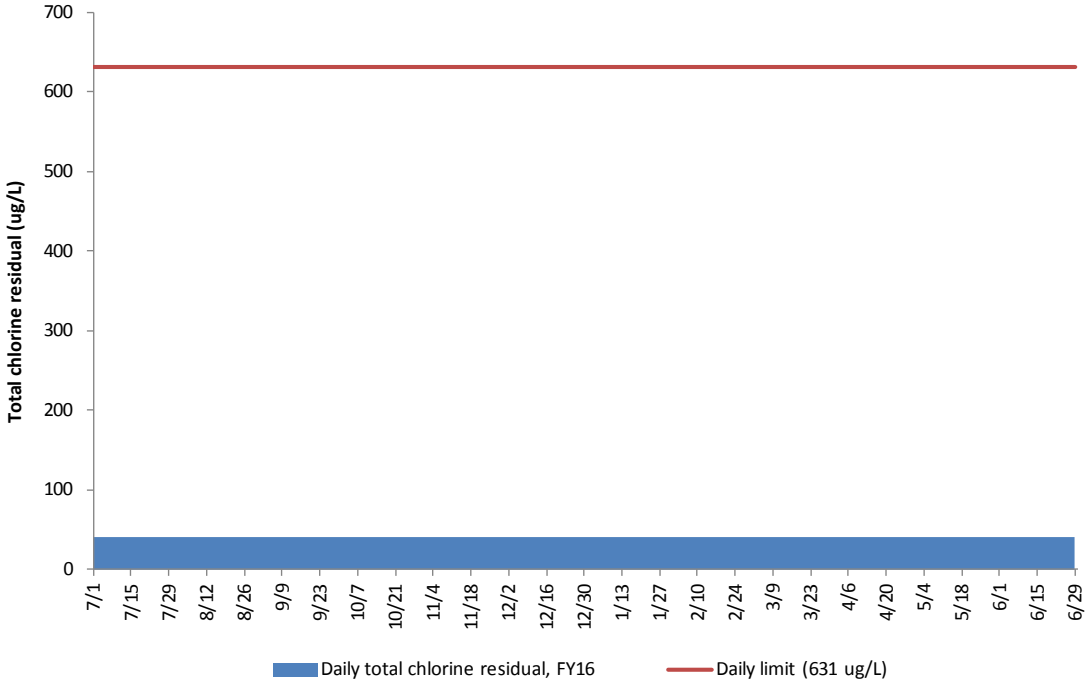


Figure 24. DITP Effluent Total Chlorine Residual (Daily Average), FY16

In addition to the limits already mentioned, the permit sets forth two more effluent limits – one for Arochlors and one for dry day flow. Arochlors 1016, 1221, 1232, 1242, 1248, 1254, and 1260 have a 0.000045 µg/L limit. However, none of these compounds were detected in FY16. The dry day flow limit 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 A.

Effluent Quality Compared to Water Quality Standards

Table 9 compares concentrations of metals in DITP effluent to water quality criteria, both acute and chronic. Even before the dilution provided by the outfall, all the metals except for copper were below both the acute and chronic criteria. After dilution, all the metals, including copper, were below the acute and chronic criteria.

Table 9. Comparison of DITP Effluent with Water Quality Criteria, FY16

Acute	FY16 Effluent Maximum (ug/L)	Dilution†	Concentration at ZID (ug/L)‡	Acute Dissolved Criteria (ug/L)*	Acute Recoverable Criteria (ug/L)**	Times Detected
Arsenic	0.826	50	0.017	69.0	69.0	1 of 24
Copper	19.3	50	0.386	4.8	5.8	55 of 55
Lead	2.36	50	0.047	210.0	220.8	21 of 55
Mercury	0.012	50	0.0002	1.8	2.1	48 of 48
Nickel	5.42	50	0.108	74.0	74.7	55 of 55
Silver	0.14	50	0.003	1.9	2.2	0 of 51
Zinc	37.80	50	0.756	90.0	95.1	55 of 55

Chronic	FY16 Effluent Average (ug/L)	Dilution†	Concentration at ZID (ug/L)‡	Chronic Dissolved Criteria (ug/L)*	Chronic Recoverable Criteria (ug/L)**	Times Detected
Arsenic	0.417	70	0.006	36.0	36.0	1 of 24
Copper	6.00	70	0.086	3.1	3.7	55 of 55
Lead	0.659	70	0.009	8.1	8.5	21 of 55
Mercury	0.005	70	0.0001	0.9	1.1	48 of 48
Nickel	3.17	70	0.045	8.2	8.3	55 of 55
Zinc	20.7	70	0.296	81.0	85.6	55 of 55

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 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 and water quality 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 the effects of nutrient inputs.

The ambient monitoring plan was revised in 2004 and in 2010. 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 2 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
Water Column			
Water column	Collect water quality data throughout Massachusetts and Cape Cod bays (Not all analyses are performed at every station)	9 surveys/year 14 stations	Temperature Salinity Dissolved oxygen Nutrients Solids Chlorophyll Water clarity Plankton Marine mammal observations
Plume-track surveys	Track discharge plume, measure discharge dilution	Completed	Completed
Mooring (GoMOOS)	Provides continuous oceanographic data for Massachusetts Bay	Continuous monitoring One to four depths near Cape Ann	Temperature Salinity Dissolved oxygen Chlorophyll and turbidity
Remote sensing	Provides oceanographic data on a regional scale through satellite imagery	Available daily (cloud-cover permitting)	Surface temperature Chlorophyll
Sea Floor			
Soft-bottom studies	Evaluate sediment quality and benthos in Boston Harbor and Massachusetts Bay	1 survey/year 23 nearfield stations 4 farfield stations	Sediment chemistry (triennially) Sediment profile imagery (23 stations) Community composition (10 near field and far field stations)
Hard-bottom studies	Characterize marine benthic communities in rock and cobble areas	1 survey/3 years 23 stations	Topography Substrate Community composition
Fish and Shellfish			
Winter flounder	Determine contaminant body burden and population health	1 survey/year 3 stations	Tissue contaminant concentrations (triennial) Physical abnormalities Liver histopathology
American lobster	Determine contaminant body burden	1 survey/3 years 3 stations	Tissue contaminant concentrations Physical abnormalities
Blue mussel	Evaluate biological condition and potential contaminant bioaccumulation	1 survey/3 years 3 stations	Tissue contaminant concentrations

Adapted from Werme, C, Rex, Ac, Hunt, CD. 2012. 2002 *Outfall Monitoring Overview Background: 2012 update*. EnQual report 2012-02.
Updated from MWRA. 2010. *MWRA Effluent Outfall Ambient Monitoring Plan, rev. 2, 7/10*. EnQual report #2010-04.

The Contingency Plan

The permit requires a contingency plan that defines a response plan when a parameter threshold is exceeded. Reponses 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

Parameter	Caution Level	Warning Level
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 *Alexandrium*)	95th percentile of the baseline seasonal mean	--
Nearfield water column zooplankton (1)	--	--
Nearfield water column *Alexandrium tamarense*	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 FY16, of which there was one. For more information on pre-FY15 exceedances, please refer to the web site listed below.

Table 14. Contingency Plan Exceedances, FY16

Date*	Threshold Level Exceeded	Threshold Exceeded
May 18, 2016	Caution	Phaeocystis
* Notification date; typically, within 5 days of knowing of the violation.		

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

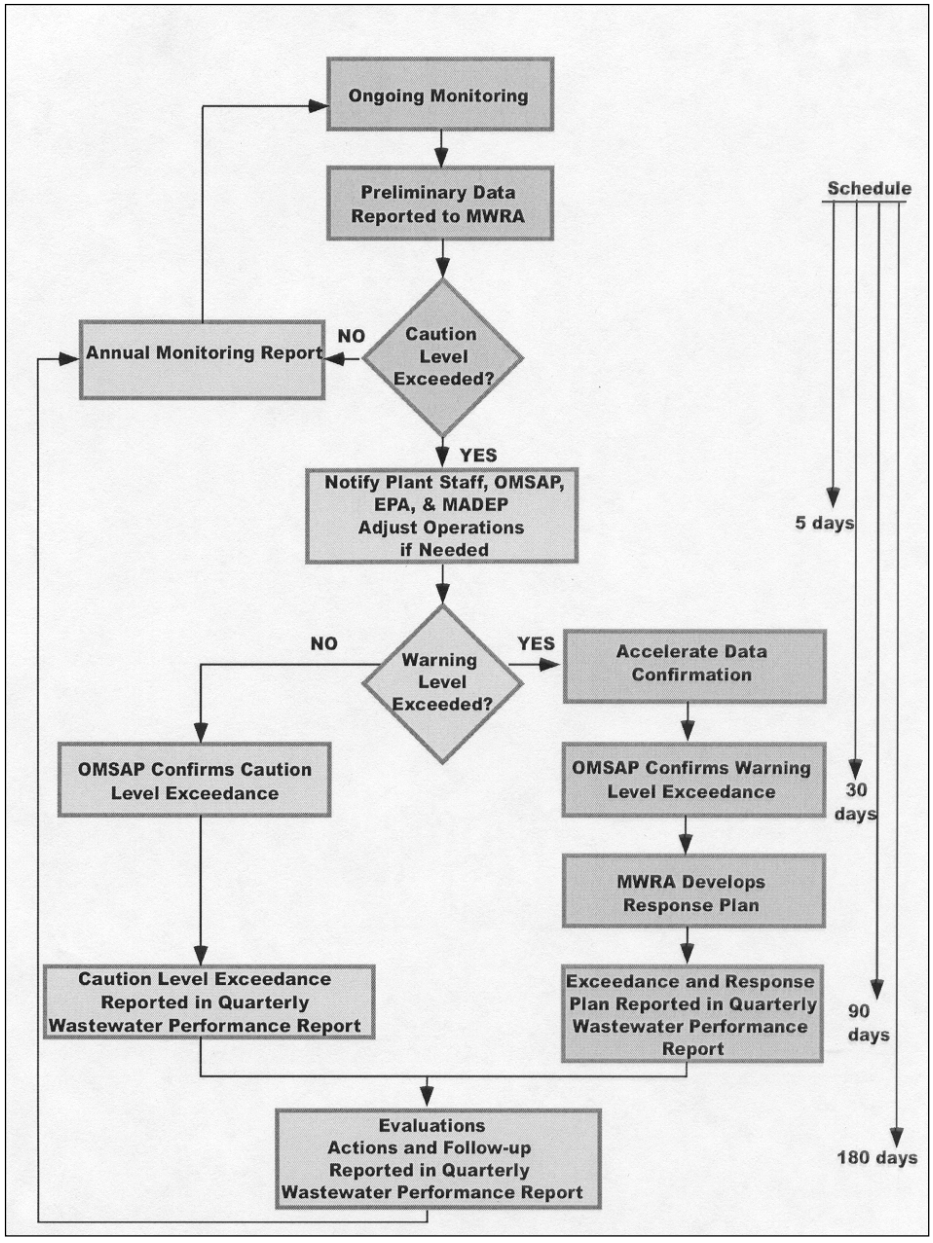


Figure 25. Contingency Plan Flow Chart

Combined Sewer Overflows

Overview

MWRA monitored four CSO facilities in the North System at the beginning of FY16. Three of the facilities – Cottage Farm, Prison Point, and Somerville Marginal – are 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 and less untreated CSO but a greater treated 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 discharge 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. Discharges from FY15 to FY16 decreased as the amount of rainfall also decreased.

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

	Activations	Days activated	Total volume treated (MG)	Min flow (MGD)	Mean flow (MGD)	Max flow (MGD)	Total rainfall (inches)
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
FY12	7	7	52	1.9	7.5	15	45.2
FY13	5	5	73	6.4	21.4	26.4	45.4
FY14	2	2	8	3.2	3.9	4.5	36.2
FY15	3	3	81.41	7.7	27.14	63.21	43.13
FY16	2	2	32.67	1.27	16.34	31.40	33.97
Average flow = Total volume treated divided by the number of days activated.							

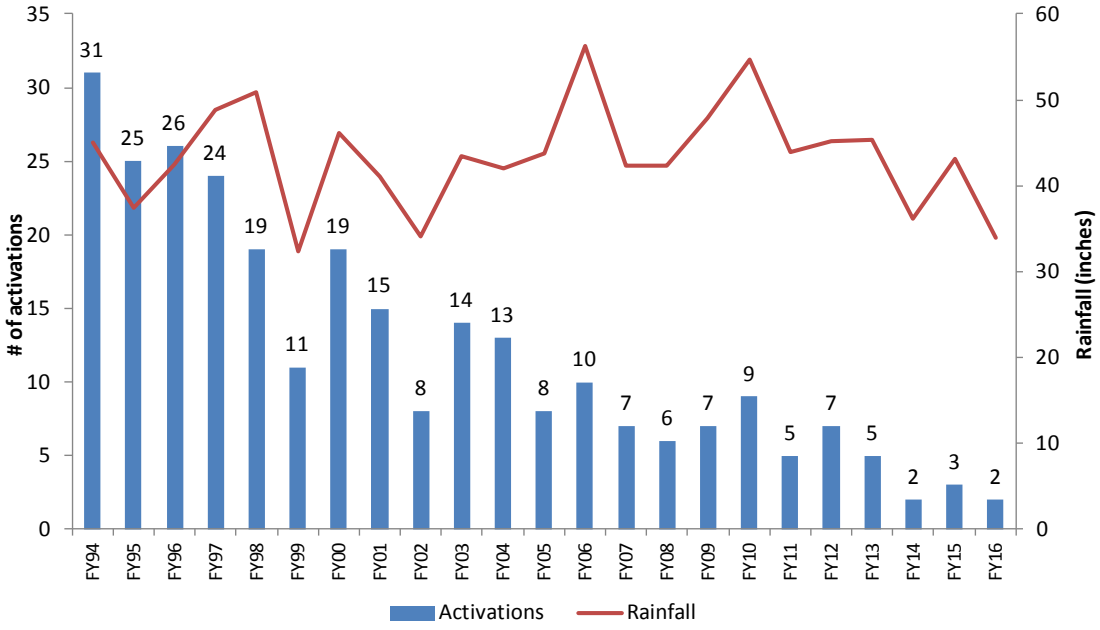


Figure 26. Cottage Farm CSO Activations Compared to Precipitation, FY94-FY16

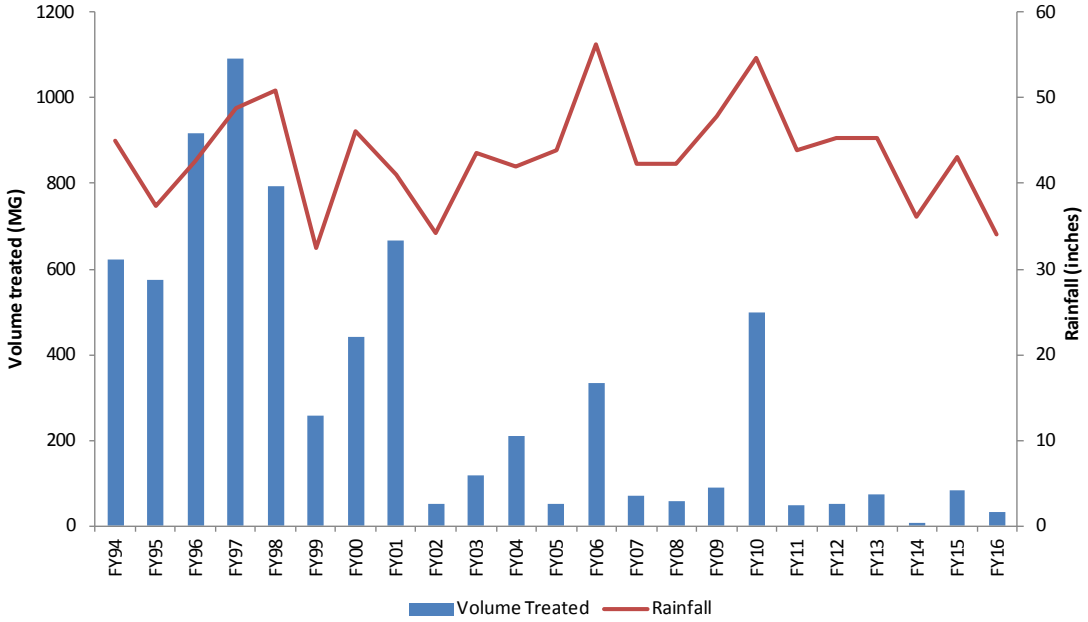


Figure 27. Cottage Farm CSO Volume Treated Compared to Precipitation, FY94-FY16

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 (screening), 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, partly because influent pH is often low and may be lowered further due to dechlorination.

Table 16. Cottage Farm CSO Effluent Characteristics, FY16

Parameter	Minimum	Average	Maximum	N
TSS (mg/L)	57.5	113.6	188.0	2
BOD (mg/L)	24.8	35.6	46.4	2
Fecal Coliform (col/100 mL)	9.0	919.5	5800	2
pH (SU)	5.2	6.0	7.0	2

MWRA also tests CSO effluent for metals whenever the CSO facility is sampled. The results of these tests are presented in Appendix B, Tables B-2 and B-3 as well as Table 17 below.

Table 17. Cottage Farm CSO Effluent Metals, FY16

Parameter	Average Concentration	Times Detected
Aluminum (ug/L)	1880	1 of 1
Cadmium (ug/L)	0.65	1 of 1
Calcium (ug/L)	11900	1 of 1
Chromium (ug/L)	12.4	1 of 1
Copper (ug/L)	44.40	1 of 1
Lead (ug/L)	40.00	1 of 1
Magnesium (ug/L)	2290	1 of 1
Mercury (ug/L)	0.11	1 of 1
Nickel (ug/L)	4.13	1 of 1

Parameter	Average Concentration	Times Detected
Zinc (ug/L)	125	1 of 1

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 flow restriction at the headworks will not affect Prison Point activations; hence they have remained relatively constant since FY94, primarily dependent on rainfall. Although total rainfall decreased from FY15 to FY16, the number of activations increased, though a smaller total volume of wastewater was treated in FY16 than in FY15.

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
FY12	26	27	429	4.1	16.5	44.4	45.2
FY13	24	24	363	0.6	15.1	69.8	45.4
FY14	11	11	165	2.67	15.0	37.4	36.2
FY15	14	14	277	3.19	19.8	103.7	43.2
FY16	15	15	186	2.32	12.37	68.80	34.0
Average flow = Total volume treated divided by the number of days activated.							

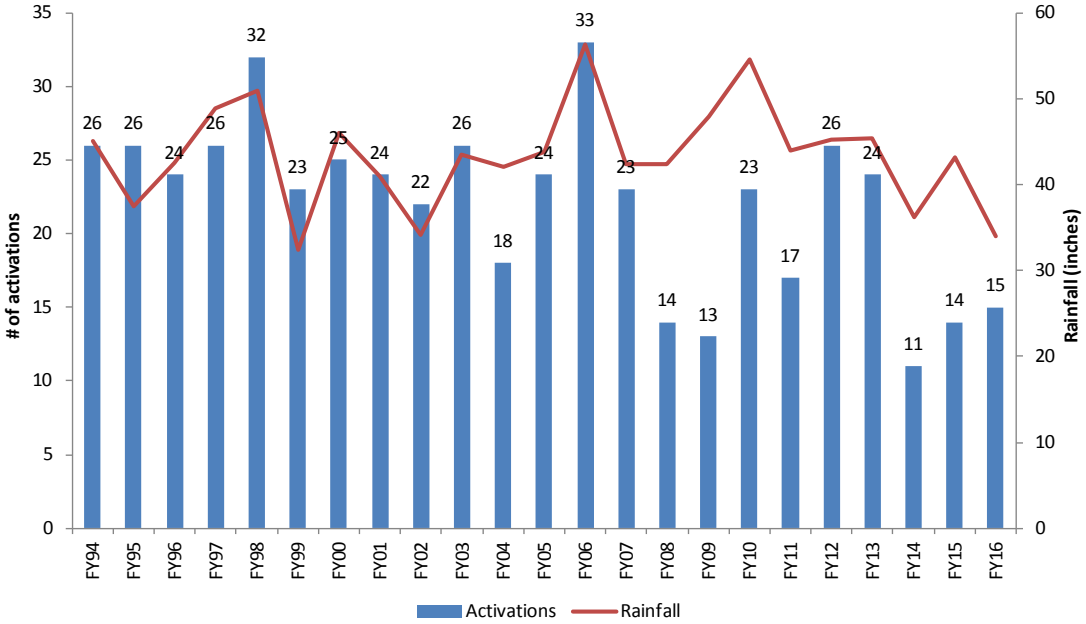


Figure 28. Prison Point CSO Activation Compared to Precipitation, FY94-FY16

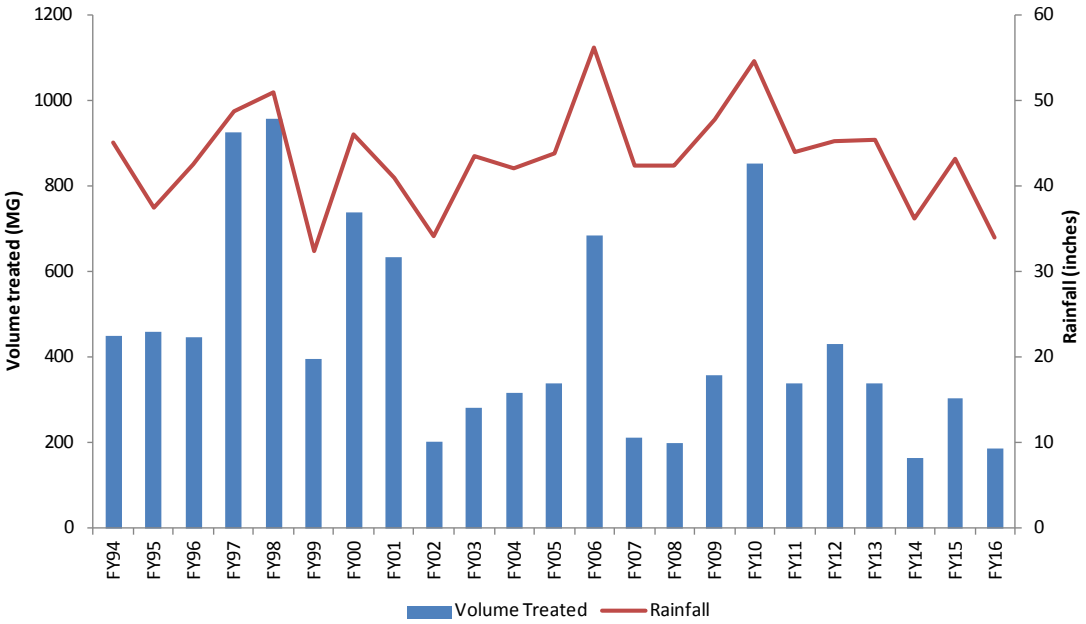


Figure 29. Prison Point CSO Volume Treated Compared to Precipitation, FY94-FY16

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, FY16

Parameter	Minimum	Average	Maximum	N
TSS (mg/L)	47.0	114.0	460.0	4
BOD (mg/L)	19.10	31.4	41.6	4
Fecal Coliform (col/100 mL)	1.0	814	15258	4
pH (SU)	6.1	6.5	6.9	4

The results of priority pollutant testing for Prison Point can be found in Tables C-2 and C-3 of Appendix C. The target metals were detected in most of the samples. Table 20 summarizes average metals concentrations in FY16 Prison Point effluent.

Table 20. Prison Point CSO Effluent Metals, FY16

Parameter	Average Concentration	Times Detected
Aluminum (ug/L)	843	2 of 2
Cadmium (ug/L)	0.754	2 of 2
Chromium (ug/L)	7.1	2 of 2
Copper (ug/L)	30.1	2 of 2
Lead (ug/L)	28.8	2 of 3
Magnesium (ug/L)	2130	2 of 2
Mercury (ug/L)	0.09	2 of 2
Nickel (ug/L)	4.17	2 of 4
Zinc (ug/L)	146.5	2 of 2

Somerville Marginal CSO Facility

Table 21 and Figures 30 and 31 summarize activation information for the Somerville Marginal facility. Somerville Marginal in FY16 shows a similar pattern to the other facilities – a slight decrease in activations and volume discharged due to the decreased rainfall in FY16 from FY15.

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
FY12	39	40	100	0.1	2.6	13	45.2
FY13	28	28	180	0.5	6.4	95.2	45.4

	Activations	Days activated	Total volume treated (MG)	Min flow (MGD)	Mean flow (MGD)	Max flow (MGD)	Total rainfall (inches)
FY14	21	21	42	0.04	2.0	9.2	36.2
FY15	25	25	98	0.05	3.92	35.1	43.13
FY16	22	22	88.19	0.28	4.01	25.91	33.97
Average flow = Total volume treated divided by the number of days activated.							

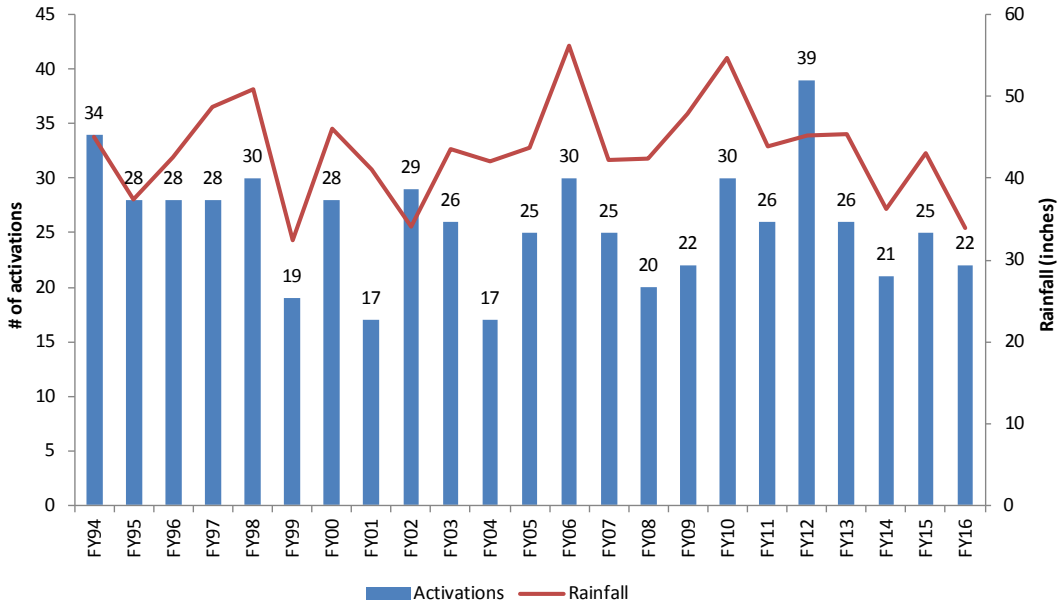


Figure 30. Somerville Marginal CSO Activations Compared to Precipitation, FY94-FY16

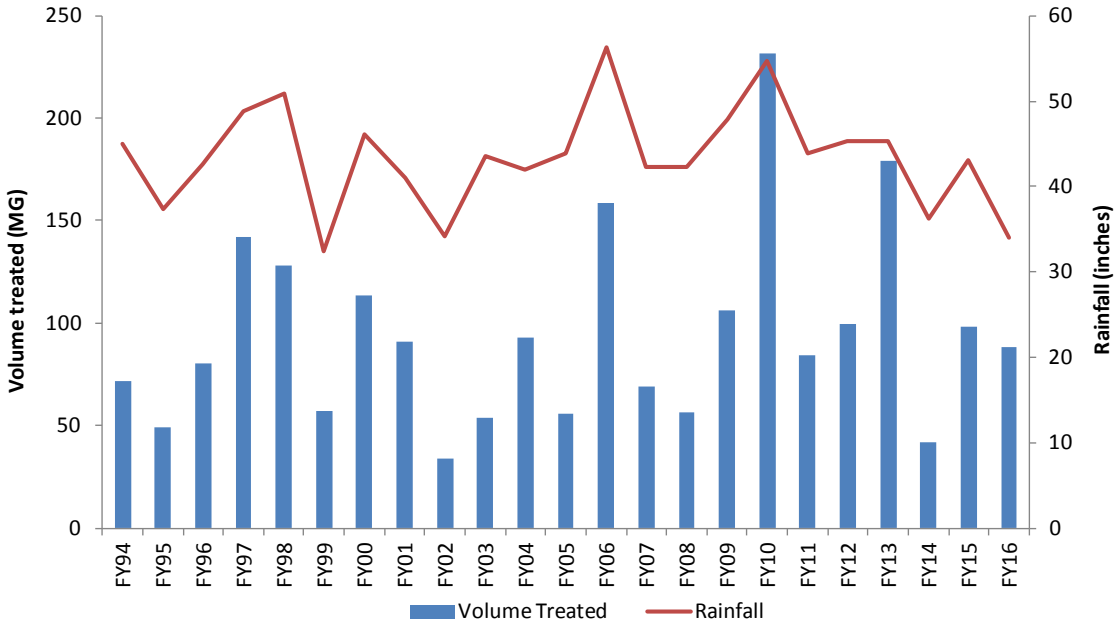


Figure 31. Somerville Marginal CSO Volume Treated Compared to Precipitation, FY94-FY16

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

Table 22. Somerville Marginal CSO Effluent Characteristics, FY16

Parameter	Minimum	Average	Maximum	N
TSS (mg/L)	24.0	106.9	700.0	5
BOD (mg/L)	4.9	28.3	77.1	5
Fecal Coliform (col/100 mL)	9.0	56261.3	225000	5
pH (SU)	6.8	7.5	8.4	5

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 FY16.

Table 23. Somerville Marginal CSO Effluent Metals, FY16

Parameter	Average Concentration	Times Detected
Aluminum (ug/L)	2496	3 of 3
Cadmium (ug/L)	0.312	3 of 3
Calcium (ug/L)	7655	3 of 3
Chromium (ug/L)	11.95	3 of 3
Copper (ug/L)	49.8	3 of 3
Lead (ug/L)	63.1	3 of 3
Magnesium (ug/L)	5355	3 of 3
Mercury (ug/L)	0.16	3 of 3
Nickel (ug/L)	6.8	3 of 3
Zinc (ug/L)	172	3 of 3

Union Park CSO Facility

The Union Park CSO facility 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 FY16. The number of activations and the total volume treated decreased in FY16 due to decreased rainfall from FY15.

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
FY12	12	12	39	0.3	3.3	9.9	45.24
FY13	7	7	36.8	0.9	5.3	17.8	45.4
FY14	5	5	20.6	0.8	4.1	6.3	36.2

	Activations	Days activated	Total volume treated (MG)	Min flow (MGD)	Mean flow (MGD)	Max flow (MGD)	Total rainfall (inches)
FY15	5	5	41.08	0.5	8.22	20.4	43.13
FY16	4	4	16.51	1.19	4.13	11.75	33.97
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, FY16

Parameter	Minimum	Average	Maximum
TSS (mg/L)	52.0	58.4	70.0
BOD (mg/L)	24.8	34.9	48.0
Fecal Coliform (col/100 mL)	27.0	77.0	127.0
pH (SU)	5.2	5.88	7.0

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, FY16

	Average Concentration	Times Detected
Aluminum (ug/L)	670	3 of 3
Antimony (ug/L)	~	0 of 3
Arsenic (ug/L)	4.0	4 of 4
Beryllium (ug/L)	1.0	0 of 2
Cadmium (ug/L)	0.5	0 of 3
Calcium (ug/L)	5800	3 of 3
Chromium (ug/L)	3.0	3 of 3
Copper (ug/L)	44.0	3 of 3
Lead (ug/L)	21.3	3 of 3
Magnesium (ug/L)	1080	3 of 3
Mercury (ug/L)	0.051	1 of 3
Nickel (ug/L)	2.0	1 of 3
Selenium (ug/L)	2.0	0 of 3
Silver (ug/L)	1.0	0 of 4
Thallium (ug/L)	1.0	0 of 4
Zinc (ug/L)	100.75	3 of 3

Sludge Processing

Overview

In December 1991, 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

Parameter	Federal Limit (ppm)	Massachusetts Type 1* Limit (ppm)
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 2015 there were no violations of federal standards for sludge pellets, but there were five violations of the molybdenum state standard. In calendar year 2016 there were no violations of federal standards, but there were seven violations of the molybdenum state standard. Tables 28 and 29 summarize the analytical results. The plant processed 36,300 tons in CY15 and 37,600 tons in CY16.

Table 28. Summary of Sludge Pellet Analysis, Calendar Year 2015

Parameter	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
Arsenic (mg/kg, dry weight)	4.0	3.5	3.5	4.5	3.4	3.1	3.7	2.7	3.9	3.3	3.7	3.7
Boron (mg/kg, dry weight)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium (mg/kg, dry weight)	3.4	3.4	3.2	5.0	4.7	3.0	2.8	2.6	2.3	2.3	2.4	2.4
Chromium (mg/kg, dry weight)	70.0	60.3	72.6	69.7	69.9	67.2	66.3	68.8	70.9	71.5	65.5	73.6
Copper (mg/kg, dry weight)	563.3	563.0	590.3	552.4	551.5	562.3	581.2	634.5	637.0	598.0	587.0	565.4
Lead (mg/kg, dry weight)	113.0	92.5	80.4	107.0	106.5	105.4	112.2	116.0	120.8	123.5	115.3	104.8
Mercury (mg/kg, dry weight)	1.6	1.5	1.3	1.7	1.5	1.6	2.0	1.4	1.5	1.9	1.9	1.7
Molybdenum (mg/kg, dry weight)	13.8	11.8	12.1	10.7	12.6	18.9	20.8	**28.9**	**32.8**	**34.2**	**30.9**	**31.9**
Nickel (mg/kg, dry weight)	23.9	23.1	23.3	24.3	23.3	21.9	23.5	23.6	22.4	21.4	25.6	24.6
Selenium (mg/kg, dry weight)	3.6	3.5	3.8	3.3	3.1	3.5	4.0	4.5	3.7	4.3	5.0	4.6
Zinc (mg/kg, dry weight)	1145.0	1150.0	1177.5	1156.0	1157.5	1172.5	1196.0	1285.0	1342.0	1282.5	1257.5	1208.0

ND: No data
Bold indicates violations of the MADEP (state) limits for Type 1 sludge or federal limits.

Table 29. Summary of Sludge Pellet Analysis, Calendar Year 2016

Parameter	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
Arsenic (mg/kg, dry weight)	4.2	3.9	3.9	3.9	3.4	3.3	4.5	4.0	4.0	4.0	4.6	4.7
Boron (mg/kg, dry weight)	25.7	24.5	24.1	25.1	26.2	25.8	26.0	25.5	25.6	25.6	25.9	25.9
Cadmium (mg/kg, dry weight)	2.2	2.8	2.6	2.6	2.3	2.1	1.9	1.4	1.6	1.8	1.9	1.8
Chromium (mg/kg, dry weight)	78.8	78.0	76.9	77.9	71.6	69.6	70.2	64.9	76.5	79.6	68.6	71.4
Copper (mg/kg, dry weight)	558.8	533.3	522.4	509.0	511.0	541.4	581.8	577.5	610	596.5	614.5	548.2
Lead (mg/kg, dry weight)	94.9	90.5	101.0	92.9	77.6	87.1	94.0	91.8	96.0	100.9	105.3	93.4
Mercury (mg/kg, dry weight)	1.8	1.5	1.6	1.6	1.4	1.3	1.7	1.6	1.7	1.7	1.6	1.7
Molybdenum (mg/kg, dry weight)	24.8	19.7	17.0	16.9	19.1	**26.8**	**35.3**	**42.6**	**41.3**	**42.7**	**38.4**	**32.8**
Nickel (mg/kg, dry weight)	26.4	26.5	25.6	23.6	21.9	21.2	20.6	20.4	22.7	23.1	25.1	24.7
Selenium (mg/kg, dry weight)	4.2	3.7	101.0	92.9	77.6	87.1	94.0	91.8	96.0	100.9	105.3	93.4
Zinc (mg/kg, dry weight)	1175.0	1082.5	1106.0	1135.0	1073.3	1212.0	1242.5	1290.0	1292.0	1297.5	1232.5	1222.0

ND: No data
Bold indicates violations of the MADEP (state) limits for Type 1 sludge or federal limits.A

Transport Systems

North System Headworks Flow Restriction

Figure 32 below shows the number of hours of maintenance- and rain-related flow restriction at the remote headworks since FY94.

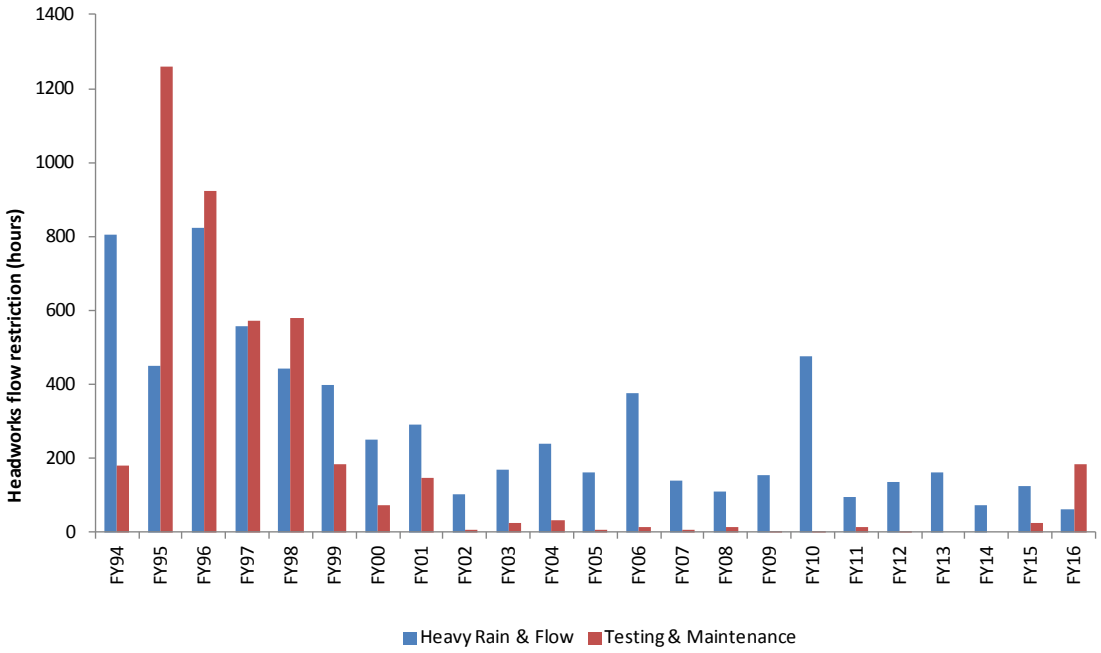


Figure 32. Flow Restriction, FY94-FY16

Figure 33 shows the influence of the number of rainy days in a year on the hours of rain-related flow restriction. 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 flow restriction hours (i.e., FY96 versus FY98 and FY02-FY05, which have similar levels of rainfall but differing amounts of flow restriction).

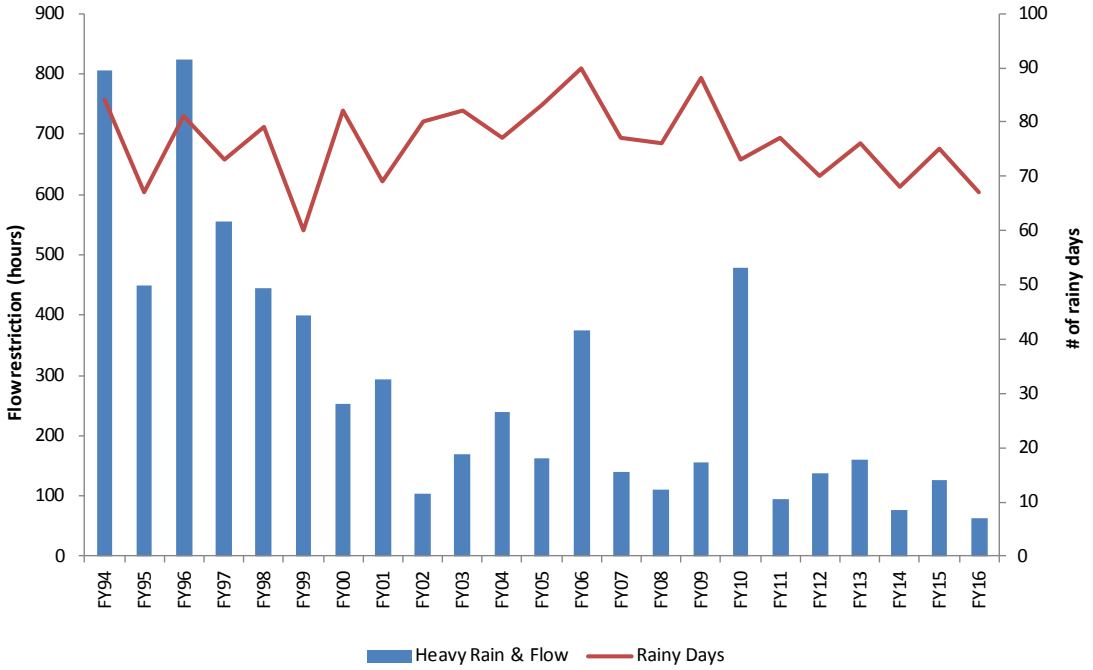


Figure 33. Rain-Related Flow Restriction, FY94-FY16

Flow restriction for maintenance purposes is plotted in Figure 34. Maintenance flow restriction 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 flow restriction 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 flow restriction 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 flow restriction 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, flow restriction due to testing and maintenance fell to minimal levels.

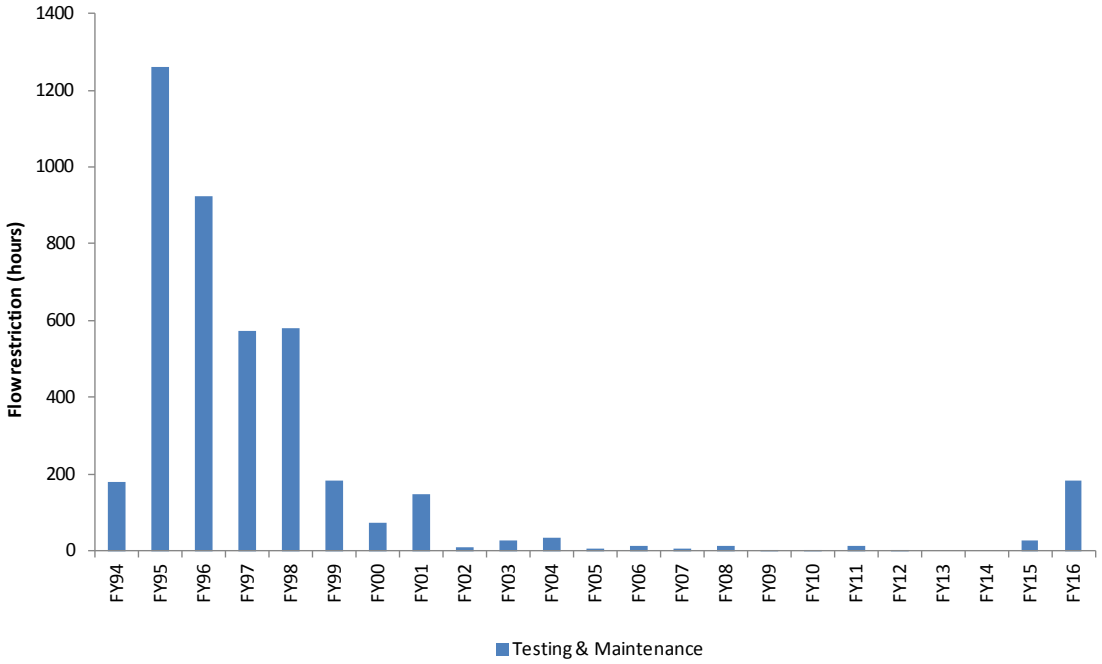


Figure 34. Testing and Maintenance-Related Flow Restriction, FY94-FY16

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 for the North System decreased from eleven in FY15 to three in FY16 (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, FY15-FY16

Location	Number of Overflows FY15	FY16
South Boston (Massport Wiggins Terminal)	0	1
Section 43, Station 79+84, Cambridge (MBTA Red Line Parking Garage)	0	1
Section 27, Station 17+03, Somerville (Near Railroad Tracks)	1	1
Section 50, Station 26+50, Melrose (Melrose St Manhole)	1	0

Location	Number of Overflows FY15	FY16
Section 60, Station 19+18, Melrose (Tremont St Manhole)	1	0
Section 69, Station 48+53, Winchester (Upstream Headhouse at Aberjona River)	1	0
Section 107, Station 1+00, Medford (Mystic Valley Pkwy (Rte 16) near James St)	1	0
Section 113, Station 3+24, Winchester (Wedgemere Siphon)	1	0
Section 152, Station 31+24, Medford (Lakeview Ave)	1	0
Section 152, Station 59+29, Arlington (Mystic Valley Pkwy Manhole)	1	0
Section 155, Station 9+12, Somerville (Boston Ave)	1	0
Section 176A, Station 131+21, Medford (Auburn St Manhole)	1	0
Section 176C, Station 00+35, Somerville (Alewife Brook Pump Station)	1	0

South System Sanitary Sewer Overflows

There were six reported overflows in the South System in FY15, but only one in FY16 (see Table 31).

Table 31. Sanitary Sewer Overflows, South System, FY15-FY16

Location	Number of Overflows FY15	FY16
Section 662, Station 9+81, Weymouth (Hingham Pump Station Force Main Air Relief Valve Near Back River Bridge)	0	1
Section 570, Station 00+00, Boston/Roslindale (Bradeen St North Gate)	1	0
Section 570, Station 00+00, Boston/Roslindale (Bradeen St South Gate)	1	0
Section 626, Station 54+06, Braintree (Smelt Brook Upstream Headhouse)	2	0
Section 626, Station 53+23, Weymouth (Smelt Brook Downstream Headhouse)	1	0
Section 628, Station 16+30, Braintree (Manhole Downstream of Pearl St Siphon)	1	0

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, 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

MWRA's NPDES permit includes a number of 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. 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
Biosolids Processing Plant
Alewife Brook Pump Station
Allison Hayes Pump Station
Braintree-Weymouth Pump Station
Caruso Pump Station
Delauri Pump Station
Framingham Pump Station
Hingham Pump Station
Houghs Neck Lift Station
Intermediate Pump Station
Neponset Pump Station
Quincy Pump Station
Squantum Pump Station

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 FY16, 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 FY16, 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, MWRA develops and enforces specific limits on effluent from industrial users.

The industrial pretreatment program requires 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 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

EPA maintains an electronic mailing list for permit-related announcements:
https://www3.epa.gov/region1/npdes/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, FY16

North System Influent	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
Flow (mgd)															
Average	180.0	160.0	164.9	168.7	164.4	186.4	212.7	227.2	222.7	229.0	185.6	167.3		189.1	
Minimum	121.9	144.9	136.5	123.2	149.3	151.4	180.7	181.9	189.8	172.3	158.1	146.4	121.9		
Maximum	299.5	227.3	521.8	306.5	226.5	330.0	407.2	369.7	349.8	454.0	267.5	271.7			521.8
Temperature (deg F)															
Average	70.0	71.5	70.6	66.9	67.3	65.3	62.0	59.8	61.2	58.4	62.0	65.6		65.1	
Minimum	66.2	68.7	65.8	58.5	59.0	60.1	58.3	56.1	57.2	54.3	57.6	63.0	54.3		
Maximum	75.0	75.7	74.5	72.9	72.3	70.3	68.0	64.9	66.0	63.5	65.5	69.8			75.7
pH (SU)															
Average	6.9	6.9	6.9	6.9	6.9	6.9	7.0	7.0	7.0	7.0	6.9	6.9		6.9	
Minimum	6.6	6.8	6.8	6.7	6.7	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.6		
Maximum	7.1	7.4	7.2	7.2	7.0	7.0	7.1	7.1	7.2	7.1	7.1	7.1			7.4

North System Influent: Conventional Parameters (mg/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
Total Suspended Solids															
Average	218	238	233	218	200	196	188	192	159	180	219	244		207	
Minimum	78	51	130	124	84	112	104	88	52	86	90	131	51		
Maximum	360	483	444	446	314	300	348	440	343	308	329	627			627
cBOD															
Average	90	111	102	125	131	120	115	115	96	106	117	118		112	
Minimum	37	44	64	64	83	79	69	75	45	51	85	85	37		
Maximum	165	191	192	220	160	156	174	209	176	136	164	169			220
Settleable Solids (mL/L)															
Average	7.1	7.2	7.9	7.2	7.9	6.0	7.2	6.4	7.2	6.3	8.7	9.0		7.3	
Minimum	2.6	2.0	1.6	1.4	2.0	2.0	3.4	3.9	3.5	2.5	5.0	4.6	1.4		
Maximum	13.0	18.0	52.0	18.0	28.0	14.4	30.0	10.0	24.0	10.0	17.2	12.5			52.0
Total Solids															
Average	1702	1760	1749	1692	1554	1471	1631	1822	1467	1523	1585	1720		1640	
Minimum	1410	1120	1150	1240	1000	1040	1120	1220	1000	1100	764	1410	764		
Maximum	2190	2490	2750	2260	1800	2180	3250	3610	2640	2260	2400	2870			3610
Volatile Solids															
Average	504	501	498	438	408	401	390	393	346	354	433	505		431	
Minimum	276	308	248	320	208	228	208	236	184	244	292	360	184		
Maximum	708	772	752	696	528	584	884	620	932	460	660	1070			1070
Volatile Suspended Solids															
Average	196	210	210	192	182	178	169	171	143	164	198	220		186	
Minimum	70	35	120	106	74	100	94	82	46	76	87	120	35		
Maximum	316	413	402	394	283	264	308	406	303	274	297	590			590

Table A-1. Deer Island Treatment Plant Operations Summary, FY16 (cont.)

North System Influent: Conventional Parameters (mg/L; cont.)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
BOD															
Average	165	195	183	203	218	203	188	182	161	181	209	214		192	
Minimum	82	109	74	109	105	123	100	109	78	95	148	139	74		
Maximum	293	328	277	339	331	337	312	301	257	245	296	324			339
COD															
Average	382	442	401	434	467	418	399	397	353	372	426	448		412	
Minimum	184	185	223	268	274	302	252	259	216	225	282	283	184		
Maximum	604	691	769	796	712	518	648	681	704	738	555	853			853
Chloride															
Average	607	637	643	643	576	535	647	779	572	596	585	618		620	
Minimum	466	286	351	374	363	338	455	448	388	406	329	492	286		
Maximum	824	931	1260	921	756	982	1380	1800	1360	1040	942	873			1800

North System Influent: Nutrients (mg/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
Ammonia															
Average	18.1	17.8	18.0	23.7	27.2	22.6	20.8	18.3	17.4	19.6	21.4	22.6		20.6	
Minimum	14.5	13.9	4.2	19.6	22.1	16.4	16.8	15.4	14.6	15.1	18.0	21.7	4.2		
Maximum	21.4	25.3	24.7	29.5	32.3	27.6	24.4	19.8	19.3	22.0	23.8	23.5			32.3
Nitrite															
Average	1.72	1.73	0.91	0.32	0.01	0.55	0.26	0.12	0.46	0.20	0.31	0.50		0.59	
Minimum	0.10	1.18	0.57	0.07	0.01	0.10	0.10	0.08	0.23	0.13	0.19	0.05	0.01		
Maximum	4.10	2.57	1.18	0.58	0.01	0.75	0.42	0.20	0.83	0.36	0.45	0.83			4.10
Nitrate															
Average	0.37	2.59	2.02	0.66	0.01	0.02	0.56	0.07	0.05	0.14	0.44	0.47		0.62	
Minimum	0.01	1.63	1.20	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.22	0.01	0.01		
Maximum	1.08	3.34	3.95	2.43	0.01	0.04	0.88	0.20	0.12	0.23	0.64	0.77			3.95
Total Kjeldahl Nitrogen															
Average	26.7	27.7	29.0	34.3	35.7	30.5	28.5	26.9	25.7	27.7	33.4	34.9		30.1	
Minimum	15.7	23.5	14.5	29.4	29.8	23.4	24.1	24.1	19.6	24.8	27.4	32.1	14.5		
Maximum	32.0	33.8	37.9	41.8	41.5	36.1	32.8	30.3	28.0	28.9	37.6	38.6			41.8
Orthophosphates															
Average	1.7	2.1	2.1	2.3	2.6	2.4	2.1	1.6	1.5	1.8	2.0	2.2		2.0	
Minimum	1.2	1.7	0.6	2.1	1.9	1.5	1.8	1.2	1.3	1.5	1.6	1.9	0.6		
Maximum	2.2	2.6	2.7	2.9	3.2	3.2	2.5	2.1	1.7	2.1	2.2	2.5			3.2
Total Phosphorus															
Average	4.6	4.6	4.4	5.3	4.8	4.6	3.9	3.5	3.5	4.1	4.5	4.8		4.4	
Minimum	3.8	3.4	2.7	4.2	3.8	3.9	3.8	3.2	2.5	3.5	4.0	4.5	2.5		
Maximum	5.9	6.0	5.7	6.7	5.8	5.2	4.1	3.8	4.0	4.4	4.7	5.1			6.7

Table A-1. Deer Island Treatment Plant Operations Summary, FY16 (cont.)

South System Influent	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
Flow (mgd)															
Average	88.5	73.6	71.5	78.0	79.2	91.1	117.7	134.7	127.2	135.5	96.5	80.0		97.8	
Minimum	76.3	67.5	62.6	68.0	67.8	76.1	96.8	99.0	110.1	99.0	77.4	70.5	62.6		
Maximum	123.8	80.4	131.3	104.0	96.7	127.4	156.8	191.9	157.5	220.0	114.1	94.6			220.0
Temperature (deg F)															
Average	66.7	69.6	70.3	66.6	65.3	62.2	57.9	55.9	55.9	56.7	60.5	64.5		62.7	
Minimum	64.4	68.0	68.4	59.9	59.0	58.6	54.9	52.9	53.4	54.5	57.4	62.6	52.9		
Maximum	70.0	71.4	72.0	69.1	73.6	75.0	66.9	68.2	68.9	59.7	68.4	67.1			75.0
pH (SU)															
Average	6.9	6.9	6.9	7.0	6.9	6.9	7.0	7.0	7.0	6.9	6.9	6.9		6.9	
Minimum	6.7	6.8	6.8	6.8	6.6	6.5	6.7	6.8	6.7	6.5	6.7	6.6	6.5		
Maximum	7.0	7.1	7.1	7.1	7.1	7.2	7.2	7.2	7.2	7.1	7.2	7.1			7.2

South System Influent: Conventional Parameters (mg/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
Total Suspended Solids															
Average	256	203	207	246	248	371	177	162	181	182	243	240		226	
Minimum	134	82	82	108	124	184	104	100	112	65	112	122	65		
Maximum	606	372	551	514	452	884	262	232	320	292	407	400			884
cBOD															
Average	128	128	140	140	130	157	93	83	81	82	108	119		116	
Minimum	68	101	92	97	91	89	55	52	52	54	84	74	52		
Maximum	219	177	204	186	203	321	148	120	106	137	146	177			321
Settleable Solids (mL/L)															
Average	12.5	7.2	6.7	9.0	9.7	19.9	7.7	7.1	7.0	8.3	9.8	9.3		9.5	
Minimum	5.5	0.5	0.1	0.2	0.4	5.6	4.5	4.0	4.5	3.5	1.5	2.0	0.1		
Maximum	50.0	19.5	34.0	54.0	54.0	52.0	19.0	12.4	14.0	23.6	15.0	16.0			54.0
Total Solids															
Average	1740	1904	1943	1786	1559	1577	1676	1339	1263	1302	1509	1731		1611	
Minimum	1500	1410	1520	1390	1280	1170	1040	1040	1060	1080	1120	1320	1040		
Maximum	2180	2920	3040	2470	1800	2300	13000	2110	1560	1800	1960	2650			13000
Volatile Solids															
Average	568	552	551	498	467	545	337	328	319	347	453	538		459	
Minimum	372	376	276	292	288	316	224	164	164	220	272	328	164		
Maximum	1000	848	760	668	668	1060	456	532	420	696	732	1020			1060
Volatile Suspended Solids															
Average	225	178	183	217	219	326	157	141	157	159	211	207		198	
Minimum	124	76	70	96	110	168	96	92	105	59	106	110	59		
Maximum	530	328	509	442	402	764	221	194	272	248	349	328			764

Table A-1. Deer Island Treatment Plant Operations Summary, FY16 (cont.)

South System Influent: Conventional Parameters (mg/L; cont.)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
BOD															
Average	190	189	211	211	207	276	151	133	138	152	189	199		187	
Minimum	115	133	147	155	134	151	101	79	103	103	117	142	79		
Maximum	380	258	303	323	304	641	193	175	223	231	256	369			641
COD															
Average	478	447	467	525	517	681	362	328	363	352	473	488		457	
Minimum	270	305	300	341	323	206	221	206	271	184	288	348	184		
Maximum	973	660	719	761	738	1750	517	470	610	644	703	926			1750
Chloride															
Average	603	711	725	657	541	504	458	525	464	480	534	616		568	
Minimum	467	483	531	483	426	379	363	390	368	392	387	485	363		
Maximum	802	1080	1240	938	697	611	723	945	610	699	778	857			1240

South System Influent: Nutrients (mg/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
Ammonia															
Average	52.8	60.7	58.6	68.2	55.8	62.0	43.9	43.5	44.8	45.2	56.1	64.7		54.7	
Minimum	42.3	51.1	37.2	64.9	42.1	49.0	38.2	31.7	37.2	40.2	49.3	60.1	31.7		
Maximum	58.7	65.5	76.8	71.4	69.1	72.2	50.4	55.3	52.1	50.4	66.3	70.2			76.8
Nitrite															
Average	0.41	1.34	0.66	0.05	0.09	0.28	0.26	0.55	0.20	0.27	0.37	0.04		0.38	
Minimum	0.01	0.43	0.01	0.02	0.01	0.01	0.02	0.02	0.03	0.04	0.02	0.01	0.01		
Maximum	1.55	1.82	1.31	0.07	0.33	0.93	0.71	1.13	0.67	0.68	0.88	0.12			1.82
Nitrate															
Average	0.17	0.42	0.40	0.10	0.01	0.04	0.20	0.47	0.19	0.15	0.07	0.11		0.19	
Minimum	0.02	0.25	0.02	0.02	0.01	0.01	0.13	0.22	0.08	0.01	0.01	0.01	0.01		
Maximum	0.30	0.51	0.80	0.18	0.01	0.10	0.28	1.12	0.27	0.26	0.21	0.19			1.12
Total Kjeldahl Nitrogen															
Average	72.3	66.3	76.0	80.0	68.3	68.5	50.2	50.9	54.1	58.5	75.0	77.6		66.5	
Minimum	60.4	64.7	54.0	76.9	55.7	41.6	43.0	38.4	43.4	50.7	59.6	71.3	38.4		
Maximum	110.0	69.6	88.7	86.9	77.2	96.1	59.1	64.2	63.4	67.3	91.0	85.1			110.0
Orthophosphates															
Average	2.9	4.2	4.2	5.1	4.4	4.5	2.5	2.3	2.4	2.5	3.4	4.3		3.6	
Minimum	1.3	3.8	3.1	4.7	3.3	2.9	2.2	1.4	2.1	2.4	3.0	3.8	1.3		
Maximum	4.1	4.6	5.0	5.6	5.1	5.5	2.8	3.2	2.8	2.7	3.8	4.9			5.6
Total Phosphorus															
Average	7.2	7.6	7.8	9.0	7.8	8.7	5.8	5.6	6.2	6.8	8.0	9.2		7.5	
Minimum	6.7	7.3	5.6	7.5	6.7	4.3	5.7	4.4	4.9	5.8	6.3	8.0	4.3		
Maximum	7.5	8.2	10.0	10.9	9.1	13.3	6.0	7.2	8.7	8.0	10.5	10.6			13.3

Table A-1. Deer Island Treatment Plant Operations Summary, FY16 (cont.)

Flow-Weighted Influent (North+South Systems): Conventional Parameters (mg/L)

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
Total Suspended Solids															
Average	231	227	225	227	215	253	184	181	167	181	227	242	167	213	253
cBOD															
Average	103	116	114	130	131	132	107	103	91	97	114	118	91	113	132
Settleable Solids (mL/L)															
Average	8.9	7.2	7.5	7.8	8.5	10.6	7.4	6.7	7.2	7.1	9.0	9.1	6.7	8.1	10.6
Total Solids															
Average	1714	1806	1807	1721	1556	1506	1647	1643	1393	1441	1559	1724	1393	1626	1807
Volatile Solids															
Average	525	517	514	457	427	448	371	369	336	351	440	516	336	439	525
Volatile Suspended Solids															
Average	206	200	202	200	194	227	165	160	148	162	202	216	148	190	227
BOD															
Average	173	193	191	206	215	227	175	164	153	170	202	209	153	190	227
COD															
Average	414	444	421	463	483	504	386	371	357	364	442	461	357	426	504
Chloride															
Average	605	660	668	647	565	525	580	684	532	553	568	617	525	600	684

Flow-Weighted Influent (North+South Systems): Nutrients (mg/L)

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
Ammonia															
Average	29.6	31.3	30.3	37.8	36.5	35.5	29.0	27.6	27.3	29.1	33.3	36.3	27.3	32.0	37.8
Nitrite															
Average	1.29	1.60	0.84	0.24	0.03	0.46	0.26	0.28	0.37	0.23	0.33	0.35	0.03	0.52	1.60
Nitrate															
Average	0.30	1.91	1.53	0.49	0.01	0.03	0.43	0.22	0.10	0.14	0.31	0.35	0.01	0.48	1.91
Total Kjeldahl Nitrogen															
Average	41.7	39.8	43.2	48.7	46.3	43.0	36.2	35.8	36.0	39.1	47.6	48.7	35.8	42.2	48.7
Orthophosphates															
Average	2.1	2.8	2.7	3.2	3.2	3.1	2.3	1.8	1.8	2.0	2.5	2.9	1.8	2.5	3.2
Total Phosphorus															
Average	5.5	5.5	5.4	6.4	5.8	6.0	4.6	4.3	4.5	5.1	5.7	6.2	4.3	5.4	6.4

Table A-1. Deer Island Treatment Plant Operations Summary, FY16 (cont.)

Final Effluent	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
Flow (mgd)															
Average	268.6	233.6	236.5	246.7	243.6	277.5	330.4	361.9	349.9	364.5	282.0	247.8		286.9	
Minimum	203.8	212.4	199.1	197.0	218.4	228.4	277.5	280.9	303.1	271.3	238.9	217.5	197.0		
Maximum	396.7	307.7	653.1	390.5	303.2	457.0	555.0	537.1	507.2	664.9	369.7	366.4			664.9
Temperature (deg F)															
Average	69.3	72.0	72.1	68.4	66.0	65.1	60.4	58.6	59.3	60.6	63.4	67.1		65.2	
Minimum	66.9	70.2	66.0	66.0	63.0	59.4	57.9	55.4	56.5	56.8	61.0	64.9	55.4		
Maximum	72.0	73.4	74.1	71.6	68.7	66.9	63.1	62.6	61.3	64.2	66.0	70.7			74.1
pH (SU)*															
Average	6.8	6.8	6.9	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.8	6.8		6.8	
Minimum	6.4	6.5	6.7	6.5	6.6	6.3	6.5	6.7	6.5	6.1	6.4	6.5	6.1		
Maximum	7.3	7.0	7.0	7.3	7.0	7.0	7.0	7.0	7.1	6.9	7.0	6.9			7.3

Final Effluent: Conventional Parameters (mg/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
Total Suspended Solids															
Average	6.4	7.5	6.8	5.6	5.4	6.7	7.8	11.5	11.5	10.7	7.1	11.0		8.2	
Minimum	3.0	3.6	2.8	3.2	2.6	2.6	4.4	5.8	7.5	4.0	4.3	4.0	2.6		
Maximum	18.8	17.1	38.8	18.2	13.6	16.0	24.6	22.5	16.7	30.4	15.2	40.0			40.0
cBOD															
Average	4.4	4.9	5.6	5.0	4.6	6.1	6.1	6.9	6.9	5.8	4.9	5.7		5.6	
Minimum	2.5	2.4	2.5	3.0	2.3	3.8	3.9	4.3	4.7	3.1	3.2	3.2	2.3		
Maximum	11.6	7.9	22.7	11.5	8.6	13.1	18.3	14.2	10.5	11.9	11.4	11.6			22.7
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	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.8			0.8
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	0.10	0.04	0.04	0.04			0.10
Fecal Coliform (colonies/100mL)*															
Geometric Mean	6	6	6	6	6	5	6	6	6	6	6	6		6	
Minimum	5	5	5	5	5	5	5	5	5	5	5	5	5		
Maximum	16	10	106	17	19	9	12	13	16	11	20	14			106
Total Solids															
Average	1527	1606	1614	1508	1315	1259	1268	1524	1225	1265	1301	1507		1410	
Minimum	1170	1180	1210	1210	948	856	992	992	932	1060	1020	1200	856		
Maximum	1890	2280	2530	1920	1610	1740	2220	3340	1750	2190	2060	2610			3340

Table A-1. Deer Island Treatment Plant Operations Summary, FY16 (cont.)

Final Effluent: Conventional Parameters (mg/L; cont.)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
Volatile Solids															
Average	320	312	320	245	196	202	176	200	162	173	203	307		235	
Minimum	188	192	108	132	92	96	60	92	64	88	104	184	60		
Maximum	520	584	764	448	260	308	300	424	256	256	312	940			940
Volatile Suspended Solids															
Average	5.8	6.8	6.2	5.1	5.1	6.1	7.1	10.2	10.4	9.6	6.4	10.0		7.4	
Minimum	2.8	3.0	2.6	2.8	2.6	2.6	4.2	5.4	6.8	4.0	3.8	3.6	2.6		
Maximum	18.0	14.9	35.2	17.2	12.6	15.2	21.4	19.9	16.3	25.2	13.6	34.5			35.2
BOD															
Average	14.1	14.6	14.2	10.2	9.9	14.8	12.7	12.8	14.0	14.6	11.8	16.3		13.3	
Minimum	5.6	5.5	7.1	4.5	5.1	7.4	6.9	6.8	8.7	5.9	7.6	6.5	4.5		
Maximum	44.0	35.6	42.3	22.9	18.2	27.4	32.5	30.3	26.9	27.9	24.9	49.0			49.0
COD															
Average	79	92	90	87	76	82	80	98	78	76	84	87		84	
Minimum	56	69	66	63	55	61	64	61	62	56	53	62	53		
Maximum	118	175	137	126	94	111	129	157	99	98	145	127			175
Total Organic Carbon															
Average	14.3	19.6	16.3	15.2	20.2	18.5	21.3	15.3	15.4	13.1	12.1	17.5		16.5	
Minimum	12.8	16.2	15.7	13.4	18.6	17.4	16.3	12.5	14.2	10.6	11.8	15.9	10.6		
Maximum	16.7	22.9	17.3	17.0	21.8	19.5	26.3	17.9	16.6	15.5	12.4	19.0			26.3
Chloride															
Average	632	681	671	663	575	546	558	698	537	567	572	627		611	
Minimum	403	462	499	494	413	408	424	445	397	444	426	513	397		
Maximum	767	988	983	926	729	857	971	1650	920	1090	918	872			1650
Fats, Oils, and Grease															
Average	7.0	7.1	6.9	6.9	7.0	6.9	7.0	7.1	7.0	7.0	7.1	6.9		7.0	
Minimum	6.9	6.9	6.8	6.8	6.8	6.9	6.9	6.9	6.9	6.7	6.8	6.8	6.7		
Maximum	7.3	7.3	7.0	7.0	7.2	7.1	7.0	7.6	7.6	7.5	7.9	7.0			7.9

Table A-1. Deer Island Treatment Plant Operations Summary, FY16 (cont.)

Final Effluent: Nutrients (mg/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Min	Annual Average	Max
Ammonia															
Average	28.2	30.7	35.8	32.9	31.1	30.3	26.4	24.4	25.5	22.5	29.5	33.0		29.2	
Minimum	17.4	23.8	22.0	21.5	19.5	18.8	19.4	15.0	16.8	10.8	18.0	21.8	10.8		
Maximum	33.6	37.6	61.3	39.4	38.7	36.7	34.3	33.7	30.7	29.2	37.3	39.7			61.3
Nitrite															
Average	0.27	0.09	0.11	0.14	0.40	0.18	0.13	0.17	0.15	0.23	0.04	0.06		0.16	
Minimum	0.06	0.05	0.02	0.04	0.02	0.03	0.06	0.04	0.08	0.08	0.02	0.01	0.01		
Maximum	0.54	0.11	0.22	0.26	1.01	0.45	0.22	0.48	0.38	0.52	0.06	0.10			1.01
Nitrate															
Average	0.69	0.26	0.25	0.84	0.17	1.13	0.17	0.20	0.22	0.25	0.10	0.37		0.39	
Minimum	0.13	0.07	0.05	0.09	0.04	0.02	0.03	0.01	0.02	0.01	0.01	0.02	0.01		
Maximum	1.95	0.42	0.59	2.33	0.24	2.63	0.32	0.40	0.41	0.92	0.26	1.27			2.63
Total Kjeldahl Nitrogen															
Average	27.4	30.1	33.9	32.5	29.0	28.8	25.5	25.5	25.9	24.0	33.2	32.9		29.0	
Minimum	16.0	23.3	25.6	22.2	18.9	18.7	20.2	15.7	18.0	12.3	19.8	24.3	12.3		
Maximum	35.1	38.9	49.5	38.2	35.4	36.9	32.4	35.4	31.2	29.3	41.0	39.6			49.5
Orthophosphates															
Average	2.3	2.5	2.6	2.9	2.2	2.3	1.7	1.5	1.6	1.6	2.2	2.4		2.1	
Minimum	1.7	2.0	1.6	2.7	1.4	1.5	1.4	0.7	1.3	1.3	2.0	2.0	0.7		
Maximum	2.7	2.8	3.5	3.1	2.8	3.1	2.1	2.1	1.8	1.9	2.4	2.8			3.5
Total Phosphorus															
Average	3.1	2.9	3.5	3.4	2.8	2.6	1.9	2.1	2.1	2.2	2.9	3.2		2.7	
Minimum	2.3	2.5	2.6	3.0	1.8	1.8	1.8	1.4	1.6	2.0	2.6	2.6	1.4		
Maximum	4.2	3.4	4.2	4.0	3.6	3.4	2.1	2.9	2.5	2.4	3.2	3.7			4.2

~: 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), FY16

Metals (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Aluminum	**628**	**1300**	**656**	**523**	**450**	**445**	**355**	**523**	**475**	**478**	**662**	**660**	606	1780	44 of 44
Antimony	25	25	25	25	25	25	25	25	25	25	25	25	25	25	0 of 44
Arsenic	0.4	**0.985**	**0.824**	**0.801**	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.496	1.45	5 of 44
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 44
Boron	125	**235**	**266**	125	**147**	125	125	125	125	125	**208**	125	155	306	9 of 44
Cadmium	**0.328**	**0.424**	**0.328**	**0.249**	**0.537**	**0.304**	**0.323**	**0.452**	**0.406**	**0.349**	**0.432**	**0.361**	0.383	0.59	44 of 44
Chromium	**3.2**	**5.52**	**2.38**	**2.73**	**7.53**	**5.71**	**5.43**	**4.69**	**3.47**	**4.05**	**8.3**	**4.8**	4.9	9.88	44 of 44
Copper	**62.6**	**88.3**	**47.3**	**45.4**	**75.6**	**58.6**	**53.4**	**60.9**	**55.7**	**49.5**	**64.2**	**67.7**	61.4	105	44 of 44
Iron	**2390**	**3540**	**1700**	**1780**	**2200**	**2170**	**1750**	**2100**	**1950**	**2310**	**2740**	**2800**	2340	4730	44 of 44
Lead	**8.01**	**21.4**	**6.61**	**10.7**	**10.4**	**5.71**	**4.59**	**4.92**	**4.24**	**7.22**	**13.5**	**12.5**	9.22	32	44 of 44
Mercury	**0.144**	**0.221**	**0.0695**	**0.195**	**0.143**	**0.107**	**0.0745**	**0.0642**	**0.103**	**0.0877**	**0.0977**	**0.118**	0.115	0.35	44 of 44
Molybdenum	**8.39**	**14.3**	**7.02**	**8.17**	**8.34**	**6.47**	**9.55**	**8.42**	**3.81**	**5.34**	**7.51**	**7.52**	7.69	17.1	44 of 44
Nickel	**5.06**	**6.58**	**4.11**	**3.95**	**6.88**	**5.56**	**6.17**	**3.6**	**5.39**	**3.93**	**6.04**	**5.4**	5.2	7.59	44 of 44
Selenium	0.45	**0.787**	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.479	0.926	2 of 44
Silver	**0.481**	**0.329**	**0.129**	**0.838**	**0.481**	**0.774**	**0.295**	**1.01**	**0.375**	**0.206**	**0.774**	**0.265**	0.485	1.02	39 of 44
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 44
Zinc	**132**	**198**	**110**	**103**	**151**	**134**	**101**	**128**	**102**	**119**	**148**	**145**	133	242	44 of 44

Cyanide (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Cyanide	**25.5**	**23.3**	**29.2**	**31.7**	**26.7**	**29.8**	**25.5**	**23.7**	**15.6**	**29.8**	**21.6**	**24.5**	25.4	36.7	40 of 44

Oil and Grease 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	**26200**	**31000**	**37300**	**33100**	**36800**	**35700**	**32600**	**27400**	**24700**	**29500**	**31300**	**26300**	30300	39000	44 of 44
Petroleum Hydrocarbons	**895**	**843**	**559**	**1550**	**1580**	**1700**	65.7	**1190**	**3020**	**667**	**510**	68.4	1080	3520	33 of 46

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	0.00211	0.00205	0.00208	0.00203	0.00207	0.00213	0.00207	0.00216	0.00214	0.00215	0.00211	0.00216	0.00211	0.00223	0 of 44
4,4'-DDE	0.00211	0.00205	0.00208	0.00203	0.00207	0.00213	0.00207	0.00216	0.00214	0.00215	0.00211	0.00216	0.00211	0.00223	0 of 44
4,4'-DDT	0.00211	0.00205	0.00208	0.00203	0.00207	0.00213	0.00207	0.00216	0.00214	0.00215	0.00211	0.00216	0.00211	0.00223	0 of 44
Aldrin	0.00105	0.00102	0.00104	0.00102	0.00104	0.00107	0.00103	0.00108	0.00107	0.00108	0.00106	0.00108	0.00106	0.00112	0 of 44
Alpha-BHC	0.00105	0.00102	0.00104	0.00102	0.00104	0.00107	0.00103	0.00108	0.00107	0.00108	0.00106	0.00108	0.00106	0.00112	0 of 44
Alpha-Chlordane	0.00105	0.00102	0.00104	0.00102	0.00104	0.00107	0.00103	0.00108	0.00107	0.00108	0.00106	0.00108	0.00106	0.00112	0 of 44
Aroclor-1016	0.0527	0.0512	0.052	0.0508	0.0518	0.0533	0.0517	0.054	0.0535	0.0538	0.0528	0.0539	0.0528	0.0558	0 of 44
Aroclor-1221	0.105	0.102	0.104	0.102	0.104	0.107	0.103	0.108	0.107	0.108	0.106	0.108	0.106	0.112	0 of 44
Aroclor-1232	0.0527	0.0512	0.052	0.0508	0.0518	0.0533	0.0517	0.054	0.0535	0.0538	0.0528	0.0539	0.0528	0.0558	0 of 44
Aroclor-1242	0.0527	0.0512	0.052	0.0508	0.0518	0.0533	0.0517	0.054	0.0535	0.0538	0.0528	0.0539	0.0528	0.0558	0 of 44
Aroclor-1248	0.0527	0.0512	0.052	0.0508	0.0518	0.0533	0.0517	0.054	0.0535	0.0538	0.0528	0.0539	0.0528	0.0558	0 of 44
Aroclor-1254	0.0527	0.0512	0.052	0.0508	0.0518	0.0533	0.0517	0.054	0.0535	0.0538	0.0528	0.0539	0.0528	0.0558	0 of 44
Aroclor-1260	0.0527	0.0512	0.052	0.0508	0.0518	0.0533	0.0517	0.054	0.0535	0.0538	0.0528	0.0539	0.0528	0.0558	0 of 44
Beta-BHC	0.00105	0.00102	0.00104	0.00102	0.00104	0.00107	0.00103	0.00108	0.00107	0.00108	0.00106	0.00108	0.00106	0.00112	0 of 44
Chlordane (Technical)	0.105	0.102	0.104	0.102	0.104	0.107	0.103	0.108	0.107	0.108	0.106	0.108	0.106	0.112	0 of 44
Delta-BHC	0.00105	0.00102	0.00104	0.00102	0.00104	0.00107	0.00103	0.00108	0.00107	0.00108	0.00106	0.00108	0.00106	0.00112	0 of 44
Dieldrin	0.00211	0.00205	0.00208	0.00203	0.00207	0.00213	0.00207	0.00216	0.00214	0.00215	0.00211	0.00216	0.00211	0.00223	0 of 44
Endosulfan I	0.00105	0.00102	0.00104	0.00102	0.00104	0.00107	0.00103	0.00108	0.00107	0.00108	0.00106	0.00108	0.00106	0.00112	0 of 44
Endosulfan II	0.00211	0.00205	0.00208	0.00203	0.00207	0.00213	0.00207	0.00216	0.00214	0.00215	0.00211	0.00216	0.00211	0.00223	0 of 44
Endosulfan Sulfate	0.00211	0.00205	0.00208	0.00203	0.00207	0.00213	0.00207	0.00216	0.00214	0.00215	0.00211	0.00216	0.00211	0.00223	0 of 44
Endrin	0.00211	0.00205	0.00208	0.00203	0.00207	0.00213	0.00207	0.00216	0.00214	0.00215	0.00211	0.00216	0.00211	0.00223	0 of 44
Endrin Aldehyde	0.00211	0.00205	0.00208	0.00203	0.00207	0.00213	0.00207	0.00216	0.00214	0.00215	0.00211	0.00216	0.00211	0.00223	0 of 44
Endrin Ketone	0.00211	0.00205	0.00208	0.00203	0.00207	0.00213	0.00207	0.00216	0.00214	0.00215	0.00211	0.00216	0.00211	0.00223	0 of 44
Gamma-BHC	0.00105	0.00102	0.00104	0.00102	0.00104	0.00107	0.00103	0.00108	0.00107	0.00108	0.00106	0.00108	0.00106	0.00112	0 of 44
Gamma-Chlordane	0.00105	0.00102	0.00104	0.00102	0.00104	0.00107	0.00103	0.00108	0.00107	0.00108	0.00106	**0.0163**	0.00246	0.0173	4 of 44
Heptachlor	0.00105	0.00102	0.00104	0.00102	0.00104	0.00107	0.00103	0.00108	0.00107	0.00108	0.00106	0.00108	0.00106	0.00112	0 of 44
Heptachlor Epoxide	0.00105	0.00102	0.00104	0.00102	0.00104	0.00107	0.00103	0.00108	0.00107	0.00108	0.00106	0.00108	0.00106	0.00112	0 of 44
Hexachlorobenzene	0.0105	0.0102	0.0104	0.0102	0.0104	0.0107	0.0103	0.0108	0.0107	0.0108	0.0106	0.0108	0.0106	0.0112	0 of 44
Methoxychlor	~	**0.00431**	~	**0.00857**	~	**0.00249**	~	**0.00363**	~	**0.00483**	~	**0.0276**	0.00863	0.049	22 of 22
Toxaphene	0.105	0.102	0.104	0.102	0.104	0.107	0.103	0.108	0.107	0.108	0.106	0.108	0.106	0.112	0 of 44

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
1,2-Dichlorobenzene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
1,2-Diphenylhydrazine (as Azobenzene)	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44

Table A-2. Deer Island Influent Characterization (North & South Systems), FY16 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,3-Dichlorobenzene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
1,4-Dichlorobenzene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2,2'-Oxybis(1-Chloropropane)	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2,4,5-Trichlorophenol	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2,4,6-Trichlorophenol	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2,4-Dichlorophenol	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2,4-Dimethylphenol	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2,4-Dinitrophenol	5.3	5.37	5.16	5.43	5.2	5.45	5.3	5.23	5.15	5.68	5.42	5.24	5.34	6.19	0 of 44
2,4-Dinitrotoluene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2,6-Dinitrotoluene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2-Chloronaphthalene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2-Chlorophenol	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2-Methyl-4,6-Dinitrophenol	5.3	5.37	5.16	5.43	5.2	5.45	5.3	5.23	5.15	5.68	5.42	5.24	5.34	6.19	0 of 44
2-Methylnaphthalene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2-Methylphenol	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2-Nitroaniline	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
2-Nitrophenol	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
3,3'-Dichlorobenzidine	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
3-Nitroaniline	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
4-Bromophenyl Phenyl Ether	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
4-Chloro-3-Methylphenol	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
4-Chloroaniline	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
4-Chlorophenyl Phenyl Ether	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
4-Methylphenol (includes 3-Methylphenol)	**5.63**	**11**	**11.1**	2.17	**31.7**	**17.7**	2.12	**22.4**	2.06	2.27	2.17	2.1	9.17	37	14 of 44
4-Nitroaniline	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
4-Nitrophenol	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Acenaphthene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Acenaphthylene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Aniline	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Anthracene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Benzidine	5.3	5.37	5.16	5.43	5.2	5.45	5.3	5.23	5.15	5.68	5.42	5.24	5.34	6.19	0 of 44
Benzo(a)anthracene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Benzo(a)pyrene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Benzo(b)fluoranthene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Benzo(g,h,i)perylene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Benzo(k)fluoranthene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Benzoic Acid	5.3	5.37	5.16	5.43	5.2	5.45	5.3	5.23	5.15	5.68	5.42	5.24	5.34	6.19	0 of 44
Benzyl Alcohol	2.12	2.15	2.07	2.17	**33.7**	2.18	2.12	2.09	2.06	2.27	**14.2**	**8.89**	6.43	48.3	5 of 44
Bis(2-Chloroethoxy)methane	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Bis(2-Chloroethyl)ether	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Bis(2-Ethylhexyl)phthalate	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Butylbenzylphthalate	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Carbazole	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Chrysene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Dibenzo(a,h)anthracene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Dibenzofuran	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Diethylphthalate	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Dimethylphthalate	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Di-N-Butylphthalate	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Di-N-Octylphthalate	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Fluoranthene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Fluorene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Hexachlorobenzene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Hexachlorobutadiene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Hexachlorocyclopentadiene	5.3	5.37	5.16	5.43	5.2	5.45	5.3	5.23	5.15	5.68	5.42	5.24	5.34	6.19	0 of 44
Hexachloroethane	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Indeno(1,2,3-CD)pyrene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Isophorone	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Naphthalene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
n-Decane	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Nitrobenzene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
N-Nitrosodimethylamine (NDMA)	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
N-Nitrosodi-N-Propylamine (NDPA)	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
N-Nitrosodiphenylamine	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
N-Octadecane	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Pentachlorophenol	5.3	5.37	5.16	5.43	5.2	5.45	5.3	5.23	5.15	5.68	5.42	5.24	5.34	6.19	0 of 44
Phenanthrene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Phenol	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44
Pyrene	2.12	2.15	2.07	2.17	2.08	2.18	2.12	2.09	2.06	2.27	2.17	2.1	2.13	2.47	0 of 44

Table A-2. Deer Island Influent Characterization (North & South Systems), FY16 (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 46
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 46
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 46
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 46
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 46
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 46
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 46
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 46
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 46
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 46
2-Butanone	**9.22**	**8.33**	**7.14**	**11.5**	**6.81**	**6.08**	**2.12**	**2.62**	**2.47**	**1.39**	**2.19**	**2.97**	4.99	13.7	31 of 46
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 46
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 46
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 46
Acetone	**117**	**135**	**157**	**136**	**119**	**200**	**91.2**	**217**	**471**	**96.6**	**112**	**68.3**	164	602	43 of 46
Acrolein	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 46
Acrylonitrile	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 46
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 46
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 46
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 46
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 46
Carbon Disulfide	**19.5**	**1.74**	**11**	**49.9**	**56.3**	**13.1**	0.5	0.5	0.5	0.5	0.5	0.5	11.7	71.7	13 of 46
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 46
Chlorobezene	0.5	0.5	0.5	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
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 46
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 46
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 46
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 46
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 46
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 46
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 46
M,P-Xylene	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0 of 46
Methylene Chloride	0.5	0.5	0.5	0.5	0.5	0.5	0.5	**4.54**	**3.57**	0.5	0.5	0.5	1.18	6.53	3 of 46
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 46
Styrene	0.5	0.5	0.5	**3.66**	**4.08**	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	7.58	2 of 46
Tetrachloroethene	0.5	0.5	0.5	0.5	0.5	0.5	0.5	**7.62**	0.5	**1.71**	**2.63**	0.5	1.53	13.7	4 of 46
Toluene	**3.05**	**1.99**	**1.2**	**1.25**	**1.56**	0.5	0.5	**3.21**	0.5	0.5	**2.24**	0.5	1.46	5.51	8 of 46
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 46
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 46
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 46
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 46
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 46
Vinyl Chloride	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	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 and are flow-weighted.

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), FY16

Metals (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Aluminum	**1440**	**2880**	**1200**	**1090**	**893**	**873**	**892**	**1240**	**1260**	**1500**	**1760**	**1570**	1420	4400	44 of 44
Antimony	57.3	55.2	45.6	52.3	49.6	49	62.8	59.3	66.1	78.4	66.6	59.7	58.6	79.9	0 of 44
Arsenic	0.917	**2.18**	**1.5**	**1.68**	0.794	0.784	1.01	0.949	1.06	1.25	1.07	0.955	1.16	3.57	5 of 44
Beryllium	0.573	0.552	0.456	0.523	0.496	0.49	0.628	0.593	0.661	0.784	0.666	0.597	0.586	0.799	0 of 44
Boron	287	**519**	**486**	261	**292**	245	314	296	331	392	**554**	298	363	790	9 of 44
Cadmium	**0.752**	**0.937**	**0.598**	**0.521**	**1.07**	**0.595**	**0.811**	**1.07**	**1.07**	**1.09**	**1.15**	**0.862**	0.897	1.35	44 of 44
Chromium	**7.34**	**12.2**	**4.34**	**5.71**	**14.9**	**11.2**	**13.6**	**11.1**	**9.17**	**12.7**	**22.1**	**11.5**	11.5	27.6	44 of 44
Copper	**144**	**195**	**86.4**	**94.9**	**150**	**115**	**134**	**144**	**147**	**155**	**171**	**162**	144	259	44 of 44
Iron	**5490**	**7810**	**3100**	**3710**	**4370**	**4250**	**4390**	**4990**	**5160**	**7230**	**7310**	**6690**	5500	11700	44 of 44
Lead	**18.4**	**47.3**	**12.1**	**22.4**	**20.7**	**11.2**	**11.5**	**11.7**	**11.2**	**22.6**	**35.9**	**29.8**	21.6	79.1	44 of 44
Mercury	**0.33**	**0.487**	**0.127**	**0.407**	**0.283**	**0.209**	**0.187**	**0.152**	**0.272**	**0.275**	**0.26**	**0.281**	0.27	0.864	44 of 44
Molybdenum	**19.3**	**31.7**	**12.8**	**17.1**	**16.6**	**12.7**	**24**	**20**	**10.1**	**16.7**	**20**	**18**	18	42.2	44 of 44
Nickel	**11.6**	**14.5**	**7.5**	**8.27**	**13.6**	**10.9**	**15.5**	**8.53**	**14.3**	**12.3**	**16.1**	**12.9**	12.2	17.9	44 of 44
Selenium	1.03	**1.74**	0.821	0.941	0.893	0.882	1.13	1.07	1.19	1.41	1.2	1.07	1.12	1.8	2 of 44
Silver	**1.1**	**0.726**	**0.235**	**1.75**	**0.955**	**1.52**	**0.742**	**2.4**	**0.992**	**0.645**	**2.06**	**0.632**	1.14	2.54	39 of 44
Thallium	1.15	1.1	0.913	1.05	0.992	0.98	1.26	1.19	1.32	1.57	1.33	1.19	1.17	1.6	0 of 44
Zinc	**303**	**437**	**201**	**216**	**299**	**262**	**253**	**304**	**271**	**372**	**394**	**346**	311	597	44 of 44

Cyanide (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Cyanide	**57.9**	**52**	**54.6**	**64.2**	**52.8**	**58.3**	**63.3**	**60.4**	**40.3**	**94.6**	**59.6**	**53.8**	59.4	117	40 of 44

Oil and Grease and Petroleum Hydrocarbons (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Fats Oil and Grease	**59500**	**69100**	**69900**	**67100**	**72900**	**70000**	**80900**	**69900**	**63900**	**93900**	**86100**	**60700**	71700	99100	44 of 44
Petroleum Hydrocarbons	**2040**	**1880**	**1050**	**3140**	**3130**	**3330**	163	**3050**	**7820**	**2120**	**1410**	158	2540	9260	33 of 46

Organochlorine Pesticides and PCBs (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
4,4'-DDD	0.00483	0.00452	0.0038	0.00425	0.00411	0.00418	0.0052	0.00512	0.00566	0.00675	0.00563	0.00515	0.00495	0.00713	0 of 44
4,4'-DDE	0.00483	0.00452	0.0038	0.00425	0.00411	0.00418	0.0052	0.00512	0.00566	0.00675	0.00563	0.00515	0.00495	0.00713	0 of 44
4,4'-DDT	0.00483	0.00452	0.0038	0.00425	0.00411	0.00418	0.0052	0.00512	0.00566	0.00675	0.00563	0.00515	0.00495	0.00713	0 of 44
Aldrin	0.00242	0.00226	0.0019	0.00213	0.00206	0.00209	0.0026	0.00256	0.00283	0.00338	0.00282	0.00257	0.00248	0.00357	0 of 44
Alpha-BHC	0.00242	0.00226	0.0019	0.00213	0.00206	0.00209	0.0026	0.00256	0.00283	0.00338	0.00282	0.00257	0.00248	0.00357	0 of 44
Alpha-Chlordane	0.00242	0.00226	0.0019	0.00213	0.00206	0.00209	0.0026	0.00256	0.00283	0.00338	0.00282	0.00257	0.00248	0.00357	0 of 44
Aroclor-1016	0.121	0.113	0.0949	0.106	0.103	0.105	0.13	0.128	0.142	0.169	0.141	0.129	0.124	0.178	0 of 44
Aroclor-1221	0.242	0.226	0.19	0.213	0.206	0.209	0.26	0.256	0.283	0.338	0.282	0.257	0.248	0.357	0 of 44
Aroclor-1232	0.121	0.113	0.0949	0.106	0.103	0.105	0.13	0.128	0.142	0.169	0.141	0.129	0.124	0.178	0 of 44
Aroclor-1242	0.121	0.113	0.0949	0.106	0.103	0.105	0.13	0.128	0.142	0.169	0.141	0.129	0.124	0.178	0 of 44
Aroclor-1248	0.121	0.113	0.0949	0.106	0.103	0.105	0.13	0.128	0.142	0.169	0.141	0.129	0.124	0.178	0 of 44
Aroclor-1254	0.121	0.113	0.0949	0.106	0.103	0.105	0.13	0.128	0.142	0.169	0.141	0.129	0.124	0.178	0 of 44
Aroclor-1260	0.121	0.113	0.0949	0.106	0.103	0.105	0.13	0.128	0.142	0.169	0.141	0.129	0.124	0.178	0 of 44
Beta-BHC	0.00242	0.00226	0.0019	0.00213	0.00206	0.00209	0.0026	0.00256	0.00283	0.00338	0.00282	0.00257	0.00248	0.00357	0 of 44
Chlordane (Technical)	0.242	0.226	0.19	0.213	0.206	0.209	0.26	0.256	0.283	0.338	0.282	0.257	0.248	0.357	0 of 44
Delta-BHC	0.00242	0.00226	0.0019	0.00213	0.00206	0.00209	0.0026	0.00256	0.00283	0.00338	0.00282	0.00257	0.00248	0.00357	0 of 44
Dieldrin	0.00483	0.00452	0.0038	0.00425	0.00411	0.00418	0.0052	0.00512	0.00566	0.00675	0.00563	0.00515	0.00495	0.00713	0 of 44
Endosulfan I	0.00242	0.00226	0.0019	0.00213	0.00206	0.00209	0.0026	0.00256	0.00283	0.00338	0.00282	0.00257	0.00248	0.00357	0 of 44
Endosulfan II	0.00483	0.00452	0.0038	0.00425	0.00411	0.00418	0.0052	0.00512	0.00566	0.00675	0.00563	0.00515	0.00495	0.00713	0 of 44
Endosulfan Sulfate	0.00483	0.00452	0.0038	0.00425	0.00411	0.00418	0.0052	0.00512	0.00566	0.00675	0.00563	0.00515	0.00495	0.00713	0 of 44
Endrin	0.00483	0.00452	0.0038	0.00425	0.00411	0.00418	0.0052	0.00512	0.00566	0.00675	0.00563	0.00515	0.00495	0.00713	0 of 44
Endrin Aldehyde	0.00483	0.00452	0.0038	0.00425	0.00411	0.00418	0.0052	0.00512	0.00566	0.00675	0.00563	0.00515	0.00495	0.00713	0 of 44
Endrin Ketone	0.00483	0.00452	0.0038	0.00425	0.00411	0.00418	0.0052	0.00512	0.00566	0.00675	0.00563	0.00515	0.00495	0.00713	0 of 44
Gamma-BHC	0.00242	0.00226	0.0019	0.00213	0.00206	0.00209	0.0026	0.00256	0.00283	0.00338	0.00282	0.00257	0.00248	0.00357	0 of 44
Gamma-Chlordane	0.00242	0.00226	0.0019	0.00213	0.00206	0.00209	0.0026	0.00256	0.00283	0.00338	0.00282	**0.0388**	0.00577	0.0409	4 of 44
Heptachlor	0.00242	0.00226	0.0019	0.00213	0.00206	0.00209	0.0026	0.00256	0.00283	0.00338	0.00282	0.00257	0.00248	0.00357	0 of 44
Heptachlor Epoxide	0.00242	0.00226	0.0019	0.00213	0.00206	0.00209	0.0026	0.00256	0.00283	0.00338	0.00282	0.00257	0.00248	0.00357	0 of 44
Hexachlorobenzene	0.0242	0.0226	0.019	0.0213	0.0206	0.0209	0.026	0.0256	0.0283	0.0338	0.0282	0.0257	0.0248	0.0357	0 of 44
Methoxychlor	~	**0.00953**	~	**0.0179**	~	**0.00488**	~	**0.00862**	~	**0.0151**	~	**0.066**	0.0206	0.118	22 of 22
Toxaphene	0.242	0.226	0.19	0.213	0.206	0.209	0.26	0.256	0.283	0.338	0.282	0.257	0.248	0.357	0 of 44

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
1,2-Dichlorobenzene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
1,2-Diphenylhydrazine (as	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44

Table A-3. Deer Island Influent Loadings (North & South Systems), FY16 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,3-Dichlorobenzene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
1,4-Dichlorobenzene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2,2'-Oxybis(1-Chloropropane)	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2,4,5-Trichlorophenol	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2,4,6-Trichlorophenol	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2,4-Dichlorophenol	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2,4-Dimethylphenol	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2,4-Dinitrophenol	12.2	11.9	9.42	11.4	10.3	10.7	13.3	12.4	13.6	17.8	14.4	12.5	12.5	19.8	0 of 44
2,4-Dinitrotoluene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2,6-Dinitrotoluene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2-Chloronaphthalene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2-Chlorophenol	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2-Methyl-4,6-Dinitrophenol	12.2	11.9	9.42	11.4	10.3	10.7	13.3	12.4	13.6	17.8	14.4	12.5	12.5	19.8	0 of 44
2-Methylnaphthalene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2-Methylphenol	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2-Nitroaniline	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
2-Nitrophenol	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
3,3'-Dichlorobenzidine	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
3-Nitroaniline	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
4-Bromophenyl Phenyl Ether	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
4-Chloro-3-Methylphenol	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
4-Chloroaniline	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
4-Chlorophenyl Phenyl Ether	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
4-Methylphenol (includes 3-	**12.9**	**24.2**	**20.2**	4.54	**63**	**34.7**	5.33	**53.1**	5.44	7.12	5.78	5.01	21.5	72.8	14 of 44
4-Nitroaniline	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
4-Nitrophenol	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Acenaphthene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Acenaphthylene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Aniline	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Anthracene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Benzidine	12.2	11.9	9.42	11.4	10.3	10.7	13.3	12.4	13.6	17.8	14.4	12.5	12.5	19.8	0 of 44
Benzo(a)anthracene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Benzo(a)pyrene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Benzo(b)fluoranthene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Benzo(g,h,i)perylene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Benzo(k)fluoranthene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Benzoic Acid	12.2	11.9	9.42	11.4	10.3	10.7	13.3	12.4	13.6	17.8	14.4	12.5	12.5	19.8	0 of 44
Benzyl Alcohol	4.87	4.75	3.77	4.54	**66.8**	4.26	5.33	4.96	5.44	7.12	**37.7**	**21.2**	15.1	95	5 of 44
Bis(2-Chloroethoxy)methane	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Bis(2-Chloroethyl)ether	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Bis(2-Ethylhexyl)phthalate	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Butylbenzylphthalate	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Carbazole	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Chrysene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Dibenzo(a,h)anthracene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Dibenzofuran	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Diethylphthalate	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Dimethylphthalate	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Di-N-Butylphthalate	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Di-N-Octylphthalate	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Fluoranthene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Fluorene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Hexachlorobenzene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Hexachlorobutadiene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Hexachlorocyclopentadiene	12.2	11.9	9.42	11.4	10.3	10.7	13.3	12.4	13.6	17.8	14.4	12.5	12.5	19.8	0 of 44
Hexachloroethane	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Indeno(1,2,3-CD)pyrene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Isophorone	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Naphthalene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
n-Decane	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Nitrobenzene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
N-Nitrosodimethylamine	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
N-Nitrosodi-N-Propylamine	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
N-Nitrosodiphenylamine	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
N-Octadecane	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Pentachlorophenol	12.2	11.9	9.42	11.4	10.3	10.7	13.3	12.4	13.6	17.8	14.4	12.5	12.5	19.8	0 of 44
Phenanthrene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Phenol	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44
Pyrene	4.87	4.75	3.77	4.54	4.13	4.26	5.33	4.96	5.44	7.12	5.78	5.01	5	7.9	0 of 44

Table A-3. Deer Island Influent Loadings (North & South Systems), FY16 (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	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
1,1,2,2-Tetrachloroethane	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
1,1,2-Trichloroethane	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
1,1-Dichloroethane	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
1,1-Dichloroethene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
1,2-Dichlorobenzene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
1,2-Dichloroethane	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
1,2-Dichloropropane	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
1,3-Dichlorobenzene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
1,4-Dichlorobenzene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
2-Butanone	**21**	**18.6**	**13.4**	**23.3**	**13.5**	**11.9**	**5.25**	**6.69**	**6.4**	**4.42**	**6.03**	**6.86**	11.7	31	31 of 46
2-Chloroethyl Vinyl Ether	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
2-Hexanone	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
4-Methyl-2-Pentanone	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Acetone	**266**	**301**	**294**	**275**	**236**	**391**	**226**	**553**	**1220**	**307**	**307**	**158**	384	1580	43 of 46
Acrolein	2.28	2.23	1.87	2.03	1.98	1.96	2.48	2.55	2.59	3.18	2.76	2.31	2.34	3.2	0 of 46
Acrylonitrile	2.28	2.23	1.87	2.03	1.98	1.96	2.48	2.55	2.59	3.18	2.76	2.31	2.34	3.2	0 of 46
Benzene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Bromodichloromethane	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Bromoform	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Bromomethane	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Carbon Disulfide	**44.3**	**3.87**	**20.7**	**101**	**111**	**25.7**	1.24	1.28	1.29	1.59	1.38	1.15	27.3	140	13 of 46
Carbon Tetrachloride	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Chlorobezene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Chloroethane	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Chloroform	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Chloromethane	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Cis-1,2-Dichloroethene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Cis-1,3-Dichloropropene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Dibromochloromethane	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Ethylbenzene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
M,P-Xylene	2.28	2.23	1.87	2.03	1.98	1.96	2.48	2.55	2.59	3.18	2.76	2.31	2.34	3.2	0 of 46
Methylene Chloride	1.14	1.11	0.935	1.01	0.99	0.98	1.24	**11.6**	**9.24**	1.59	1.38	1.15	2.76	17.2	3 of 46
O-Xylene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Styrene	1.14	1.11	0.935	**7.43**	**8.08**	0.98	1.24	1.28	1.29	1.59	1.38	1.15	2.35	15.2	2 of 46
Tetrachloroethene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	**19.4**	1.29	**5.43**	**7.26**	1.15	3.6	37.7	4 of 46
Toluene	**6.95**	**4.44**	**2.24**	**2.53**	**3.09**	0.98	1.24	**8.19**	1.29	1.59	**6.17**	1.15	3.41	15.2	8 of 46
Trans-1,2-Dichloroethene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Trans-1,3-Dichloropropene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Trichloroethene	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Trichlorofluoromethane	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Vinyl Acetate	1.14	1.11	0.935	1.01	0.99	0.98	1.24	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 46
Vinyl Chloride	0.455	0.446	0.374	0.405	0.396	0.392	0.496	0.51	0.518	0.635	0.551	0.461	0.469	0.639	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 and are flow-weighted.

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 Influent Characterization (North System), FY16

Metals (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Aluminum	**622**	**1530**	**785**	**707**	**380**	**353**	**342**	**563**	**517**	**443**	**704**	**672**	635	2010	24 of 24
Antimony	25	25	25	25	25	25	25	25	25	25	25	25	25	25	0 of 24
Arsenic	0.4	**1.13**	**1.01**	**0.906**	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.541	1.67	5 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	125	**188**	**257**	125	125	125	125	125	125	125	**248**	125	151	356	4 of 24
Cadmium	**0.282**	**0.481**	**0.407**	**0.314**	**0.52**	**0.292**	**0.3**	**0.507**	**0.431**	**0.278**	**0.366**	**0.333**	0.373	0.686	24 of 24
Chromium	**2.13**	**5.74**	**2.7**	**11.3**	**8.71**	**4.79**	**4.99**	**4.58**	**3.06**	**3.09**	**7.82**	**4.08**	5.17	19.7	24 of 24
Copper	**44.5**	**80.6**	**45.7**	**60.2**	**68**	**43.9**	**53.1**	**59.4**	**54.6**	**41.6**	**49.7**	**55.6**	54.5	90.5	24 of 24
Iron	**1650**	**3480**	**1650**	**2200**	**1690**	**1200**	**1450**	**1630**	**1430**	**1460**	**1890**	**1980**	1810	4550	24 of 24
Lead	**6.33**	**25.2**	**7.39**	**12.9**	**10.9**	**5.22**	**5.85**	**5.62**	**4.47**	**7.35**	**15**	**13.4**	10	36.8	24 of 24
Mercury	**0.13**	**0.264**	**0.0654**	**0.317**	**0.12**	**0.0827**	**0.109**	**0.0581**	**0.114**	**0.083**	**0.0701**	**0.091**	0.124	0.414	24 of 24
Molybdenum	**9.79**	**17.7**	**8.41**	**10.4**	**9.53**	**7.42**	**18.5**	**11.2**	**4.06**	**6.12**	**7.83**	**7.61**	9.81	23.9	24 of 24
Nickel	**3.84**	**6.97**	**4.3**	**4.08**	**7.26**	**4.73**	**4.48**	**3.53**	**6.04**	**3.85**	**6.07**	**5.01**	5	8.64	24 of 24
Selenium	0.45	**0.746**	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.475	1.15	1 of 24
Silver	**0.457**	**0.4**	**0.166**	**0.734**	**0.455**	**0.727**	**0.273**	**1.34**	**0.374**	**0.153**	**0.816**	**0.213**	0.502	1.41	22 of 24
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	**101**	**195**	**110**	**122**	**139**	**104**	**99.7**	**130**	**94.8**	**102**	**129**	**126**	121	228	24 of 24

Cyanide (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Cyanide	**23.7**	**17.2**	**28.8**	**29.8**	**24.1**	**29.1**	**23.3**	**22.7**	**15.5**	**31**	**23.6**	**22.7**	24.2	40.7	22 of 24

Oil and Grease 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	**24700**	**28800**	**35100**	**35100**	**41400**	**37900**	**26800**	**33300**	**25600**	**34000**	**35000**	**30400**	32100	43800	24 of 24
Petroleum Hydrocarbons	**572**	**446**	**632**	**1390**	**1600**	**1460**	66.7	**1080**	**2990**	**376**	**531**	69.9	908	3620	15 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	0.00209	0.00206	0.00208	0.00208	0.00205	0.00211	0.00225	0.00214	0.00214	0.00217	0.00212	0.00211	0.00212	0.00246	0 of 24
4,4'-DDE	0.00209	0.00206	0.00208	0.00208	0.00205	0.00211	0.00225	0.00214	0.00214	0.00217	0.00212	0.00211	0.00212	0.00246	0 of 24
4,4'-DDT	0.00209	0.00206	0.00208	0.00208	0.00205	0.00211	0.00225	0.00214	0.00214	0.00217	0.00212	0.00211	0.00212	0.00246	0 of 24
Aldrin	0.00104	0.00103	0.00104	0.00104	0.00103	0.00106	0.00112	0.00107	0.00107	0.00109	0.00106	0.00106	0.00106	0.00123	0 of 24
Alpha-BHC	0.00104	0.00103	0.00104	0.00104	0.00103	0.00106	0.00112	0.00107	0.00107	0.00109	0.00106	0.00106	0.00106	0.00123	0 of 24
Alpha-Chlordane	0.00104	0.00103	0.00104	0.00104	0.00103	0.00106	0.00112	0.00107	0.00107	0.00109	0.00106	0.00106	0.00106	0.00123	0 of 24
Aroclor-1016	0.0522	0.0514	0.052	0.052	0.0513	0.0528	0.0562	0.0535	0.0535	0.0543	0.053	0.0528	0.053	0.0615	0 of 24
Aroclor-1221	0.104	0.103	0.104	0.104	0.103	0.106	0.112	0.107	0.107	0.109	0.106	0.106	0.106	0.123	0 of 24
Aroclor-1232	0.0522	0.0514	0.052	0.052	0.0513	0.0528	0.0562	0.0535	0.0535	0.0543	0.053	0.0528	0.053	0.0615	0 of 24
Aroclor-1242	0.0522	0.0514	0.052	0.052	0.0513	0.0528	0.0562	0.0535	0.0535	0.0543	0.053	0.0528	0.053	0.0615	0 of 24
Aroclor-1248	0.0522	0.0514	0.052	0.052	0.0513	0.0528	0.0562	0.0535	0.0535	0.0543	0.053	0.0528	0.053	0.0615	0 of 24
Aroclor-1254	0.0522	0.0514	0.052	0.052	0.0513	0.0528	0.0562	0.0535	0.0535	0.0543	0.053	0.0528	0.053	0.0615	0 of 24
Aroclor-1260	0.0522	0.0514	0.052	0.052	0.0513	0.0528	0.0562	0.0535	0.0535	0.0543	0.053	0.0528	0.053	0.0615	0 of 24
Beta-BHC	0.00104	0.00103	0.00104	0.00104	0.00103	0.00106	0.00112	0.00107	0.00107	0.00109	0.00106	0.00106	0.00106	0.00123	0 of 24
Chlordane (Technical)	0.104	0.103	0.104	0.104	0.103	0.106	0.112	0.107	0.107	0.109	0.106	0.106	0.106	0.123	0 of 24
Delta-BHC	0.00104	0.00103	0.00104	0.00104	0.00103	0.00106	0.00112	0.00107	0.00107	0.00109	0.00106	0.00106	0.00106	0.00123	0 of 24
Dieldrin	0.00209	0.00206	0.00208	0.00208	0.00205	0.00211	0.00225	0.00214	0.00214	0.00217	0.00212	0.00211	0.00212	0.00246	0 of 24
Endosulfan I	0.00104	0.00103	0.00104	0.00104	0.00103	0.00106	0.00112	0.00107	0.00107	0.00109	0.00106	0.00106	0.00106	0.00123	0 of 24
Endosulfan II	0.00209	0.00206	0.00208	0.00208	0.00205	0.00211	0.00225	0.00214	0.00214	0.00217	0.00212	0.00211	0.00212	0.00246	0 of 24
Endosulfan Sulfate	0.00209	0.00206	0.00208	0.00208	0.00205	0.00211	0.00225	0.00214	0.00214	0.00217	0.00212	0.00211	0.00212	0.00246	0 of 24
Endrin	0.00209	0.00206	0.00208	0.00208	0.00205	0.00211	0.00225	0.00214	0.00214	0.00217	0.00212	0.00211	0.00212	0.00246	0 of 24
Endrin Aldehyde	0.00209	0.00206	0.00208	0.00208	0.00205	0.00211	0.00225	0.00214	0.00214	0.00217	0.00212	0.00211	0.00212	0.00246	0 of 24
Endrin Ketone	0.00209	0.00206	0.00208	0.00208	0.00205	0.00211	0.00225	0.00214	0.00214	0.00217	0.00212	0.00211	0.00212	0.00246	0 of 24
Gamma-BHC	0.00104	0.00103	0.00104	0.00104	0.00103	0.00106	0.00112	0.00107	0.00107	0.00109	0.00106	0.00106	0.00106	0.00123	0 of 24
Gamma-Chlordane	0.00104	0.00103	0.00104	0.00104	0.00103	0.00106	0.00112	0.00107	0.00107	0.00109	0.00106	**0.0154**	0.0023	0.0167	2 of 24
Heptachlor	0.00104	0.00103	0.00104	0.00104	0.00103	0.00106	0.00112	0.00107	0.00107	0.00109	0.00106	0.00106	0.00106	0.00123	0 of 24
Heptachlor Epoxide	0.00104	0.00103	0.00104	0.00104	0.00103	0.00106	0.00112	0.00107	0.00107	0.00109	0.00106	0.00106	0.00106	0.00123	0 of 24
Hexachlorobenzene	0.0104	0.0103	0.0104	0.0104	0.0103	0.0106	0.0112	0.0107	0.0107	0.0109	0.0106	0.0106	0.0106	0.0123	0 of 24
Methoxychlor	~	**0.0048**	~	**0.00958**	~	**0.00208**	~	**0.00484**	~	**0.00513**	~	**0.0371**	0.0107	0.0681	12 of 12
Toxaphene	0.104	0.103	0.104	0.104	0.103	0.106	0.112	0.107	0.107	0.109	0.106	0.106	0.106	0.123	0 of 24

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
1,2-Dichlorobenzene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
1,2-Diphenylhydrazine (as Azobenzene)	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24

Table A-4. Deer Island Influent Characterization (North System), FY16 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,3-Dichlorobenzene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
1,4-Dichlorobenzene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,2'-Oxybis(1-Chloropropane)	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,4,5-Trichlorophenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,4,6-Trichlorophenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,4-Dichlorophenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,4-Dimethylphenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,4-Dinitrophenol	5.35	5.36	5.18	5.05	5.16	5.47	5.37	5.15	5.14	5.97	5.27	5.16	5.32	6.76	0 of 24
2,4-Dinitrotoluene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,6-Dinitrotoluene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2-Chloronaphthalene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2-Chlorophenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2-Methyl-4,6-Dinitrophenol	5.35	5.36	5.18	5.05	5.16	5.47	5.37	5.15	5.14	5.97	5.27	5.16	5.32	6.76	0 of 24
2-Methylnaphthalene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2-Methylphenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2-Nitroaniline	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2-Nitrophenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
3,3'-Dichlorobenzidine	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
3-Nitroaniline	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
4-Bromophenyl Phenyl Ether	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
4-Chloro-3-Methylphenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
4-Chloroaniline	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
4-Chlorophenyl Phenyl Ether	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
4-Methylphenol (includes 3-Methylphenol)	2.14	2.15	2.07	2.02	**32.8**	**12.4**	2.15	**33.5**	2.05	2.39	2.11	2.07	7.67	40.2	5 of 24
4-Nitroaniline	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
4-Nitrophenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Acenaphthene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Acenaphthylene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Aniline	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Anthracene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Benzidine	5.35	5.36	5.18	5.05	5.16	5.47	5.37	5.15	5.14	5.97	5.27	5.16	5.32	6.76	0 of 24
Benzo(a)anthracene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Benzo(a)pyrene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Benzo(b)fluoranthene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Benzo(g,h,i)perylene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Benzo(k)fluoranthene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Benzoic Acid	5.35	5.36	5.18	5.05	5.16	5.47	5.37	5.15	5.14	5.97	5.27	5.16	5.32	6.76	0 of 24
Benzyl Alcohol	2.14	2.15	2.07	2.02	**48.4**	2.19	2.15	2.06	2.05	2.39	2.11	**12.2**	6.37	70.4	3 of 24
Bis(2-Chloroethoxy)methane	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Bis(2-Chloroethyl)ether	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Bis(2-Ethylhexyl)phthalate	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Butylbenzylphthalate	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Carbazole	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Chrysene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Dibenzo(a,h)anthracene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Dibenzofuran	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Diethylphthalate	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Dimethylphthalate	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Di-N-Butylphthalate	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Di-N-Octylphthalate	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Fluoranthene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Fluorene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Hexachlorobenzene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Hexachlorobutadiene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Hexachlorocyclopentadiene	5.35	5.36	5.18	5.05	5.16	5.47	5.37	5.15	5.14	5.97	5.27	5.16	5.32	6.76	0 of 24
Hexachloroethane	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Indeno(1,2,3-CD)pyrene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Isophorone	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Naphthalene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
n-Decane	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Nitrobenzene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
N-Nitrosodimethylamine (NDMA)	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
N-Nitrosodi-N-Propylamine (NDPA)	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
N-Nitrosodiphenylamine	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
N-Octadecane	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Pentachlorophenol	5.35	5.36	5.18	5.05	5.16	5.47	5.37	5.15	5.14	5.97	5.27	5.16	5.32	6.76	0 of 24
Phenanthrene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Phenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Pyrene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24

Table A-4. Deer Island Influent Characterization (North System), FY16 (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	**7.24**	**6.19**	**3.52**	**5.75**	**5.57**	**3.76**	0.5	0.5	0.5	0.5	0.5	0.5	2.72	14.1	9 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	**115**	**145**	**125**	**141**	**114**	**83.1**	**101**	**281**	**661**	**94.4**	**121**	**57.9**	173	903	22 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	**22.8**	0.5	0.5	**57.8**	**57.7**	0.5	0.5	0.5	0.5	0.5	0.5	0.5	10.7	66	5 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
Chlorobezene	0.5	0.5	0.5	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	**6.6**	**5.4**	0.5	0.5	0.5	1.48	10.1	3 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	**5.16**	**5.74**	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.22	10.8	2 of 24
Tetrachloroethene	0.5	0.5	0.5	0.5	0.5	0.5	0.5	**4.4**	0.5	0.5	0.5	0.5	0.852	7.58	1 of 24
Toluene	0.5	0.5	0.5	0.5	0.5	0.5	0.5	**4.59**	0.5	0.5	**3.07**	0.5	1.13	7.92	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	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 and are flow-weighted.

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), FY16

Metals (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Aluminum	**969**	**2400**	**992**	**988**	**514**	**459**	**548**	**861**	**855**	**878**	**1260**	**1080**	984	3630	24 of 24
Antimony	38.9	39.2	31.6	34.9	33.8	32.5	40	38.2	41.3	49.5	44.7	40.1	38.7	50.5	0 of 24
Arsenic	0.623	**1.77**	**1.28**	**1.27**	0.541	0.52	0.64	0.612	0.661	0.793	0.716	0.642	0.839	3.02	5 of 24
Beryllium	0.389	0.392	0.316	0.349	0.338	0.325	0.4	0.382	0.413	0.495	0.447	0.401	0.387	0.505	0 of 24
Boron	195	**295**	**325**	175	169	162	200	191	207	248	**444**	201	234	680	4 of 24
Cadmium	**0.44**	**0.754**	**0.514**	**0.439**	**0.704**	**0.379**	**0.48**	**0.775**	**0.712**	**0.552**	**0.655**	**0.535**	0.578	1.06	24 of 24
Chromium	**3.32**	**8.99**	**3.4**	**15.7**	**11.8**	**6.22**	**7.98**	**7.01**	**5.06**	**6.13**	**14**	**6.55**	8.02	26.9	24 of 24
Copper	**69.4**	**126**	**57.7**	**84.1**	**92.1**	**57**	**85**	**90.8**	**90.3**	**82.4**	**88.9**	**89.3**	84.4	164	24 of 24
Iron	**2570**	**5460**	**2080**	**3080**	**2290**	**1560**	**2320**	**2490**	**2360**	**2880**	**3390**	**3180**	2810	8230	24 of 24
Lead	**9.85**	**39.4**	**9.34**	**18**	**14.8**	**6.78**	**9.35**	**8.59**	**7.38**	**14.6**	**26.7**	**21.4**	15.5	66.5	24 of 24
Mercury	**0.202**	**0.413**	**0.0825**	**0.442**	**0.162**	**0.107**	**0.175**	**0.0888**	**0.188**	**0.164**	**0.125**	**0.146**	0.192	0.749	24 of 24
Molybdenum	**15.2**	**27.7**	**10.6**	**14.5**	**12.9**	**9.63**	**29.6**	**17.1**	**6.72**	**12.1**	**14**	**12.2**	15.2	38.1	24 of 24
Nickel	**5.99**	**10.9**	**5.43**	**5.7**	**9.82**	**6.14**	**7.16**	**5.4**	**9.98**	**7.62**	**10.9**	**8.04**	7.75	13.8	24 of 24
Selenium	0.701	**1.17**	0.568	0.629	0.609	0.584	0.72	0.688	0.744	0.892	0.805	0.722	0.736	1.52	1 of 24
Silver	**0.711**	**0.626**	**0.21**	**1.03**	**0.616**	**0.944**	**0.437**	**2.05**	**0.617**	**0.303**	**1.46**	**0.342**	0.778	2.17	22 of 24
Thallium	0.779	0.783	0.631	0.699	0.677	0.649	0.8	0.765	0.826	0.991	0.894	0.803	0.775	1.01	0 of 24
Zinc	**157**	**306**	**139**	**170**	**188**	**135**	**159**	**198**	**157**	**201**	**230**	**202**	187	412	24 of 24

Cyanide (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Cyanide	**36.5**	**27.1**	**37.3**	**41**	**32.7**	**37.8**	**36.5**	**38.4**	**25**	**61.9**	**44**	**35**	37.8	82.3	22 of 24

Oil and Grease and Petroleum Hydrocarbons (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Fats Oil and Grease	**38100**	**45400**	**45400**	**48300**	**56000**	**49300**	**45600**	**56400**	**41500**	**67900**	**65200**	**46900**	50500	75900	24 of 24
Petroleum Hydrocarbons	**880**	**704**	**818**	**1910**	**2160**	**1900**	105	**1820**	**4850**	**750**	**990**	108	1420	5990	15 of 24

Organochlorine Pesticides and PCBs (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
4,4'-DDD	0.00325	0.00322	0.00263	0.00291	0.00277	0.00274	0.0036	0.00327	0.00354	0.0043	0.00379	0.00339	0.00328	0.00453	0 of 24
4,4'-DDE	0.00325	0.00322	0.00263	0.00291	0.00277	0.00274	0.0036	0.00327	0.00354	0.0043	0.00379	0.00339	0.00328	0.00453	0 of 24
4,4'-DDT	0.00325	0.00322	0.00263	0.00291	0.00277	0.00274	0.0036	0.00327	0.00354	0.0043	0.00379	0.00339	0.00328	0.00453	0 of 24
Aldrin	0.00163	0.00161	0.00131	0.00145	0.00139	0.00137	0.0018	0.00164	0.00177	0.00215	0.0019	0.00169	0.00164	0.00226	0 of 24
Alpha-BHC	0.00163	0.00161	0.00131	0.00145	0.00139	0.00137	0.0018	0.00164	0.00177	0.00215	0.0019	0.00169	0.00164	0.00226	0 of 24
Alpha-Chlordane	0.00163	0.00161	0.00131	0.00145	0.00139	0.00137	0.0018	0.00164	0.00177	0.00215	0.0019	0.00169	0.00164	0.00226	0 of 24
Aroclor-1016	0.0814	0.0805	0.0656	0.0727	0.0694	0.0685	0.09	0.0818	0.0884	0.108	0.0948	0.0847	0.0821	0.113	0 of 24
Aroclor-1221	0.163	0.161	0.131	0.145	0.139	0.137	0.18	0.164	0.177	0.215	0.19	0.169	0.164	0.226	0 of 24
Aroclor-1232	0.0814	0.0805	0.0656	0.0727	0.0694	0.0685	0.09	0.0818	0.0884	0.108	0.0948	0.0847	0.0821	0.113	0 of 24
Aroclor-1242	0.0814	0.0805	0.0656	0.0727	0.0694	0.0685	0.09	0.0818	0.0884	0.108	0.0948	0.0847	0.0821	0.113	0 of 24
Aroclor-1248	0.0814	0.0805	0.0656	0.0727	0.0694	0.0685	0.09	0.0818	0.0884	0.108	0.0948	0.0847	0.0821	0.113	0 of 24
Aroclor-1254	0.0814	0.0805	0.0656	0.0727	0.0694	0.0685	0.09	0.0818	0.0884	0.108	0.0948	0.0847	0.0821	0.113	0 of 24
Aroclor-1260	0.0814	0.0805	0.0656	0.0727	0.0694	0.0685	0.09	0.0818	0.0884	0.108	0.0948	0.0847	0.0821	0.113	0 of 24
Beta-BHC	0.00163	0.00161	0.00131	0.00145	0.00139	0.00137	0.0018	0.00164	0.00177	0.00215	0.0019	0.00169	0.00164	0.00226	0 of 24
Chlordane (Technical)	0.163	0.161	0.131	0.145	0.139	0.137	0.18	0.164	0.177	0.215	0.19	0.169	0.164	0.226	0 of 24
Delta-BHC	0.00163	0.00161	0.00131	0.00145	0.00139	0.00137	0.0018	0.00164	0.00177	0.00215	0.0019	0.00169	0.00164	0.00226	0 of 24
Dieldrin	0.00325	0.00322	0.00263	0.00291	0.00277	0.00274	0.0036	0.00327	0.00354	0.0043	0.00379	0.00339	0.00328	0.00453	0 of 24
Endosulfan I	0.00163	0.00161	0.00131	0.00145	0.00139	0.00137	0.0018	0.00164	0.00177	0.00215	0.0019	0.00169	0.00164	0.00226	0 of 24
Endosulfan II	0.00325	0.00322	0.00263	0.00291	0.00277	0.00274	0.0036	0.00327	0.00354	0.0043	0.00379	0.00339	0.00328	0.00453	0 of 24
Endosulfan Sulfate	0.00325	0.00322	0.00263	0.00291	0.00277	0.00274	0.0036	0.00327	0.00354	0.0043	0.00379	0.00339	0.00328	0.00453	0 of 24
Endrin	0.00325	0.00322	0.00263	0.00291	0.00277	0.00274	0.0036	0.00327	0.00354	0.0043	0.00379	0.00339	0.00328	0.00453	0 of 24
Endrin Aldehyde	0.00325	0.00322	0.00263	0.00291	0.00277	0.00274	0.0036	0.00327	0.00354	0.0043	0.00379	0.00339	0.00328	0.00453	0 of 24
Endrin Ketone	0.00325	0.00322	0.00263	0.00291	0.00277	0.00274	0.0036	0.00327	0.00354	0.0043	0.00379	0.00339	0.00328	0.00453	0 of 24
Gamma-BHC	0.00163	0.00161	0.00131	0.00145	0.00139	0.00137	0.0018	0.00164	0.00177	0.00215	0.0019	0.00169	0.00164	0.00226	0 of 24
Gamma-Chlordane	0.00163	0.00161	0.00131	0.00145	0.00139	0.00137	0.0018	0.00164	0.00177	0.00215	0.0019	**0.0248**	0.00356	0.0262	2 of 24
Heptachlor	0.00163	0.00161	0.00131	0.00145	0.00139	0.00137	0.0018	0.00164	0.00177	0.00215	0.0019	0.00169	0.00164	0.00226	0 of 24
Heptachlor Epoxide	0.00163	0.00161	0.00131	0.00145	0.00139	0.00137	0.0018	0.00164	0.00177	0.00215	0.0019	0.00169	0.00164	0.00226	0 of 24
Hexachlorobenzene	0.0163	0.0161	0.0131	0.0145	0.0139	0.0137	0.018	0.0164	0.0177	0.0215	0.019	0.0169	0.0164	0.0226	0 of 24
Methoxychlor	~	**0.00752**	~	**0.0134**	~	**0.00271**	~	**0.00741**	~	**0.0102**	~	**0.0595**	0.0168	0.112	12 of 12
Toxaphene	0.163	0.161	0.131	0.145	0.139	0.137	0.18	0.164	0.177	0.215	0.19	0.169	0.164	0.226	0 of 24

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
1,2-Dichlorobenzene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
1,2-Diphenylhydrazine (as Azobenzene)	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24

Table A-5. Deer Island Influent Loadings (North System), FY16 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,3-Dichlorobenzene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
1,4-Dichlorobenzene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2,2'-Oxybis(1-Chloropropane)	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2,4,5-Trichlorophenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2,4,6-Trichlorophenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2,4-Dichlorophenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2,4-Dimethylphenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2,4-Dinitrophenol	8.33	8.39	6.54	7.06	6.98	7.1	8.6	7.88	8.49	11.8	9.43	8.29	8.24	13.7	0 of 24
2,4-Dinitrotoluene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2,6-Dinitrotoluene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2-Chloronaphthalene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2-Chlorophenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2-Methyl-4,6-Dinitrophenol	8.33	8.39	6.54	7.06	6.98	7.1	8.6	7.88	8.49	11.8	9.43	8.29	8.24	13.7	0 of 24
2-Methylnaphthalene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2-Methylphenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2-Nitroaniline	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
2-Nitrophenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
3,3'-Dichlorobenzidine	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
3-Nitroaniline	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
4-Bromophenyl Phenyl Ether	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
4-Chloro-3-Methylphenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
4-Chloroaniline	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
4-Chlorophenyl Phenyl Ether	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
4-Methylphenol (includes 3-Methylphenol)	3.33	3.36	2.62	2.82	**44.4**	**16.1**	3.44	**51.2**	3.4	4.73	3.77	3.32	11.9	53.9	5 of 24
4-Nitroaniline	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
4-Nitrophenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Acenaphthene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Acenaphthylene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Aniline	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Anthracene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Benzidine	8.33	8.39	6.54	7.06	6.98	7.1	8.6	7.88	8.49	11.8	9.43	8.29	8.24	13.7	0 of 24
Benzo(a)anthracene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Benzo(a)pyrene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Benzo(b)fluoranthene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Benzo(g,h,i)perylene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Benzo(k)fluoranthene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Benzoic Acid	8.33	8.39	6.54	7.06	6.98	7.1	8.6	7.88	8.49	11.8	9.43	8.29	8.24	13.7	0 of 24
Benzyl Alcohol	3.33	3.36	2.62	2.82	**65.5**	2.84	3.44	3.15	3.4	4.73	3.77	**19.5**	9.87	93.6	3 of 24
Bis(2-Chloroethoxy)methane	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Bis(2-Chloroethyl)ether	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Bis(2-Ethylhexyl)phthalate	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Butylbenzylphthalate	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Carbazole	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Chrysene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Dibenzo(a,h)anthracene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Dibenzofuran	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Diethylphthalate	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Dimethylphthalate	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Di-N-Butylphthalate	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Di-N-Octylphthalate	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Fluoranthene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Fluorene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Hexachlorobenzene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Hexachlorobutadiene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Hexachlorocyclopentadiene	8.33	8.39	6.54	7.06	6.98	7.1	8.6	7.88	8.49	11.8	9.43	8.29	8.24	13.7	0 of 24
Hexachloroethane	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Indeno(1,2,3-CD)pyrene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Isophorone	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Naphthalene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
n-Decane	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Nitrobenzene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
N-Nitrosodimethylamine (NDMA)	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
N-Nitrosodi-N-Propylamine (NDPA)	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
N-Nitrosodiphenylamine	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
N-Octadecane	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Pentachlorophenol	8.33	8.39	6.54	7.06	6.98	7.1	8.6	7.88	8.49	11.8	9.43	8.29	8.24	13.7	0 of 24
Phenanthrene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Phenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24
Pyrene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.3	5.46	0 of 24

Table A-5. Deer Island Influent Loadings (North System), FY16 (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	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
1,1,2,2-Tetrachloroethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
1,1,2-Trichloroethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
1,1-Dichloroethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
1,1-Dichloroethene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
1,2-Dichlorobenzene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
1,2-Dichloroethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
1,2-Dichloropropane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
1,3-Dichlorobenzene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
1,4-Dichlorobenzene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
2-Butanone	**11.1**	**9.77**	**4.56**	**7.91**	**7.54**	**4.89**	0.784	0.845	0.81	0.997	0.932	0.77	4.24	21.5	9 of 24
2-Chloroethyl Vinyl Ether	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
2-Hexanone	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
4-Methyl-2-Pentanone	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Acetone	**177**	**228**	**162**	**194**	**155**	**108**	**159**	**475**	**1070**	**188**	**225**	**89.2**	269	1490	22 of 24
Acrolein	1.54	1.58	1.29	1.38	1.35	1.3	1.57	1.69	1.62	1.99	1.86	1.54	1.56	2.06	0 of 24
Acrylonitrile	1.54	1.58	1.29	1.38	1.35	1.3	1.57	1.69	1.62	1.99	1.86	1.54	1.56	2.06	0 of 24
Benzene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Bromodichloromethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Bromoform	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Bromomethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Carbon Disulfide	**35**	0.789	0.647	**79.5**	**78.2**	0.65	0.784	0.845	0.81	0.997	0.932	0.77	16.7	91.3	5 of 24
Carbon Tetrachloride	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Chlorobezene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Chloroethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Chloroform	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Chloromethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Cis-1,2-Dichloroethene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Cis-1,3-Dichloropropene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Dibromochloromethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Ethylbenzene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
M,P-Xylene	1.54	1.58	1.29	1.38	1.35	1.3	1.57	1.69	1.62	1.99	1.86	1.54	1.56	2.06	0 of 24
Methylene Chloride	0.769	0.789	0.647	0.688	0.677	0.65	0.784	**11.2**	**8.75**	0.997	0.932	0.77	2.3	16.7	3 of 24
O-Xylene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Styrene	0.769	0.789	0.647	**7.1**	**7.77**	0.65	0.784	0.845	0.81	0.997	0.932	0.77	1.91	14.9	2 of 24
Tetrachloroethene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	**7.44**	0.81	0.997	0.932	0.77	1.33	14.1	1 of 24
Toluene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	**7.76**	0.81	0.997	**5.72**	0.77	1.76	14.8	2 of 24
Trans-1,2-Dichloroethene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Trans-1,3-Dichloropropene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Trichloroethene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Trichlorofluoromethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Vinyl Acetate	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.78	1.03	0 of 24
Vinyl Chloride	0.308	0.316	0.259	0.275	0.271	0.26	0.314	0.338	0.324	0.399	0.373	0.308	0.312	0.412	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 and are flow-weighted.

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), FY16

Metals (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Aluminum	**642**	**741**	**366**	**508**	**600**	**626**	**435**	**449**	**405**	**537**	**577**	**635**	536	1150	24 of 24
Antimony	25	25	25	25	25	25	25	25	25	25	25	25	25	25	0 of 24
Arsenic	0.4	**0.625**	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.415	0.836	1 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	125	**348**	**286**	125	**195**	125	125	125	125	125	125	125	154	372	5 of 24
Cadmium	**0.424**	**0.285**	**0.149**	**0.235**	**0.572**	**0.327**	**0.266**	**0.352**	**0.364**	**0.47**	**0.567**	**0.418**	0.377	0.875	24 of 24
Chromium	**5.46**	**4.99**	**1.66**	**3.95**	**5**	**7.53**	**5.57**	**4.89**	**4.14**	**5.7**	**9.29**	**6.28**	5.48	11.8	24 of 24
Copper	**101**	**107**	**51.1**	**56.8**	**91.9**	**87.4**	**46.9**	**63.5**	**57.4**	**62.9**	**93.7**	**92.5**	74.2	144	24 of 24
Iron	**3970**	**3660**	**1810**	**2900**	**3290**	**4070**	**2320**	**2960**	**2820**	**3760**	**4480**	**4490**	3390	5510	24 of 24
Lead	**11.6**	**12.3**	**4.85**	**7.34**	**9.27**	**6.67**	**3.97**	**3.66**	**3.87**	**6.99**	**10.4**	**10.7**	7.39	19	24 of 24
Mercury	**0.174**	**0.115**	**0.0788**	**0.137**	**0.192**	**0.154**	**0.0716**	**0.0752**	**0.0844**	**0.0957**	**0.154**	**0.173**	0.121	0.239	24 of 24
Molybdenum	**5.44**	**6.26**	**3.88**	**3.47**	**5.79**	**4.61**	**3.02**	**3.39**	**3.39**	**3.99**	**6.86**	**7.33**	4.69	8.67	24 of 24
Nickel	**7.62**	**5.64**	**3.68**	**4.47**	**6.06**	**7.19**	**6.21**	**3.72**	**4.3**	**4.07**	**5.99**	**6.2**	5.37	9.69	24 of 24
Selenium	0.45	**0.888**	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.479	1.3	1 of 24
Silver	**0.533**	**0.156**	0.045	**0.268**	**0.536**	**0.866**	**0.327**	**0.412**	**0.378**	**0.296**	**0.69**	**0.371**	0.407	0.906	21 of 24
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	**197**	**203**	**110**	**142**	**177**	**192**	**110**	**125**	**115**	**148**	**187**	**184**	155	279	24 of 24

Cyanide (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Cyanide	**29**	**38.3**	**30.1**	**35.7**	**32.1**	**31.2**	**18.3**	**25.6**	**15.7**	**27.7**	**17.5**	**28**	26.4	39.3	20 of 23

Oil and Grease 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	**29200**	**36300**	**38300**	**28900**	**27000**	**31400**	**25000**	**15700**	**23100**	**12700**	**23400**	**18000**	23500	54800	24 of 25
Petroleum Hydrocarbons	**1570**	**1800**	**395**	**1880**	**1540**	**2170**	62.4	**1430**	**3060**	**1160**	**466**	65.2	1280	3350	18 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	0.00202	0.00208	0.00205	0.00212	0.00218	0.00209	0.0022	0.00214	0.00212	0.0021	0.00225	0.00213	0.00238	0 of 24
4,4'-DDE	0.00214	0.00202	0.00208	0.00205	0.00212	0.00218	0.00209	0.0022	0.00214	0.00212	0.0021	0.00225	0.00213	0.00238	0 of 24
4,4'-DDT	0.00214	0.00202	0.00208	0.00205	0.00212	0.00218	0.00209	0.0022	0.00214	0.00212	0.0021	0.00225	0.00213	0.00238	0 of 24
Aldrin	0.00107	0.00101	0.00104	0.00102	0.00106	0.00109	0.00104	0.0011	0.00107	0.00106	0.00105	0.00113	0.00106	0.00119	0 of 24
Alpha-BHC	0.00107	0.00101	0.00104	0.00102	0.00106	0.00109	0.00104	0.0011	0.00107	0.00106	0.00105	0.00113	0.00106	0.00119	0 of 24
Alpha-Chlordane	0.00107	0.00101	0.00104	0.00102	0.00106	0.00109	0.00104	0.0011	0.00107	0.00106	0.00105	0.00113	0.00106	0.00119	0 of 24
Aroclor-1016	0.0535	0.0505	0.052	0.0512	0.053	0.0545	0.0522	0.0549	0.0535	0.053	0.0525	0.0563	0.0532	0.0595	0 of 24
Aroclor-1221	0.107	0.101	0.104	0.102	0.106	0.109	0.104	0.11	0.107	0.106	0.105	0.113	0.106	0.119	0 of 24
Aroclor-1232	0.0535	0.0505	0.052	0.0512	0.053	0.0545	0.0522	0.0549	0.0535	0.053	0.0525	0.0563	0.0532	0.0595	0 of 24
Aroclor-1242	0.0535	0.0505	0.052	0.0512	0.053	0.0545	0.0522	0.0549	0.0535	0.053	0.0525	0.0563	0.0532	0.0595	0 of 24
Aroclor-1248	0.0535	0.0505	0.052	0.0512	0.053	0.0545	0.0522	0.0549	0.0535	0.053	0.0525	0.0563	0.0532	0.0595	0 of 24
Aroclor-1254	0.0535	0.0505	0.052	0.0512	0.053	0.0545	0.0522	0.0549	0.0535	0.053	0.0525	0.0563	0.0532	0.0595	0 of 24
Aroclor-1260	0.0535	0.0505	0.052	0.0512	0.053	0.0545	0.0522	0.0549	0.0535	0.053	0.0525	0.0563	0.0532	0.0595	0 of 24
Beta-BHC	0.00107	0.00101	0.00104	0.00102	0.00106	0.00109	0.00104	0.0011	0.00107	0.00106	0.00105	0.00113	0.00106	0.00119	0 of 24
Chlordane (Technical)	0.107	0.101	0.104	0.102	0.106	0.109	0.104	0.11	0.107	0.106	0.105	0.113	0.106	0.119	0 of 24
Delta-BHC	0.00107	0.00101	0.00104	0.00102	0.00106	0.00109	0.00104	0.0011	0.00107	0.00106	0.00105	0.00113	0.00106	0.00119	0 of 24
Dieldrin	0.00214	0.00202	0.00208	0.00205	0.00212	0.00218	0.00209	0.0022	0.00214	0.00212	0.0021	0.00225	0.00213	0.00238	0 of 24
Endosulfan I	0.00107	0.00101	0.00104	0.00102	0.00106	0.00109	0.00104	0.0011	0.00107	0.00106	0.00105	0.00113	0.00106	0.00119	0 of 24
Endosulfan II	0.00214	0.00202	0.00208	0.00205	0.00212	0.00218	0.00209	0.0022	0.00214	0.00212	0.0021	0.00225	0.00213	0.00238	0 of 24
Endosulfan Sulfate	0.00214	0.00202	0.00208	0.00205	0.00212	0.00218	0.00209	0.0022	0.00214	0.00212	0.0021	0.00225	0.00213	0.00238	0 of 24
Endrin	0.00214	0.00202	0.00208	0.00205	0.00212	0.00218	0.00209	0.0022	0.00214	0.00212	0.0021	0.00225	0.00213	0.00238	0 of 24
Endrin Aldehyde	0.00214	0.00202	0.00208	0.00205	0.00212	0.00218	0.00209	0.0022	0.00214	0.00212	0.0021	0.00225	0.00213	0.00238	0 of 24
Endrin Ketone	0.00214	0.00202	0.00208	0.00205	0.00212	0.00218	0.00209	0.0022	0.00214	0.00212	0.0021	0.00225	0.00213	0.00238	0 of 24
Gamma-BHC	0.00107	0.00101	0.00104	0.00102	0.00106	0.00109	0.00104	0.0011	0.00107	0.00106	0.00105	0.00113	0.00106	0.00119	0 of 24
Gamma-Chlordane	0.00107	0.00101	**0.00104**	0.00102	0.00106	0.00109	0.00104	0.0011	0.00107	0.00106	0.00105	**0.018**	0.00244	0.0186	2 of 24
Heptachlor	0.00107	0.00101	0.00104	0.00102	0.00106	0.00109	0.00104	0.0011	0.00107	0.00106	0.00105	0.00113	0.00106	0.00119	0 of 24
Heptachlor Epoxide	0.00107	0.00101	0.00104	0.00102	0.00106	0.00109	0.00104	0.0011	0.00107	0.00106	0.00105	0.00113	0.00106	0.00119	0 of 24
Hexachlorobenzene	0.0107	0.0101	0.0104	0.0102	0.0106	0.0109	0.0104	0.011	0.0107	0.0106	0.0105	0.0113	0.0106	0.0119	0 of 24
Methoxychlor	~	**0.00313**	~	**0.00671**	~	**0.00329**	~	**0.00144**	~	**0.00431**	~	**0.00827**	0.00448	0.00904	12 of 12
Toxaphene	0.107	0.101	0.104	0.102	0.106	0.109	0.104	0.11	0.107	0.106	0.105	0.113	0.106	0.119	0 of 24

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
1,2-Dichlorobenzene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
1,2-Diphenylhydrazine (as Azobenzene)	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24

Table A-6. Deer Island Influent Characterization (South System), FY16 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,3-Dichlorobenzene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
1,4-Dichlorobenzene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2,2'-Oxybis(1-Chloropropane)	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2,4,5-Trichlorophenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2,4,6-Trichlorophenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2,4-Dichlorophenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2,4-Dimethylphenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2,4-Dinitrophenol	5.2	5.4	5.13	5.7	5.28	5.4	5.17	5.38	5.15	5.18	5.72	5.41	5.33	6.25	0 of 24
2,4-Dinitrotoluene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2,6-Dinitrotoluene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2-Chloronaphthalene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2-Chlorophenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2-Methyl-4,6-Dinitrophenol	5.2	5.4	5.13	5.7	5.28	5.4	5.17	5.38	5.15	5.18	5.72	5.41	5.33	6.25	0 of 24
2-Methylnaphthalene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2-Methylphenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2-Nitroaniline	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
2-Nitrophenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
3,3'-Dichlorobenzidine	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
3-Nitroaniline	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
4-Bromophenyl Phenyl Ether	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
4-Chloro-3-Methylphenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
4-Chloroaniline	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
4-Chlorophenyl Phenyl Ether	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
4-Methylphenol (includes 3-Methylphenol)	**13**	**32.5**	**31.3**	2.28	**29.4**	**28.2**	2.07	2.15	2.06	2.07	2.29	2.17	10.3	38	9 of 24
4-Nitroaniline	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
4-Nitrophenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Acenaphthene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Acenaphthylene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Aniline	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Anthracene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Benzidine	5.2	5.4	5.13	5.7	5.28	5.4	5.17	5.38	5.15	5.18	5.72	5.41	5.33	6.25	0 of 24
Benzo(a)anthracene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Benzo(a)pyrene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Benzo(b)fluoranthene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Benzo(g,h,i)perylene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Benzo(k)fluoranthene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Benzoic Acid	5.2	5.4	5.13	5.7	5.28	5.4	5.17	5.38	5.15	5.18	5.72	5.41	5.33	6.25	0 of 24
Benzyl Alcohol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	**38.8**	2.17	5.47	49.7	2 of 24
Bis(2-Chloroethoxy)methane	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Bis(2-Chloroethyl)ether	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Bis(2-Ethylhexyl)phthalate	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Butylbenzylphthalate	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Carbazole	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Chrysene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Dibenzo(a,h)anthracene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Dibenzofuran	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Diethylphthalate	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Dimethylphthalate	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Di-N-Butylphthalate	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Di-N-Octylphthalate	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Fluoranthene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Fluorene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Hexachlorobenzene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Hexachlorobutadiene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Hexachlorocyclopentadiene	5.2	5.4	5.13	5.7	5.28	5.4	5.17	5.38	5.15	5.18	5.72	5.41	5.33	6.25	0 of 24
Hexachloroethane	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Indeno(1,2,3-CD)pyrene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Isophorone	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Naphthalene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
n-Decane	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Nitrobenzene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
N-Nitrosodimethylamine (NDMA)	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
N-Nitrosodi-N-Propylamine (NDPA)	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
N-Nitrosodiphenylamine	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
N-Octadecane	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Pentachlorophenol	5.2	5.4	5.13	5.7	5.28	5.4	5.17	5.38	5.15	5.18	5.72	5.41	5.33	6.25	0 of 24
Phenanthrene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Phenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24
Pyrene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.13	2.5	0 of 24

Table A-6. Deer Island Influent Characterization (South System), FY16 (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	**13.3**	**13.5**	**15.3**	**23.6**	**9.49**	**10.6**	**2.51**	**6.8**	**5.76**	**2.89**	**5.72**	**7.95**	8.81	24.4	22 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	**121**	**112**	**230**	**124**	**130**	**429**	**72.1**	**90.5**	**153**	**100**	**92.5**	**89.3**	137	450	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	**12.6**	**4.73**	**34.8**	**33.3**	**53.2**	**38**	0.5	0.5	0.5	0.5	0.5	0.5	12	86	8 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
Chlorobezene	0.5	0.5	0.5	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	**14**	0.5	**3.75**	**7.1**	0.5	2.73	26.4	3 of 24
Toluene	**8.38**	**5.61**	**2.78**	**2.83**	**3.86**	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.97	10.9	6 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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	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 and are flow-weighted.

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), FY16

Metals (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Aluminum	**472**	**476**	**206**	**335**	**379**	**414**	**454**	**379**	**402**	**621**	**505**	**496**	428	825	24 of 24
Antimony	18.4	16.1	14.1	16.5	15.8	16.5	26.1	21.1	24.8	28.9	21.9	19.6	20	29.5	0 of 24
Arsenic	0.295	**0.402**	0.225	0.264	0.252	0.264	0.417	0.337	0.397	0.462	0.35	0.313	0.332	0.554	1 of 24
Beryllium	0.184	0.161	0.141	0.165	0.158	0.165	0.261	0.211	0.248	0.289	0.219	0.196	0.2	0.295	0 of 24
Boron	92	**224**	**161**	82.4	**123**	82.6	130	105	124	144	109	97.8	123	232	5 of 24
Cadmium	**0.312**	**0.183**	**0.0841**	**0.155**	**0.361**	**0.216**	**0.278**	**0.297**	**0.362**	**0.543**	**0.496**	**0.327**	0.301	0.708	24 of 24
Chromium	**4.02**	**3.21**	**0.935**	**2.6**	**3.15**	**4.97**	**5.82**	**4.12**	**4.12**	**6.58**	**8.13**	**4.91**	4.38	10.3	24 of 24
Copper	**74.2**	**68.6**	**28.7**	**37.4**	**58**	**57.7**	**49**	**53.5**	**57**	**72.7**	**82.1**	**72.3**	59.3	95.4	24 of 24
Iron	**2920**	**2360**	**1020**	**1910**	**2080**	**2690**	**2420**	**2500**	**2800**	**4350**	**3920**	**3510**	2710	6160	24 of 24
Lead	**8.52**	**7.91**	**2.73**	**4.84**	**5.85**	**4.4**	**4.14**	**3.08**	**3.84**	**8.07**	**9.13**	**8.33**	5.91	12.6	24 of 24
Mercury	**0.128**	**0.0742**	**0.0443**	**0.0904**	**0.121**	**0.102**	**0.0747**	**0.0634**	**0.0839**	**0.111**	**0.135**	**0.135**	0.0969	0.175	24 of 24
Molybdenum	**4.01**	**4.03**	**2.18**	**2.29**	**3.65**	**3.04**	**3.16**	**2.86**	**3.37**	**4.61**	**6.01**	**5.73**	3.74	6.82	24 of 24
Nickel	**5.61**	**3.62**	**2.07**	**2.94**	**3.82**	**4.75**	**6.48**	**3.13**	**4.27**	**4.7**	**5.24**	**4.85**	4.29	8.25	24 of 24
Selenium	0.331	**0.571**	0.253	0.297	0.284	0.297	0.47	0.379	0.447	0.52	0.394	0.352	0.383	0.861	1 of 24
Silver	**0.393**	**0.1**	0.0253	**0.177**	**0.338**	**0.572**	**0.341**	**0.347**	**0.375**	**0.342**	**0.604**	**0.29**	0.325	0.752	21 of 24
Thallium	0.368	0.321	0.281	0.329	0.315	0.33	0.522	0.421	0.497	0.578	0.438	0.391	0.399	0.59	0 of 24
Zinc	**145**	**130**	**62.1**	**93.7**	**112**	**127**	**115**	**106**	**115**	**171**	**164**	**144**	124	220	24 of 24

Cyanide (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Cyanide	**21.4**	**24.9**	**17.3**	**23.2**	**20.1**	**20.6**	**18.3**	**22**	**15.2**	**32.8**	**15.6**	**21.2**	21.1	34.9	20 of 23

Oil and Grease and Petroleum Hydrocarbons (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Fats Oil and Grease	**21500**	**23600**	**23500**	**18800**	**16900**	**20700**	**25000**	**13500**	**22400**	**17800**	**20900**	**13800**	19800	35100	24 of 25
Petroleum Hydrocarbons	**1160**	**1170**	**227**	**1220**	**964**	**1430**	62.3	**1230**	**2970**	**1370**	**416**	50	1020	3280	18 of 24

Organochlorine Pesticides and PCBs (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
4,4'-DDD	0.00158	0.0013	0.00117	0.00135	0.00134	0.00144	0.00218	0.00185	0.00213	0.00245	0.00184	0.00176	0.0017	0.00261	0 of 24
4,4'-DDE	0.00158	0.0013	0.00117	0.00135	0.00134	0.00144	0.00218	0.00185	0.00213	0.00245	0.00184	0.00176	0.0017	0.00261	0 of 24
4,4'-DDT	0.00158	0.0013	0.00117	0.00135	0.00134	0.00144	0.00218	0.00185	0.00213	0.00245	0.00184	0.00176	0.0017	0.00261	0 of 24
Aldrin	0.000788	0.000649	0.000585	0.000675	0.000669	0.00072	0.00109	0.000926	0.00106	0.00123	0.000919	0.00088	0.000849	0.0013	0 of 24
Alpha-BHC	0.000788	0.000649	0.000585	0.000675	0.000669	0.00072	0.00109	0.000926	0.00106	0.00123	0.000919	0.00088	0.000849	0.0013	0 of 24
Alpha-Chlordane	0.000788	0.000649	0.000585	0.000675	0.000669	0.00072	0.00109	0.000926	0.00106	0.00123	0.000919	0.00088	0.000849	0.0013	0 of 24
Aroclor-1016	0.0394	0.0325	0.0293	0.0338	0.0334	0.036	0.0544	0.0463	0.0532	0.0613	0.046	0.044	0.0425	0.0651	0 of 24
Aroclor-1221	0.0788	0.0649	0.0585	0.0675	0.0669	0.072	0.109	0.0926	0.106	0.123	0.0919	0.088	0.0849	0.13	0 of 24
Aroclor-1232	0.0394	0.0325	0.0293	0.0338	0.0334	0.036	0.0544	0.0463	0.0532	0.0613	0.046	0.044	0.0425	0.0651	0 of 24
Aroclor-1242	0.0394	0.0325	0.0293	0.0338	0.0334	0.036	0.0544	0.0463	0.0532	0.0613	0.046	0.044	0.0425	0.0651	0 of 24
Aroclor-1248	0.0394	0.0325	0.0293	0.0338	0.0334	0.036	0.0544	0.0463	0.0532	0.0613	0.046	0.044	0.0425	0.0651	0 of 24
Aroclor-1254	0.0394	0.0325	0.0293	0.0338	0.0334	0.036	0.0544	0.0463	0.0532	0.0613	0.046	0.044	0.0425	0.0651	0 of 24
Aroclor-1260	0.0394	0.0325	0.0293	0.0338	0.0334	0.036	0.0544	0.0463	0.0532	0.0613	0.046	0.044	0.0425	0.0651	0 of 24
Beta-BHC	0.000788	0.000649	0.000585	0.000675	0.000669	0.00072	0.00109	0.000926	0.00106	0.00123	0.000919	0.00088	0.000849	0.0013	0 of 24
Chlordane (Technical)	0.0788	0.0649	0.0585	0.0675	0.0669	0.072	0.109	0.0926	0.106	0.123	0.0919	0.088	0.0849	0.13	0 of 24
Delta-BHC	0.000788	0.000649	0.000585	0.000675	0.000669	0.00072	0.00109	0.000926	0.00106	0.00123	0.000919	0.00088	0.000849	0.0013	0 of 24
Dieldrin	0.00158	0.0013	0.00117	0.00135	0.00134	0.00144	0.00218	0.00185	0.00213	0.00245	0.00184	0.00176	0.0017	0.00261	0 of 24
Endosulfan I	0.000788	0.000649	0.000585	0.000675	0.000669	0.00072	0.00109	0.000926	0.00106	0.00123	0.000919	0.00088	0.000849	0.0013	0 of 24
Endosulfan II	0.00158	0.0013	0.00117	0.00135	0.00134	0.00144	0.00218	0.00185	0.00213	0.00245	0.00184	0.00176	0.0017	0.00261	0 of 24
Endosulfan Sulfate	0.00158	0.0013	0.00117	0.00135	0.00134	0.00144	0.00218	0.00185	0.00213	0.00245	0.00184	0.00176	0.0017	0.00261	0 of 24
Endrin	0.00158	0.0013	0.00117	0.00135	0.00134	0.00144	0.00218	0.00185	0.00213	0.00245	0.00184	0.00176	0.0017	0.00261	0 of 24
Endrin Aldehyde	0.00158	0.0013	0.00117	0.00135	0.00134	0.00144	0.00218	0.00185	0.00213	0.00245	0.00184	0.00176	0.0017	0.00261	0 of 24
Endrin Ketone	0.00158	0.0013	0.00117	0.00135	0.00134	0.00144	0.00218	0.00185	0.00213	0.00245	0.00184	0.00176	0.0017	0.00261	0 of 24
Gamma-BHC	0.000788	0.000649	0.000585	0.000675	0.000669	0.00072	0.00109	0.000926	0.00106	0.00123	0.000919	0.00088	0.000849	0.0013	0 of 24
Gamma-Chlordane	0.000788	0.000649	**0.000585**	0.000675	0.000669	0.00072	0.00109	0.000926	0.00106	0.00123	0.000919	**0.0141**	0.00195	0.0147	2 of 24
Heptachlor	0.000788	0.000649	0.000585	0.000675	0.000669	0.00072	0.00109	0.000926	0.00106	0.00123	0.000919	0.00088	0.000849	0.0013	0 of 24
Heptachlor Epoxide	0.000788	0.000649	0.000585	0.000675	0.000669	0.00072	0.00109	0.000926	0.00106	0.00123	0.000919	0.00088	0.000849	0.0013	0 of 24
Hexachlorobenzene	0.00788	0.00649	0.00585	0.00675	0.00669	0.0072	0.0109	0.00926	0.0106	0.0123	0.00919	0.0088	0.00849	0.013	0 of 24
Methoxychlor	~	**0.00201**	~	**0.00442**	~	**0.00217**	~	**0.00121**	~	**0.00498**	~	**0.00646**	0.00354	0.0068	12 of 12
Toxaphene	0.0788	0.0649	0.0585	0.0675	0.0669	0.072	0.109	0.0926	0.106	0.123	0.0919	0.088	0.0849	0.13	0 of 24

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
1,2-Dichlorobenzene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
1,2-Diphenylhydrazine (as Azobenzene)	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24

Table A-7. Deer Island Influent Loadings (South System), FY16 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,3-Dichlorobenzene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
1,4-Dichlorobenzene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2,2'-Oxybis(1-Chloropropane)	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2,4,5-Trichlorophenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2,4,6-Trichlorophenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2,4-Dichlorophenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2,4-Dimethylphenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2,4-Dinitrophenol	3.83	3.47	2.88	3.76	3.33	3.57	5.39	4.53	5.12	5.99	5.01	4.23	4.26	6.12	0 of 24
2,4-Dinitrotoluene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2,6-Dinitrotoluene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2-Chloronaphthalene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2-Chlorophenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2-Methyl-4,6-Dinitrophenol	3.83	3.47	2.88	3.76	3.33	3.57	5.39	4.53	5.12	5.99	5.01	4.23	4.26	6.12	0 of 24
2-Methylnaphthalene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2-Methylphenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2-Nitroaniline	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
2-Nitrophenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
3,3'-Dichlorobenzidine	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
3-Nitroaniline	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
4-Bromophenyl Phenyl Ether	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
4-Chloro-3-Methylphenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
4-Chloroaniline	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
4-Chlorophenyl Phenyl Ether	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
4-Methylphenol (includes 3-Methylphenol)	**9.58**	**20.9**	**17.6**	1.5	**18.5**	**18.6**	2.16	1.81	2.05	2.39	2	1.69	8.23	25.2	9 of 24
4-Nitroaniline	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
4-Nitrophenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Acenaphthene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Acenaphthylene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Aniline	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Anthracene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Benzidine	3.83	3.47	2.88	3.76	3.33	3.57	5.39	4.53	5.12	5.99	5.01	4.23	4.26	6.12	0 of 24
Benzo(a)anthracene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Benzo(a)pyrene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Benzo(b)fluoranthene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Benzo(g,h,i)perylene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Benzo(k)fluoranthene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Benzoic Acid	3.83	3.47	2.88	3.76	3.33	3.57	5.39	4.53	5.12	5.99	5.01	4.23	4.26	6.12	0 of 24
Benzyl Alcohol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	**34**	1.69	4.37	43.3	2 of 24
Bis(2-Chloroethoxy)methane	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Bis(2-Chloroethyl)ether	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Bis(2-Ethylhexyl)phthalate	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Butylbenzylphthalate	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Carbazole	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Chrysene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Dibenzo(a,h)anthracene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Dibenzofuran	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Diethylphthalate	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Dimethylphthalate	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Di-N-Butylphthalate	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Di-N-Octylphthalate	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Fluoranthene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Fluorene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Hexachlorobenzene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Hexachlorobutadiene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Hexachlorocyclopentadiene	3.83	3.47	2.88	3.76	3.33	3.57	5.39	4.53	5.12	5.99	5.01	4.23	4.26	6.12	0 of 24
Hexachloroethane	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Indeno(1,2,3-CD)pyrene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Isophorone	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Naphthalene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
n-Decane	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Nitrobenzene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
N-Nitrosodimethylamine (NDMA)	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
N-Nitrosodi-N-Propylamine (NDPA)	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
N-Nitrosodiphenylamine	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
N-Octadecane	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Pentachlorophenol	3.83	3.47	2.88	3.76	3.33	3.57	5.39	4.53	5.12	5.99	5.01	4.23	4.26	6.12	0 of 24
Phenanthrene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Phenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24
Pyrene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.7	2.44	0 of 24

Table A-7. Deer Island Influent Loadings (South System), FY16 (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	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
1,1,2,2-Tetrachloroethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
1,1,2-Trichloroethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
1,1-Dichloroethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
1,1-Dichloroethene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
1,2-Dichlorobenzene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
1,2-Dichloroethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
1,2-Dichloropropane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
1,3-Dichlorobenzene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
1,4-Dichlorobenzene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
2-Butanone	**9.84**	**8.81**	**8.79**	**15.4**	**5.94**	**7.02**	**2.51**	**5.85**	**5.59**	**3.43**	**5.1**	**6.09**	7.03	16	22 of 24
2-Chloroethyl Vinyl Ether	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
2-Hexanone	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
4-Methyl-2-Pentanone	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Acetone	**89.2**	**72.8**	**132**	**80.8**	**81**	**283**	**72.1**	**77.8**	**148**	**119**	**82.4**	**68.4**	109	298	23 of 24
Acrolein	0.737	0.651	0.575	0.652	0.626	0.66	1	0.86	0.97	1.18	0.892	0.766	0.798	1.19	0 of 24
Acrylonitrile	0.737	0.651	0.575	0.652	0.626	0.66	1	0.86	0.97	1.18	0.892	0.766	0.798	1.19	0 of 24
Benzene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Bromodichloromethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Bromoform	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Bromomethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Carbon Disulfide	**9.29**	**3.08**	**20**	**21.7**	**33.3**	**25.1**	0.5	0.43	0.485	0.592	0.446	0.383	9.6	53.9	8 of 24
Carbon Tetrachloride	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Chlorobezene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Chloroethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Chloroform	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Chloromethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Cis-1,2-Dichloroethene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Cis-1,3-Dichloropropene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Dibromochloromethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Ethylbenzene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
M,P-Xylene	0.737	0.651	0.575	0.652	0.626	0.66	1	0.86	0.97	1.18	0.892	0.766	0.798	1.19	0 of 24
Methylene Chloride	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
O-Xylene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Styrene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Tetrachloroethene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	**12**	0.485	**4.44**	**6.33**	0.383	2.17	23.6	3 of 24
Toluene	**6.18**	**3.65**	**1.6**	**1.84**	**2.42**	0.33	0.5	0.43	0.485	0.592	0.446	0.383	1.57	6.97	6 of 24
Trans-1,2-Dichloroethene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Trans-1,3-Dichloropropene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Trichloroethene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Trichlorofluoromethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Vinyl Acetate	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.597	0 of 24
Vinyl Chloride	0.147	0.13	0.115	0.13	0.125	0.132	0.2	0.172	0.194	0.237	0.178	0.153	0.16	0.239	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 and are flow-weighted.

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, FY16

Metals (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Aluminum	**50.9**	**37**	**42.5**	**21.5**	**23.1**	**86.3**	**65.3**	**35.7**	**33.5**	**152**	**12.5**	**14.8**	52.5	366	46 of 57
Antimony	25	25	25	25	25	25	25	25	25	25	25	25	25	25	0 of 24
Arsenic	**0.612**	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.417	0.826	1 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	125	**219**	**189**	125	125	125	125	125	125	125	125	125	137	294	2 of 24
Cadmium	**0.0194**	0.015	0.015	0.015	0.015	0.015	**0.0422**	**0.0229**	**0.0468**	**0.0322**	0.015	0.015	0.0236	0.0617	13 of 55
Chromium	**0.458**	**3.48**	**0.558**	**2.14**	0.35	**0.707**	**0.778**	**0.949**	0.35	**1.4**	**0.965**	**1.05**	1.04	10.3	28 of 55
Copper	**5.02**	**4.43**	**4.62**	**8.7**	**5.31**	**5.79**	**8.96**	**5.9**	**6.49**	**7.46**	**3.74**	**5.02**	6	19.3	55 of 55
Iron	**249**	**474**	**327**	**324**	**282**	**204**	**255**	**323**	**330**	**237**	**301**	**308**	300	513	24 of 24
Lead	**0.442**	**0.564**	**0.507**	**0.577**	**0.581**	**0.537**	**0.936**	**0.582**	**0.583**	**1.23**	**0.576**	**0.569**	0.659	2.36	21 of 55
Mercury	**0.00523**	**0.00369**	**0.00326**	**0.00344**	**0.0045**	**0.0035**	**0.00694**	**0.00398**	**0.00521**	**0.0073**	**0.003**	**0.0034**	0.00469	0.0118	48 of 48
Molybdenum	**7.28**	**8.38**	**4.92**	**4.6**	**6.61**	**4.77**	**7.34**	**4.95**	**5**	**4.23**	**5.32**	**5.87**	5.71	10.4	48 of 48
Nickel	**3.96**	**3.48**	**2.5**	**2.76**	**3.73**	**2.82**	**3.37**	**3.22**	**3.71**	**2.62**	**2.56**	**3.21**	3.17	5.42	55 of 55
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	0.09	0.09	0.09	0.09	0.045	0.045	0.045	0.045	0.045	0.0772	0.0794	0.0702	0.0673	0.135	0 of 48
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	**19.6**	**19.9**	**11.8**	**14.8**	**19.2**	**18.7**	**24.6**	**22.4**	**26.2**	**29.4**	**16.7**	**16.7**	20.7	37.8	55 of 55

Cyanide (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Cyanide	10	10	10	10	10	10	10	10	10	10	10	10	10	10	0 of 24

Oil and Grease 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	698	711	688	692	701	695	695	708	704	701	709	690	700	787	0 of 64
Petroleum Hydrocarbons	65.2	67	66.9	64.9	64.1	65.7	63.5	**184**	69.1	64.5	**191**	63.5	91.3	831	2 of 63

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	0.00226	0.00208	0.00244	0.0023	0.00224	0.00224	0.00232	0.00208	0.00218	0.00204	0.0022	0.00212	0.0022	0.00244	0 of 12
4,4'-DDE	0.00226	0.00208	0.00244	0.0023	0.00224	0.00224	0.00232	0.00208	0.00218	0.00204	0.0022	0.00212	0.0022	0.00244	0 of 12
4,4'-DDT	0.00226	0.00208	0.00244	0.0023	0.00224	0.00224	0.00232	0.00208	0.00218	0.00204	0.0022	0.00212	0.0022	0.00244	0 of 12
Aldrin	0.00113	0.00104	0.00122	0.00115	0.00112	0.00112	0.00116	0.00104	0.00109	0.00102	0.0011	0.00106	0.0011	0.00122	0 of 12
Alpha-BHC	0.00113	0.00104	0.00122	0.00115	0.00112	0.00112	0.00116	0.00104	0.00109	0.00102	0.0011	0.00106	0.0011	0.00122	0 of 12
Alpha-Chlordane	0.00113	0.00104	0.00122	0.00115	0.00112	0.00112	0.00116	0.00104	0.00109	0.00102	0.0011	0.00106	0.0011	0.00122	0 of 12
Aroclor-1016	0.0565	0.052	0.061	0.0575	0.056	0.056	0.058	0.052	0.0545	0.051	0.055	0.053	0.0549	0.061	0 of 12
Aroclor-1221	0.113	0.104	0.122	0.115	0.112	0.112	0.116	0.104	0.109	0.102	0.11	0.106	0.11	0.122	0 of 12
Aroclor-1232	0.0565	0.052	0.061	0.0575	0.056	0.056	0.058	0.052	0.0545	0.051	0.055	0.053	0.0549	0.061	0 of 12
Aroclor-1242	0.0565	0.052	0.061	0.0575	0.056	0.056	0.058	0.052	0.0545	0.051	0.055	0.053	0.0549	0.061	0 of 12
Aroclor-1248	0.0565	0.052	0.061	0.0575	0.056	0.056	0.058	0.052	0.0545	0.051	0.055	0.053	0.0549	0.061	0 of 12
Aroclor-1254	0.0565	0.052	0.061	0.0575	0.056	0.056	0.058	0.052	0.0545	0.051	0.055	0.053	0.0549	0.061	0 of 12
Aroclor-1260	0.0565	0.052	0.061	0.0575	0.056	0.056	0.058	0.052	0.0545	0.051	0.055	0.053	0.0549	0.061	0 of 12
Beta-BHC	0.00113	0.00104	0.00122	0.00115	0.00112	0.00112	0.00116	0.00104	0.00109	0.00102	0.0011	0.00106	0.0011	0.00122	0 of 12
Chlordane (Technical)	0.113	0.104	0.122	0.115	0.112	0.112	0.116	0.104	0.109	0.102	0.11	0.106	0.11	0.122	0 of 12
Delta-BHC	0.00113	0.00104	0.00122	0.00115	0.00112	0.00112	0.00116	0.00104	0.00109	0.00102	0.0011	0.00106	0.0011	0.00122	0 of 12
Dieldrin	0.00226	0.00208	0.00244	0.0023	0.00224	0.00224	0.00232	0.00208	0.00218	0.00204	0.0022	0.00212	0.0022	0.00244	0 of 12
Endosulfan I	0.00113	0.00104	0.00122	0.00115	0.00112	0.00112	0.00116	0.00104	0.00109	0.00102	0.0011	0.00106	0.0011	0.00122	0 of 12
Endosulfan II	0.00226	0.00208	0.00244	0.0023	0.00224	0.00224	0.00232	0.00208	0.00218	0.00204	0.0022	0.00212	0.0022	0.00244	0 of 12
Endosulfan Sulfate	0.00226	0.00208	0.00244	0.0023	0.00224	0.00224	0.00232	0.00208	0.00218	0.00204	0.0022	0.00212	0.0022	0.00244	0 of 12
Endrin	0.00226	0.00208	0.00244	0.0023	0.00224	0.00224	0.00232	0.00208	0.00218	0.00204	0.0022	0.00212	0.0022	0.00244	0 of 12
Endrin Aldehyde	0.00226	0.00208	0.00244	0.0023	0.00224	0.00224	0.00232	0.00208	0.00218	0.00204	0.0022	0.00212	0.0022	0.00244	0 of 12
Endrin Ketone	0.00226	0.00208	0.00244	0.0023	0.00224	0.00224	0.00232	0.00208	0.00218	0.00204	0.0022	0.00212	0.0022	0.00244	0 of 12
Gamma-BHC	0.00113	0.00104	0.00122	0.00115	0.00112	0.00112	0.00116	0.00104	0.00109	0.00102	0.0011	0.00106	0.0011	0.00122	0 of 12
Gamma-Chlordane	0.00113	0.00104	0.00122	0.00115	0.00112	0.00112	0.00116	0.00104	0.00109	0.00102	0.0011	0.00106	0.0011	0.00122	0 of 12
Heptachlor	0.00113	0.00104	0.00122	0.00115	0.00112	0.00112	0.00116	0.00104	0.00109	0.00102	0.0011	0.00106	0.0011	0.00122	0 of 12
Heptachlor Epoxide	0.00113	0.00104	0.00122	0.00115	0.00112	0.00112	0.00116	0.00104	0.00109	0.00102	0.0011	0.00106	0.0011	0.00122	0 of 12
Hexachlorobenzene	0.00113	0.00104	0.00122	0.00115	0.00112	0.00112	0.00116	0.00104	0.00109	0.00102	0.0011	0.00106	0.0011	0.00122	0 of 12
Methoxychlor	0.0113	0.0104	0.0122	0.0115	0.0112	0.0112	0.0116	0.0104	0.0109	0.0102	0.011	0.0106	0.011	0.0122	0 of 12
Total AMP PCBs	**0.000725**	**0.000759**	**0.0002**	**0.000247**	**0.000259**	**0.000194**	**0.000449**	**0.000175**	**0.000206**	**0.000342**	**0.000243**	**0.00055**	0.000363	0.0023	46 of 48
Toxaphene	0.113	0.104	0.122	0.115	0.112	0.112	0.116	0.104	0.109	0.102	0.11	0.106	0.11	0.122	0 of 12

Table A-8. Deer Island Effluent Characterization, FY16 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
1,2-Dichlorobenzene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
1,2-Diphenylhydrazine (as Azobenzene)	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
1,3-Dichlorobenzene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
1,4-Dichlorobenzene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2,2'-Oxybis(1-Chloropropane)	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2,4,5-Trichlorophenol	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2,4,6-Trichlorophenol	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2,4-Dichlorophenol	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2,4-Dimethylphenol	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2,4-Dinitrophenol	5.25	5.23	5.53	6.14	5.84	5.99	5.45	5.76	6.25	5.2	5.58	5.32	5.61	7.04	0 of 24
2,4-Dinitrotoluene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2,6-Dinitrotoluene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2-Chloronaphthalene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2-Chlorophenol	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2-Methyl-4,6-Dinitrophenol	5.25	5.23	5.53	6.14	5.84	5.99	5.45	5.76	6.25	5.2	5.58	5.32	5.61	7.04	0 of 24
2-Methylnaphthalene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2-Methylphenol	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2-Nitroaniline	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
2-Nitrophenol	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
3,3'-Dichlorobenzidine	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
3-Nitroaniline	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
4-Bromophenyl Phenyl Ether	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
4-Chloro-3-Methylphenol	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
4-Chloroaniline	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
4-Chlorophenyl Phenyl Ether	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
4-Methylphenol (includes 3-Methylphenol)	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
4-Nitroaniline	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
4-Nitrophenol	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Acenaphthene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Acenaphthylene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Aniline	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Anthracene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Benzidine	5.25	5.23	5.53	6.14	5.84	5.99	5.45	5.76	6.25	5.2	5.58	5.32	5.61	7.04	0 of 24
Benzo(a)anthracene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Benzo(a)pyrene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Benzo(b)fluoranthene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Benzo(g,h,i)perylene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Benzo(k)fluoranthene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Benzoic Acid	5.25	5.23	5.53	6.14	5.84	5.99	5.45	5.76	6.25	5.2	5.58	5.32	5.61	7.04	0 of 24
Benzyl Alcohol	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Bis(2-Chloroethoxy)methane	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Bis(2-Chloroethyl)ether	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Bis(2-Ethylhexyl)phthalate	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Butylbenzylphthalate	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Carbazole	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Chrysene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Dibenzo(a,h)anthracene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Dibenzofuran	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Diethylphthalate	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Dimethylphthalate	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Di-N-Butylphthalate	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Di-N-Octylphthalate	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Fluoranthene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Fluorene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Hexachlorobenzene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Hexachlorobutadiene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Hexachlorocyclopentadiene	5.25	5.23	5.53	6.14	5.84	5.99	5.45	5.76	6.25	5.2	5.58	5.32	5.61	7.04	0 of 24
Hexachloroethane	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24

Table A-8. Deer Island Effluent Characterization, FY16 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Indeno(1,2,3-CD)pyrene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Isophorone	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Naphthalene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
n-Decane	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Nitrobenzene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
N-Nitrosodimethylamine (NDMA)	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
N-Nitrosodi-N-Propylamine (NDPA)	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
N-Nitrosodiphenylamine	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
N-Octadecane	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Pentachlorophenol	5.25	5.23	5.53	6.14	5.84	5.99	5.45	5.76	6.25	5.2	5.58	5.32	5.61	7.04	0 of 24
Phenanthrene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Phenol	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24
Pyrene	2.1	2.09	2.21	2.46	2.34	2.4	2.18	2.31	2.5	2.08	2.23	2.13	2.25	2.82	0 of 24

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	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0 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	1	1	1	1	1	1	**5.9**	1	1	1	1	1.44	11	1 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	**7.94**	**4.75**	0.5	0.5	0.5	1.57	15.1	2 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	0.5	0.5	0.5	0.5	0 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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	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 and are flow-weighted.

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, FY16

Metals (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Aluminum	**124**	**75.1**	**84.9**	**43.5**	**44.3**	**169**	**195**	**96.6**	**91**	**590**	**33.5**	**36.3**	130	2030	46 of 57
Antimony	56.9	55.7	46.7	50.7	49.5	49	61.1	63.8	64.7	79.4	68.9	57.7	58.7	79.9	0 of 24
Arsenic	**1.39**	0.891	0.748	0.811	0.792	0.784	0.978	1.02	1.04	1.27	1.1	0.923	0.979	1.87	1 of 24
Beryllium	0.569	0.557	0.467	0.507	0.495	0.49	0.611	0.638	0.647	0.794	0.689	0.577	0.587	0.799	0 of 24
Boron	284	**487**	**354**	253	247	245	306	319	324	397	344	288	321	726	2 of 24
Cadmium	**0.0471**	0.0304	0.03	0.0303	0.0287	0.0293	**0.126**	**0.062**	**0.127**	**0.125**	0.0403	0.0367	0.0584	0.286	13 of 55
Chromium	**1.11**	**7.05**	**1.12**	**4.33**	0.671	**1.38**	**2.32**	**2.57**	0.949	**5.44**	**2.59**	**2.58**	2.58	18.3	28 of 55
Copper	**12**	**8.98**	**9.24**	**17.6**	**10.2**	**11.3**	**26.7**	**16.1**	**17.6**	**28.9**	**10**	**12.3**	14.9	64.4	55 of 55
Iron	**568**	**1060**	**612**	**657**	**558**	**401**	**623**	**824**	**855**	**752**	**831**	**710**	704	1270	24 of 24
Lead	**1.06**	**1.14**	**1.01**	**1.17**	**1.11**	**1.05**	**2.79**	**1.59**	**1.58**	**4.77**	**1.55**	**1.39**	1.63	13.1	21 of 55
Mercury	**0.0132**	**0.00748**	**0.00661**	**0.00695**	**0.00863**	**0.00684**	**0.0207**	**0.0106**	**0.0141**	**0.0283**	**0.00806**	**0.00833**	0.0117	0.0655	48 of 48
Molybdenum	**18.4**	**17**	**9.98**	**9.29**	**12.7**	**9.32**	**21.9**	**13.2**	**13.6**	**16.4**	**14.3**	**14.4**	14.2	27.7	48 of 48
Nickel	**9.62**	**7.06**	**5**	**5.58**	**7.15**	**5.51**	**10**	**8.71**	**10.1**	**10.1**	**6.87**	**7.86**	7.83	16.6	55 of 55
Selenium	1.02	1	0.841	0.912	0.891	0.882	1.1	1.15	1.16	1.43	1.24	1.04	1.06	1.44	0 of 24
Silver	0.227	0.182	0.183	0.182	0.0862	0.0879	0.134	0.12	0.122	0.299	0.213	0.172	0.167	0.749	0 of 48
Thallium	1.14	1.11	0.935	1.01	0.99	0.98	1.22	1.28	1.29	1.59	1.38	1.15	1.17	1.6	0 of 24
Zinc	**47.6**	**40.3**	**23.7**	**29.9**	**36.8**	**36.6**	**73.4**	**60.8**	**71.2**	**114**	**44.8**	**40.8**	51.1	210	55 of 55

Cyanide (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Cyanide	27.9	19.3	21.2	19.9	19.1	19.6	24.1	27.1	27.8	43.5	28.4	21.6	25	55.5	0 of 24

Oil and Grease and Petroleum Hydrocarbons (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Fats Oil and Grease	1680	1360	1350	1340	1370	1530	1960	1990	2150	2440	1860	1410	1700	3920	0 of 64
Petroleum Hydrocarbons	157	128	131	126	126	145	175	**518**	211	225	**500**	130	223	2230	2 of 63

Organochlorine Pesticides and PCBs (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
4,4'-DDD	0.00511	0.00514	0.00458	0.00469	0.00448	0.00439	0.00575	0.00488	0.00574	0.00652	0.00558	0.00512	0.00516	0.00652	0 of 12
4,4'-DDE	0.00511	0.00514	0.00458	0.00469	0.00448	0.00439	0.00575	0.00488	0.00574	0.00652	0.00558	0.00512	0.00516	0.00652	0 of 12
4,4'-DDT	0.00511	0.00514	0.00458	0.00469	0.00448	0.00439	0.00575	0.00488	0.00574	0.00652	0.00558	0.00512	0.00516	0.00652	0 of 12
Aldrin	0.00255	0.00257	0.00229	0.00234	0.00224	0.00219	0.00288	0.00244	0.00287	0.00326	0.00279	0.00256	0.00258	0.00326	0 of 12
Alpha-BHC	0.00255	0.00257	0.00229	0.00234	0.00224	0.00219	0.00288	0.00244	0.00287	0.00326	0.00279	0.00256	0.00258	0.00326	0 of 12
Alpha-Chlordane	0.00255	0.00257	0.00229	0.00234	0.00224	0.00219	0.00288	0.00244	0.00287	0.00326	0.00279	0.00256	0.00258	0.00326	0 of 12
Aroclor-1016	0.128	0.128	0.114	0.117	0.112	0.11	0.144	0.122	0.143	0.163	0.14	0.128	0.129	0.163	0 of 12
Aroclor-1221	0.255	0.257	0.229	0.234	0.224	0.219	0.288	0.244	0.287	0.326	0.279	0.256	0.258	0.326	0 of 12
Aroclor-1232	0.128	0.128	0.114	0.117	0.112	0.11	0.144	0.122	0.143	0.163	0.14	0.128	0.129	0.163	0 of 12
Aroclor-1242	0.128	0.128	0.114	0.117	0.112	0.11	0.144	0.122	0.143	0.163	0.14	0.128	0.129	0.163	0 of 12
Aroclor-1248	0.128	0.128	0.114	0.117	0.112	0.11	0.144	0.122	0.143	0.163	0.14	0.128	0.129	0.163	0 of 12
Aroclor-1254	0.128	0.128	0.114	0.117	0.112	0.11	0.144	0.122	0.143	0.163	0.14	0.128	0.129	0.163	0 of 12
Aroclor-1260	0.128	0.128	0.114	0.117	0.112	0.11	0.144	0.122	0.143	0.163	0.14	0.128	0.129	0.163	0 of 12
Beta-BHC	0.00255	0.00257	0.00229	0.00234	0.00224	0.00219	0.00288	0.00244	0.00287	0.00326	0.00279	0.00256	0.00258	0.00326	0 of 12
Chlordane (Technical)	0.255	0.257	0.229	0.234	0.224	0.219	0.288	0.244	0.287	0.326	0.279	0.256	0.258	0.326	0 of 12
Delta-BHC	0.00255	0.00257	0.00229	0.00234	0.00224	0.00219	0.00288	0.00244	0.00287	0.00326	0.00279	0.00256	0.00258	0.00326	0 of 12
Dieldrin	0.00511	0.00514	0.00458	0.00469	0.00448	0.00439	0.00575	0.00488	0.00574	0.00652	0.00558	0.00512	0.00516	0.00652	0 of 12
Endosulfan I	0.00255	0.00257	0.00229	0.00234	0.00224	0.00219	0.00288	0.00244	0.00287	0.00326	0.00279	0.00256	0.00258	0.00326	0 of 12
Endosulfan II	0.00511	0.00514	0.00458	0.00469	0.00448	0.00439	0.00575	0.00488	0.00574	0.00652	0.00558	0.00512	0.00516	0.00652	0 of 12
Endosulfan Sulfate	0.00511	0.00514	0.00458	0.00469	0.00448	0.00439	0.00575	0.00488	0.00574	0.00652	0.00558	0.00512	0.00516	0.00652	0 of 12
Endrin	0.00511	0.00514	0.00458	0.00469	0.00448	0.00439	0.00575	0.00488	0.00574	0.00652	0.00558	0.00512	0.00516	0.00652	0 of 12
Endrin Aldehyde	0.00511	0.00514	0.00458	0.00469	0.00448	0.00439	0.00575	0.00488	0.00574	0.00652	0.00558	0.00512	0.00516	0.00652	0 of 12
Endrin Ketone	0.00511	0.00514	0.00458	0.00469	0.00448	0.00439	0.00575	0.00488	0.00574	0.00652	0.00558	0.00512	0.00516	0.00652	0 of 12
Gamma-BHC	0.00255	0.00257	0.00229	0.00234	0.00224	0.00219	0.00288	0.00244	0.00287	0.00326	0.00279	0.00256	0.00258	0.00326	0 of 12
Gamma-Chlordane	0.00255	0.00257	0.00229	0.00234	0.00224	0.00219	0.00288	0.00244	0.00287	0.00326	0.00279	0.00256	0.00258	0.00326	0 of 12
Heptachlor	0.00255	0.00257	0.00229	0.00234	0.00224	0.00219	0.00288	0.00244	0.00287	0.00326	0.00279	0.00256	0.00258	0.00326	0 of 12
Heptachlor Epoxide	0.00255	0.00257	0.00229	0.00234	0.00224	0.00219	0.00288	0.00244	0.00287	0.00326	0.00279	0.00256	0.00258	0.00326	0 of 12
Hexachlorobenzene	0.00255	0.00257	0.00229	0.00234	0.00224	0.00219	0.00288	0.00244	0.00287	0.00326	0.00279	0.00256	0.00258	0.00326	0 of 12
Methoxychlor	0.0255	0.0257	0.0229	0.0234	0.0224	0.0219	0.0288	0.0244	0.0287	0.0326	0.0279	0.0256	0.0258	0.0326	0 of 12
Total AMP PCBs	**0.00183**	**0.00154**	**0.000405**	**0.000499**	**0.000496**	**0.000379**	**0.00134**	**0.000466**	**0.000558**	**0.00133**	**0.000653**	**0.00135**	0.000903	0.0052	46 of 48
Toxaphene	0.255	0.257	0.229	0.234	0.224	0.219	0.288	0.244	0.287	0.326	0.279	0.256	0.258	0.326	0 of 12

Table A-9. Deer Island Effluent Loadings, FY16 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
1,2-Dichlorobenzene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
1,2-Diphenylhydrazine (as Azobenzene)	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
1,3-Dichlorobenzene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
1,4-Dichlorobenzene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2,2'-Oxybis(1-Chloropropane)	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2,4,5-Trichlorophenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2,4,6-Trichlorophenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2,4-Dichlorophenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2,4-Dimethylphenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2,4-Dinitrophenol	11.9	11.7	10.3	12.5	11.6	11.7	13.3	14.7	16.2	16.5	15.4	12.3	13.2	17.9	0 of 24
2,4-Dinitrotoluene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2,6-Dinitrotoluene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2-Chloronaphthalene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2-Chlorophenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2-Methyl-4,6-Dinitrophenol	11.9	11.7	10.3	12.5	11.6	11.7	13.3	14.7	16.2	16.5	15.4	12.3	13.2	17.9	0 of 24
2-Methylnaphthalene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2-Methylphenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2-Nitroaniline	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
2-Nitrophenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
3,3'-Dichlorobenzidine	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
3-Nitroaniline	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
4-Bromophenyl Phenyl Ether	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
4-Chloro-3-Methylphenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
4-Chloroaniline	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
4-Chlorophenyl Phenyl Ether	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
4-Methylphenol (includes 3-Methylphenol)	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
4-Nitroaniline	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
4-Nitrophenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Acenaphthene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Acenaphthylene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Aniline	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Anthracene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Benzidine	11.9	11.7	10.3	12.5	11.6	11.7	13.3	14.7	16.2	16.5	15.4	12.3	13.2	17.9	0 of 24
Benzo(a)anthracene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Benzo(a)pyrene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Benzo(b)fluoranthene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Benzo(g,h,i)perylene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Benzo(k)fluoranthene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Benzoic Acid	11.9	11.7	10.3	12.5	11.6	11.7	13.3	14.7	16.2	16.5	15.4	12.3	13.2	17.9	0 of 24
Benzyl Alcohol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Bis(2-Chloroethoxy)methane	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Bis(2-Chloroethyl)ether	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Bis(2-Ethylhexyl)phthalate	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Butylbenzylphthalate	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Carbazole	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Chrysene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Dibenzo(a,h)anthracene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Dibenzofuran	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Diethylphthalate	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Dimethylphthalate	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Di-N-Butylphthalate	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Di-N-Octylphthalate	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Fluoranthene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Fluorene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Hexachlorobenzene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Hexachlorobutadiene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Hexachlorocyclopentadiene	11.9	11.7	10.3	12.5	11.6	11.7	13.3	14.7	16.2	16.5	15.4	12.3	13.2	17.9	0 of 24
Hexachloroethane	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24

Table A-9. Deer Island Effluent Loadings, FY16 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Indeno(1,2,3-CD)pyrene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Isophorone	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Naphthalene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
n-Decane	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Nitrobenzene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
N-Nitrosodimethylamine (NDMA)	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
N-Nitrosodi-N-Propylamine (NDPA)	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
N-Nitrosodiphenylamine	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
N-Octadecane	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Pentachlorophenol	11.9	11.7	10.3	12.5	11.6	11.7	13.3	14.7	16.2	16.5	15.4	12.3	13.2	17.9	0 of 24
Phenanthrene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Phenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24
Pyrene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	7.18	0 of 24

Volatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,1,1-Trichloroethane	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
1,1,2,2-Tetrachloroethane	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
1,1,2-Trichloroethane	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
1,1-Dichloroethane	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
1,1-Dichloroethene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
1,2-Dichlorobenzene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
1,2-Dichloroethane	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
1,2-Dichloropropane	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
1,3-Dichlorobenzene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
1,4-Dichlorobenzene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
2-Butanone	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
2-Chloroethyl Vinyl Ether	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
2-Hexanone	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
4-Methyl-2-Pentanone	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Acetone	2.79	1.93	2.12	1.99	1.91	1.96	2.41	**16**	2.78	4.35	2.84	2.16	3.6	29.2	1 of 24
Acrolein	2.79	1.93	2.12	1.99	1.91	1.96	2.41	2.71	2.78	4.35	2.84	2.16	2.5	5.55	0 of 24
Acrylonitrile	2.79	1.93	2.12	1.99	1.91	1.96	2.41	2.71	2.78	4.35	2.84	2.16	2.5	5.55	0 of 24
Benzene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Bromodichloromethane	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Bromoform	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Bromomethane	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Carbon Disulfide	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Carbon Tetrachloride	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Chlorobenzene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Chloroethane	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Chloroform	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Chloromethane	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Cis-1,2-Dichloroethene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Cis-1,3-Dichloropropene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Dibromochloromethane	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Ethylbenzene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
M,P-Xylene	2.79	1.93	2.12	1.99	1.91	1.96	2.41	2.71	2.78	4.35	2.84	2.16	2.5	5.55	0 of 24
Methylene Chloride	1.39	0.967	1.06	0.993	0.956	0.979	1.2	**21.5**	**13.2**	2.18	1.42	1.08	3.91	41.6	2 of 24
O-Xylene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Styrene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Tetrachloroethene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Toluene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Trans-1,2-Dichloroethene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Trans-1,3-Dichloropropene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Trichloroethene	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Trichlorofluoromethane	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Vinyl Acetate	1.39	0.967	1.06	0.993	0.956	0.979	1.2	1.35	1.39	2.18	1.42	1.08	1.25	2.77	0 of 24
Vinyl Chloride	0.557	0.387	0.423	0.397	0.382	0.391	0.482	0.541	0.557	0.871	0.569	0.432	0.499	1.11	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 and are flow-weighted.

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), FY16

Polycyclic Aromatic Hydrocarbons (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1-Methylnaphthalene	~	**0.111**	~	**0.116**	~	**0.0278**	~	**1.45**	~	**0.133**	~	**0.0822**	0.341	2.69	22 of 22
1-Methylphenanthrene	~	**0.0422**	~	**0.0567**	~	**0.018**	~	**0.366**	~	**0.0407**	~	**0.034**	0.0964	0.666	22 of 22
2,3,5-Trimethylnaphthylene	~	**0.0547**	~	**0.0591**	~	**0.022**	~	**0.542**	~	**0.0765**	~	**0.0382**	0.141	1.01	22 of 22
2,6-Dimethylnaphthalene	~	**0.114**	~	**0.104**	~	**0.0355**	~	**0.969**	~	**0.0761**	~	**0.0858**	0.242	1.79	22 of 22
2-Methylnaphthalene	~	**0.0881**	~	**0.109**	~	**0.0207**	~	**0.906**	~	**0.103**	~	**0.0721**	0.228	1.66	22 of 22
Acenaphthene	~	**0.0921**	~	**0.0957**	~	**0.0224**	~	**0.123**	~	**0.0535**	~	**0.0611**	0.0728	0.192	22 of 22
Acenaphthylene	~	**0.0127**	~	**0.0154**	~	**0.00342**	~	**0.00554**	~	**0.0137**	~	**0.00791**	0.00962	0.0202	22 of 22
Anthracene	~	**0.0632**	~	**0.0641**	~	**0.0234**	~	**0.0684**	~	**0.0311**	~	**0.0416**	0.0466	0.11	22 of 22
Benzo(a)anthracene	~	**0.189**	~	**0.167**	~	**0.0415**	~	**0.0393**	~	**0.0734**	~	**0.132**	0.1	0.32	22 of 22
Benzo(a)pyrene	~	**0.192**	~	**0.156**	~	**0.0365**	~	**0.03**	~	**0.0562**	~	**0.104**	0.0881	0.328	22 of 22
Benzo(b)fluoranthene	~	**0.344**	~	**0.235**	~	**0.0486**	~	**0.0535**	~	**0.114**	~	**0.216**	0.16	0.589	22 of 22
Benzo(e)pyrene	~	**0.152**	~	**0.107**	~	**0.0312**	~	**0.0313**	~	**0.0548**	~	**0.112**	0.0779	0.261	22 of 22
Benzo(g,h,i)perylene	~	**0.173**	~	0.000515	~	**0.0174**	~	0.000537	~	**0.0489**	~	**0.0135**	0.0461	0.297	12 of 22
Benzo(k)fluoranthene	~	**0.103**	~	**0.0702**	~	**0.0176**	~	**0.0138**	~	**0.0291**	~	**0.0574**	0.0455	0.176	22 of 22
Benzothiazole	~	**0.0606**	~	**0.0705**	~	**0.038**	~	**0.0673**	~	**0.111**	~	**0.876**	0.22	1.52	22 of 22
Biphenyl	~	**0.0304**	~	**0.0165**	~	**0.00589**	~	**0.21**	~	**0.0216**	~	**0.0196**	0.0541	0.385	22 of 22
C1-Chrysenes	~	**0.119**	~	**0.112**	~	**0.0214**	~	**0.0339**	~	**0.0528**	~	**0.0899**	0.0672	0.199	21 of 22
C1-Dibenzothiophenes	~	**0.0268**	~	**0.0655**	~	**0.0269**	~	**0.429**	~	**0.0555**	~	**0.0498**	0.114	0.779	20 of 22
C1-Flyoranthenes/Pyrenes	~	**0.171**	~	**0.155**	~	**0.0306**	~	**0.12**	~	**0.0677**	~	**0.107**	0.103	0.282	22 of 22
C1-Fluorenes	~	**0.0553**	~	**0.0862**	~	**0.0236**	~	**0.671**	~	**0.0745**	~	**0.0649**	0.171	1.21	22 of 22
C1-Naphthalenes	~	**0.159**	~	**0.178**	~	**0.0298**	~	**1.45**	~	**0.182**	~	**0.095**	0.369	2.68	22 of 22
C1-Phenanthrenes/Anthracenes	~	**0.199**	~	**0.222**	~	**0.0688**	~	**1.23**	~	**0.178**	~	**0.133**	0.35	2.22	22 of 22
C2-Chrysenes	~	0.000511	~	0.000515	~	0.000552	~	0.000537	~	0.000524	~	0.00052	0.000527	0.000573	0 of 22
C2-Dibenzothiophenes	~	0.000511	~	0.000515	~	0.000552	~	**0.587**	~	0.000524	~	0.00052	0.107	1.09	2 of 22
C2-Fluoranthenes/Pyrenes	~	**0.127**	~	**0.0917**	~	**0.0193**	~	**0.0863**	~	**0.0297**	~	**0.0467**	0.0629	0.21	19 of 22
C2-Fluorenes	~	**0.0247**	~	**0.0672**	~	0.000552	~	**0.619**	~	**0.0711**	~	**0.0517**	0.148	1.11	15 of 22
C2-Naphthalenes	~	**0.231**	~	**0.232**	~	**0.0416**	~	**3.68**	~	**0.313**	~	**0.108**	0.825	6.89	22 of 22
C2-Phenanthrenes/Anthracenes	~	**0.0985**	~	**0.123**	~	**0.043**	~	**1.02**	~	**0.128**	~	**0.0819**	0.263	1.85	22 of 22
C3-Chrysenes	~	0.000511	~	0.000515	~	0.000552	~	0.000537	~	0.000524	~	0.00052	0.000527	0.000573	0 of 22
C3-Dibenzothiophenes	~	0.000511	~	0.000515	~	0.000552	~	**0.426**	~	0.000524	~	0.00052	0.0774	0.841	1 of 22
C3-Fluoranthenes/Pyrenes	~	0.000511	~	0.000515	~	0.000552	~	**0.0138**	~	0.000524	~	0.00052	0.00293	0.0268	1 of 22
C3-Fluorenes	~	0.000511	~	0.000515	~	0.000552	~	**0.571**	~	0.000524	~	0.00052	0.104	1.03	2 of 22
C3-Naphthalenes	~	**0.186**	~	**0.182**	~	**0.0475**	~	**3.74**	~	**0.316**	~	**0.0946**	0.822	6.97	22 of 22
C3-Phenanthrenes/Anthracenes	~	**0.0411**	~	**0.23**	~	**0.0419**	~	**0.517**	~	**0.0539**	~	**0.0422**	0.146	0.976	17 of 22
C4-Chrysenes	~	0.000511	~	0.000515	~	0.000552	~	0.000537	~	0.000524	~	0.00052	0.000527	0.000573	0 of 22
C4-Naphthalenes	~	**0.138**	~	**0.168**	~	**0.0479**	~	**2.39**	~	**0.253**	~	**0.092**	0.554	4.38	22 of 22
C4-Phenanthrenes/Anthracenes	~	0.000511	~	0.000515	~	**0.00713**	~	**0.0767**	~	0.000524	~	0.00052	0.0153	0.151	5 of 22
Chrysene	~	**0.267**	~	**0.183**	~	**0.0453**	~	**0.0473**	~	**0.0919**	~	**0.19**	0.132	0.457	22 of 22
Dibenzo(a,h)anthracene	~	**0.0374**	~	0.000515	~	0.000552	~	**0.00339**	~	0.000524	~	0.00052	0.00726	0.0665	2 of 22
Dibenzofuran	~	**0.0398**	~	**0.0312**	~	**0.0135**	~	**0.0779**	~	**0.0265**	~	**0.0298**	0.0371	0.123	22 of 22
Dibenzothiophene	~	**0.0311**	~	**0.0285**	~	**0.0135**	~	**0.149**	~	**0.0269**	~	**0.0253**	0.0475	0.263	22 of 22
Fluoranthene	~	**0.528**	~	**0.308**	~	**0.0932**	~	**0.0968**	~	**0.188**	~	**0.35**	0.254	0.894	22 of 22
Fluorene	~	**0.0731**	~	**0.0765**	~	**0.0199**	~	**0.258**	~	**0.0454**	~	**0.0586**	0.0897	0.456	22 of 22
Indeno(1,2,3-CD)pyrene	~	**0.197**	~	**0.0614**	~	**0.0678**	~	**0.0479**	~	**0.122**	~	**0.266**	0.134	0.35	21 of 22
Naphthalene	~	**0.161**	~	**0.206**	~	**0.0316**	~	**0.439**	~	**0.207**	~	**0.21**	0.216	0.704	22 of 22
Perylene	~	**0.042**	~	**0.0417**	~	**0.00921**	~	**0.0292**	~	**0.0332**	~	**0.0679**	0.0374	0.0774	18 of 22
Phenanthrene	~	**0.343**	~	**0.291**	~	**0.12**	~	**0.589**	~	**0.18**	~	**0.226**	0.29	1	22 of 22
Pyrene	~	**0.412**	~	**0.296**	~	**0.0816**	~	**0.124**	~	**0.154**	~	**0.281**	0.216	0.692	22 of 22

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	~	0.000205	~	0.000206	~	**0.000457**	~	0.000215	~	0.000208	~	0.000208	0.000246	0.000702	1 of 22
2,4'-DDE	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
2,4'-DDT	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
4,4'-DDD	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
4,4'-DDE	~	**0.00199**	~	**0.00334**	~	**0.00109**	~	0.000215	~	**0.00222**	~	**0.00215**	0.00172	0.00334	17 of 22
4,4'-DDT	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
Aldrin	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
Alpha-Chlordane	~	**0.00381**	~	**0.0072**	~	**0.00147**	~	**0.00384**	~	**0.00545**	~	**0.00505**	0.00435	0.0072	22 of 22
BZ 101 Pentachlorobiphenyl	~	**0.000776**	~	**0.00223**	~	0.000221	~	0.000215	~	**0.0012**	~	**0.00232**	0.00109	0.00264	11 of 22
BZ 105 Pentachlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
BZ 118 Pentachlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	**0.000793**	~	0.000208	0.00035	0.000918	4 of 22
BZ 126 Pentachlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22

Table A-10. Deer Island Influent Characterization (Low detection limit analyses; North & South Systems), FY16 (cont.)

Organochlorine Pesticides and PCBs (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
BZ 128 Hexachlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
BZ 138 Hexachlorobiphenyl	~	**0.00101**	~	**0.00199**	~	**0.000819**	~	**0.00131**	~	**0.00157**	~	**0.00581**	0.00212	0.00975	22 of 22
BZ 153 Hexachlorobiphenyl	~	**0.000842**	~	**0.00163**	~	**0.000743**	~	**0.00119**	~	**0.00125**	~	**0.00588**	0.00197	0.01	22 of 22
BZ 170 Heptachlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	**0.00175**	0.000491	0.00326	1 of 22
BZ 18 Trichlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
BZ 180 Heptachlorobiphenyl	~	**0.00062**	~	**0.0014**	~	**0.000551**	~	**0.000887**	~	0.000208	~	**0.007**	0.00178	0.0136	13 of 22
BZ 187 Heptachlorobiphenyl	~	**0.000381**	~	**0.00132**	~	**0.000414**	~	**0.000399**	~	0.000208	~	**0.00406**	0.00109	0.00774	15 of 22
BZ 195 Octachlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	**0.000855**	0.000328	0.00148	1 of 22
BZ 206 Nonachlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	**0.000512**	0.000266	0.000806	1 of 22
BZ 209 Decachlorobiphenyl	~	**0.00017**	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.000205	0.000229	2 of 22
BZ 28 Trichlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
BZ 44 Tetrachlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
BZ 52 Tetrachlorobiphenyl	~	**0.000785**	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.000308	0.00104	4 of 22
BZ 66 Tetrachlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
BZ 77 Tetrachlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
BZ 8 Dichlorobiphenyl	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
Cis-Nonachlor	~	**0.000336**	~	**0.00106**	~	**0.000312**	~	**0.000656**	~	**0.000637**	~	**0.000742**	0.000594	0.00106	16 of 22
DDMU	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
Dieldrin	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
Endrin	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
Gamma-BHC	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
Gamma-Chlordane	~	**0.00277**	~	**0.00893**	~	**0.00904**	~	**0.00303**	~	**0.00453**	~	**0.00526**	0.00512	0.00969	22 of 22
Heptachlor	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
Heptachlor Epoxide	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
Hexachlorobenzene	~	0.000835	~	0.00198	~	0.000515	~	0.000707	~	0.000938	~	0.00225	0.00114	0.00226	22 of 22
Mirex	~	0.000205	~	0.000206	~	0.000221	~	0.000215	~	0.000208	~	0.000208	0.00021	0.000229	0 of 22
Oxychlordane	~	0.000205	~	**0.0634**	~	**0.0275**	~	0.000215	~	0.000208	~	0.000208	0.00933	0.0634	6 of 22
Total Chlordane	~	**0.00545**	~	**0.0112**	~	**0.00224**	~	**0.00592**	~	**0.00855**	~	**0.00797**	0.00672	0.0112	22 of 22
Total DDT	~	**0.00199**	~	**0.00334**	~	**0.00136**	~	0.000215	~	**0.00222**	~	**0.00215**	0.00177	0.00334	17 of 22
Trans-Nonachlor	~	**0.00164**	~	**0.00403**	~	**0.000771**	~	**0.00209**	~	**0.0031**	~	**0.00291**	0.00236	0.00403	22 of 22

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 and are flow-weighted.

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), FY16

Polycyclic Aromatic Hydrocarbons (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1-Methylnaphthalene	~	**0.245**	~	**0.243**	~	**0.0544**	~	**3.43**	~	**0.417**	~	**0.196**	0.812	6.45	22 of 22
1-Methylphenanthrene	~	**0.0932**	~	**0.119**	~	**0.0353**	~	**0.868**	~	**0.128**	~	**0.0812**	0.23	1.6	22 of 22
2,3,5-Trimethylnaphthylene	~	**0.121**	~	**0.124**	~	**0.0432**	~	**1.29**	~	**0.24**	~	**0.0912**	0.335	2.43	22 of 22
2,6-Dimethylnaphthalene	~	**0.251**	~	**0.218**	~	**0.0696**	~	**2.3**	~	**0.239**	~	**0.205**	0.577	4.3	22 of 22
2-Methylnaphthalene	~	**0.195**	~	**0.229**	~	**0.0406**	~	**2.15**	~	**0.322**	~	**0.172**	0.544	3.98	22 of 22
Acenaphthene	~	**0.203**	~	**0.2**	~	**0.0439**	~	**0.293**	~	**0.168**	~	**0.146**	0.173	0.461	22 of 22
Acenaphthylene	~	**0.0281**	~	**0.0323**	~	**0.00671**	~	**0.0131**	~	**0.0431**	~	**0.0189**	0.0229	0.0602	22 of 22
Anthracene	~	**0.14**	~	**0.134**	~	**0.0459**	~	**0.162**	~	**0.0975**	~	**0.0992**	0.111	0.265	22 of 22
Benzo(a)anthracene	~	**0.418**	~	**0.348**	~	**0.0814**	~	**0.0933**	~	**0.23**	~	**0.315**	0.239	0.791	22 of 22
Benzo(a)pyrene	~	**0.424**	~	**0.327**	~	**0.0716**	~	**0.0711**	~	**0.176**	~	**0.249**	0.21	0.81	22 of 22
Benzo(b)fluoranthene	~	**0.759**	~	**0.493**	~	**0.0952**	~	**0.127**	~	**0.356**	~	**0.515**	0.382	1.46	22 of 22
Benzo(e)pyrene	~	**0.336**	~	**0.223**	~	**0.0612**	~	**0.0742**	~	**0.172**	~	**0.266**	0.186	0.644	22 of 22
Benzo(g,h,i)perylene	~	**0.382**	~	0.00108	~	**0.0341**	~	0.00127	~	**0.153**	~	**0.0322**	0.11	0.733	12 of 22
Benzo(k)fluoranthene	~	**0.228**	~	**0.147**	~	**0.0346**	~	**0.0328**	~	**0.0914**	~	**0.137**	0.109	0.434	22 of 22
Benzothiazole	~	**0.134**	~	**0.147**	~	**0.0745**	~	**0.16**	~	**0.349**	~	**2.09**	0.524	3.58	22 of 22
Biphenyl	~	**0.0672**	~	**0.0344**	~	**0.0115**	~	**0.498**	~	**0.0677**	~	**0.0468**	0.129	0.925	22 of 22
C1-Chrysenes	~	**0.262**	~	**0.233**	~	**0.0419**	~	**0.0805**	~	**0.166**	~	**0.215**	0.16	0.491	21 of 22
C1-Dibenzothiophenes	~	**0.0592**	~	**0.137**	~	**0.0527**	~	**1.02**	~	**0.174**	~	**0.119**	0.271	1.87	20 of 22
C1-Flyoranthenes/Pyrenes	~	**0.377**	~	**0.324**	~	**0.0599**	~	**0.285**	~	**0.212**	~	**0.255**	0.246	0.697	22 of 22
C1-Fluorenes	~	**0.122**	~	**0.18**	~	**0.0462**	~	**1.59**	~	**0.234**	~	**0.155**	0.407	2.9	22 of 22
C1-Naphthalenes	~	**0.35**	~	**0.373**	~	**0.0584**	~	**3.44**	~	**0.572**	~	**0.227**	0.878	6.42	22 of 22
C1-Phenanthrenes/Anthracenes	~	**0.439**	~	**0.465**	~	**0.135**	~	**2.91**	~	**0.557**	~	**0.317**	0.835	5.32	22 of 22
C2-Chrysenes	~	0.00113	~	0.00108	~	0.00108	~	0.00127	~	0.00165	~	0.00124	0.00126	0.00169	0 of 22
C2-Dibenzothiophenes	~	0.00113	~	0.00108	~	0.00108	~	**1.39**	~	0.00165	~	0.00124	0.254	2.6	2 of 22
C2-Fluoranthenes/Pyrenes	~	**0.281**	~	**0.192**	~	**0.0378**	~	**0.205**	~	**0.0932**	~	**0.112**	0.15	0.52	19 of 22
C2-Fluorenes	~	**0.0545**	~	**0.141**	~	0.00108	~	**1.47**	~	**0.223**	~	**0.123**	0.353	2.66	15 of 22
C2-Naphthalenes	~	**0.511**	~	**0.485**	~	**0.0816**	~	**8.74**	~	**0.981**	~	**0.259**	1.97	16.5	22 of 22
C2-Phenanthrenes/Anthracenes	~	**0.218**	~	**0.258**	~	**0.0843**	~	**2.42**	~	**0.401**	~	**0.196**	0.626	4.44	22 of 22
C3-Chrysenes	~	0.00113	~	0.00108	~	0.00108	~	0.00127	~	0.00165	~	0.00124	0.00126	0.00169	0 of 22
C3-Dibenzothiophenes	~	0.00113	~	0.00108	~	0.00108	~	**1.01**	~	0.00165	~	0.00124	0.185	2.02	1 of 22
C3-Fluoranthenes/Pyrenes	~	0.00113	~	0.00108	~	0.00108	~	**0.0328**	~	0.00165	~	0.00124	0.00699	0.0644	1 of 22
C3-Fluorenes	~	0.00113	~	0.00108	~	0.00108	~	**1.35**	~	0.00165	~	0.00124	0.247	2.46	2 of 22
C3-Naphthalenes	~	**0.411**	~	**0.381**	~	**0.0931**	~	**8.86**	~	**0.991**	~	**0.226**	1.96	16.7	22 of 22
C3-Phenanthrenes/Anthracenes	~	**0.0909**	~	**0.48**	~	**0.0822**	~	**1.23**	~	**0.169**	~	**0.101**	0.347	2.34	17 of 22
C4-Chrysenes	~	0.00113	~	0.00108	~	0.00108	~	0.00127	~	0.00165	~	0.00124	0.00126	0.00169	0 of 22
C4-Naphthalenes	~	**0.305**	~	**0.351**	~	**0.0939**	~	**5.68**	~	**0.792**	~	**0.22**	1.32	10.5	22 of 22
C4-Phenanthrenes/Anthracenes	~	0.00113	~	0.00108	~	**0.014**	~	**0.182**	~	0.00165	~	0.00124	0.0364	0.362	5 of 22
Chrysene	~	**0.59**	~	**0.383**	~	**0.0888**	~	**0.112**	~	**0.288**	~	**0.454**	0.314	1.13	22 of 22
Dibenzo(a,h)anthracene	~	**0.0827**	~	0.00108	~	0.00108	~	**0.00804**	~	0.00165	~	0.00124	0.0173	0.164	2 of 22
Dibenzofuran	~	**0.0879**	~	**0.0652**	~	**0.0265**	~	**0.185**	~	**0.083**	~	**0.071**	0.0883	0.296	22 of 22
Dibenzothiophene	~	**0.0688**	~	**0.0596**	~	**0.0264**	~	**0.353**	~	**0.0845**	~	**0.0605**	0.113	0.631	22 of 22
Fluoranthene	~	**1.17**	~	**0.645**	~	**0.183**	~	**0.23**	~	**0.589**	~	**0.835**	0.604	2.21	22 of 22
Fluorene	~	**0.162**	~	**0.16**	~	**0.039**	~	**0.613**	~	**0.143**	~	**0.14**	0.214	1.09	22 of 22
Indeno(1,2,3-CD)pyrene	~	**0.436**	~	**0.128**	~	**0.133**	~	**0.114**	~	**0.382**	~	**0.634**	0.32	0.864	21 of 22
Naphthalene	~	**0.356**	~	**0.43**	~	**0.062**	~	**1.04**	~	**0.648**	~	**0.502**	0.514	1.69	22 of 22
Perylene	~	**0.0929**	~	**0.0872**	~	**0.018**	~	**0.0692**	~	**0.104**	~	**0.162**	0.089	0.185	18 of 22
Phenanthrene	~	**0.758**	~	**0.609**	~	**0.236**	~	**1.4**	~	**0.565**	~	**0.54**	0.691	2.4	22 of 22
Pyrene	~	**0.909**	~	**0.62**	~	**0.16**	~	**0.294**	~	**0.482**	~	**0.67**	0.514	1.71	22 of 22

Organochlorine Pesticides and PCBs (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
2,4'-DDD	~	0.000452	~	0.000431	~	**0.000896**	~	0.000509	~	0.000652	~	0.000496	0.000586	0.00138	1 of 22
2,4'-DDE	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
2,4'-DDT	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
4,4'-DDD	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
4,4'-DDE	~	**0.00439**	~	**0.00699**	~	**0.00213**	~	0.000509	~	**0.00695**	~	**0.00512**	0.00411	0.00729	17 of 22
4,4'-DDT	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
Aldrin	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
Alpha-Chlordane	~	**0.00841**	~	**0.0151**	~	**0.00287**	~	**0.0091**	~	**0.0171**	~	**0.0121**	0.0104	0.0186	22 of 22
BZ 101 Pentachlorobiphenyl	~	**0.00171**	~	**0.00467**	~	0.000432	~	0.000509	~	**0.00378**	~	**0.00555**	0.0026	0.00638	11 of 22
BZ 105 Pentachlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
BZ 118 Pentachlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	**0.00249**	~	0.000496	0.000835	0.00283	4 of 22
BZ 126 Pentachlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22

Table A-11. Deer Island Influent loadings (Low detection limit analyses; North & South Systems), FY16 (cont.)

Organochlorine Pesticides and PCBs (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
BZ 128 Hexachlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
BZ 138 Hexachlorobiphenyl	~	**0.00223**	~	**0.00417**	~	**0.0016**	~	**0.00312**	~	**0.00494**	~	**0.0139**	0.00506	0.0236	22 of 22
BZ 153 Hexachlorobiphenyl	~	**0.00186**	~	**0.0034**	~	**0.00146**	~	**0.00282**	~	**0.00393**	~	**0.014**	0.00469	0.0242	22 of 22
BZ 170 Heptachlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	**0.00418**	0.00117	0.00786	1 of 22
BZ 18 Trichlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
BZ 180 Heptachlorobiphenyl	~	**0.00137**	~	**0.00293**	~	**0.00108**	~	**0.0021**	~	0.000652	~	**0.0167**	0.00425	0.0329	13 of 22
BZ 187 Heptachlorobiphenyl	~	**0.000841**	~	**0.00277**	~	**0.000812**	~	**0.000946**	~	0.000652	~	**0.00969**	0.0026	0.0187	15 of 22
BZ 195 Octachlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.00204	0.000782	0.00359	1 of 22
BZ 206 Nonachlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	**0.00122**	0.000633	0.00195	1 of 22
BZ 209 Decachlorobiphenyl	~	**0.000376**	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000488	0.000666	2 of 22
BZ 28 Trichlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
BZ 44 Tetrachlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
BZ 52 Tetrachlorobiphenyl	~	**0.00173**	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000734	0.00256	4 of 22
BZ 66 Tetrachlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
BZ 77 Tetrachlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
BZ 8 Dichlorobiphenyl	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
Cis-Nonachlor	~	**0.000741**	~	**0.00223**	~	**0.000611**	~	**0.00156**	~	**0.002**	~	**0.00177**	0.00142	0.00223	16 of 22
DDMU	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
Dieldrin	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
Endrin	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
Gamma-BHC	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
Gamma-Chlordane	~	**0.00611**	~	**0.0187**	~	**0.0177**	~	**0.00719**	~	**0.0142**	~	**0.0126**	0.0122	0.019	22 of 22
Heptachlor	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
Heptachlor Epoxide	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
Hexachlorobenzene	~	0.00185	~	0.00413	~	0.00101	~	0.00168	~	0.00294	~	0.00537	0.00271	0.00541	22 of 22
Mirex	~	0.000452	~	0.000431	~	0.000432	~	0.000509	~	0.000652	~	0.000496	0.000501	0.000666	0 of 22
Oxychlordane	~	0.000452	~	**0.133**	~	**0.0538**	~	0.000509	~	0.000652	~	0.000496	0.0222	0.133	6 of 22
Total Chlordane	~	**0.012**	~	**0.0235**	~	**0.00438**	~	**0.014**	~	**0.0268**	~	**0.019**	0.016	0.0299	22 of 22
Total DDT	~	**0.00439**	~	**0.00699**	~	**0.00267**	~	0.000509	~	**0.00695**	~	**0.00512**	0.00421	0.00729	17 of 22
Trans-Nonachlor	~	**0.00363**	~	**0.00843**	~	**0.00151**	~	**0.00495**	~	**0.00972**	~	**0.00696**	0.00563	0.0113	22 of 22

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 and are flow-weighted.

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), FY16

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
1,2-Dichlorobenzene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
1,2-Diphenylhydrazine (as Azobenzene)	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
1,3-Dichlorobenzene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
1,4-Dichlorobenzene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,2'-Oxybis(1-Chloropropane)	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,4,5-Trichlorophenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,4,6-Trichlorophenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,4-Dichlorophenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,4-Dimethylphenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,4-Dinitrophenol	5.35	5.36	5.18	5.05	5.16	5.47	5.37	5.15	5.14	5.97	5.27	5.16	5.32	6.76	0 of 24
2,4-Dinitrotoluene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2,6-Dinitrotoluene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2-Chloronaphthalene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2-Chlorophenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2-Methyl-4,6-Dinitrophenol	5.35	5.36	5.18	5.05	5.16	5.47	5.37	5.15	5.14	5.97	5.27	5.16	5.32	6.76	0 of 24
2-Methylnaphthalene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2-Methylphenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2-Nitroaniline	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
2-Nitrophenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
3,3'-Dichlorobenzidine	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
3-Nitroaniline	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
4-Bromophenyl Phenyl Ether	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
4-Chloro-3-Methylphenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
4-Chloroaniline	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
4-Chlorophenyl Phenyl Ether	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
4-Methylphenol (includes 3-Methylphenol)	2.14	2.15	2.07	2.02	**32.8**	**12.4**	2.15	**33.5**	2.05	2.39	2.11	2.07	7.67	40.2	5 of 24
4-Nitroaniline	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
4-Nitrophenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Acenaphthene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Acenaphthylene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Aniline	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Anthracene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Benzidine	5.35	5.36	5.18	5.05	5.16	5.47	5.37	5.15	5.14	5.97	5.27	5.16	5.32	6.76	0 of 24
Benzo(a)anthracene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Benzo(a)pyrene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Benzo(b)fluoranthene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Benzo(g,h,i)perylene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Benzo(k)fluoranthene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Benzoic Acid	5.35	5.36	5.18	5.05	5.16	5.47	5.37	5.15	5.14	5.97	5.27	5.16	5.32	6.76	0 of 24
Benzyl Alcohol	2.14	2.15	2.07	2.02	**48.4**	2.19	2.15	2.06	2.05	2.39	2.11	**12.2**	6.37	70.4	3 of 24
Bis(2-Chloroethoxy)methane	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Bis(2-Chloroethyl)ether	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Bis(2-Ethylhexyl)phthalate	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Butylbenzylphthalate	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Carbazole	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Chrysene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Dibenzo(a,h)anthracene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Dibenzofuran	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Diethylphthalate	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Dimethylphthalate	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Di-N-Butylphthalate	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Di-N-Octylphthalate	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Fluoranthene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Fluorene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Hexachlorobenzene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Hexachlorobutadiene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Hexachlorocyclopentadiene	5.35	5.36	5.18	5.05	5.16	5.47	5.37	5.15	5.14	5.97	5.27	5.16	5.32	6.76	0 of 24
Hexachloroethane	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Indeno(1,2,3-CD)pyrene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Isophorone	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Naphthalene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
n-Decane	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24

Table A-12. Deer Island Influent Characterization (Low detection limit analyses; North System), FY16 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Nitrobenzene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
N-Nitrosodimethylamine (NDMA)	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
N-Nitrosodi-N-Propylamine (NDPA)	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
N-Nitrosodiphenylamine	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
N-Octadecane	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Pentachlorophenol	5.35	5.36	5.18	5.05	5.16	5.47	5.37	5.15	5.14	5.97	5.27	5.16	5.32	6.76	0 of 24
Phenanthrene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Phenol	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24
Pyrene	2.14	2.15	2.07	2.02	2.07	2.19	2.15	2.06	2.05	2.39	2.11	2.07	2.13	2.7	0 of 24

Polycyclic Aromatic Hydrocarbons (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1-Methylnaphthalene	~	**0.139**	~	**0.116**	~	**0.0228**	~	**2.21**	~	**0.0845**	~	**0.101**	0.44	4.17	12 of 12
1-Methylphenanthrene	~	**0.0539**	~	**0.106**	~	**0.0177**	~	**0.553**	~	**0.0246**	~	**0.0313**	0.128	1.03	12 of 12
2,3,5-Trimethylnaphthylene	~	**0.0623**	~	**0.0592**	~	**0.0204**	~	**0.828**	~	**0.0307**	~	**0.0344**	0.169	1.57	12 of 12
2,6-Dimethylnaphthalene	~	**0.128**	~	**0.0999**	~	**0.0321**	~	**1.48**	~	**0.03**	~	**0.0785**	0.301	2.78	12 of 12
2-Methylnaphthalene	~	**0.111**	~	**0.113**	~	**0.0197**	~	**1.38**	~	**0.0775**	~	**0.0904**	0.295	2.57	12 of 12
Acenaphthene	~	**0.117**	~	**0.138**	~	**0.0244**	~	**0.178**	~	**0.0592**	~	**0.0765**	0.0981	0.289	12 of 12
Acenaphthylene	~	**0.0163**	~	**0.0289**	~	**0.00383**	~	**0.00644**	~	**0.0177**	~	**0.00907**	0.0139	0.0369	12 of 12
Anthracene	~	**0.0806**	~	**0.146**	~	**0.0254**	~	**0.0979**	~	**0.0307**	~	**0.0455**	0.069	0.208	12 of 12
Benzo(a)anthracene	~	**0.248**	~	**0.362**	~	**0.048**	~	**0.0416**	~	**0.073**	~	**0.144**	0.149	0.497	12 of 12
Benzo(a)pyrene	~	**0.255**	~	**0.311**	~	**0.0431**	~	**0.0297**	~	**0.0569**	~	**0.119**	0.132	0.426	12 of 12
Benzo(b)fluoranthene	~	**0.454**	~	**0.493**	~	**0.0569**	~	**0.0514**	~	**0.11**	~	**0.244**	0.231	0.762	12 of 12
Benzo(e)pyrene	~	**0.201**	~	**0.194**	~	**0.0352**	~	**0.03**	~	**0.0516**	~	**0.125**	0.105	0.337	12 of 12
Benzo(g,h,i)perylene	~	**0.228**	~	0.000537	~	**0.026**	~	0.00053	~	**0.0474**	~	**0.00343**	0.0525	0.384	6 of 12
Benzo(k)fluoranthene	~	**0.136**	~	**0.178**	~	**0.0222**	~	**0.0135**	~	**0.0281**	~	**0.0664**	0.0718	0.262	12 of 12
Benzothiazole	~	**0.0699**	~	**0.0942**	~	**0.0356**	~	**0.0747**	~	**0.122**	~	**0.241**	0.11	0.304	12 of 12
Biphenyl	~	**0.0321**	~	**0.0199**	~	**0.00613**	~	**0.318**	~	**0.0147**	~	**0.0228**	0.068	0.595	12 of 12
C1-Chrysenes	~	**0.154**	~	**0.19**	~	**0.0237**	~	**0.0428**	~	**0.0485**	~	**0.0937**	0.0906	0.255	12 of 12
C1-Dibenzothiophenes	~	**0.0376**	~	**0.109**	~	**0.0225**	~	**0.645**	~	**0.0313**	~	**0.0386**	0.144	1.2	12 of 12
C1-Flyoranthenes/Pyrenes	~	**0.222**	~	**0.291**	~	**0.0315**	~	**0.165**	~	**0.0573**	~	**0.11**	0.143	0.375	12 of 12
C1-Fluorenes	~	**0.0616**	~	**0.113**	~	**0.0228**	~	**1**	~	**0.0502**	~	**0.0612**	0.215	1.86	12 of 12
C1-Naphthalenes	~	**0.199**	~	**0.182**	~	**0.0259**	~	**2.21**	~	**0.125**	~	**0.117**	0.471	4.15	12 of 12
C1-Phenanthrenes/Anthracenes	~	**0.232**	~	**0.387**	~	**0.0685**	~	**1.85**	~	**0.112**	~	**0.119**	0.451	3.42	12 of 12
C2-Chrysenes	~	0.00051	~	0.000537	~	0.00054	~	0.00053	~	0.000523	~	0.00052	0.000526	0.00057	0 of 12
C2-Dibenzothiophenes	~	0.00051	~	0.000537	~	0.00054	~	**0.91**	~	0.000523	~	0.00052	0.149	1.69	2 of 12
C2-Fluoranthenes/Pyrenes	~	**0.163**	~	**0.177**	~	**0.0209**	~	**0.134**	~	**0.0249**	~	**0.0486**	0.0918	0.267	12 of 12
C2-Fluorenes	~	**0.0346**	~	**0.0699**	~	0.00054	~	**0.923**	~	**0.0414**	~	**0.0453**	0.183	1.7	9 of 12
C2-Naphthalenes	~	**0.265**	~	**0.236**	~	0.0384	~	**5.64**	~	**0.136**	~	**0.107**	1.05	10.7	12 of 12
C2-Phenanthrenes/Anthracenes	~	**0.11**	~	**0.171**	~	**0.0368**	~	**1.54**	~	**0.0619**	~	**0.0613**	0.323	2.86	12 of 12
C3-Chrysenes	~	0.00051	~	0.000537	~	0.00054	~	0.00053	~	0.000523	~	0.00052	0.000526	0.00057	0 of 12
C3-Dibenzothiophenes	~	0.00051	~	0.000537	~	0.00054	~	**0.66**	~	0.000523	~	0.00052	0.108	1.31	1 of 12
C3-Fluoranthenes/Pyrenes	~	0.00051	~	0.000537	~	0.00054	~	**0.0212**	~	0.000523	~	0.00052	0.00389	0.0415	1 of 12
C3-Fluorenes	~	0.00051	~	0.000537	~	0.00054	~	**0.885**	~	0.000523	~	0.00052	0.145	1.6	2 of 12
C3-Naphthalenes	~	**0.208**	~	**0.182**	~	**0.0436**	~	**5.69**	~	**0.132**	~	**0.0839**	1.04	10.8	12 of 12
C3-Phenanthrenes/Anthracenes	~	**0.0578**	~	**0.235**	~	**0.0413**	~	**0.801**	~	**0.0285**	~	**0.0267**	0.192	1.52	11 of 12
C4-Chrysenes	~	0.00051	~	0.000537	~	0.00054	~	0.00053	~	0.000523	~	0.00052	0.000526	0.00057	0 of 12
C4-Naphthalenes	~	**0.145**	~	**0.144**	~	**0.04**	~	**3.62**	~	**0.115**	~	**0.0764**	0.679	6.77	12 of 12
C4-Phenanthrenes/Anthracenes	~	0.00051	~	0.000537	~	**0.00597**	~	**0.119**	~	0.000523	~	0.00052	0.0205	0.235	3 of 12
Chrysene	~	**0.351**	~	**0.394**	~	**0.0512**	~	**0.0489**	~	**0.0886**	~	**0.215**	0.188	0.589	12 of 12
Dibenzo(a,h)anthracene	~	**0.0526**	~	0.000537	~	0.00054	~	**0.00495**	~	0.000523	~	0.00052	0.00994	0.0907	2 of 12
Dibenzofuran	~	**0.0483**	~	**0.0448**	~	**0.0155**	~	**0.112**	~	**0.0262**	~	**0.0331**	0.0463	0.186	12 of 12
Dibenzothiophene	~	**0.0388**	~	**0.0626**	~	**0.0141**	~	**0.222**	~	**0.0211**	~	**0.0281**	0.0632	0.403	12 of 12
Fluoranthene	~	**0.691**	~	**0.605**	~	**0.106**	~	**0.0987**	~	**0.183**	~	**0.392**	0.342	1.15	12 of 12
Fluorene	~	**0.0892**	~	**0.116**	~	**0.0215**	~	**0.386**	~	**0.0427**	~	**0.0677**	0.119	0.7	12 of 12
Indeno(1,2,3-CD)pyrene	~	**0.274**	~	**0.045**	~	**0.0566**	~	**0.0522**	~	**0.0879**	~	**0.186**	0.119	0.474	11 of 12
Naphthalene	~	**0.211**	~	**0.212**	~	**0.0384**	~	**0.659**	~	**0.272**	~	**0.291**	0.287	1.08	12 of 12
Perylene	~	**0.0591**	~	**0.0724**	~	**0.0115**	~	**0.029**	~	**0.0297**	~	**0.0475**	0.0414	0.102	11 of 12
Phenanthrene	~	**0.435**	~	**0.606**	~	**0.136**	~	**0.857**	~	**0.16**	~	**0.239**	0.396	1.52	12 of 12
Pyrene	~	**0.535**	~	**0.609**	~	**0.091**	~	**0.148**	~	**0.149**	~	**0.311**	0.301	0.885	12 of 12

Table A-12. Deer Island Influent Characterization (Low detection limit analyses; North System), FY16 (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	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
2,4'-DDE	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
2,4'-DDT	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
4,4'-DDD	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
4,4'-DDE	~	**0.00214**	~	**0.00184**	~	**0.0006**	~	0.000212	~	**0.00121**	~	0.00143	0.001238667	0.00642	8 of 12
4,4'-DDT	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
Aldrin	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
Alpha-Chlordane	~	**0.00403**	~	**0.0046**	~	**0.00074**	~	**0.00256**	~	**0.00328**	~	**0.00239**	0.002933333	0.00938	12 of 12
BZ 101 Pentachlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
BZ 105 Pentachlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
BZ 118 Pentachlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
BZ 126 Pentachlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
BZ 128 Hexachlorobiphenyl	~	**0.000777**	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000306167	0.00193	2 of 12
BZ 138 Hexachlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
BZ 153 Hexachlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
BZ 170 Heptachlorobiphenyl	~	**0.00101**	~	**0.00266**	~	0.000216	~	0.000212	~	**0.00122**	~	**0.0021**	0.001236333	0.00418	7 of 12
BZ 18 Trichlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
BZ 180 Heptachlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	**0.000838**	~	0.000208	0.0003155	0.00196	2 of 12
BZ 187 Heptachlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
BZ 195 Octachlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
BZ 206 Nonachlorobiphenyl	~	**0.00108**	~	**0.00239**	~	**0.000584**	~	**0.00161**	~	**0.00175**	~	**0.00735**	0.002460667	0.0213	12 of 12
BZ 209 Decachlorobiphenyl	~	**0.000885**	~	**0.0019**	~	**0.000566**	~	**0.00147**	~	**0.00132**	~	**0.00759**	0.0022885	0.0223	12 of 12
BZ 28 Trichlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	**0.0025**	0.000592667	0.0077	1 of 12
BZ 44 Tetrachlorobiphenyl	~	**0.000728**	~	**0.00143**	~	**0.000521**	~	**0.00126**	~	0.000209	~	**0.0103**	0.002408	0.0328	9 of 12
BZ 52 Tetrachlorobiphenyl	~	**0.000412**	~	**0.00121**	~	**0.000411**	~	**0.000498**	~	0.000209	~	**0.00581**	0.001425	0.0182	10 of 12
BZ 66 Tetrachlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	**0.00117**	0.000371	0.00343	1 of 12
BZ 77 Tetrachlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	**0.000659**	0.000285833	0.00179	1 of 12
BZ 8 Dichlorobiphenyl	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
Cis-Nonachlor	~	**0.000333**	~	**0.000661**	~	0.000216	~	**0.000562**	~	0.000209	~	**0.000457**	0.000406333	0.00154	6 of 12
DDMU	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
Dieldrin	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
Endrin	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
Gamma-BHC	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
Gamma-Chlordane	~	**0.00302**	~	**0.00696**	~	**0.0069**	~	**0.00193**	~	**0.00246**	~	**0.00342**	0.004115	0.0127	12 of 12
Heptachlor	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
Heptachlor Epoxide	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
Hexachlorobenzene	~	**0.000904**	~	**0.00181**	~	**0.000365**	~	**0.000804**	~	**0.000974**	~	**0.00277**	0.001271167	0.00459	12 of 12
Mirex	~	0.000204	~	0.000215	~	0.000216	~	0.000212	~	0.000209	~	0.000208	0.000210667	0.000424	0 of 12
Oxychlordane	~	0.000204	~	0.0444	~	0.0259	~	0.000212	~	0.000209	~	0.000208	0.0118555	0.123	4 of 12
Total AMP PCBs	~	**0.00575**	~	**0.00738**	~	**0.0011**	~	**0.00434**	~	**0.00501**	~	**0.00403**	0.004601667	0.015	12 of 12
Total Chlordane	~	**0.00214**	~	**0.00184**	~	**0.0006**	~	0.000212	~	**0.00121**	~	**0.00143**	0.001238667	0.00642	8 of 12
Total DDT	~	**0.00173**		**0.00278**		**0.000363**		**0.00178**		**0.00172**		**0.00163**	0.001667167	0.0056	12 of 12
Trans-Nonachlor															

Table A-12. Deer Island Influent Characterization (Low detection limit analyses; North System), FY16 (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	**7.24**	**6.19**	**3.52**	**5.75**	**5.57**	**3.76**	0.5	0.5	0.5	0.5	0.5	0.5	2.9	7.24	9 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	**115**	**145**	**125**	**141**	**114**	**83.1**	**101**	**281**	**661**	**94.4**	**121**	**57.9**	170.0	661	22 of 24
Acrolein	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1	0 of 24
Acrylonitrile	1	1	1	1	1	1	1	1	1	1	1	1	1.0	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	**22.8**	0.5	0.5	**57.8**	**57.7**	0.5	0.5	0.5	0.5	0.5	0.5	0.5	11.9	57.8	5 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
Chlorobezene	0.5	0.5	0.5	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	1.0	1	0 of 24
Methylene Chloride	0.5	0.5	0.5	0.5	0.5	0.5	0.5	**6.6**	**5.4**	0.5	0.5	0.5	1.4	6.6	3 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	5.16	5.74	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.3	5.74	2 of 24
Tetrachloroethene	0.5	0.5	0.5	0.5	0.5	0.5	0.5	**4.4**	0.5	0.5	0.5	0.5	0.8	4.4	1 of 24
Toluene	0.5	0.5	0.5	0.5	0.5	0.5	0.5	**4.59**	0.5	0.5	**3.07**	0.5	1.1	4.59	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	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 and are flow-weighted.

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), FY16

Semivolatile Organics (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
1,2-Dichlorobenzene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
1,2-Diphenylhydrazine (as Azobenzene)	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
1,3-Dichlorobenzene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
1,4-Dichlorobenzene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2,2'-Oxybis(1-Chloropropane)	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2,4,5-Trichlorophenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2,4,6-Trichlorophenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2,4-Dichlorophenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2,4-Dimethylphenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2,4-Dinitrophenol	8.33	8.39	6.54	7.06	6.98	7.1	8.6	7.88	8.49	11.8	9.43	8.29	8.24	11.8	0 of 24
2,4-Dinitrotoluene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2,6-Dinitrotoluene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2-Chloronaphthalene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2-Chlorophenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2-Methyl-4,6-Dinitrophenol	8.33	8.39	6.54	7.06	6.98	7.1	8.6	7.88	8.49	11.8	9.43	8.29	8.24	11.8	0 of 24
2-Methylnaphthalene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2-Methylphenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2-Nitroaniline	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
2-Nitrophenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
3,3'-Dichlorobenzidine	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
3-Nitroaniline	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
4-Bromophenyl Phenyl Ether	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
4-Chloro-3-Methylphenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
4-Chloroaniline	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
4-Chlorophenyl Phenyl Ether	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
4-Methylphenol	3.33	3.36	2.62	2.82	**44.4**	**16.1**	3.44	**51.2**	**3.4**	4.73	3.77	3.32	11.87	51.2	5 of 24
4-Nitroaniline	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
4-Nitrophenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Acenaphthene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Acenaphthylene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Aniline	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Anthracene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Benzidine	8.33	8.39	6.54	7.06	6.98	7.1	8.6	7.88	8.49	11.8	9.43	8.29	8.24	11.8	0 of 24
Benzo(a)anthracene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Benzo(a)pyrene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Benzo(b)fluoranthene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Benzo(g,h,i)perylene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Benzo(k)fluoranthene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Benzoic Acid	8.33	8.39	6.54	7.06	6.98	7.1	8.6	7.88	8.49	11.8	9.43	8.29	8.24	11.8	0 of 24
Benzyl Alcohol	3.33	3.36	2.62	2.82	**65.5**	2.84	3.44	3.15	3.4	4.73	3.77	**19.5**	9.87	65.5	3 of 24
Bis(2-Chloroethoxy)methane	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Bis(2-Chloroethyl)ether	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Bis(2-Ethylhexyl)phthalate	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Butylbenzylphthalate	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Carbazole	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Chrysene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Dibenzo(a,h)anthracene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Dibenzofuran	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Diethylphthalate	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Dimethylphthalate	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Di-N-Butylphthalate	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Di-N-Octylphthalate	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Fluoranthene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Fluorene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Hexachlorobenzene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Hexachlorobutadiene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Hexachlorocyclopentadiene	8.33	8.39	6.54	7.06	6.98	7.1	8.6	7.88	8.49	11.8	9.43	8.29	8.24	11.8	0 of 24
Hexachloroethane	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Indeno(1,2,3-CD)pyrene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Isophorone	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
Naphthalene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24
n-Decane	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.30	4.73	0 of 24

Table A-13. Deer Island Influent Loadings (Low detection limit analyses; North System), FY16 (cont.)

Semivolatile Organics (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Nitrobenzene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.298333333	4.73	0 of 24
N-Nitrosodimethylamine (NDMA)	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.298333333	4.73	0 of 24
N-Nitrosodi-N-Propylamine (NDPA)	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.298333333	4.73	0 of 24
N-Nitrosodiphenylamine	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.298333333	4.73	0 of 24
N-Octadecane	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.298333333	4.73	0 of 24
Pentachlorophenol	8.33	8.39	6.54	7.06	6.98	7.1	8.6	7.88	8.49	11.8	9.43	8.29	8.240833333	11.80	0 of 24
Phenanthrene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.298333333	4.73	0 of 24
Phenol	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.298333333	4.73	0 of 24
Pyrene	3.33	3.36	2.62	2.82	2.8	2.84	3.44	3.15	3.4	4.73	3.77	3.32	3.298333333	4.73	0 of 24

Polycyclic Aromatic Hydrocarbons (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1-Methylnaphthalene	~	**0.218**	~	**0.162**	~	**0.0296**	~	**3.38**	~	**0.167**	~	**0.162**	0.69	3.38	12 of 12
1-Methylphenanthrene	~	**0.0845**	~	**0.149**	~	**0.0229**	~	**0.845**	~	**0.0488**	~	**0.0503**	0.20	0.85	12 of 12
2,3,5-Trimethylnaphthylene	~	**0.0976**	~	**0.0828**	~	**0.0264**	~	**1.27**	~	**0.0608**	~	**0.0552**	0.27	1.27	12 of 12
2,6-Dimethylnaphthalene	~	**0.2**	~	**0.14**	~	**0.0416**	~	**2.26**	~	**0.0594**	~	**0.126**	0.47	2.26	12 of 12
2-Methylnaphthalene	~	**0.174**	~	**0.158**	~	**0.0256**	~	**2.11**	~	**0.154**	~	**0.145**	0.46	2.11	12 of 12
Acenaphthene	~	**0.184**	~	**0.193**	~	**0.0316**	~	**0.272**	~	**0.117**	~	**0.123**	0.15	0.27	12 of 12
Acenaphthylene	~	**0.0255**	~	**0.0404**	~	**0.00498**	~	**0.00985**	~	**0.0351**	~	**0.0146**	0.02	0.04	12 of 12
Anthracene	~	**0.126**	~	**0.205**	~	**0.033**	~	**0.15**	~	**0.0607**	~	**0.073**	0.11	0.21	12 of 12
Benzo(a)anthracene	~	**0.388**	~	**0.506**	~	**0.0623**	~	**0.0636**	~	**0.145**	~	**0.231**	0.23	0.51	12 of 12
Benzo(a)pyrene	~	**0.399**	~	**0.435**	~	**0.056**	~	**0.0454**	~	**0.113**	~	**0.191**	0.21	0.44	12 of 12
Benzo(b)fluoranthene	~	**0.711**	~	**0.689**	~	**0.0739**	~	**0.0786**	~	**0.219**	~	**0.392**	0.36	0.71	12 of 12
Benzo(e)pyrene	~	**0.315**	~	**0.271**	~	**0.0458**	~	**0.0459**	~	**0.102**	~	**0.201**	0.16	0.32	12 of 12
Benzo(g,h,i)perylene	~	**0.358**	~	0.000751	~	**0.0337**	~	0.00081	~	**0.0938**	~	**0.00551**	0.08	0.36	6 of 12
Benzo(k)fluoranthene	~	**0.212**	~	**0.249**	~	**0.0288**	~	**0.0206**	~	**0.0556**	~	**0.107**	0.11	0.25	12 of 12
Benzothiazole	~	**0.11**	~	**0.132**	~	**0.0462**	~	**0.114**	~	**0.242**	~	**0.387**	0.17	0.39	12 of 12
Biphenyl	~	**0.0503**	~	**0.0278**	~	**0.00796**	~	**0.486**	~	**0.0292**	~	**0.0365**	0.11	0.49	12 of 12
C1-Chrysenes	~	**0.242**	~	**0.265**	~	**0.0308**	~	**0.0655**	~	**0.096**	~	**0.15**	0.14	0.27	12 of 12
C1-Dibenzothiophenes	~	**0.0589**	~	**0.152**	~	**0.0292**	~	**0.986**	~	**0.062**	~	**0.062**	0.23	0.99	12 of 12
C1-Flyoranthenes/Pyrenes	~	**0.348**	~	**0.407**	~	**0.0409**	~	**0.253**	~	**0.114**	~	**0.176**	0.22	0.41	12 of 12
C1-Fluorenes	~	**0.0965**	~	**0.158**	~	**0.0296**	~	**1.54**	~	**0.0994**	~	**0.0983**	0.34	1.54	12 of 12
C1-Naphthalenes	~	**0.311**	~	**0.254**	~	**0.0336**	~	**3.39**	~	**0.249**	~	**0.188**	0.74	3.39	12 of 12
C1-Phenanthrenes/Anthracenes	~	**0.364**	~	**0.542**	~	**0.089**	~	**2.82**	~	**0.222**	~	**0.191**	0.70	2.82	12 of 12
C2-Chrysenes	~	0.000799	~	0.000751	~	0.000701	~	0.00081	~	0.00104	~	0.000834	0.00	0.00	0 of 12
C2-Dibenzothiophenes	~	0.000799	~	0.000751	~	0.000701	~	**1.39**	~	0.00104	~	0.000834	0.23	1.39	2 of 12
C2-Fluoranthenes/Pyrenes	~	**0.255**	~	**0.247**	~	**0.0271**	~	**0.204**	~	**0.0494**	~	**0.0781**	0.14	0.26	12 of 12
C2-Fluorenes	~	**0.0541**	~	**0.0976**	~	0.000701	~	**1.41**	~	**0.0821**	~	**0.0727**	0.29	1.41	9 of 12
C2-Naphthalenes	~	**0.415**	~	**0.33**	~	0.0499	~	**8.63**	~	**0.27**	~	**0.172**	1.64	8.63	12 of 12
C2-Phenanthrenes/Anthracenes	~	**0.172**	~	**0.239**	~	**0.0478**	~	**2.35**	~	**0.123**	~	**0.0984**	0.51	2.35	12 of 12
C3-Chrysenes	~	0.000799	~	0.000751	~	0.000701	~	0.00081	~	0.00104	~	0.000834	0.00	0.00	0 of 12
C3-Dibenzothiophenes	~	0.000799	~	0.000751	~	0.000701	~	**1.01**	~	0.00104	~	0.000834	0.17	1.01	1 of 12
C3-Fluoranthenes/Pyrenes	~	0.000799	~	0.000751	~	0.000701	~	**0.0324**	~	0.00104	~	0.000834	0.01	0.03	1 of 12
C3-Fluorenes	~	0.000799	~	0.000751	~	0.000701	~	**1.35**	~	0.00104	~	0.000834	0.23	1.35	2 of 12
C3-Naphthalenes	~	**0.325**	~	**0.254**	~	**0.0567**	~	**8.71**	~	**0.262**	~	**0.135**	1.62	8.71	12 of 12
C3-Phenanthrenes/Anthracenes	~	**0.0906**	~	**0.328**	~	**0.0537**	~	**1.22**	~	**0.0564**	~	**0.0428**	0.30	1.22	11 of 12
C4-Chrysenes	~	0.000799	~	0.000751	~	0.000701	~	0.00081	~	0.00104	~	0.000834	0.00	0.00	0 of 12
C4-Naphthalenes	~	**0.227**	~	**0.201**	~	**0.0519**	~	**5.54**	~	**0.227**	~	**0.123**	1.06	5.54	12 of 12
C4-Phenanthrenes/Anthracenes	~	0.000799	~	0.000751	~	**0.00775**	~	**0.181**	~	0.00104	~	0.000834	0.03	0.18	3 of 12
Chrysene	~	**0.55**	~	**0.551**	~	**0.0665**	~	**0.0748**	~	**0.176**	~	**0.346**	0.29	0.55	12 of 12
Dibenzo(a,h)anthracene	~	**0.0823**	~	0.000751	~	0.000701	~	**0.00757**	~	0.00104	~	0.000834	0.02	0.08	2 of 12
Dibenzofuran	~	**0.0757**	~	**0.0626**	~	**0.0201**	~	**0.171**	~	**0.0519**	~	**0.0531**	0.07	0.17	12 of 12
Dibenzothiophene	~	**0.0608**	~	**0.0875**	~	**0.0183**	~	**0.339**	~	**0.0418**	~	**0.045**	0.10	0.34	12 of 12
Fluoranthene	~	**1.08**	~	**0.846**	~	**0.137**	~	**0.151**	~	**0.363**	~	**0.63**	0.53	1.08	12 of 12
Fluorene	~	**0.14**	~	**0.163**	~	**0.0279**	~	**0.591**	~	**0.0846**	~	**0.109**	0.19	0.59	12 of 12
Indeno(1,2,3-CD)pyrene	~	**0.429**	~	**0.0629**	~	**0.0735**	~	**0.0799**	~	**0.174**	~	**0.298**	0.19	0.43	11 of 12
Naphthalene	~	**0.331**	~	**0.296**	~	**0.0499**	~	**1.01**	~	**0.539**	~	**0.467**	0.45	1.01	12 of 12
Perylene	~	**0.0925**	~	**0.101**	~	**0.0149**	~	**0.0443**	~	**0.0588**	~	**0.0763**	0.06	0.10	11 of 12
Phenanthrene	~	**0.682**	~	**0.847**	~	**0.177**	~	**1.31**	~	**0.316**	~	**0.384**	0.62	1.31	12 of 12
Pyrene	~	**0.838**	~	**0.851**	~	**0.118**	~	**0.226**	~	**0.294**	~	**0.499**	0.47	0.85	12 of 12

Table A-13. Deer Island Influent Loadings (Low detection limit analyses; North System), FY14 (cont.)

Organochlorine Pesticides and PCBs (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
2,4'-DDD	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
2,4'-DDE	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
2,4'-DDT	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
4,4'-DDD	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
4,4'-DDE	~	**0.00334**	~	**0.00257**	~	**0.000779**	~	0.000324	~	**0.00239**	~	0.00229	0.001949	0.003340	8 of 12
4,4'-DDT	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
Aldrin	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
Alpha-Chlordane	~	**0.00631**	~	**0.00643**	~	**0.000961**	~	**0.00392**	~	**0.00651**	~	**0.00384**	0.004662	0.006510	12 of 12
BZ 101 Pentachlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
BZ 105 Pentachlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
BZ 118 Pentachlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
BZ 126 Pentachlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
BZ 128 Hexachlorobiphenyl	~	**0.00122**	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000479	0.001220	2 of 12
BZ 138 Hexachlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
BZ 153 Hexachlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
BZ 170 Heptachlorobiphenyl	~	**0.00158**	~	**0.00372**	~	0.000281	~	0.000324	~	**0.00241**	~	**0.00337**	0.001948	0.003720	7 of 12
BZ 18 Trichlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
BZ 180 Heptachlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	**0.00166**	~	0.000334	0.000536	0.001660	2 of 12
BZ 187 Heptachlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
BZ 195 Octachlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
BZ 206 Nonachlorobiphenyl	~	**0.00169**	~	**0.00335**	~	**0.000759**	~	**0.00247**	~	**0.00346**	~	**0.0118**	0.003922	0.011800	12 of 12
BZ 209 Decachlorobiphenyl	~	**0.00139**	~	**0.00265**	~	**0.000735**	~	**0.00225**	~	**0.00262**	~	**0.0122**	0.003641	0.012200	12 of 12
BZ 28 Trichlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	**0.00402**	0.000943	0.004020	1 of 12
BZ 44 Tetrachlorobiphenyl	~	**0.00114**	~	**0.002**	~	**0.000676**	~	**0.00192**	~	0.000414	~	**0.0166**	0.003792	0.016600	9 of 12
BZ 52 Tetrachlorobiphenyl	~	**0.000645**	~	**0.00168**	~	**0.000534**	~	**0.000761**	~	0.000414	~	**0.00933**	0.002227	0.009330	10 of 12
BZ 66 Tetrachlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	**0.00188**	0.000586	0.001880	1 of 12
BZ 77 Tetrachlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	**0.00106**	0.000450	0.001060	1 of 12
BZ 8 Dichlorobiphenyl	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
Cis-Nonachlor	~	**0.000522**	~	**0.000924**	~	0.000281	~	**0.000859**	~	0.000414	~	**0.000733**	0.000622	0.000924	6 of 12
DDMU	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
Dieldrin	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
Endrin	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
Gamma-BHC	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
Gamma-Chlordane	~	**0.00472**	~	**0.00973**	~	**0.00896**	~	**0.00296**	~	**0.00487**	~	**0.00548**	0.006120	0.009730	12 of 12
Heptachlor	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
Heptachlor Epoxide	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
Hexachlorobenzene	~	**0.00142**	~	**0.00253**	~	**0.000474**	~	**0.00123**	~	**0.00193**	~	**0.00445**	0.002006	0.004450	12 of 12
Mirex	~	0.000319	~	0.0003	~	0.000281	~	0.000324	~	0.000414	~	0.000334	0.000329	0.000414	0 of 12
Oxychlordane	~	0.000319	~	0.0621	~	0.0336	~	0.000324	~	0.000414	~	0.000334	0.016182	0.062100	4 of 12
Total Chlordane	~	**0.00901**	~	**0.0103**	~	**0.00143**	~	**0.00664**	~	**0.00993**	~	**0.00646**	0.007295	0.010300	12 of 12
Total DDT	~	**0.00334**	~	**0.00257**	~	**0.000779**	~	0.000324	~	**0.00239**	~	**0.00229**	0.001949	0.003340	8 of 12
Trans-Nonachlor	~	**0.00173**	~	**0.00278**	~	**0.000363**	~	**0.00178**	~	**0.00172**	~	**0.00163**	0.001667	0.002780	12 of 12

Table A-13. Deer Island Influent Loadings (Low detection limit analyses; North System), FY15 (cont.)

Volatile Organics (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,1,1-Trichloroethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
1,1,2,2-Tetrachloroethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
1,1,2-Trichloroethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
1,1-Dichloroethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
1,1-Dichloroethene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
1,2-Dichlorobenzene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
1,2-Dichloroethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
1,2-Dichloropropane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
1,3-Dichlorobenzene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
1,4-Dichlorobenzene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
2-Butanone	**11.1**	**9.77**	**4.56**	**7.91**	**7.54**	**4.89**	0.784	0.845	0.81	0.997	0.932	0.77	4.242	11.100	9 of 24
2-Chloroethyl Vinyl Ether	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
2-Hexanone	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
4-Methyl-2-Pentanone	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Acetone	**177**	**228**	**162**	**194**	**155**	**108**	**159**	**475**	**1070**	**188**	**225**	**89.2**	269.183	1070.000	22 of 24
Acrolein	1.54	1.58	1.29	1.38	1.35	1.3	1.57	1.69	1.62	1.99	1.86	1.54	1.559	1.990	0 of 24
Acrylonitrile	1.54	1.58	1.29	1.38	1.35	1.3	1.57	1.69	1.62	1.99	1.86	1.54	1.559	1.990	0 of 24
Benzene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Bromodichloromethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Bromoform	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Bromomethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Carbon Disulfide	**35**	0.789	0.647	**79.5**	**78.2**	0.65	0.784	0.845	0.81	0.997	0.932	0.77	16.660	79.500	5 of 24
Carbon Tetrachloride	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Chlorobezene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Chloroethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Chloroform	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Chloromethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Cis-1,2-Dichloroethene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Cis-1,3-Dichloropropene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Dibromochloromethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Ethylbenzene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
M,P-Xylene	1.54	1.58	1.29	1.38	1.35	1.3	1.57	1.69	1.62	1.99	1.86	1.54	1.559	1.990	0 of 24
Methylene Chloride	0.769	0.789	0.647	0.688	0.677	0.65	0.784	**11.2**	**8.75**	0.997	0.932	0.77	2.304	11.200	3 of 24
O-Xylene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Styrene	0.769	0.789	0.647	7.1	7.77	0.65	0.784	0.845	0.81	0.997	0.932	0.77	1.905	7.770	2 of 24
Tetrachloroethene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	**7.44**	0.81	0.997	0.932	0.77	1.329	7.440	1 of 24
Toluene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	**7.76**	0.81	0.997	**5.72**	0.77	1.755	7.760	2 of 24
Trans-1,2-Dichloroethene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Trans-1,3-Dichloropropene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Trichloroethene	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Trichlorofluoromethane	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Vinyl Acetate	0.769	0.789	0.647	0.688	0.677	0.65	0.784	0.845	0.81	0.997	0.932	0.77	0.780	0.997	0 of 24
Vinyl Chloride	0.308	0.316	0.259	0.275	0.271	0.26	0.314	0.338	0.324	0.399	0.373	0.308	0.312	0.399	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 and are flow-weighted.

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), FY16

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
1,2-Dichlorobenzene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
1,2-Diphenylhydrazine (as Azobenzene)	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
1,3-Dichlorobenzene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
1,4-Dichlorobenzene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2,2'-Oxybis(1-Chloropropane)	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2,4,5-Trichlorophenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2,4,6-Trichlorophenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2,4-Dichlorophenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2,4-Dimethylphenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2,4-Dinitrophenol	5.2	5.4	5.13	5.7	5.28	5.4	5.17	5.38	5.15	5.18	5.72	5.41	5.34	5.72	0 of 24
2,4-Dinitrotoluene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2,6-Dinitrotoluene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2-Chloronaphthalene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2-Chlorophenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2-Methyl-4,6-Dinitrophenol	5.2	5.4	5.13	5.7	5.28	5.4	5.17	5.38	5.15	5.18	5.72	5.41	5.34	5.72	0 of 24
2-Methylnaphthalene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2-Methylphenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2-Nitroaniline	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
2-Nitrophenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
3,3'-Dichlorobenzidine	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
3-Nitroaniline	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
4-Bromophenyl Phenyl Ether	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
4-Chloro-3-Methylphenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
4-Chloroaniline	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
4-Chlorophenyl Phenyl Ether	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
4-Methylphenol (includes 3-Methylphenol)	**13**	**32.5**	**31.3**	2.28	**29.4**	**28.2**	2.07	2.15	2.06	2.07	2.29	2.17	12.46	32.50	9 of 24
4-Nitroaniline	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
4-Nitrophenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Acenaphthene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Acenaphthylene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Aniline	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Anthracene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Benzidine	5.2	5.4	5.13	5.7	5.28	5.4	5.17	5.38	5.15	5.18	5.72	5.41	5.34	5.72	0 of 24
Benzo(a)anthracene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Benzo(a)pyrene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Benzo(b)fluoranthene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Benzo(g,h,i)perylene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Benzo(k)fluoranthene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Benzoic Acid	5.2	5.4	5.13	5.7	5.28	5.4	5.17	5.38	5.15	5.18	5.72	5.41	5.34	5.72	0 of 24
Benzyl Alcohol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	**38.8**	2.17	5.18	38.80	2 of 24
Bis(2-Chloroethoxy)methane	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Bis(2-Chloroethyl)ether	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Bis(2-Ethylhexyl)phthalate	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Butylbenzylphthalate	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Carbazole	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Chrysene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Dibenzo(a,h)anthracene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Dibenzofuran	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Diethylphthalate	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Dimethylphthalate	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Di-N-Butylphthalate	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Di-N-Octylphthalate	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Fluoranthene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Fluorene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Hexachlorobenzene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Hexachlorobutadiene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Hexachlorocyclopentadiene	5.2	5.4	5.13	5.7	5.28	5.4	5.17	5.38	5.15	5.18	5.72	5.41	5.34	5.72	0 of 24
Hexachloroethane	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Indeno(1,2,3-CD)pyrene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Isophorone	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
Naphthalene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24
n-Decane	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.29	0 of 24

Table A-14. Deer Island Influent Characterization (Low detection limit analyses; South System), FY16 (cont.)

Semivolatile Organics (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Nitrobenzene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.5	0 of 24
N-Nitrosodimethylamine (NDMA)	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.5	0 of 24
N-Nitrosodi-N-Propylamine (NDPA)	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.5	0 of 24
N-Nitrosodiphenylamine	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.5	0 of 24
N-Octadecane	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.5	0 of 24
Pentachlorophenol	5.2	5.4	5.13	5.7	5.28	5.4	5.17	5.38	5.15	5.18	5.72	5.41	5.34	6.25	0 of 24
Phenanthrene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.5	0 of 24
Phenol	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.5	0 of 24
Pyrene	2.08	2.16	2.05	2.28	2.11	2.16	2.07	2.15	2.06	2.07	2.29	2.17	2.14	2.5	0 of 24

Polycyclic Aromatic Hydrocarbons (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1-Methylnaphthalene	~	**0.0414**	~	**0.0948**	~	**0.0376**	~	**0.0551**	~	**0.216**	~	**0.0433**	0.081	0.216	12 of 12
1-Methylphenanthrene	~	**0.0136**	~	**0.0341**	~	**0.0187**	~	**0.0265**	~	**0.0682**	~	**0.0396**	0.033	0.068	12 of 12
2,3,5-Trimethylnaphthylene	~	**0.0363**	~	**0.0806**	~	**0.0254**	~	**0.0224**	~	**0.155**	~	**0.046**	0.061	0.155	12 of 12
2,6-Dimethylnaphthalene	~	**0.0791**	~	**0.134**	~	**0.0423**	~	**0.047**	~	**0.155**	~	**0.101**	0.093	0.155	12 of 12
2-Methylnaphthalene	~	**0.0319**	~	**0.0674**	~	**0.0228**	~	**0.0418**	~	**0.146**	~	**0.0347**	0.057	0.146	12 of 12
Acenaphthene	~	**0.0307**	~	**0.0343**	~	**0.0185**	~	**0.0246**	~	**0.0438**	~	**0.0296**	0.030	0.044	12 of 12
Acenaphthylene	~	**0.00411**	~	**0.00579**	~	**0.00262**	~	**0.00391**	~	**0.00689**	~	**0.00553**	0.005	0.007	12 of 12
Anthracene	~	**0.0205**	~	**0.0234**	~	**0.0195**	~	**0.0149**	~	**0.0318**	~	**0.0335**	0.024	0.034	12 of 12
Benzo(a)anthracene	~	**0.0459**	~	**0.0427**	~	**0.0289**	~	**0.0353**	~	**0.0742**	~	**0.107**	0.056	0.107	12 of 12
Benzo(a)pyrene	~	**0.0382**	~	**0.0337**	~	**0.0236**	~	**0.0305**	~	**0.0551**	~	**0.0746**	0.043	0.075	12 of 12
Benzo(b)fluoranthene	~	**0.0748**	~	**0.0703**	~	**0.0323**	~	**0.0574**	~	**0.119**	~	**0.157**	0.085	0.157	12 of 12
Benzo(e)pyrene	~	**0.034**	~	**0.0291**	~	**0.0234**	~	**0.0336**	~	**0.0605**	~	**0.084**	0.044	0.084	12 of 12
Benzo(g,h,i)perylene	~	**0.0384**	~	**0.014**	~	0.000575	~	0.00055	~	**0.0516**	~	**0.0341**	0.023	0.052	7 of 12
Benzo(k)fluoranthene	~	**0.0237**	~	**0.0172**	~	**0.00874**	~	**0.0145**	~	**0.031**	~	**0.0391**	0.022	0.039	12 of 12
Benzothiazole	~	**0.038**	~	**0.0511**	~	**0.0428**	~	**0.0538**	~	**0.0927**	~	**2.18**	0.410	2.180	12 of 12
Biphenyl	~	**0.0263**	~	**0.0149**	~	**0.00541**	~	**0.0148**	~	**0.0333**	~	**0.0131**	0.018	0.033	12 of 12
C1-Chrysenes	~	**0.0319**	~	**0.0417**	~	**0.0167**	~	**0.0178**	~	**0.0603**	~	**0.0822**	0.042	0.082	11 of 12
C1-Dibenzothiophenes	~	0.000515	~	**0.0599**	~	**0.0357**	~	**0.0371**	~	**0.0969**	~	**0.0727**	0.050	0.097	10 of 12
C1-Flyoranthenes/Pyrenes	~	**0.0448**	~	**0.0592**	~	**0.0287**	~	**0.0382**	~	**0.0854**	~	**0.1**	0.059	0.100	12 of 12
C1-Fluorenes	~	**0.0398**	~	**0.0806**	~	**0.0252**	~	**0.0648**	~	**0.116**	~	**0.0726**	0.067	0.116	12 of 12
C1-Naphthalenes	~	**0.0613**	~	**0.13**	~	**0.0375**	~	**0.0607**	~	**0.28**	~	**0.0491**	0.103	0.280	12 of 12
C1-Phenanthrenes/Anthracenes	~	**0.117**	~	**0.166**	~	**0.0695**	~	**0.101**	~	**0.29**	~	**0.162**	0.151	0.290	12 of 12
C2-Chrysenes	~	0.000515	~	0.000517	~	0.000575	~	0.00055	~	0.000528	~	0.00052	0.001	0.001	0 of 12
C2-Dibenzothiophenes	~	0.000515	~	0.000517	~	0.000575	~	0.00055	~	0.000528	~	0.00052	0.001	0.001	0 of 12
C2-Fluoranthenes/Pyrenes	~	**0.041**	~	**0.0387**	~	**0.0162**	~	0.00055	~	**0.038**	~	**0.0428**	0.030	0.043	9 of 12
C2-Fluorenes	~	0.000515	~	**0.0813**	~	0.000575	~	**0.0687**	~	**0.122**	~	**0.065**	0.056	0.122	8 of 12
C2-Naphthalenes	~	**0.15**	~	**0.271**	~	**0.048**	~	**0.13**	~	**0.615**	~	**0.111**	0.221	0.615	12 of 12
C2-Phenanthrenes/Anthracenes	~	**0.0709**	~	**0.127**	~	**0.0552**	~	**0.0802**	~	**0.241**	~	**0.124**	0.116	0.241	12 of 12
C3-Chrysenes	~	0.000515	~	0.000517	~	0.000575	~	0.00055	~	0.000528	~	0.00052	0.001	0.001	0 of 12
C3-Dibenzothiophenes	~	0.000515	~	0.000517	~	0.000575	~	0.00055	~	0.000528	~	0.00052	0.001	0.001	0 of 12
C3-Fluoranthenes/Pyrenes	~	0.000515	~	0.000517	~	0.000575	~	0.00055	~	0.000528	~	0.00052	0.001	0.001	0 of 12
C3-Fluorenes	~	0.000515	~	0.000517	~	0.000575	~	0.00055	~	0.000528	~	0.00052	0.001	0.001	0 of 12
C3-Naphthalenes	~	**0.134**	~	**0.255**	~	**0.0552**	~	**0.181**	~	**0.631**	~	**0.116**	0.229	0.631	12 of 12
C3-Phenanthrenes/Anthracenes	~	0.000515	~	**0.285**	~	**0.0431**	~	0.00055	~	**0.0975**	~	**0.074**	0.083	0.285	8 of 12
C4-Chrysenes	~	0.000515	~	0.000517	~	0.000575	~	0.00055	~	0.000528	~	0.00052	0.001	0.001	0 of 12
C4-Naphthalenes	~	**0.121**	~	**0.227**	~	**0.0635**	~	**0.164**	~	**0.489**	~	**0.124**	0.198	0.489	12 of 12
C4-Phenanthrenes/Anthracenes	~	0.000515	~	0.000517	~	**0.00941**	~	0.00055	~	0.000528	~	0.00052	0.002	0.009	2 of 12
Chrysene	~	**0.0621**	~	**0.0554**	~	**0.0337**	~	**0.0444**	~	**0.0976**	~	**0.139**	0.072	0.139	12 of 12
Dibenzo(a,h)anthracene	~	0.000515	~	**0.00488**	~	0.000575	~	0.00055	~	0.000528	~	0.00052	0.001	0.005	1 of 12
Dibenzofuran	~	**0.019**	~	**0.0182**	~	**0.00976**	~	**0.0159**	~	**0.027**	~	**0.0229**	0.019	0.027	12 of 12
Dibenzothiophene	~	**0.0125**	~	**0.0146**	~	**0.0121**	~	**0.0167**	~	**0.0369**	~	**0.0198**	0.019	0.037	12 of 12
Fluoranthene	~	**0.131**	~	**0.105**	~	**0.0686**	~	**0.0934**	~	**0.196**	~	**0.262**	0.143	0.262	12 of 12
Fluorene	~	**0.034**	~	**0.0435**	~	**0.0168**	~	**0.026**	~	**0.0502**	~	**0.0398**	0.035	0.050	12 of 12
Indeno(1,2,3-CD)pyrene	~	**0.0109**	~	**0.0637**	~	**0.0898**	~	**0.04**	~	**0.18**	~	**0.429**	0.136	0.429	12 of 12
Naphthalene	~	**0.0383**	~	**0.064**	~	**0.0184**	~	**0.0406**	~	**0.0944**	~	**0.0456**	0.050	0.094	12 of 12
Perylene	~	0.000515	~	0.000517	~	**0.00476**	~	**0.0295**	~	**0.0392**	~	**0.11**	0.031	0.110	8 of 12
Phenanthrene	~	**0.118**	~	**0.135**	~	**0.0886**	~	**0.104**	~	**0.216**	~	**0.2**	0.144	0.216	12 of 12
Pyrene	~	**0.111**	~	**0.0973**	~	**0.0632**	~	**0.08**	~	**0.162**	~	**0.219**	0.122	0.219	12 of 12

Table A-14. Deer Island Influent Characterization (Low detection limit analyses; South System), FY16 (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	~	0.000206	~	0.000207	~	**0.000931**	~	0.00022	~	0.000206	~	0.000208	0.000329667	0.000931	1 of 12
2,4'-DDE	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
2,4'-DDT	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
4,4'-DDD	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
4,4'-DDE	~	**0.00163**	~	**0.00397**	~	**0.00205**	~	0.00022	~	**0.00395**	~	**0.00362**	0.002573333	0.00397	10 of 12
4,4'-DDT	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
Aldrin	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
Alpha-Chlordane	~	**0.00326**	~	**0.0105**	~	**0.0029**	~	**0.00615**	~	**0.00917**	~	**0.0105**	0.00708	0.0105	12 of 12
BZ 101 Pentachlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
BZ 105 Pentachlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
BZ 118 Pentachlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
BZ 126 Pentachlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
BZ 128 Hexachlorobiphenyl	~	**0.000803**	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000312333	0.000803	2 of 12
BZ 138 Hexachlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
BZ 153 Hexachlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
BZ 170 Heptachlorobiphenyl	~	0.000206	~	**0.00182**	~	0.00023	~	0.00022	~	**0.00118**	~	**0.00278**	0.001072667	0.00278	6 of 12
BZ 18 Trichlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
BZ 180 Heptachlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	**0.000715**	~	0.000208	0.000297667	0.000715	2 of 12
BZ 187 Heptachlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
BZ 195 Octachlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
BZ 206 Nonachlorobiphenyl	~	**0.000834**	~	**0.00209**	~	**0.00128**	~	**0.00077**	~	**0.00128**	~	**0.00265**	0.001484	0.00265	12 of 12
BZ 209 Decachlorobiphenyl	~	**0.000736**	~	**0.00145**	~	**0.00109**	~	**0.000671**	~	**0.00114**	~	**0.00237**	0.001242833	0.00237	12 of 12
BZ 28 Trichlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
BZ 44 Tetrachlorobiphenyl	~	**0.000357**	~	**0.000812**	~	**0.00061**	~	0.00022	~	0.000206	~	0.000208	0.000402167	0.000812	6 of 12
BZ 52 Tetrachlorobiphenyl	~	**0.000305**	~	**0.000533**	~	**0.000421**	~	0.00022	~	0.000206	~	**0.00046**	0.0003575	0.000533	7 of 12
BZ 66 Tetrachlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
BZ 77 Tetrachlorobiphenyl	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
BZ 8 Dichlorobiphenyl	~	**0.0000877**	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000193117	0.00023	2 of 12
Cis-Nonachlor	~	**0.000341**	~	**0.00145**	~	**0.0005**	~	**0.000827**	~	**0.00137**	~	**0.00133**	0.000969667	0.00145	11 of 12
DDMU	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
Dieldrin	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
Endrin	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
Gamma-BHC	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
Gamma-Chlordane	~	**0.00216**	~	**0.00996**	~	**0.0132**	~	**0.00502**	~	**0.00808**	~	**0.00905**	0.007911667	0.0132	12 of 12
Heptachlor	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
Heptachlor Epoxide	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
Hexachlorobenzene	~	**0.000669**	~	**0.00401**	~	**0.00081**	~	**0.000531**	~	**0.000878**	~	**0.00118**	0.001346333	0.00401	12 of 12
Mirex	~	0.000206	~	0.000207	~	0.00023	~	0.00022	~	0.000206	~	0.000208	0.000212833	0.00023	0 of 12
Oxychlordane	~	0.000206	~	**0.00941**	~	**0.0305**	~	0.00022	~	0.000206	~	0.000208	0.006791667	0.0305	4 of 12
Total Chlordane	~	**0.00471**	~	**0.0165**	~	**0.00447**	~	**0.00878**	~	**0.0146**	~	**0.0161**	0.01086	0.0165	12 of 12
Total DDT	~	**0.00163**	~	**0.00397**	~	**0.00287**	~	0.00022	~	**0.00395**	~	**0.00362**	0.00271	0.00397	10 of 12
Trans-Nonachlor	~	**0.00145**	~	**0.00607**	~	**0.00157**	~	**0.00265**	~	**0.00545**	~	**0.00554**	0.003788333	0.00607	12 of 12

Table A-14. Deer Island Influent Characterization (Low detection limit analyses; South System), FY16 (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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	0 of 24
2-Butanone	**13.3**	**13.5**	**15.3**	**23.6**	**9.49**	**10.6**	**2.51**	**6.8**	**5.76**	**2.89**	**5.72**	**7.95**	9.79	23.60	22 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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	0 of 24
Acetone	**121**	**112**	**230**	**124**	**130**	**429**	**72.1**	**90.5**	**153**	**100**	**92.5**	**89.3**	145.28	429.00	23 of 24
Acrolein	1	1	1	1	1	1	1	1	1	1	1	1	1.00	1.00	0 of 24
Acrylonitrile	1	1	1	1	1	1	1	1	1	1	1	1	1.00	1.00	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	0 of 24
Carbon Disulfide	**12.6**	**4.73**	**34.8**	**33.3**	**53.2**	**38**	0.5	0.5	0.5	0.5	0.5	0.5	14.97	53.20	8 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	0.50	0.50	0 of 24
Chlorobezene	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	0 of 24
M,P-Xylene	1	1	1	1	1	1	1	1	1	1	1	1	1.00	1.00	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	0 of 24
Tetrachloroethene	0.5	0.5	0.5	0.5	0.5	0.5	0.5	**14**	0.5	**3.75**	**7.1**	0.5	2.45	14.00	3 of 24
Toluene	**8.38**	**5.61**	**2.78**	**2.83**	**3.86**	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.25	8.38	6 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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	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	0.50	0.50	0 of 24
Vinyl Chloride	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.20	0.20	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 and are flow-weighted.

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), FY16

Semivolatile Organics (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
1,2-Dichlorobenzene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
1,2-Diphenylhydrazine (as Azobenzene)	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
1,3-Dichlorobenzene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
1,4-Dichlorobenzene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2,2'-Oxybis(1-Chloropropane)	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2,4,5-Trichlorophenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2,4,6-Trichlorophenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2,4-Dichlorophenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2,4-Dimethylphenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2,4-Dinitrophenol	3.83	3.47	2.88	3.76	3.33	3.57	5.39	4.53	5.12	5.99	5.01	4.23	4.26	5.99	0 of 24
2,4-Dinitrotoluene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2,6-Dinitrotoluene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2-Chloronaphthalene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2-Chlorophenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2-Methyl-4,6-Dinitrophenol	3.83	3.47	2.88	3.76	3.33	3.57	5.39	4.53	5.12	5.99	5.01	4.23	4.26	5.99	0 of 24
2-Methylnaphthalene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2-Methylphenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2-Nitroaniline	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
2-Nitrophenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
3,3'-Dichlorobenzidine	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
3-Nitroaniline	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
4-Bromophenyl Phenyl Ether	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
4-Chloro-3-Methylphenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
4-Chloroaniline	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
4-Chlorophenyl Phenyl Ether	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
4-Methylphenol (includes 3-Methylphenol)	**9.58**	**20.9**	**17.6**	1.5	**18.5**	**18.6**	2.16	1.81	2.05	2.39	2	**1.69**	8.23	20.90	9 of 24
4-Nitroaniline	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
4-Nitrophenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Acenaphthene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Acenaphthylene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Aniline	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Anthracene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Benzidine	3.83	3.47	2.88	3.76	3.33	3.57	5.39	4.53	5.12	5.99	5.01	4.23	4.26	5.99	0 of 24
Benzo(a)anthracene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Benzo(a)pyrene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Benzo(b)fluoranthene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Benzo(g,h,i)perylene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Benzo(k)fluoranthene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Benzoic Acid	3.83	3.47	2.88	3.76	3.33	3.57	5.39	4.53	5.12	5.99	5.01	4.23	4.26	5.99	0 of 24
Benzyl Alcohol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	**34**	1.69	4.37	34.00	2 of 24
Bis(2-Chloroethoxy)methane	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Bis(2-Chloroethyl)ether	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Bis(2-Ethylhexyl)phthalate	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Butylbenzylphthalate	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Carbazole	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Chrysene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Dibenzo(a,h)anthracene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Dibenzofuran	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Diethylphthalate	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Dimethylphthalate	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Di-N-Butylphthalate	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Di-N-Octylphthalate	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Fluoranthene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Fluorene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Hexachlorobenzene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Hexachlorobutadiene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Hexachlorocyclopentadiene	3.83	3.47	2.88	3.76	3.33	3.57	5.39	4.53	5.12	5.99	5.01	4.23	4.26	5.99	0 of 24
Hexachloroethane	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Indeno(1,2,3-CD)pyrene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Isophorone	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Naphthalene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
n-Decane	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24

Table A-15. Deer Island Influent Loadings (Low detection limit analyses; South System), FY16 (cont.)

Semivolatile Organics (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Nitrobenzene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
N-Nitrosodimethylamine (NDMA)	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
N-Nitrosodi-N-Propylamine (NDPA)	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
N-Nitrosodiphenylamine	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
N-Octadecane	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Pentachlorophenol	3.83	3.47	2.88	3.76	3.33	3.57	5.39	4.53	5.12	5.99	5.01	4.23	4.26	5.99	0 of 24
Phenanthrene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Phenol	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24
Pyrene	1.54	1.39	1.15	1.5	1.33	1.43	2.16	1.81	2.05	2.39	2	1.69	1.70	2.39	0 of 24

Polycyclic Aromatic Hydrocarbons (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1-Methylnaphthalene	~	**0.0266**	~	**0.0625**	~	**0.0249**	~	**0.0464**	~	**0.249**	~	**0.0339**	0.0739	0.2490	12 of 12
1-Methylphenanthrene	~	**0.00876**	~	**0.0224**	~	**0.0123**	~	**0.0223**	~	**0.0788**	~	**0.031**	0.0293	0.0788	12 of 12
2,3,5-Trimethylnaphthylene	~	**0.0233**	~	**0.0531**	~	**0.0168**	~	**0.0189**	~	**0.179**	~	**0.0359**	0.0545	0.1790	12 of 12
2,6-Dimethylnaphthalene	~	**0.0508**	~	**0.0886**	~	**0.028**	~	**0.0396**	~	**0.179**	~	**0.0789**	0.0775	0.1790	12 of 12
2-Methylnaphthalene	~	**0.0205**	~	**0.0444**	~	**0.0151**	~	**0.0352**	~	**0.168**	~	**0.0272**	0.0517	0.1680	12 of 12
Acenaphthene	~	**0.0197**	~	**0.0226**	~	**0.0122**	~	**0.0207**	~	**0.0506**	~	**0.0231**	0.0248	0.0506	12 of 12
Acenaphthylene	~	**0.00264**	~	**0.00382**	~	**0.00173**	~	**0.00329**	~	**0.00796**	~	**0.00432**	0.0040	0.0080	12 of 12
Anthracene	~	**0.0132**	~	**0.0154**	~	**0.0129**	~	**0.0126**	~	**0.0368**	~	**0.0262**	0.0195	0.0368	12 of 12
Benzo(a)anthracene	~	**0.0295**	~	**0.0281**	~	**0.0191**	~	**0.0298**	~	**0.0857**	~	**0.084**	0.0460	0.0857	12 of 12
Benzo(a)pyrene	~	**0.0246**	~	**0.0222**	~	**0.0156**	~	**0.0257**	~	**0.0636**	~	**0.0584**	0.0350	0.0636	12 of 12
Benzo(b)fluoranthene	~	**0.0481**	~	**0.0463**	~	**0.0214**	~	**0.0483**	~	**0.137**	~	**0.123**	0.0707	0.1370	12 of 12
Benzo(e)pyrene	~	**0.0219**	~	**0.0192**	~	**0.0154**	~	**0.0283**	~	**0.0699**	~	**0.0657**	0.0367	0.0699	12 of 12
Benzo(g,h,i)perylene	~	**0.0247**	~	**0.0092**	~	0.00038	~	0.000463	~	**0.0596**	~	**0.0267**	0.0202	0.0596	7 of 12
Benzo(k)fluoranthene	~	**0.0152**	~	**0.0113**	~	**0.00577**	~	**0.0122**	~	**0.0358**	~	**0.0306**	0.0185	0.0358	12 of 12
Benzothiazole	~	**0.0244**	~	**0.0337**	~	**0.0283**	~	**0.0453**	~	**0.107**	~	**1.7**	0.3231	1.7000	12 of 12
Biphenyl	~	**0.0169**	~	**0.0098**	~	**0.00357**	~	**0.0125**	~	**0.0385**	~	**0.0102**	0.0152	0.0385	12 of 12
C1-Chrysenes	~	**0.0205**	~	**0.0275**	~	**0.0111**	~	**0.015**	~	**0.0697**	~	**0.0643**	0.0347	0.0697	11 of 12
C1-Dibenzothiophenes	~	0.000331	~	**0.0395**	~	**0.0236**	~	**0.0312**	~	**0.112**	~	**0.0568**	0.0439	0.1120	10 of 12
C1-Flyoranthenes/Pyrenes	~	**0.0288**	~	**0.039**	~	**0.019**	~	**0.0322**	~	**0.0987**	~	**0.0783**	0.0493	0.0987	12 of 12
C1-Fluorenes	~	**0.0256**	~	**0.0531**	~	**0.0166**	~	**0.0546**	~	**0.134**	~	**0.0568**	0.0568	0.1340	12 of 12
C1-Naphthalenes	~	**0.0394**	~	**0.0857**	~	**0.0248**	~	**0.0511**	~	**0.324**	~	**0.0384**	0.0939	0.3240	12 of 12
C1-Phenanthrenes/Anthracenes	~	**0.075**	~	**0.109**	~	**0.0459**	~	**0.0853**	~	**0.335**	~	**0.127**	0.1295	0.3350	12 of 12
C2-Chrysenes	~	0.000331	~	0.000341	~	0.00038	~	0.000463	~	0.00061	~	0.000407	0.0004	0.0006	0 of 12
C2-Dibenzothiophenes	~	0.000331	~	0.000341	~	0.00038	~	0.000463	~	0.00061	~	0.000407	0.0004	0.0006	0 of 12
C2-Fluoranthenes/Pyrenes	~	**0.0263**	~	**0.0255**	~	**0.0107**	~	0.000463	~	**0.0439**	~	**0.0335**	0.0234	0.0439	9 of 12
C2-Fluorenes	~	0.000331	~	**0.0536**	~	0.00038	~	**0.0579**	~	**0.141**	~	**0.0508**	0.0507	0.1410	8 of 12
C2-Naphthalenes	~	**0.0964**	~	**0.179**	~	**0.0317**	~	**0.109**	~	**0.711**	~	**0.0869**	0.2023	0.7110	12 of 12
C2-Phenanthrenes/Anthracenes	~	**0.0456**	~	**0.0835**	~	**0.0365**	~	**0.0676**	~	**0.278**	~	**0.0972**	0.1014	0.2780	12 of 12
C3-Chrysenes	~	0.000331	~	0.000341	~	0.00038	~	0.000463	~	0.00061	~	0.000407	0.0004	0.0006	0 of 12
C3-Dibenzothiophenes	~	0.000331	~	0.000341	~	0.00038	~	0.000463	~	0.00061	~	0.000407	0.0004	0.0006	0 of 12
C3-Fluoranthenes/Pyrenes	~	0.000331	~	0.000341	~	0.00038	~	0.000463	~	0.00061	~	0.000407	0.0004	0.0006	0 of 12
C3-Fluorenes	~	0.000331	~	0.000341	~	0.00038	~	0.000463	~	0.00061	~	0.000407	0.0004	0.0006	0 of 12
C3-Naphthalenes	~	**0.086**	~	**0.168**	~	**0.0364**	~	**0.153**	~	**0.729**	~	**0.091**	0.2106	0.7290	12 of 12
C3-Phenanthrenes/Anthracenes	~	0.000331	~	**0.188**	~	**0.0285**	~	0.000463	~	**0.113**	~	**0.0579**	0.0647	0.1880	8 of 12
C4-Chrysenes	~	0.000331	~	0.000341	~	0.00038	~	0.000463	~	0.00061	~	0.000407	0.0004	0.0006	0 of 12
C4-Naphthalenes	~	**0.078**	~	**0.15**	~	**0.0419**	~	**0.138**	~	**0.565**	~	**0.0969**	0.1783	0.5650	12 of 12
C4-Phenanthrenes/Anthracenes	~	0.000331	~	0.000341	~	**0.00621**	~	0.000463	~	0.00061	~	0.000407	0.0014	0.0062	2 of 12
Chrysene	~	**0.0399**	~	**0.0365**	~	**0.0223**	~	**0.0374**	~	**0.113**	~	**0.109**	0.0597	0.1130	12 of 12
Dibenzo(a,h)anthracene	~	0.000331	~	**0.00322**	~	0.00038	~	0.000463	~	0.00061	~	0.000407	0.0009	0.0032	1 of 12
Dibenzofuran	~	**0.0122**	~	**0.012**	~	**0.00644**	~	**0.0134**	~	**0.0312**	~	**0.0179**	0.0155	0.0312	12 of 12
Dibenzothiophene	~	**0.00803**	~	**0.00962**	~	**0.00802**	~	**0.0141**	~	**0.0427**	~	**0.0154**	0.0163	0.0427	12 of 12
Fluoranthene	~	**0.0843**	~	**0.0695**	~	**0.0453**	~	**0.0787**	~	**0.226**	~	**0.205**	0.1181	0.2260	12 of 12
Fluorene	~	**0.0219**	~	**0.0287**	~	**0.0111**	~	**0.0219**	~	**0.058**	~	**0.0312**	0.0288	0.0580	12 of 12
Indeno(1,2,3-CD)pyrene	~	**0.00698**	~	**0.042**	~	**0.0593**	~	**0.0337**	~	**0.207**	~	**0.336**	0.1142	0.3360	12 of 12
Naphthalene	~	**0.0246**	~	**0.0421**	~	**0.0121**	~	**0.0342**	~	**0.109**	~	**0.0356**	0.0429	0.1090	12 of 12
Perylene	~	0.000331	~	0.000341	~	**0.00314**	~	**0.0249**	~	**0.0452**	~	**0.0857**	0.0266	0.0857	8 of 12
Phenanthrene	~	**0.0761**	~	**0.0887**	~	**0.0585**	~	**0.0875**	~	**0.249**	~	**0.156**	0.1193	0.2490	12 of 12
Pyrene	~	**0.0716**	~	**0.0641**	~	**0.0417**	~	**0.0674**	~	**0.188**	~	**0.171**	0.1006	0.1880	12 of 12

Table A-15. Deer Island Influent Loadings (Low detection limit analyses; South System), FY16 (cont.)

Organochlorine Pesticides and PCBs (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
2,4'-DDD	~	0.000132	~	0.000136	~	**0.000615**	~	0.000185	~	0.000238	~	0.000163	0.000244833	0.000615	1 of 12
2,4'-DDE	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
2,4'-DDT	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
4,4'-DDD	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
4,4'-DDE	~	**0.00105**	~	**0.00262**	~	**0.00135**	~	0.000185	~	**0.00456**	~	**0.00283**	0.002099167	0.00456	10 of 12
4,4'-DDT	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
Aldrin	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
Alpha-Chlordane	~	**0.0021**	~	**0.0069**	~	**0.00191**	~	**0.00518**	~	**0.0106**	~	**0.00821**	0.005816667	0.0106	12 of 12
BZ 101 Pentachlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
BZ 105 Pentachlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
BZ 118 Pentachlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
BZ 126 Pentachlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
BZ 128 Hexachlorobiphenyl	~	**0.000516**	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000231667	0.000516	2 of 12
BZ 138 Hexachlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
BZ 153 Hexachlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
BZ 170 Heptachlorobiphenyl	~	0.000132	~	**0.0012**	~	0.000152	~	0.000185	~	**0.00136**	~	**0.00218**	0.000868167	0.00218	6 of 12
BZ 18 Trichlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
BZ 180 Heptachlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	**0.000826**	~	0.000163	0.000265667	0.000826	2 of 12
BZ 187 Heptachlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
BZ 195 Octachlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
BZ 206 Nonachlorobiphenyl	~	**0.000536**	~	**0.00138**	~	**0.000845**	~	**0.000649**	~	**0.00148**	~	**0.00207**	0.00116	0.00207	12 of 12
BZ 209 Decachlorobiphenyl	~	**0.000473**	~	**0.000957**	~	**0.000721**	~	**0.000566**	~	**0.00131**	~	**0.00185**	0.0009795	0.00185	12 of 12
BZ 28 Trichlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
BZ 44 Tetrachlorobiphenyl	~	**0.00023**	~	**0.000535**	~	**0.000403**	~	0.000185	~	0.000238	~	0.000163	0.000292333	0.000535	6 of 12
BZ 52 Tetrachlorobiphenyl	~	**0.000196**	~	**0.000351**	~	**0.000278**	~	0.000185	~	0.000238	~	**0.00036**	0.000268	0.00036	7 of 12
BZ 66 Tetrachlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
BZ 77 Tetrachlorobiphenyl	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
BZ 8 Dichlorobiphenyl	~	**0.0000564**	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000155067	0.000238	2 of 12
Cis-Nonachlor	~	**0.000219**	~	**0.000953**	~	**0.00033**	~	**0.000696**	~	**0.00158**	~	**0.00104**	0.000803	0.00158	11 of 12
DDMU	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
Dieldrin	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
Endrin	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
Gamma-BHC	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
Gamma-Chlordane	~	**0.00139**	~	**0.00656**	~	**0.00875**	~	**0.00423**	~	**0.00934**	~	**0.00708**	0.006225	0.00934	12 of 12
Heptachlor	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
Heptachlor Epoxide	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
Hexachlorobenzene	~	**0.00043**	~	**0.00265**	~	**0.000535**	~	**0.000447**	~	**0.00101**	~	**0.000924**	0.000999333	0.00265	12 of 12
Mirex	~	0.000132	~	0.000136	~	0.000152	~	0.000185	~	0.000238	~	0.000163	0.000167667	0.000238	0 of 12
Oxychlordane	~	0.000132	~	**0.0062**	~	**0.0202**	~	0.000185	~	0.000238	~	0.000163	0.004519667	0.0202	4 of 12
Total Chlordane	~	**0.00303**	~	**0.0109**	~	**0.00295**	~	**0.0074**	~	**0.0169**	~	**0.0126**	0.008963333	0.0169	12 of 12
Total DDT	~	**0.00105**	~	**0.00262**	~	**0.00189**	~	0.000185	~	**0.00456**	~	**0.00283**	0.002189167	0.00456	10 of 12
Trans-Nonachlor	~	**0.000929**	~	**0.004**	~	**0.00104**	~	**0.00223**	~	**0.0063**	~	**0.00434**	0.003139833	0.0063	12 of 12

Table A-15. Deer Island Influent Loadings (Low detection limit analyses; South System), FY16 (cont.)

Volatile Organics (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,1,1-Trichloroethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
1,1,2,2-Tetrachloroethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
1,1,2-Trichloroethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
1,1-Dichloroethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
1,1-Dichloroethene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
1,2-Dichlorobenzene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
1,2-Dichloroethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
1,2-Dichloropropane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
1,3-Dichlorobenzene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
1,4-Dichlorobenzene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
2-Butanone	**9.84**	**8.81**	**8.79**	**15.4**	**5.94**	**7.02**	**2.51**	**5.85**	**5.59**	**3.43**	**5.1**	**6.09**	7.031	15.400	22 of 24
2-Chloroethyl Vinyl Ether	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
2-Hexanone	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
4-Methyl-2-Pentanone	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Acetone	**89.2**	**72.8**	**132**	**80.8**	**81**	**283**	**72.1**	**77.8**	**148**	**119**	**82.4**	**68.4**	108.875	283.000	23 of 24
Acrolein	0.737	0.651	0.575	0.652	0.626	0.66	1	0.86	0.97	1.18	0.892	0.766	0.797	1.180	0 of 24
Acrylonitrile	0.737	0.651	0.575	0.652	0.626	0.66	1	0.86	0.97	1.18	0.892	0.766	0.797	1.180	0 of 24
Benzene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Bromodichloromethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Bromoform	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Bromomethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Carbon Disulfide	**9.29**	**3.08**	**20**	**21.7**	**33.3**	**25.1**	0.5	0.43	0.485	0.592	0.446	0.383	9.609	33.300	8 of 24
Carbon Tetrachloride	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Chlorobezene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Chloroethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Chloroform	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Chloromethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Cis-1,2-Dichloroethene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Cis-1,3-Dichloropropene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Dibromochloromethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Ethylbenzene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
M,P-Xylene	0.737	0.651	0.575	0.652	0.626	0.66	1	0.86	0.97	1.18	0.892	0.766	0.797	1.180	0 of 24
Methylene Chloride	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
O-Xylene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Styrene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Tetrachloroethene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	**12**	0.485	**4.44**	**6.33**	0.383	2.174	12.000	3 of 24
Toluene	**6.18**	**3.65**	**1.6**	**1.84**	**2.42**	0.33	0.5	0.43	0.485	0.592	0.446	0.383	1.571	6.180	6 of 24
Trans-1,2-Dichloroethene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Trans-1,3-Dichloropropene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Trichloroethene	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Trichlorofluoromethane	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Vinyl Acetate	0.368	0.326	0.287	0.326	0.313	0.33	0.5	0.43	0.485	0.592	0.446	0.383	0.399	0.592	0 of 24
Vinyl Chloride	0.147	0.13	0.115	0.13	0.125	0.132	0.2	0.172	0.194	0.237	0.178	0.153	0.159	0.237	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 and are flow-weighted.

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), FY16

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	**0.000255**	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000119	0.000255	1 of 48
2,4'-DDE	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
2,4'-DDT	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
4,4'-DDD	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
4,4'-DDE	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
4,4'-DDT	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
Aldrin	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
Alpha-Chlordane	**0.000289**	**0.00121**	**0.000707**	**0.000888**	**0.000408**	**0.000222**	**0.000971**	**0.000588**	**0.000705**	**0.00134**	**0.000258**	**0.000396**	0.000665	0.001340	47 of 48
BZ 101 Pentachlorobiphenyl	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
BZ 105 Pentachlorobiphenyl	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
BZ 118 Pentachlorobiphenyl	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
BZ 126 Pentachlorobiphenyl	0.000102	**0.000113**	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000107	0.000113	2 of 48
BZ 128 Hexachlorobiphenyl	0.000102	**0.000191**	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000114	0.000191	4 of 48
BZ 138 Hexachlorobiphenyl	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
BZ 153 Hexachlorobiphenyl	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
BZ 170 Heptachlorobiphenyl	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	**0.000199**	0.000106	0.00011	0.000106	0.000108	0.000104	0.000114	0.000199	2 of 48
BZ 18 Trichlorobiphenyl	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
BZ 180 Heptachlorobiphenyl	0.000102	**0.000136**	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	**0.000155**	0.000113	0.000155	6 of 48
BZ 187 Heptachlorobiphenyl	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
BZ 195 Octachlorobiphenyl	**0.000161**	**0.0000871**	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000110	0.000161	3 of 48
BZ 206 Nonachlorobiphenyl	**0.000224**	**0.000167**	**0.000112**	**0.000136**	**0.000153**	**0.000102**	**0.00014**	**0.0000978**	**0.000106**	**0.000185**	**0.000127**	**0.000216**	0.000147	0.000224	46 of 48
BZ 209 Decachlorobiphenyl	**0.000208**	**0.000133**	**0.0000874**	**0.000111**	**0.000105**	**0.0000923**	**0.000152**	**0.0000766**	**0.0000997**	**0.000157**	**0.000103**	**0.000179**	0.000125	0.000208	46 of 48
BZ 28 Trichlorobiphenyl	**0.00015**	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000110	0.000150	1 of 48
BZ 44 Tetrachlorobiphenyl	**0.000159**	**0.000101**	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000111	0.000159	2 of 48
BZ 52 Tetrachlorobiphenyl	**0.000147**	**0.0000931**	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000109	0.000147	3 of 48
BZ 66 Tetrachlorobiphenyl	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
BZ 77 Tetrachlorobiphenyl	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
BZ 8 Dichlorobiphenyl	**0.000121**	**0.0000758**	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	**0.0000918**	0.000104	0.000104	0.000121	4 of 48
Cis-Nonachlor	0.000102	0.000104	0.000106	**0.00012**	0.000112	0.000107	0.000103	0.000106	0.00011	**0.000108**	0.000108	0.000104	0.000108	0.000120	2 of 48
DDMU	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
Dieldrin	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
Endrin	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
Gamma-BHC	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
Gamma-Chlordane	**0.000304**	**0.000635**	**0.000443**	**0.000709**	**0.00134**	**0.000894**	**0.000821**	**0.000376**	**0.000629**	**0.00102**	**0.000574**	**0.000647**	0.000699	0.001340	48 of 48
Heptachlor	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
Heptachlor Epoxide	0.000102	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000106	0.000112	0 of 48
Hexachlorobenzene	**0.000147**	**0.000169**	**0.00137**	**0.000259**	**0.000286**	**0.00019**	**0.000671**	**0.000154**	**0.000294**	**0.000267**	**0.000188**	**0.000379**	0.000365	0.001370	47 of 48
Mirex	0.000182	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000113	0.000182	1 of 48
Oxychlordane	0.000102	0.000104	0.000106	0.000989	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000180	0.000989	1 of 48
Total Chlordane	**0.000465**	**0.00167**	**0.000851**	**0.0012**	**0.000641**	**0.00034**	**0.00136**	**0.000781**	**0.001**	**0.00178**	**0.000477**	**0.000694**	0.000938	0.001780	47 of 48
Total DDT	**0.000255**	0.000104	0.000106	0.000107	0.000112	0.000107	0.000103	0.000106	0.00011	0.000106	0.000108	0.000104	0.000119	0.000255	1 of 48
Trans-Nonachlor	**0.000199**	**0.000464**	**0.000144**	**0.000311**	**0.000233**	**0.000118**	**0.000383**	**0.000192**	**0.000296**	**0.000444**	**0.000219**	**0.000298**	0.000275	0.000464	47 of 48

Polycyclic Aromatic Hydrocarbons (ug/L)

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1-Methylnaphthalene	**0.00622**	**0.00424**	**0.00667**	**0.00342**	**0.005**	**0.00552**	**0.0527**	**0.0611**	**0.0109**	**0.0283**	**0.00811**	**0.00577**	0.016495833	0.0611	48 of 48
1-Methylphenanthrene	**0.00538**	**0.00723**	**0.00537**	**0.00698**	**0.00666**	**0.00564**	**0.0155**	**0.0268**	**0.0143**	**0.0261**	**0.00682**	**0.00628**	0.011088333	0.0268	48 of 48
2,3,5-Trimethylnaphthylene	**0.0128**	**0.0141**	**0.012**	**0.0162**	**0.017**	**0.0133**	**0.0404**	**0.0573**	**0.039**	**0.0625**	**0.0226**	**0.0134**	0.026716667	0.0625	48 of 48
2,6-Dimethylnaphthalene	**0.0287**	**0.011**	**0.0114**	**0.0123**	**0.015**	**0.0066**	**0.0363**	**0.0946**	**0.0237**	**0.0472**	**0.0147**	**0.0356**	0.028091667	0.0946	48 of 48
2-Methylnaphthalene	**0.00693**	**0.00618**	**0.0144**	**0.00712**	**0.00641**	**0.00661**	**0.0709**	**0.255**	**0.0675**	**0.123**	**0.0374**	**0.0199**	0.051779167	0.255	48 of 48
Acenaphthene	**0.00727**	**0.017**	**0.0267**	**0.0153**	**0.0123**	**0.0117**	**0.038**	**0.0682**	**0.0559**	**0.0926**	**0.0341**	**0.0301**	0.0340975	0.0926	47 of 48
Acenaphthylene	**0.000904**	**0.000915**	**0.00349**	**0.000702**	0.000537	0.000524	**0.00227**	**0.00308**	**0.003**	**0.00468**	**0.00149**	**0.00156**	0.001929333	0.00468	29 of 48
Anthacene	**0.0043**	**0.0069**	**0.00868**	**0.00693**	**0.00521**	**0.00534**	**0.0144**	**0.00999**	**0.00711**	**0.0204**	**0.00704**	**0.00955**	0.008820833	0.0204	48 of 48
Benzo(a)anthracene	**0.0113**	**0.00992**	**0.00559**	**0.00835**	**0.00507**	**0.00524**	**0.0239**	**0.00802**	**0.00958**	**0.034**	**0.00647**	**0.0123**	0.011645	0.034	48 of 48
Benzo(a)pyrene	**0.0079**	**0.00492**	**0.0028**	**0.00421**	**0.00503**	**0.00331**	**0.0151**	**0.00566**	**0.007**	**0.0317**	**0.00435**	**0.00761**	0.008299167	0.0317	48 of 48
Benzo(b)fluoranthene	**0.0169**	**0.0111**	**0.0058**	**0.00901**	**0.00455**	**0.0046**	**0.0377**	**0.0128**	**0.0139**	**0.0623**	**0.0104**	**0.0169**	0.017163333	0.0623	48 of 48
Benzo(e)pyrene	**0.00732**	**0.00536**	**0.00258**	**0.00428**	**0.00339**	**0.00325**	**0.0197**	**0.00822**	**0.00929**	**0.0314**	**0.00643**	**0.00944**	0.009221667	0.0314	48 of 48
Benzo(g,h,i)perylene	**0.00699**	**0.00386**	**0.000927**	**0.00319**	**0.00145**	**0.00196**	**0.015**	**0.00446**	**0.00476**	**0.0248**	**0.00387**	**0.00482**	0.006340583	0.0248	43 of 48
Benzo(k)fluoranthene	**0.00542**	**0.0031**	**0.00166**	**0.00244**	**0.00233**	**0.00245**	**0.0112**	**0.00338**	**0.00331**	**0.0151**	**0.00224**	**0.00352**	0.004679167	0.0151	48 of 48
Benzothiazole	**0.112**	**0.0902**	**0.233**	**0.266**	**0.235**	**0.275**	**0.487**	**0.231**	**0.361**	**0.47**	**0.24**	**0.474**	0.289516667	0.487	48 of 48

Table A-16. Deer Island Effluent Characterization (Low detection limit analyses), FY16 (cont.)

Polycyclic Aromatic Hydrocarbons (ug/L)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Biphenyl	0.000643	**0.003**	**0.00448**	**0.00327**	**0.00457**	**0.0026**	**0.0106**	**0.0198**	**0.0119**	**0.0149**	**0.00699**	**0.00574**	0.007374417	0.0198	44 of 48
C1-Chrysenes	**0.00855**	**0.0063**	**0.00424**	**0.00622**	**0.00254**	**0.00292**	**0.0122**	**0.0068**	**0.00868**	**0.027**	**0.00727**	**0.0105**	0.008601667	0.027	48 of 48
C1-Dibenzothiophenes	**0.0221**	**0.0234**	**0.0239**	**0.0305**	**0.0197**	**0.017**	**0.0439**	**0.0384**	**0.0289**	**0.0471**	**0.0175**	**0.0231**	0.027958333	0.0471	48 of 48
C1-Fluoranthenes/Pyrenes	**0.0156**	**0.0151**	**0.00897**	**0.0139**	**0.00875**	**0.00779**	**0.0241**	**0.0151**	**0.0163**	**0.0427**	**0.0129**	**0.0193**	0.016709167	0.0427	48 of 48
C1-Fluorenes	**0.0309**	**0.0327**	**0.0377**	**0.0414**	**0.0406**	**0.0141**	**0.0442**	**0.0817**	**0.0422**	**0.0651**	**0.0263**	**0.0225**	0.03995	0.0817	48 of 48
C1-Naphthalenes	**0.0144**	**0.0113**	**0.0192**	**0.0122**	**0.00798**	**0.00875**	**0.0745**	**0.197**	**0.0549**	**0.128**	**0.0323**	**0.02**	0.0483775	0.197	48 of 48
C1-Phenanthrenes/Anthracenes	**0.0273**	**0.0277**	**0.0259**	**0.0312**	**0.0251**	**0.0205**	**0.0625**	**0.0972**	**0.0604**	**0.119**	**0.0347**	**0.0361**	0.0473	0.119	48 of 48
C2-Chrysenes	0.000643	**0.00332**	0.000537	0.000542	0.000537	0.000524	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.000892667	0.00332	3 of 48
C2-Dibenzothiophenes	0.000643	0.000525	0.000537	0.000542	0.000537	0.000524	0.027	0.00071	0.000748	0.00102	0.000724	0.000637	0.002845583	0.027	4 of 48
C2-Fluoranthenes/Pyrenes	0.000643	**0.0126**	**0.0072**	**0.00909**	**0.00738**	**0.00514**	**0.0241**	**0.00785**	**0.00797**	**0.0221**	**0.00665**	**0.00945**	0.010014417	0.0241	41 of 48
C2-Fluorenes	**0.0158**	**0.018**	**0.0152**	**0.021**	**0.0186**	**0.000524**	**0.033**	**0.0547**	**0.0381**	**0.0559**	**0.019**	**0.0194**	0.025768667	0.0559	43 of 48
C2-Naphthalenes	**0.0441**	**0.0212**	**0.0309**	**0.0307**	**0.0238**	**0.0101**	**0.102**	**0.45**	**0.102**	**0.24**	**0.0542**	**0.04**	0.09575	0.45	48 of 48
C2-Phenanthrenes/Anthracenes	**0.0265**	**0.0255**	**0.0136**	**0.0222**	**0.0196**	**0.0149**	**0.0425**	**0.0586**	**0.0429**	**0.0832**	**0.0219**	**0.0282**	0.0333	0.0832	48 of 48
C3-Chrysenes	0.000643	0.000525	0.000537	0.000542	0.000537	0.000524	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.00065975	0.00102	0 of 48
C3-Dibenzothiophenes	0.000643	0.000525	0.000537	0.000542	0.000537	0.000524	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.00065975	0.00102	0 of 48
C3-Fluoranthenes/Pyrenes	0.000643	0.000525	0.000537	0.000542	0.000537	0.000524	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.00065975	0.00102	0 of 48
C3-Fluorenes	0.000643	**0.0346**	0.000537	0.000542	0.000537	**0.0664**	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.008989	0.0664	7 of 48
C3-Naphthalenes	**0.0405**	**0.0436**	**0.0364**	**0.0489**	**0.0368**	**0.000524**	**0.0996**	**0.411**	**0.136**	**0.264**	**0.0541**	**0.0368**	0.100685333	0.411	44 of 48
C3-Phenanthrenes/Anthracenes	**0.0153**	**0.0105**	**0.00705**	**0.0145**	**0.0398**	**0.00783**	**0.027**	**0.0169**	**0.0154**	**0.0376**	**0.00959**	**0.0138**	0.017939167	0.0398	47 of 48
C4-Chrysenes	0.000643	0.000525	0.000537	0.000542	0.000537	0.000524	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.00065975	0.00102	0 of 48
C4-Naphthalenes	**0.0739**	**0.0658**	**0.102**	**0.119**	**0.098**	**0.0766**	**0.116**	**0.231**	**0.12**	**0.212**	**0.0572**	**0.07**	0.111791667	0.231	48 of 48
C4-Phenanthrenes/Anthracenes	0.000643	0.000525	0.000537	0.000542	**0.0122**	**0.00287**	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.001827167	0.0122	8 of 48
Chrysene	**0.0162**	**0.0137**	**0.00712**	**0.011**	**0.00674**	**0.00627**	**0.0305**	**0.013**	**0.0132**	**0.0615**	**0.0118**	**0.0192**	0.017519167	0.0615	48 of 48
Dibenzo(a,h)anthracene	**0.00215**	0.000525	0.000537	0.000542	0.000537	0.000524	**0.000949**	0.00071	0.000748	0.00102	0.000724	0.000637	0.00080025	0.00215	3 of 48
Dibenzofuran	**0.0118**	**0.0256**	**0.0323**	**0.0244**	**0.017**	**0.0136**	**0.0332**	**0.0317**	**0.0221**	**0.038**	**0.02**	**0.0247**	0.024533333	0.038	48 of 48
Dibenzothiophene	**0.00372**	**0.00622**	**0.00732**	**0.00704**	**0.00696**	**0.006**	**0.0128**	**0.0247**	**0.0171**	**0.024**	**0.00829**	**0.00909**	0.011103333	0.0247	48 of 48
Fluoranthene	**0.0329**	**0.0426**	**0.0289**	**0.0366**	**0.022**	**0.0222**	**0.0803**	**0.0427**	**0.0425**	**0.152**	**0.0384**	**0.0532**	0.049525	0.152	48 of 48
Fluorene	**0.012**	**0.0241**	**0.0331**	**0.0255**	**0.0176**	**0.0137**	**0.0371**	**0.0582**	**0.0295**	**0.0542**	**0.0228**	**0.0205**	0.029025	0.0582	48 of 48
Indeno(1,2,3-CD)pyrene	**0.023**	**0.00109**	**0.00567**	**0.0101**	**0.00708**	**0.0028**	**0.0143**	**0.0129**	**0.0289**	**0.0546**	**0.00745**	**0.017**	0.0154075	0.0546	45 of 48
Naphthalene	**0.0175**	**0.0128**	**0.0161**	**0.00953**	**0.00839**	**0.00853**	**0.0834**	**0.118**	**0.103**	**0.177**	**0.0442**	**0.0313**	0.052479167	0.177	48 of 48
Perylene	0.000643	0.000525	0.000537	0.000542	0.000537	0.000524	**0.00396**	**0.00626**	**0.00632**	0.0139	**0.00351**	0.0064	0.003638167	0.0139	21 of 48
Phenanthrene	**0.0177**	**0.0311**	**0.0391**	**0.0307**	**0.0228**	**0.0239**	**0.0913**	**0.1**	**0.0542**	**0.143**	**0.0366**	**0.0352**	0.052133333	0.143	48 of 48
Pyrene	**0.0394**	**0.0415**	**0.0264**	**0.0359**	**0.022**	**0.0199**	**0.0654**	**0.0346**	**0.0354**	**0.111**	**0.0316**	**0.047**	0.042508333	0.111	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 and are flow-weighted.

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-17. Deer Island Effluent Loadings (Low detection limit analyses), FY16

Organochlorine Pesticides and PCBs (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
2,4'-DDD	**0.000644**	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000297	0.000644	1 of 48
2,4'-DDE	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
2,4'-DDT	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
4,4'-DDD	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
4,4'-DDE	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
4,4'-DDT	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
Aldrin	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
Alpha-Chlordane	**0.00073**	**0.00246**	**0.00144**	**0.00179**	**0.000781**	**0.000434**	**0.00289**	**0.00157**	**0.00191**	**0.00521**	**0.000693**	**0.00097**	0.001740	0.005210	47 of 48
BZ 101 Pentachlorobiphenyl	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
BZ 105 Pentachlorobiphenyl	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
BZ 118 Pentachlorobiphenyl	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
BZ 126 Pentachlorobiphenyl	0.000258	**0.000229**	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000266	0.000410	2 of 48
BZ 128 Hexachlorobiphenyl	0.000258	**0.000387**	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000279	0.000410	4 of 48
BZ 138 Hexachlorobiphenyl	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
BZ 153 Hexachlorobiphenyl	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
BZ 170 Heptachlorobiphenyl	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	**0.000595**	0.000284	0.0003	0.00041	0.00029	0.000255	0.000288	0.000595	2 of 48
BZ 18 Trichlorobiphenyl	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
BZ 180 Heptachlorobiphenyl	0.000258	**0.000275**	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	**0.000379**	0.000280	0.000410	6 of 48
BZ 187 Heptachlorobiphenyl	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
BZ 195 Octachlorobiphenyl	**0.000407**	**0.000177**	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000274	0.000410	3 of 48
BZ 206 Nonachlorobiphenyl	**0.000566**	**0.000339**	**0.000228**	**0.000275**	**0.000294**	**0.000199**	**0.000418**	**0.000261**	**0.000288**	**0.000718**	**0.000341**	**0.00053**	0.000371	0.000718	46 of 48
BZ 209 Decachlorobiphenyl	**0.000526**	**0.000269**	**0.000177**	**0.000224**	**0.000202**	**0.00018**	**0.000453**	**0.000204**	**0.00027**	**0.000609**	**0.000276**	**0.000437**	0.000319	0.000609	46 of 48
BZ 28 Trichlorobiphenyl	**0.000379**	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000275	0.000410	1 of 48
BZ 44 Tetrachlorobiphenyl	**0.000402**	**0.000205**	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000276	0.000410	2 of 48
BZ 52 Tetrachlorobiphenyl	**0.000371**	**0.000189**	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000272	0.000410	3 of 48
BZ 66 Tetrachlorobiphenyl	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
BZ 77 Tetrachlorobiphenyl	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
BZ 8 Dichlorobiphenyl	**0.000306**	**0.000154**	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	**0.000246**	0.000255	0.000260	0.000410	4 of 48
Cis-Nonachlor	0.000258	0.000211	0.000215	**0.000242**	0.000215	0.00021	0.000308	0.000284	0.0003	**0.000417**	0.00029	0.000255	0.000267	0.000417	2 of 48
DDMU	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
Dieldrin	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
Endrin	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
Gamma-BHC	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
Gamma-Chlordane	**0.000767**	**0.00129**	**0.0009**	**0.00143**	**0.00256**	**0.00175**	**0.00245**	**0.001**	**0.00171**	**0.00395**	**0.00154**	**0.00158**	0.001744	0.003950	48 of 48
Heptachlor	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
Heptachlor Epoxide	0.000258	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000264	0.000410	0 of 48
Hexachlorobenzene	**0.000372**	**0.000343**	**0.00279**	**0.000524**	**0.000548**	**0.000371**	**0.002**	**0.000412**	**0.000798**	**0.00103**	**0.000505**	**0.000927**	0.000885	0.002790	47 of 48
Mirex	0.000461	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000281	0.000461	1 of 48
Oxychlordane	0.000258	0.000211	0.000215	0.002	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000413	0.002000	1 of 48
Total Chlordane	**0.00117**	**0.00339**	**0.00173**	**0.00242**	**0.00123**	**0.000664**	**0.00404**	**0.00208**	**0.00271**	**0.00692**	**0.00128**	**0.0017**	0.002445	0.006920	47 of 48
Total DDT	**0.000644**	0.000211	0.000215	0.000217	0.000215	0.00021	0.000308	0.000284	0.0003	0.00041	0.00029	0.000255	0.000297	0.000644	1 of 48
Trans-Nonachlor	**0.000504**	**0.000941**	**0.000292**	**0.000629**	**0.000447**	**0.000231**	**0.00114**	**0.000513**	**0.000802**	**0.00172**	**0.000588**	**0.000729**	0.000711	0.001720	47 of 48

Semivolatile Organics (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1,2,4-Trichlorobenzene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
1,2-Dichlorobenzene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
1,2-Diphenylhydrazine (as Azobenzene)	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
1,3-Dichlorobenzene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
1,4-Dichlorobenzene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
2,2'-Oxybis(1-Chloropropane)	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
2,4,5-Trichlorophenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
2,4,6-Trichlorophenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
2,4-Dichlorophenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
2,4-Dimethylphenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
2,4-Dinitrophenol	11.9	11.7	10.3	12.5	11.6	11.7	13.3	14.7	16.2	16.5	15.4	12.3	17.1	51.7	0 of 24
2,4-Dinitrotoluene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
2,6-Dinitrotoluene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
2-Chloronaphthalene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24
2-Chlorophenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	6.86	20.7	0 of 24

Table A-17. Deer Island Effluent Loadings (Low detection limit analyses), FY16 (cont.)

Semivolatile Organics (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
2-Methyl-4,6-Dinitrophenol	11.9	11.7	10.3	12.5	11.6	11.7	13.3	14.7	16.2	16.5	15.4	12.3	13.18	16.50	0 of 24
2-Methylnaphthalene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
2-Methylphenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
2-Nitroaniline	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
2-Nitrophenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
3,3'-Dichlorobenzidine	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
3-Nitroaniline	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
4-Bromophenyl Phenyl Ether	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
4-Chloro-3-Methylphenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
4-Chloroaniline	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
4-Chlorophenyl Phenyl Ether	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
4-Methylphenol (includes 3-Methylphenol)	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
4-Nitroaniline	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
4-Nitrophenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Acenaphthene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Acenaphthylene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Aniline	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Anthracene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Benzidine	11.9	11.7	10.3	12.5	11.6	11.7	13.3	14.7	16.2	16.5	15.4	12.3	13.18	16.50	0 of 24
Benzo(a)anthracene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Benzo(a)pyrene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Benzo(b)fluoranthene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Benzo(g,h,i)perylene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Benzo(k)fluoranthene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Benzoic Acid	11.9	11.7	10.3	12.5	11.6	11.7	13.3	14.7	16.2	16.5	15.4	12.3	13.18	16.50	0 of 24
Benzyl Alcohol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Bis(2-Chloroethoxy)methane	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Bis(2-Chloroethyl)ether	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Bis(2-Ethylhexyl)phthalate	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Butylbenzylphthalate	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Carbazole	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Chrysene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Dibenzo(a,h)anthracene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Dibenzofuran	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Diethylphthalate	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Dimethylphthalate	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Di-N-Butylphthalate	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Di-N-Octylphthalate	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Fluoranthene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Fluorene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Hexachlorobenzene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Hexachlorobutadiene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Hexachlorocyclopentadiene	11.9	11.7	10.3	12.5	11.6	11.7	13.3	14.7	16.2	16.5	15.4	12.3	13.18	16.50	0 of 24
Hexachloroethane	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Indeno(1,2,3-CD)pyrene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Isophorone	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Naphthalene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
n-Decane	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Nitrobenzene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
N-Nitrosodimethylamine (NDMA)	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
N-Nitrosodi-N-Propylamine (NDPA)	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
N-Nitrosodiphenylamine	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
N-Octadecane	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Pentachlorophenol	11.9	11.7	10.3	12.5	11.6	11.7	13.3	14.7	16.2	16.5	15.4	12.3	13.18	16.50	0 of 24
Phenanthrene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Phenol	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24
Pyrene	4.78	4.67	4.14	4.98	4.63	4.7	5.33	5.9	6.48	6.62	6.16	4.91	5.28	6.62	0 of 24

Table A-17. Deer Island Effluent Loadings (Low detection limit analyses), FY16 (cont.)

Polycyclic Aromatic Hydrocarbons (lbs/day)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
1-Methylnaphthalene	**0.00622**	**0.00424**	**0.00667**	**0.00342**	**0.005**	**0.00552**	**0.0527**	**0.0611**	**0.0109**	**0.0283**	**0.00811**	**0.00577**	0.0165	0.0611	48 of 48
1-Methylphenanthrene	**0.00538**	**0.00723**	**0.00537**	**0.00698**	**0.00666**	**0.00564**	**0.0155**	**0.0268**	**0.0143**	**0.0261**	**0.00682**	**0.00628**	0.0111	0.0268	48 of 48
2,3,5-Trimethylnaphthylene	**0.0128**	**0.0141**	**0.012**	**0.0162**	**0.017**	**0.0133**	**0.0404**	**0.0573**	**0.039**	**0.0625**	**0.0226**	**0.0134**	0.0267	0.0625	48 of 48
2,6-Dimethylnaphthalene	**0.0287**	**0.011**	**0.0114**	**0.0123**	**0.015**	**0.0066**	**0.0363**	**0.0946**	**0.0237**	**0.0472**	**0.0147**	**0.0356**	0.0281	0.0946	48 of 48
2-Methylnaphthalene	**0.00693**	**0.00618**	**0.0144**	**0.00712**	**0.00641**	**0.00661**	**0.0709**	**0.255**	**0.0675**	**0.123**	**0.0374**	**0.0199**	0.0518	0.2550	48 of 48
Acenaphthene	**0.00727**	**0.017**	**0.0267**	**0.0153**	**0.0123**	**0.0117**	**0.038**	**0.0682**	**0.0559**	**0.0926**	**0.0341**	**0.0301**	0.0341	0.0926	47 of 48
Acenaphthylene	**0.000904**	**0.000915**	**0.00349**	**0.000702**	0.000537	0.000524	**0.00227**	**0.00308**	**0.003**	**0.00468**	**0.00149**	**0.00156**	0.0019	0.0047	29 of 48
Anthacene	**0.0043**	**0.0069**	**0.00868**	**0.00693**	**0.00521**	**0.00534**	**0.0144**	**0.00999**	**0.00711**	**0.0204**	**0.00704**	**0.00955**	0.0088	0.0204	48 of 48
Benzo(a)anthracene	**0.0113**	**0.00992**	**0.00559**	**0.00835**	**0.00507**	**0.00524**	**0.0239**	**0.00802**	**0.00958**	**0.034**	**0.00647**	**0.0123**	0.0116	0.0340	48 of 48
Benzo(a)pyrene	**0.0079**	**0.00492**	**0.0028**	**0.00421**	**0.00503**	**0.00331**	**0.0151**	**0.00566**	**0.007**	**0.0317**	**0.00435**	**0.00761**	0.0083	0.0317	48 of 48
Benzo(b)fluoranthene	**0.0169**	**0.0111**	**0.0058**	**0.00901**	**0.00455**	**0.0046**	**0.0377**	**0.0128**	**0.0139**	**0.0623**	**0.0104**	**0.0169**	0.0172	0.0623	48 of 48
Benzo(e)pyrene	**0.00732**	**0.00536**	**0.00258**	**0.00428**	**0.00339**	**0.00325**	**0.0197**	**0.00822**	**0.00929**	**0.0314**	**0.00643**	**0.00944**	0.0092	0.0314	48 of 48
Benzo(g,h,i)perylene	**0.00699**	**0.00386**	**0.000927**	**0.00319**	**0.00145**	**0.00196**	**0.015**	**0.00446**	**0.00476**	**0.0248**	**0.00387**	**0.00482**	0.0063	0.0248	43 of 48
Benzo(k)fluoranthene	**0.00542**	**0.0031**	**0.00166**	**0.00244**	**0.00233**	**0.00245**	**0.0112**	**0.00338**	**0.00331**	**0.0151**	**0.00224**	**0.00352**	0.0047	0.0151	48 of 48
Benzothiazole	**0.112**	**0.0902**	**0.233**	**0.266**	**0.235**	**0.275**	**0.487**	**0.231**	**0.361**	**0.47**	**0.24**	**0.474**	0.2895	0.4870	48 of 48
Biphenyl	0.000643	**0.003**	**0.00448**	**0.00327**	**0.00457**	**0.0026**	**0.0106**	**0.0198**	**0.0119**	**0.0149**	**0.00699**	**0.00574**	0.0074	0.0198	44 of 48
C1-Chrysenes	**0.00855**	**0.0063**	**0.00424**	**0.00622**	**0.00254**	**0.00292**	**0.0122**	**0.0068**	**0.00868**	**0.027**	**0.00727**	**0.0105**	0.0086	0.0270	48 of 48
C1-Dibenzothiophenes	**0.0221**	**0.0234**	**0.0239**	**0.0305**	**0.0197**	**0.017**	**0.0439**	**0.0384**	**0.0289**	**0.0471**	**0.0175**	**0.0231**	0.0280	0.0471	48 of 48
C1-Fluoranthenes/Pyrenes	**0.0156**	**0.0151**	**0.00897**	**0.0139**	**0.00875**	**0.00779**	**0.0241**	**0.0151**	**0.0163**	**0.0427**	**0.0129**	**0.0193**	0.0167	0.0427	48 of 48
C1-Fluorenes	**0.0309**	**0.0327**	**0.0377**	**0.0414**	**0.0406**	**0.0141**	**0.0442**	**0.0817**	**0.0422**	**0.0651**	**0.0263**	**0.0225**	0.0400	0.0817	48 of 48
C1-Naphthalenes	**0.0144**	**0.0113**	**0.0192**	**0.0122**	**0.00798**	**0.00875**	**0.0745**	**0.197**	**0.0549**	**0.128**	**0.0323**	**0.02**	0.0484	0.1970	48 of 48
C1-Phenanthrenes/Anthracenes	**0.0273**	**0.0277**	**0.0259**	**0.0312**	**0.0251**	**0.0205**	**0.0625**	**0.0972**	**0.0604**	**0.119**	**0.0347**	**0.0361**	0.0473	0.1190	48 of 48
C2-Chrysenes	0.000643	**0.00332**	0.000537	0.000542	0.000537	0.000524	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.0009	0.0033	3 of 48
C2-Dibenzothiophenes	0.000643	0.000525	0.000537	0.000542	0.000537	0.000524	0.027	0.00071	0.000748	0.00102	0.000724	0.000637	0.0028	0.0270	4 of 48
C2-Fluoranthenes/Pyrenes	0.000643	**0.0126**	**0.0072**	**0.00909**	**0.00738**	**0.00514**	**0.0241**	**0.00785**	**0.00797**	**0.0221**	**0.00665**	**0.00945**	0.0100	0.0241	41 of 48
C2-Fluorenes	**0.0158**	**0.018**	**0.0152**	**0.021**	**0.0186**	**0.000524**	**0.033**	**0.0547**	**0.0381**	**0.0559**	**0.019**	**0.0194**	0.0258	0.0559	43 of 48
C2-Naphthalenes	**0.0441**	**0.0212**	**0.0309**	**0.0307**	**0.0238**	**0.0101**	**0.102**	**0.45**	**0.102**	**0.24**	**0.0542**	**0.04**	0.0958	0.4500	48 of 48
C2-Phenanthrenes/Anthracenes	**0.0265**	**0.0255**	**0.0136**	**0.0222**	**0.0196**	**0.0149**	**0.0425**	**0.0586**	**0.0429**	**0.0832**	**0.0219**	**0.0282**	0.0333	0.0832	48 of 48
C3-Chrysenes	0.000643	0.000525	0.000537	0.000542	0.000537	0.000524	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.0007	0.0010	0 of 48
C3-Dibenzothiophenes	0.000643	0.000525	0.000537	0.000542	0.000537	0.000524	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.0007	0.0010	0 of 48
C3-Fluoranthenes/Pyrenes	0.000643	0.000525	0.000537	0.000542	0.000537	0.000524	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.0007	0.0010	0 of 48
C3-Fluorenes	0.000643	**0.0346**	0.000537	0.000542	0.000537	**0.0664**	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.0090	0.0664	7 of 48
C3-Naphthalenes	**0.0405**	**0.0436**	**0.0364**	**0.0489**	**0.0368**	**0.000524**	**0.0996**	**0.411**	**0.136**	**0.264**	**0.0541**	**0.0368**	0.1007	0.4110	44 of 48
C3-Phenanthrenes/Anthracenes	**0.0153**	**0.0105**	**0.00705**	**0.0145**	**0.0398**	**0.00783**	**0.027**	**0.0169**	**0.0154**	**0.0376**	**0.00959**	**0.0138**	0.0179	0.0398	47 of 48
C4-Chrysenes	0.000643	0.000525	0.000537	0.000542	0.000537	0.000524	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.0007	0.0010	0 of 48
C4-Naphthalenes	**0.0739**	**0.0658**	**0.102**	**0.119**	**0.098**	**0.0766**	**0.116**	**0.231**	**0.12**	**0.212**	**0.0572**	**0.07**	0.1118	0.2310	48 of 48
C4-Phenanthrenes/Anthracenes	0.000643	0.000525	0.000537	0.000542	**0.0122**	**0.00287**	0.00077	0.00071	0.000748	0.00102	0.000724	0.000637	0.0018	0.0122	8 of 48
Chrysene	**0.0162**	**0.0137**	**0.00712**	**0.011**	**0.00674**	**0.00627**	**0.0305**	**0.013**	**0.0132**	**0.0615**	**0.0118**	**0.0192**	0.0175	0.0615	48 of 48
Dibenzo(a,h)anthracene	**0.00215**	0.000525	0.000537	0.000542	0.000537	0.000524	**0.000949**	0.00071	0.000748	0.00102	0.000724	0.000637	0.0008	0.0022	3 of 48
Dibenzofuran	**0.0118**	**0.0256**	**0.0323**	**0.0244**	**0.017**	**0.0136**	**0.0332**	**0.0317**	**0.0221**	**0.038**	**0.02**	**0.0247**	0.0245	0.0380	48 of 48
Dibenzothiophene	**0.00372**	**0.00622**	**0.00732**	**0.00704**	**0.00696**	**0.006**	**0.0128**	**0.0247**	**0.0171**	**0.024**	**0.00829**	**0.00909**	0.0111	0.0247	48 of 48
Fluoranthene	**0.0329**	**0.0426**	**0.0289**	**0.0366**	**0.022**	**0.0222**	**0.0803**	**0.0427**	**0.0425**	**0.152**	**0.0384**	**0.0532**	0.0495	0.1520	48 of 48
Fluorene	**0.012**	**0.0241**	**0.0331**	**0.0255**	**0.0176**	**0.0137**	**0.0371**	**0.0582**	**0.0295**	**0.0542**	**0.0228**	**0.0205**	0.0290	0.0582	48 of 48
Indeno(1,2,3-CD)pyrene	**0.023**	**0.00109**	**0.00567**	**0.0101**	**0.00708**	**0.0028**	**0.0143**	**0.0129**	**0.0289**	**0.0546**	**0.00745**	**0.017**	0.0154	0.0546	45 of 48
Naphthalene	**0.0175**	**0.0128**	**0.0161**	**0.00953**	**0.00839**	**0.00853**	**0.0834**	**0.118**	**0.103**	**0.177**	**0.0442**	**0.0313**	0.0525	0.1770	48 of 48
Perylene	0.000643	0.000525	0.000537	0.000542	0.000537	0.000524	**0.00396**	**0.00626**	**0.00632**	0.0139	**0.00351**	0.0064	0.0036	0.0139	21 of 48
Phenanthrene	**0.0177**	**0.0311**	**0.0391**	**0.0307**	**0.0228**	**0.0239**	**0.0913**	**0.1**	**0.0542**	**0.143**	**0.0366**	**0.0352**	0.0521	0.1430	48 of 48
Pyrene	**0.0394**	**0.0415**	**0.0264**	**0.0359**	**0.022**	**0.0199**	**0.0654**	**0.0346**	**0.0354**	**0.111**	**0.0316**	**0.047**	0.0425	0.1110	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 and are flow-weighted.

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, Fiscal Year 2016

Date		Rainfall (inches)	Discharge Duration (hours)	Total Volume (MG)	Peak Flow (MG)	pH pH (SU)	BOD Effluent (mg/L)	TSS Effluent (mg/L)	Fecal Coliform (col/100 ml)	Chlorine Residual (mg/L)
July										
	10	1.12	1.8	1.27	22.17	5.39	24.8	57.5	<10	<.02
						5.16		57.6	<10	<.02
								60.0	27	<.02
										<.02
August										
	NA									
September										
	30	2.46	6.53	31.40	200	6.35	46.4	106	580	<.02
						7.01		126	1450	<.02
								111	9.01	<.02
								151	320	0.02
								188	5800	<.02
								177	1180	<.02
								132	1730	<.02
								92	153	<.02
								93	108	<.02
								124	380	<.02
								127	207	<.02
								102	9.01	<.02
October										
NA										
November										
NA										
December										
NA										
January										
NA										
February										
NA										
March										
NA										
April										
NA										
May										
NA										
June										
NA										
Total			8.33	32.67						
Average		1.79	4.17	16.34		6.0	35.6	113.6	919.5	0.0
Minimum		1.12	1.80	1.27	22.2	5.2	24.8	57.5	9.0	0.0
Maximum		2.46	6.53	31.40	200.0	7.0	46.4	188.0	5800.0	0.0

Number of CSO Events 2

* Continued from previous day
A= Samples out of holding time
NA= No Activation
ND = No data

Table B-2. Cottage Farm CSO Facility Effluent Characterization, FY16

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Metals (ug/L)															
ALUMINUM	~	NA	1880	NA	NA	NA	NA	NA	NA	NA	NA	NA	1880.00	1880	1 of 1
CADMIUM	~	NA	0.65	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.65	0.6515	1 of 2
CALCIUM	~	NA	11900	NA	NA	NA	NA	NA	NA	NA	NA	NA	11900.00	11900	1 of 1
CHROMIUM	~	NA	12.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.40	12.4	1 of 1
COPPER	~	NA	44.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	44.40	44.4	1 of 1
LEAD	~	NA	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	40.00	40	1 of 1
MAGNESIUM	~	NA	2290	NA	NA	NA	NA	NA	NA	NA	NA	NA	2290.00	2290	1 of 1
MERCURY	~	NA	0.113	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.11	0.113	1 of 1
NICKEL	~	NA	4.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.13	4.13	1 of 2
ZINC	~	NA	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	125.00	125	1 of 1
TOTAL ORGANIC CARB	~	NA	27.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.80	27.8	1 of 1

Table B-3. Cottage Farm CSO Facility Effluent Loadings, FY16

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Metals (lbs/day)															
ALUMINUM	~	NA	19.93168	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	20	1 of 1
CADMIUM	~	NA	0.006907	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.007	0.007	1 of 2
CALCIUM	~	NA	126.1633	NA	NA	NA	NA	NA	NA	NA	NA	NA	126	126	1 of 1
CHROMIUM	~	NA	0.131464	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1	0.1	1 of 1
COPPER	~	NA	0.470727	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5	0.5	1 of 1
LEAD	~	NA	0.424078	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.42	0.42	1 of 1
MAGNESIUM	~	NA	24.27849	NA	NA	NA	NA	NA	NA	NA	NA	NA	24	24	1 of 1
MERCURY	~	NA	0.001198	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001	0.001	1 of 1
NICKEL	~	NA	0.043786	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.04	0.04	1 of 2
ZINC	~	NA	1.325245	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.33	1.33	1 of 1
Total Organic Carbon (lbs/day)															
TOTAL ORGANIC CARB	~	NA	0.29473	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3	0.3	1 of 1

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, Fiscal Year 2016

Date		Rainfall (inches)	Discharge Duration (hours)	Total Volume (MG)	Peak Flow (MG)	pH (SU)	BOD Effluent (mg/L)	TSS Effluent (mg/L)	Fecal Coliform (col/100 ml)	Chlorine Residual (mg/L)
July										
	1	0.54	1	2.32	2					
	10	1.12	3.6	17.76	236					
August										
	4	0.49	2	6.66	256					
September										
	30	2.46	10.13	68.8	274	6.92	19.1	240	81.1	0.63
						6.15		460	7730	<.02
						6.12		391	330	<.02
						6.26		88	1	<.02
								82	63.1	<.02
								69	90.1	<.02
								117	135	<.02
								92	510	<.02
								232	370	<.02
								56	290	<.02
								52	36	<.02
								51	117	<.02
								56	510	<.02
								64	360	0.02
								145	250	<.02
								184	330	<.02
								83	18	1.29
								119	210	<.02
								98	460	0.04
								99	360	<.02
								224	460	<.02
October										
	29	0.73	2.46	9.64	217					
November										
	20	0.86	1.31	3.18	98					
December										
	23	0.76	3.45	5.51	61.7	6.72	35.7	73	330	<.02
								65.5	189	<.02
								75	200	<.02
								67	36	<.02
								59	230	<.02
								47		
January										
	10	1.38	4.2	18.66	185	6.61	29.2	58.5	1010	<0.02
								164	72.1	<0.02
								170	530	0.05
								140	144	<0.02

Table C-1 Prison Point CSO Facility Operations Summary, Fiscal Year 2016

Date		Rainfall (inches)	Discharge Duration (hours)	Total Volume (MG)	Peak Flow (MG)	pH (SU)	BOD Effluent (mg/L)	TSS Effluent (mg/L)	Fecal Coliform (col/100 ml)	Chlorine Residual (mg/L)
January (cont.)										
								92.5	108	<0.02
								122	340	<0.02
								92	4400	<0.02
								68.5	640	<0.02
	16	1.22	4.116	7.07	79					
February										
	16	0.66	2.516	7.1	12.5	6.4	41.6	372	560	<0.02
								412	1240	<0.02
								189	568	<0.02
								176	874	<0.02
								196	54.1	<0.02
	25	0.81	1.416	3.52	3					
March										
	NA									
April										
	7	1.03	5.31	17.93	199					
May										
	30	1.13	2.7	9.82	215.0					
June										
	5	0.91	3.38	5.11	82.7					
	29	0.03	1.73	2.54	94					
Total			49.32	185.62						
Average		0.94	3.29	12.37	134.33	6.45	31.40	141.03	621.45	0.41
Minimum		0.03	1.00	2.32	2.00	6.12	19.10	47.00	1.00	0.02
Maximum		2.46	10.13	68.80	274.00	6.92	41.60	460.00	7730.00	1.29

Number of CSO Events 15

* Continued from previous day
A= Samples out of holding time
NA= No Activation
ND = No data

Table C-2. Prison Point CSO Facility Effluent Characterization, FY16

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Metals (ug/L)															
ALUMINUM	~	~	772	~	~	914	~	~	NA	~	~	~	843	914	2 of 2
CADMIUM	~	~	0.66	~	~	0.347	~	~	NA	~	~	~	0.506	0.664	2 of 3
CALCIUM	~	~	6830	~	~	~	~	~	NA	~	~	~	6830	6830	1 of 1
CHROMIUM	~	~	6.08	~	~	8.16	~	~	NA	~	~	~	7.1	8.2	2 of 2
COPPER	~	~	23.9	~	~	36.2	~	~	NA	~	~	~	30.1	36.2	2 of 2
LEAD	~	~	23.2	~	~	28.2	~	~	NA	~	~	~	25.7	28.2	2 of 3
MAGNESIUM	~	~	2000	~	~	2260	~	~	NA	~	~	~	2130	2260	2 of 2
MERCURY	~	~	0.0825	~	~	0.088	~	~	NA	~	~	~	0.09	0.09	2 of 2
NICKEL	~	~	2.78	~	~	2.83	~	~	NA	~	~	~	4.17	5.67	2 of 3
ZINC	~	~	105	~	~	188	~	~	NA	~	~	~	146.50	188	2 of 2
Total Organic Carbon (mg/L)															
TOTAL ORGANIC CARB	~	~	11.5	~	~	13.8	~	~	NA	~	~	~	12.7	13.8	2 of 2

Table C-3. Prison Point CSO Facility Effluent Loadings, FY16

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Metals (lbs/day)															
ALUMINUM	~	~	443.39	~	~	42.0416967	~	~	NA	~	~	~	243	443	2 of 2
CADMIUM	~	~	0.38	~	~	0.01596113	~	~	NA	~	~	~	0.199	0.381	2 of 3
CALCIUM	~	~	3922.76	~	~	~	~	~	NA	~	~	~	3923	3923	1 of 1
CHROMIUM	~	~	3.49	~	~	0.37533944	~	~	NA	~	~	~	1.9	3.5	2 of 2
COPPER	~	~	13.73	~	~	1.66510878	~	~	NA	~	~	~	7.7	13.7	2 of 2
LEAD	~	~	13.30	~	~	1.29712894	~	~	NA	~	~	~	7.3	13.3	2 of 3
MAGNESIUM	~	~	1148.68	~	~	103.954305	~	~	NA	~	~	~	626	1149	2 of 2
MERCURY	~	~	0.05	~	~	0.00404778	~	~	NA	~	~	~	0.03	0.05	2 of 2
NICKEL	~	~	1.59	~	~	0.13017287	~	~	NA	~	~	~	0.86	1.59	2 of 3
ZINC	~	~	60.31	~	~	8.64752624	~	~	NA	~	~	~	34.5	60.3	2 of 2
Total Organic Carbon (lbs/day)															
TOTAL ORGANIC CARBON			0.122			0.63476522							0.4	0.6	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 D. Somerville Marginal CSO Facility

Table D-1 Somerville Marginal CSO Facility Operations Summary, Fiscal Year 2016

Date		Rainfall (inches)	Discharge Duration (hours)	Total Volume (MG)	Peak Flow (MG)	pH (SU)	BOD Effluent (mg/L)	TSS Effluent (mg/L)	Fecal Coliform (col/100 ml)	Chlorine Residual (mg/L)
July										
	1	0.54	1.5	1.16	42.6	6.77	18.2	122	<10	<.02
								58.6	<10	<.02
	10	1.12	3.28	10.49	55.0					
	18	0.14	0.93	0.28	ND					
August										
	4	0.49	1.7	3.52	48					
	11	0.83	1.43	1.11	38.8					
	21	0.63	1.18	0.55	ND					
September										
	30	2.46	10.73	25.91	160					
October										
	29	0.73	3.40	5.87	110.4	8.4	6.9	26.5	<10	0.02
								49	<10	<.02
								76.5	<10	<.02
								162	9.01	<.02
								97	<10	<.02
November										
	20	0.86	1.36	1.35	69	6.96	34.2	85	225000	<.02
								700	18	<.02
								142	<10	<.02
										<.02
December										
	23	0.76	4.81	2.86	36.87	7.39	4.9	47	<10	<.02
								43	18	<.02
								24	<10	<.02
								34	<10	<.02
								46.5	<10	<.02
								48.5	<10	7.1
								52.5	<10	<.02
	29	1.02	2.25	1.36	50					
January										
	10	1.38	5.516	8.59	97.86					
	16	1.22	5.35	3.69	66.95					

Table D-1 Somerville Marginal CSO Facility Operations Summary, Fiscal Year 2016

Date		Rainfall (inches)	Discharge Duration (hours)	Total Volume (MG)	Peak Flow (MG)	pH (SU)	BOD Effluent (mg/L)	TSS Effluent (mg/L)	Fecal Coliform (col/100 ml)	Chlorine Residual (mg/L)
February										
	16	0.66	1.95	1.31	72.31					
	25	0.81	2.866	1.91	40	8.16	77.1	110	<10	<0.02
March										
	2	0.37	0.88	0.47	24					
	15	1.14	4.38	1.92	25					
April										
	7	1.03	5.7	9.21	ND					
May										
	2	0.39	1.00	1.01	25					
	30	1.13	4.25	3.10	40.0					
June										
	5	0.91	3.46	1.82	38.49					
	29	0.03	2.03	0.7	ND					
Total			69.95	88.19						
Average		0.85	3.18	4.01	57.8	7.5	28.3	106.9	56261.3	3.6
Minimum		0.03	0.88	0.28	24.0	6.8	4.9	24.0	9.0	0.0
Maximum		2.46	10.73	25.91	160.0	8.4	77.1	700.0	225000.0	7.1

Number of CSO Events 22

* Continued from previous day
A= Samples out of holding time
NA= No Activation
ND = No data

Table D-2. Somerville Marginal CSO Facility Effluent Characterization, FY16

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Metals (ug/L)	~	~	~			~	~	~	~	~	~	~			
ALUMINUM	~	~	~	971	4020	~	~	~	~	~	~	~	2496	4020	2 of 2
CADMIUM	~	~	~	0.178	0.446	~	~	~	~	~	~	~	0.312	0.446	2 of 2
CALCIUM	~	~	~	7290	8020	~	~	~	~	~	~	~	7655	8020	2 of 2
CHROMIUM	~	~	~	5.29	18.6	~	~	~	~	~	~	~	11.95	18.60	2 of 2
COPPER	~	~	~	15.8	83.7	~	~	~	~	~	~	~	49.8	83.7	2 of 2
LEAD	~	~	~	29.8	96.3	~	~	~	~	~	~	~	63.1	96.3	2 of 2
MAGNESIUM	~	~	~	5980	4730	~	~	~	~	~	~	~	5355	5980	2 of 2
MERCURY	~	~	~	0.0991	0.223	~	~	~	~	~	~	~	0.16	0.223	2 of 2
NICKEL	~	~	~	2.545	9.77	~	~	~	~	~	~	~	6.2	9.77	2 of 3
ZINC	~	~	~	69	274	~	~	~	~	~	~	~	172	274	2 of 2
Total Organic Carbon (mg/L)															
TOTAL ORGANIC CARB	~	~	~	10	17.9	~	~	~	~	~	~	~	13.95	17.9	2 of 2

Table D-3. Somerville Marginal CSO Facility Effluent Loadings, FY16

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Metals (lbs/day)															
ALUMINUM	~	~	~	47.58168	45.3046	~	~	~	~	~	~	~	46	48	2 of 2
CADMIUM	~	~	~	0.008722	0.005026	~	~	~	~	~	~	~	0.007	0.009	2 of 2
CALCIUM	~	~	~	357.2301	90.3838	~	~	~	~	~	~	~	224	357	2 of 2
CHROMIUM	~	~	~	0.259225	0.209618	~	~	~	~	~	~	~	0.23	0.26	2 of 2
COPPER	~	~	~	0.774244	0.943282	~	~	~	~	~	~	~	0.9	0.9	2 of 2
LEAD	~	~	~	1.460282	1.085282	~	~	~	~	~	~	~	1.3	1.5	2 of 2
MAGNESIUM	~	~	~	293.0365	53.30615	~	~	~	~	~	~	~	173	293	2 of 2
MERCURY	~	~	~	0.004856	0.002513	~	~	~	~	~	~	~	0.00	0.00	2 of 2
NICKEL	~	~	~	0.124712	0.110106	~	~	~	~	~	~	~	0.1	0.1	2 of 3
ZINC	~	~	~	3.38119	3.087925	~	~	~	~	~	~	~	3.2	3.4	2 of 2
Total Organic Carbon (lbs/day)															
TOTAL ORGANIC CARB	~	~	~	0.490028	45.3046	~	~	~	~	~	~	~	22.9	45.3	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, Fiscal Year 2016

Date		Rainfall (inches)	Discharge Duration (hours)	Total Volume (MG)	Peak Flow (MG)	pH (SU)	BOD Effluent (mg/L)	TSS Effluent (mg/L)	Fecal Coliform (col/100 ml)	Enterococci (col/100 ml) Effluent	Chlorine Residual (mg/L)
July											
	10	1.12	1.8	1.27	22.2	5.39	24.8	57.5	<10	37	<.02
						5.16		57.6	<10	21	<.02
								60	27		<.02
											<.02
August											
NA											
September											
	30	2.46	5.76	11.75	123.4	5.68	48	53	<100	<100	<.02
						5.24		54	<100	364	<.02
						5.67		52	<100	100	0.12
						5.77			<100	<100	<.02
						5.7			<100	<100	<.02
October											
NA											
November											
NA											
December											
NA											
January											
	10	1.38	3.41	2.3	66.53						
February											
NA											
March											
NA											
April											
NA											
May											
	30	1.13	2.56	1.19	28.46	6.48	32	70	<10	694	0
						7		63	127	109	0
						6.04			<10	100	0
June											
NA											
Total			13.53	16.51							
Average		1.52	3.38	4.13	60.14	5.81	34.93	58.39	77.00	203.57	0.03
Minimum		1.12	1.80	1.19	22.17	5.16	24.80	52.00	27.00	21.00	0.00
Maximum		2.46	5.76	11.75	123.40	7.00	48.00	70.00	127.00	694.00	0.12

Number of CSO Events 4

* Continued from previous day
A= Samples out of holding time
NA= No Activation
ND = No data

Table E-2. Union Park CSO Facility Effluent Characterization, FY16

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Metals (ug/L)															
ALUMINUM	600	NA	~	NA	NA	NA	~	NA	NA	NA	740	NA	670	740	2 of 2
ANTIMONY	1	NA	~	NA	NA	NA	~	NA	NA	NA	1	NA	1	1	0 of 2
ARSENIC	4	NA	~	NA	NA	NA	~	NA	NA	NA	4	NA	4	4	2 of 2
BERYLLIUM	0.5	NA	~	NA	NA	NA	~	NA	NA	NA	0.5	NA	0.5	0.5	0 of 2
CADMIUM	0.25	NA	~	NA	NA	NA	~	NA	NA	NA	0.25	NA	0.25	0.25	0 of 3
CALCIUM	5200	NA	~	NA	NA	NA	~	NA	NA	NA	6400	NA	5800	6400	2 of 2
CHROMIUM	3	NA	~	NA	NA	NA	~	NA	NA	NA	3	NA	3	3	3 of 3
COPPER	42	NA	~	NA	NA	NA	~	NA	NA	NA	46	NA	44.0	46	3 of 3
LEAD	19.5	NA	~	NA	NA	NA	~	NA	NA	NA	23	NA	21.3	23	3 of 3
MAGNESIUM	860	NA	~	NA	NA	NA	~	NA	NA	NA	1300	NA	1080	1300	2 of 2
MERCURY	0.032	NA	~	NA	NA	NA	~	NA	NA	NA	0.069	NA	0.051	0.069	2 of 2
NICKEL	1	NA	~	NA	NA	NA	~	NA	NA	NA	2	NA	1.5	2	1 of 3
SELENIUM	1	NA	~	NA	NA	NA	~	NA	NA	NA	1	NA	1	1	0 of 2
SILVER	0.5	NA	~	NA	NA	NA	~	NA	NA	NA	0.5	NA	0.5	0.5	0 of 2
THALLIUM	0.5	NA	~	NA	NA	NA	~	NA	NA	NA	0.5	NA	0.5	0.5	0 of 2
ZINC	81.5	NA	~	NA	NA	NA	~	NA	NA	NA	120	NA	100.75	120	3 of 3
Total Organic Carbon (mg/L)															
TOTAL ORGANIC CARB(	12	NA	~	NA	NA	NA	~	NA	NA	NA	19	NA	15.5	19	2 of 2

Table E-3. Union Park CSO Facility Effluent Loadings, FY16

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average	Maximum	Times Detected
Metals (lbs/day)															
ALUMINUM	6.361	NA	~	NA	NA	NA	~	NA	NA	NA	7.351	NA	7	7	2 of 2
ANTIMONY	0.011	NA	~	NA	NA	NA	~	NA	NA	NA	0.010	NA	0.010	0.011	0 of 2
ARSENIC	0.042	NA	~	NA	NA	NA	~	NA	NA	NA	0.040	NA	0.041	0.042	2 of 2
BERYLLIUM	0.005	NA	~	NA	NA	NA	~	NA	NA	NA	0.005	NA	0.005	0.005	0 of 2
CADMIUM	0.003	NA	~	NA	NA	NA	~	NA	NA	NA	0.002	NA	0.003	0.003	0 of 3
CALCIUM	55.130	NA	~	NA	NA	NA	~	NA	NA	NA	63.578	NA	59	64	2 of 2
CHROMIUM	0.032	NA	~	NA	NA	NA	~	NA	NA	NA	0.030	NA	0.031	0.032	3 of 3
COPPER	0.445	NA	~	NA	NA	NA	~	NA	NA	NA	0.457	NA	0.451	0.457	3 of 3
LEAD	0.207	NA	~	NA	NA	NA	~	NA	NA	NA	0.228	NA	0.218	0.228	3 of 3
MAGNESIUM	9.118	NA	~	NA	NA	NA	~	NA	NA	NA	12.914	NA	11	13	2 of 2
MERCURY	0.0003	NA	~	NA	NA	NA	~	NA	NA	NA	0.0007	NA	0.001	0.001	2 of 2
NICKEL	0.011	NA	~	NA	NA	NA	~	NA	NA	NA	0.020	NA	0.015	0.020	1 of 3
SELENIUM	0.011	NA	~	NA	NA	NA	~	NA	NA	NA	0.010	NA	0.010	0.011	0 of 2
SILVER	0.005	NA	~	NA	NA	NA	~	NA	NA	NA	0.005	NA	0.005	0.005	0 of 2
THALLIUM	0.005	NA	~	NA	NA	NA	~	NA	NA	NA	0.005	NA	0.005	0.005	0 of 2
ZINC	0.864	NA	~	NA	NA	NA	~	NA	NA	NA	1.192	NA	1.0	1.2	3 of 3
Total Organic Carbon (lbs/day)															
TOTAL ORGANIC CARB(	0.127	NA	~	NA	NA	NA	~	NA	NA	NA	0.201	NA	0.164	0.201	2 of 2

ND = No data
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 FY16, 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[a]	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[b]	Tests involve using mysid shrimp (*Mysidopsis bahia*) and inland silverside (*Menidia beryllina*) in 48 hour acute toxicity tests. LC50 must be achieved in a solution that is 50% effluent.		
C-NOEC[c]	C-NOEC tests involve larval inland silverside (*Menidia beryllina*) and sea urchin (*Arbacia punctulata*). *Menidia* tests involve a week's worth of exposure to various effluent concentrations. The *Arbacia* 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[†]	
Fecal Coliform	Must meet Massachusetts Water Quality Standards	
LC50[b]	Since Cottage Farm and Somerville Marginal's relief outfall both discharge in freshwater, acute toxicity tests are required with daphnids (Ceriodaphnia dubia) and fathead minnows (Pimpephales promelas). 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 (Mysidopsis bahia) and inland silverside (Menidia beryllina). LC50 results are reportable.	

* No limit, but values reported to EPA and DEP.
[†] 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).
[a] 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.
[b] LC50: the concentration of effluent in a sample that causes mortality in 50% of the test population at a specific time of observation.
[c] 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 FY16, 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:

$$Loading = Q \times C \times 8.34$$

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[1]	Sampling Frequency Influent	Effluent	Analytical Method[2]
Metals				
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
Organics and Other Compounds				
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
Conventional				
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[3]
Total Suspended Solids	Composite	Daily	Daily	160.2
Nutrients				
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.
[1] Influent and effluent composite samples are 24-hour time composite samples.
[2] EPA Methods.
[3] Standard Methods.

Table F-4. CSO Monitoring Program

Parameter	Sample Type	Sampling Frequency	Analytical Method[1]
Biochemical O_2 Demand	Grab/Composite[3]	4 x year	5210 B[2]
Fecal Coliform	Grab[4]	4 x year	9222 D[2]
pH	Grab	4 x year	150.1
Total Chlorine Residual	Grab[3]	4 x year	330.5
Total Suspended Solids	Grab[3]	4 x year	160.2
Whole Effluent Toxicity	Composite[5]	2 x year	WET Test Protocols

[1] EPA Methods.

[2] Standard Methods.

[3] 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.

[4] 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.

[5] Cottage Farm and the Somerville Marginal relief outfall discharge to freshwater so the organisms used for toxicity testing are the daphnid Ceriodaphnia dubia and the fathead minnow Pimpephales promelas. The other facilities discharge to marine waters, so the test organisms are the inland silverside Menidia beryllina and the mysid shrimp Mysidopsis bahia.

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

Overview

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, 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.

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

	Population[1]		MWRA Sewerage System	
Town	Total Community	Sewered	North	South
Arlington	43,711	42,857	x	
Ashland	16,993	12,743		x
Bedford	13,765	12,379	x	
Belmont	25,204	24,537	x	
Boston	636,479	645,320	x	x
Braintree	36,249	34,910		x
Brookline	59,115	59,073	x	x
Burlington	25,165	24,507	x	
Cambridge	106,471	105,932	x	
Canton	21,932	14,459		x
Chelsea	36,828	35,649	x	
Dedham	24,974	23,650		x
Everett	42,567	42,101	x	
Framingham	70,068	62,092		x
Hingham	7,279	6,652		x
Holbrook	10,899	9,557		x
Lexington	32,272	30,557	x	
Malden	60,374	60,314	x	
Medford	57,033	56,681	x	
Melrose	27,435	27,236	x	
Milton	27,158	25,279	x	x
Natick	33,760	29,481		x
Needham	29,366	28,152		x
Newton	86,307	84,914	x	x
Norwood	28,780	28,254		x
Quincy	93,027	92,909		x
Randolph	33,226	32,304		x
Reading	25,192	24,751	x	
Revere	53,179	52,407	x	
Somerville	77,104	75,754	x	
Stoneham	21,605	21,269	x	
Stoughton	27,849	18,937		x
Wakefield	25,613	24,687	x	
Walpole	24,562	17,448		x
Waltham	61,918	61,120	x	
Watertown	32,863	32,248	x	
Wellesley	28,748	27,420		x
Westwood	14,768	13,985		x
Weymouth	54,906	52,276		x
Wilmington	22,936	21,612	x	
Winchester	21,869	21,572	x	
Winthrop	17,940	17,737	x	
Woburn	38,949	37,364	x	
TOTAL	**2,236,438**	**2,173,086**		

[1] Community population data are from MWRA's I/I program, August 2015 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

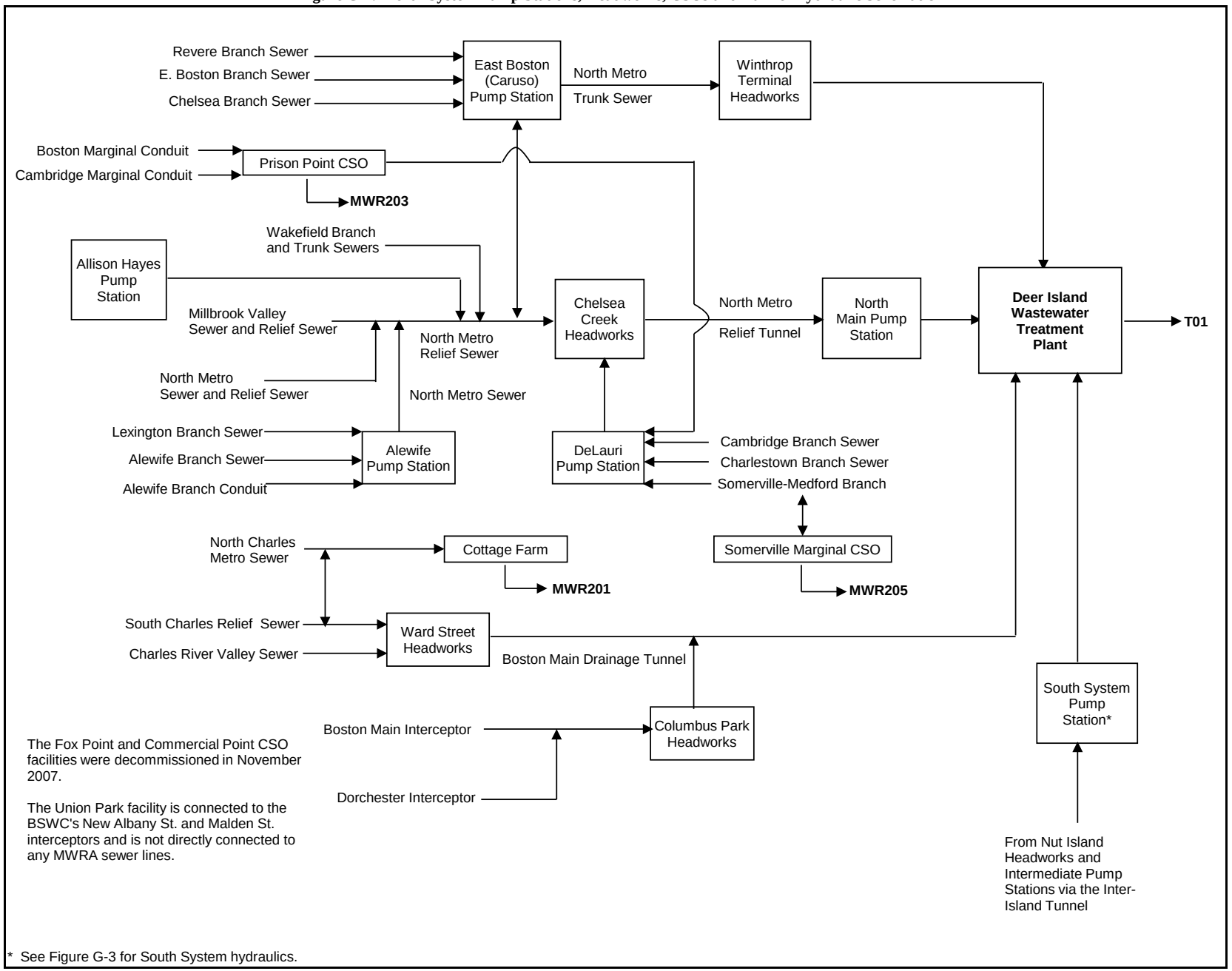
The MWRA North System has four pump stations. The Alewife Brook (64 mgd), Caruso (110 mgd), DeLauri (90 mgd), and Allison Hayes (11 mgd) pump stations convey wastewater to the headworks facilities. The four pump stations receive flow from interceptor lines as follows in Table G-3.

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 flow restriction at the headworks.

During wet weather, when the wastewater volume exceeds the hydraulic capacity of the treatment plant, the headworks restrict 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 flow restriction in response to hydraulic demand on the system, the headworks may restrict flow so that emergency repairs, system testing, or maintenance work can be performed at the treatment plant. Flow restriction at Ward Street and

Columbus Park Headworks influences Cottage Farm activations. Backups at the DeLauri Pumping Station brought about by flow restriction 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 FY16) 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 was an unmanned gravity facility with a design capacity of 119 mgd. It received wet weather flows from the Dorchester Interceptor sewer line. Operation of this facility paralleled that of the Somerville Marginal CSO; treatment included screening and disinfection. Effluent was 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

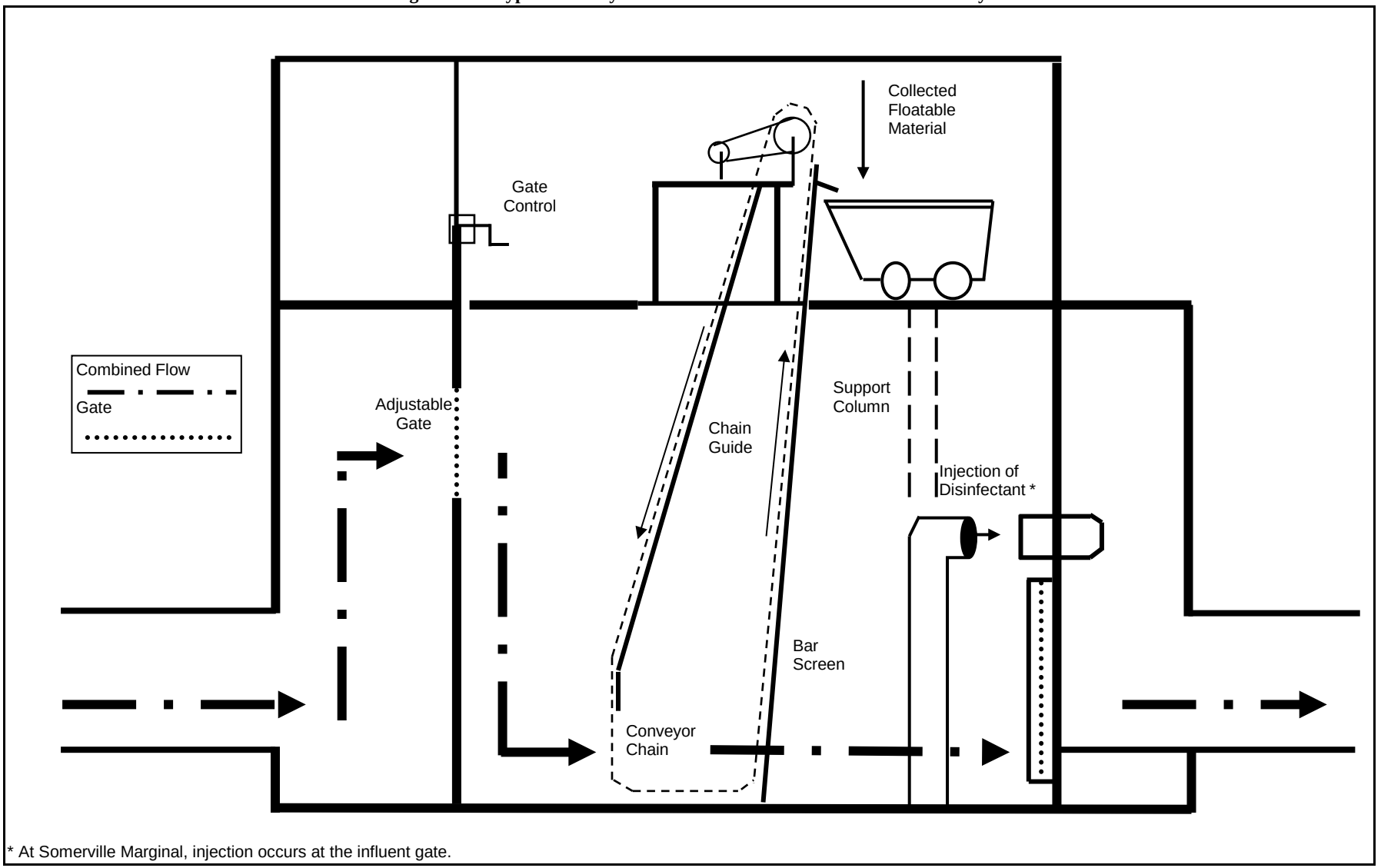
Commercial Point was an unmanned gravity CSO with a design capacity of 194 mgd. This facility also received wet weather backups from the Dorchester Interceptor. Treatment included screening and disinfection. Effluent was discharged to Dorchester Bay through outfall number MWR211. This facility came on-line 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 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



* At Somerville Marginal, injection occurs at the influent gate.

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 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

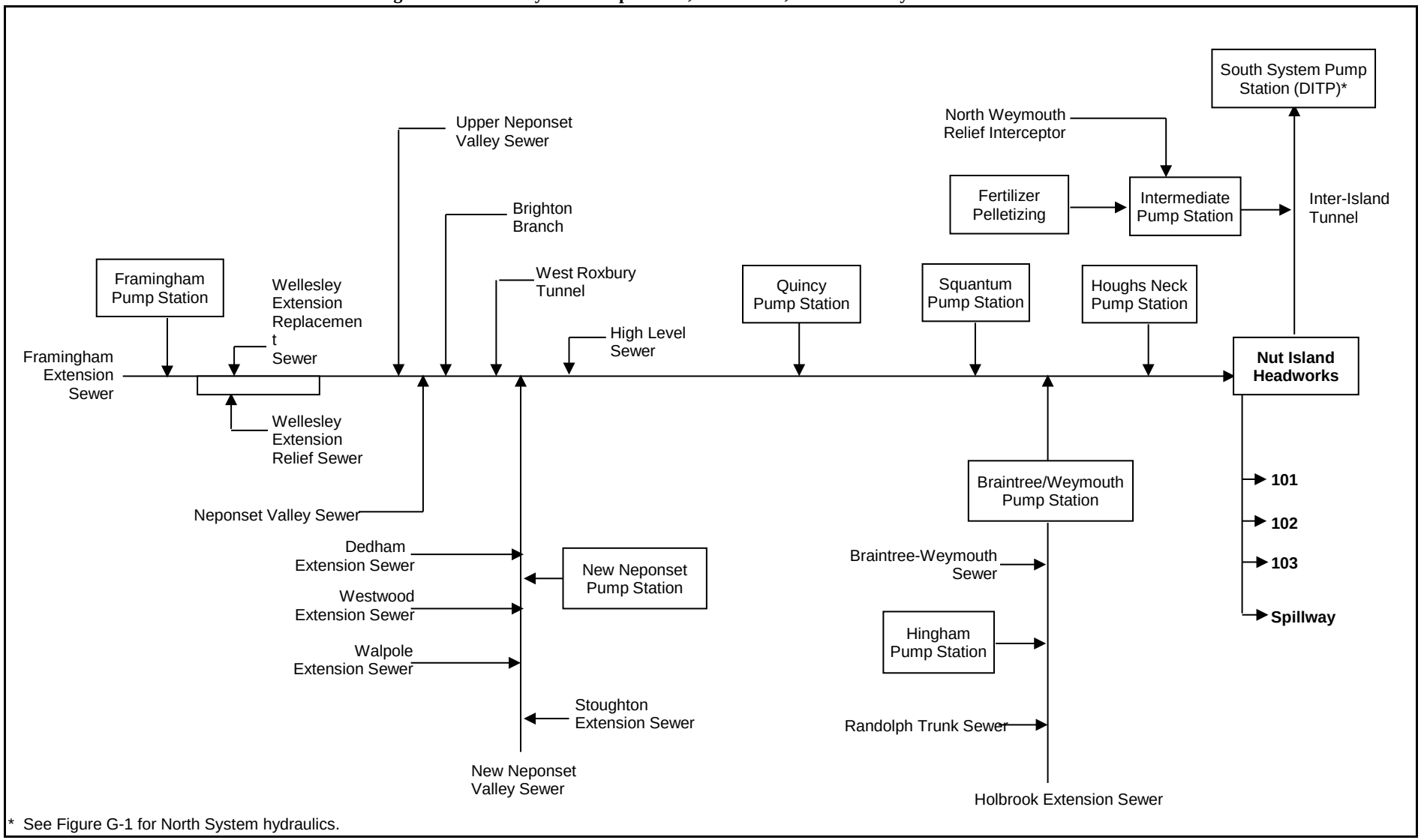
Pump Station	Interceptor
Hingham Pump Station	Weymouth-Hingham Sewer Lines
Braintree-Weymouth Pump Station	Braintree-Randolph Trunk Sewer Braintree-Weymouth Extension Sewer Holbrook Extension Sewer Hingham Pump Station
Braintree-Weymouth IPS	North Weymouth Relief Interceptor Quincy Pelletizing Plant (see Chapter 4)
Squantum Pump Station	Squantum Sewers

Pump Station	Interceptor
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



* See Figure G-1 for North System hydraulics.

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.

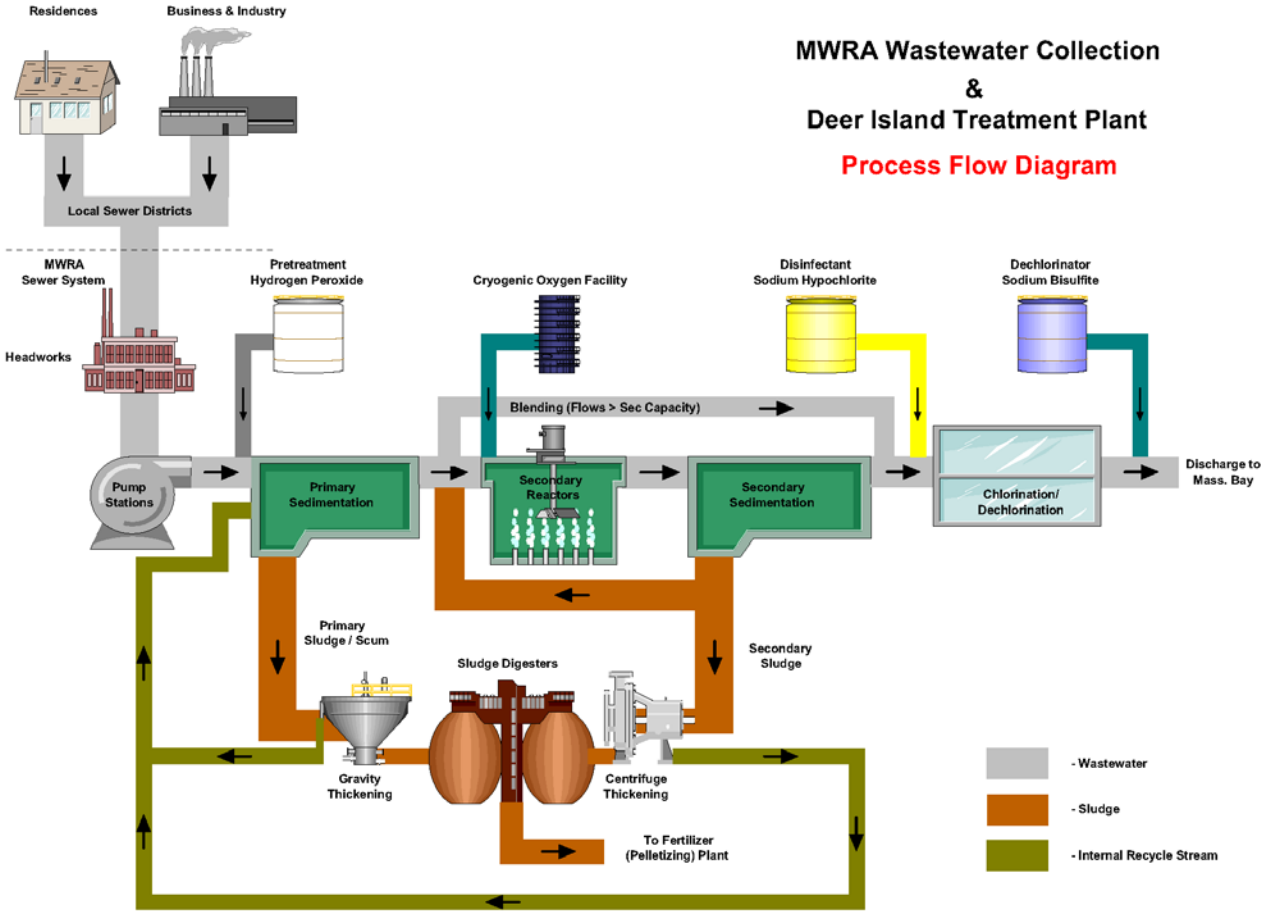
The upgraded primary treatment plant came on-line on January 21, 1995. The first battery of secondary treatment was initiated at Deer Island on August 1, 1997. Battery B came on-line on March 1, 1998, and the third and final secondary treatment battery, Battery C, started up on March 8, 2001.

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 37+06)	Upstream Headhouse at Mystic Valley Pkwy
	Arlington, Section 152 (Station 47+49)	Manhole off Mystic Valley Pkwy
	Arlington, Section 152 (Station 51+30)	Manhole off Mystic Valley Pkwy
	Arlington, Section 152 (Station 56+54)	Manhole on Mystic Valley Pkwy, Mt. Pleasant Cemetary
	Arlington, Section 152 (Station 59+29)	Manhole on Mystic Valley Pkwy
	Cambridge, Section 43 (Station 79+84)	MBTA Red Line Parking Garage
	Cambridge, Section 81, (Station 29+19)	Mooney St
	Cambridge Section 177 (Station 31+05)	Turnpike Exit Ramp
	Cambridge Section 179 (Station 207+53)	Mooney St
	Charlestown, Section 25.5 (Station 0+61)	Manhole
	East Boston, 477 Meridian Street	
	Hyde Park, Section 519 (Station 22+00)	Manhole
	Hyde Park, Section 519 (Station 25+02)	Manhole
	Malden, Section 20A (Station 15+22)	20 Pearl St., Edgeworth Branch Upstream Manhole
	Malden, Section 40	Unknown, Likely Near Charles St
	Malden, Section 41	Unknown, Likely Near Charles St
	Malden, Section 64 (Station 1+26)	Charles St at New England Coffee
	Medford, Section 19 (Station 4+25)	Malden River Siphon, Upstream Headhouse
	Medford, Section 78 (Station 0+34)	Downstream Headhouse High St
	Medford, Section 107 (Station 1+00)	Overflow Weir, Mystic River Pkwy Near James St.
	Medford, Section 151 (Station 25+79)	Lakeview Terrace Manhole at Mystic Valley Pkwy
	Medford, Section 152 (Station 31+24)	Downstream Headhouse Off Lakeview Rd.
	Medford, Section C/176A (Station 131+21)	Auburn St Manhole
	Melrose, Section 50 (Station 5+81)	Tremont St at Ell Pond
	Melrose, Section 50 (Station 12+56)	Tremont St N of Lynn Fells Pkwy
	Melrose, Section 50 (Station 26+50)	Manhole on Melrose St
	Melrose, Section 51 (Station 3+60)	Roosevelt School
	Melrose, Section 51 (Station 10+75)	Brunswick Park, Roosevelt School
	Melrose, Section 51 (Station 21+20)	Melrose St
	Melrose, Section 60 (Station 15+91)	Tremont St. @ Ell Pond, West Side
	Somerville, Section 27 (Station 17+03)	Near Railroad Tracks
	Somerville, Section 155 (Station 9+12)	Boston Ave/Upstream Headhouse
	Somerville, Section 176A (131+21)	Auburn St Manhole
	Somerville, Section 176C (00+35)	Alewife Brook Pump Station Discharge Side
	South Boston, Massport Wiggins Terminal	Massport Wiggins Terminal
	Stoneham, Section 46 (Station 57+46)	Montvale Ave
	Stoneham, Section 73 (Station 23+08)	Montvale Ave
	Stoneham, Section 168 (Station 82+68)	In Woods Off Linwood Rd
	Wakefield, 59 Brook St	59 Brook St
	Wakefield, Section 204A (Section 1+23)	Manhole Upstream of Hayes PS At Putnam St
	Waltham, Section 212 (Station 393+77)	W of Newton St at Wall St
	Winchester, Section 45 (Station 48+45)	Brookside Ave Manhole in Park Behind Houses
	Winchester, Section 69 (Station 48+53)	Upstream Headhouse at Aberjona River
	Winchester, Section 71 (Station 27+61)	Brookside Place Manhole in Parking Area
	Winchester, Section 113B (Station 2+06)	Wedgemere Siphon Downstream Headhouse
	Winchester, Section 113B (Station 3+24)	Wedgemere Siphon Upstream Headhouse
	Winchester, Section 150 (Station 53+54)	Wedgemere Siphon Upstream Headhouse
	Woburn, Section 46 (Station 25+15)	Erie Street, Upstream of Sandcatcher
	Woburn, Section 72 (Station 25+42)	Erie Street, Upstream of Sandcatcher
	Woburn, Section 169 (Station 41+79)	Henshaw St - Upstream of Sandcatcher
South	Boston/Roslindale, Section 570 (Station 0+00)	Bradeen St North/South Gate
	Boston/Roslindale, Section 570 (Station 10+89)	Bradeen St South Gate
	Boston/Roslindale, Section 571 (Station 13+51)	High Level Sewer at Arboretum (South Street)
	Braintree, Section 626 (Station 53+23)	Smelt Brook Siphon, Downstream Headhouse
	Braintree, Section 626 (Station 54+06)	Smelt Brook Siphon, Upstream Headhouse
	Braintree, Section 628 (Station 13+73)	Downstream Manhole
	Braintree, Section 628 (Station 16+30)	Manhole Downstream of Pearl St. Siphon
	Braintree, Section 628 (Station 17+07)	Downstream Headhouse
	Braintree, Section 628 (Station 17+64)	Upstream Headhouse
	Braintree, Section 655 (Station 84+28)	Randolph Trunk siphon, downstream headhouse
	Canton, Section 619 (Station 10+06)	Manhole
	Canton, Section 670 (Station 26+83)	Business Park South of Neponset St

System	Location	Description
	Canton, Section 670 (Station 42+79)	Riverview Rd Manhole
	Milton, Section 561	Brook Road
	Newton, Section 530 (Station 52+13)	Upper Neponset Valley Sewer at Vine and Hollywood Sts.
	Newton, Section 530 (Station 58+16)	Wayne Rd Easement
	Newton, Section 530 (Station 64+32)	Wayne Rd Easement, Manhole Downstream of Brookline
	Norwood, Section 669 (Station 42+55)	Overlook Dr Easement
	Quincy, Section 544H (Station 0+38)	Nut Island Headworks Emergency Outfall: Gates 17//18
	Quincy, Section 551	Greenleaf St near Quincy PS Discharge
	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
	Weymouth, Section 662 (Station 9+81)	Hingham Pump Station Force Main Air Relief Valve Near Back River Bridge
	Weymouth, Section 626 (Station 0+06)	Idlewell Blvd
	Weymouth, Section 626 (Station 29+99)	Regina Road
	Weymouth, Section 626 (Station 52+23)	Downstream Headhouse

* 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 commonly used 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 RL
Aluminum	200.7	<90 µg/L
Antimony	200.7	<50 µg/L
Arsenic	200.9 - SM3113B Mo	<0.8 µg/L
Beryllium	200.7	<250 µg/L
Boron	200.7	<250 µg/L
Cadmium	200.9 - SM3113B Mo	<0.03 µg/L
Chromium	200.9 - SM3113B Mo	<0.7 µg/L
Copper	200.8	<0.25 µg/L
	200.9 - SM3113B Mo	<1 µg/L
Hexavalent Chromium	SM 3500-CR D[2]	<50 µg/L
Iron	200.7	<30 µg/L
Lead	200.8	<0.0625 µg/L
	200.9 - SM3113B Mo	<1.20 µg/L
Mercury	245.7	<0.00180 µg/L
Molybdenum	200.9 - SM3113B Mo	<1 µg/L
Nickel	200.9 - SM3113B Mo	<0.7 µg/L
Selenium	200.9 - SM3113B Mo	<0.9 µg/L
Silver	200.9 - SM3113B Mo	<0.09 µg/L
Thallium	200.9 - SM3113B Mo	<1 µg/L
Zinc	200.7	<6.0 µg/L
Cyanide	ASTM D7511-09e2	<20 µg/L
Fats, Oil, and Grease (mg/L)	1664A	<7 mg/L
Petroleum hydrocarbons (mg/L)	NADEP EPH (mod)	[1]
Phenol	625	<20 µg/L
Sulfate (mg/L)	300.0	<1
Total Organic Carbon (mg/L)	SM 5310B	<0.3 mg/L
Surfactants (mg/L)	425.1	<0.03
4,4'-DDD	608/612	<20 ng/L
	625 (modified)	<1 ng/L
4-4'-DDE	608/612	<20 ng/L
	625 (modified)	<1 ng/L
4-4'-DDT	608/612	<20 ng/L
	625 (modified)	<1 ng/L
Aldrin	608/612	<10 ng/L
	625 (modified)	<1 ng/L
alpha-BHC	608/612	<10 ng/L
alpha-Chlordane	608/612	<10 ng/L
	625 (modified)	<1 ng/L
beta-BHC	608/612	<10 ng/L
Chlordane (Technical)	608/612	<1000 ng/L
delta-BHC	608/612	<10 ng/L
Dieldrin	608/612	<20 ng/L
	625 (modified)	<1 ng/L
Endosulfan I	608/612	<10 ng/L
Endosulfan II	608/612	<20 ng/L
Endosulfan sulfate	608/612	<20 ng/L
Endrin	608/612	<20 ng/L
	625 (modified)	<1 ng/L
Endrin aldehyde	608/612	<20 ng/L
Endrin ketone	608/612	<20 ng/L
gamma-BHC (Lindane)	608/612	<10 ng/L
	625 (modified)	<1 ng/L
Heptachlor	608/612	<10 ng/L
	625 (modified)	<1 ng/L
Heptachlor epoxide	608/612	<10 ng/L
	625 (modified)	<1 ng/L
Hexachlorobenzene	608/612	<10 ng/L
	625	<20 µg/L
	625 (modified)	<1 ng/L
Methoxychlor	608/612	<100 ng/L
Toxaphene	608/612	<1000 ng/L
Arochlor-1016	608/612	<500 ng/L

Parameter	EPA Method Number	MWRA RL
Arochlor-1221	608/612	<1000 ng/L
Arochlor-1232	608/612	<500 ng/L
Arochlor-1242	608/612	<500 ng/L
Arochlor-1248	608/612	<500 ng/L
Arochlor-1254	608/612	<500 ng/L
Arochlor-1260	608/612	<500 ng/L
1,1,1-trichloroethane	624	<5 µg/L
1,1,2,2-tetrachloroethane	624	<5 µg/L
1,1,2-trichloroethane	624	<5 µg/L
1,1-dichloroethane	624	<5 µg/L
1,1-dichloroethene	624	<5 µg/L
1,2-dichlorobenzene	624	<5 µg/L
	625	<20 µg/L
1,2-dichloroethane	624	<5 µg/L
1,2-dichloropropane	624	<5 µg/L
1,3-dichlorobenzene	624	<5 µg/L
	625	<20 µg/L
1,4-dichlorobenzene	624	<5 µg/L
	625	<20 µg/L
2-butanone	624	<5 µg/L
2-chloroethylvinylether	624	<5 µg/L
2-hexanone	624	<5 µg/L
4-methyl-2-pentanone	624	<5 µg/L
Acetone	624	<10 µg/L
Acrolein	624	<10 µg/L
Acrylonitrile	624	<10 µg/L
Benzene	624	<5 µg/L
Bromodichloromethane	624	<5 µg/L
Bromoform	624	<5 µg/L
Bromomethane	624	<5 µg/L
Carbon disulfide	624	<5 µg/L
Carbon tetrachloride	624	<5 µg/L
Chlorobenzene	624	<5 µg/L
Chloroethane	624	<5 µg/L
Chloroform	624	<5 µg/L
Chloromethane	624	<5 µg/L
cis-1,2-dichloroethene	624	<5 µg/L
cis-1,3-dichloropropane	624	<5 µg/L
Dibromochloromethane	624	<5 µg/L
Ethylbenzene	624	<5 µg/L
m,p-xylene	624	<10 µg/L
Methylene chloride	624	<5 µg/L
o-xylene	624	<5 µg/L
Styrene	624	<5 µg/L
Tetrachloroethene	624	<5 µg/L
Toluene	624	<5 µg/L
trans-1,2-dichloroethene	624	<5 µg/L
trans-1,3-dichloropropene	624	<5 µg/L
Trichloroethene	624	<5 µg/L
Trichlorofluoromethane	624	<5 µg/L
Vinyl acetate	624	<5 µg/L
Vinyl chloride	624	<2 µg/L
1,2,4-trichlorobenzene	625	<20 µg/L
1,2-dichlorobenzene	624	<5 µg/L
	625	<20 µg/L
1,2-diphenylhydrazine	625	<20 µg/L
1,3-dichlorobenzene	624	<5 µg/L
	625	<20 µg/L
1,4-dichlorobenzene	624	<5 µg/L
	625	<20 µg/L
2,2'-oxybis(1-chloropropane)	625	<20
2,4,5-trichlorophenol	625	<20

Parameter	EPA Method Number	MWRA RL
2,4,6-trichlorophenol	625	<20 µg/L
2,4-dichlorophenol	625	<20 µg/L
2,4-dimethylphenol	625	<20 µg/L
2,4-dinitrophenol	625	<50 µg/L
2,4-dinitrotoluene	625	<20 µg/L
2,6-dinitrotoluene	625	<20 µg/L
2-chloronaphthalene	625	<20 µg/L
2-chlorophenol	625	<20 µg/L
2-methyl-4,6-dinitrophenol	625	<50 µg/L
2-methylnaphthalene	625	<20 µg/L
	625 (modified)	<5 ng/L
2-methylphenol	625	<20 µg/L
2-nitroaniline	625	<20 µg/L
2-nitrophenol	625	<20 µg/L
3-3'-dichlorobenzidine	625	<20 µg/L
3-nitroaniline	625	<20 µg/L
4-bromophenyl phenyl ether	625	<20 µg/L
4-chloro-3-methylphenol	625	<20 µg/L
4-chloroaniline	625	<20 µg/L
4-chlorophenyl phenyl ether	625	<20 µg/L
4-methylphenol (includes 3-methylphenol)	625	<20 µg/L
4-nitroaniline	625	<20 µg/L
4-nitrophenol	625	<20 µg/L
Acenaphthene	625	<20 µg/L
	625 (modified)	<5 ng/L
Acenaphthylene	625	<20 µg/L
	625 (modified)	<5 ng/L
Aniline	625	<20 µg/L
Anthracene	625	<20 µg/L
	625 (modified)	<5 µg/L
Benzindine	625	<50 µg/L
Benzo(a)anthracene	625	<20 µg/L
	625 (modified)	<5 ng/L
Benzo(a)pyrene	625	<20 µg/L
	625 (modified)	<5 ng/L
Benzo(b)fluoranthene	625	<20 µg/L
	625 (modified)	<5 ng/L
Benzo(ghi)perylene	625	<20 µg/L
	625 (modified)	<5 ng/L
Benzo(k)fluoranthene	625	<20 µg/L
	625 (modified)	<5 ng/L
Benzoic acid	625	<50 µg/L
Benzyl alcohol	625	<20 µg/L
bis(2-chloroethoxy) methane	625	<20 µg/L
bis(2-chloroethyl) ether	625	<20 µg/L
bis(2-ethylhexyl) phthalate	625	<20 µg/L
Butyl benzyl phthalate	625	<20 µg/L
Chrysene	625	<20 µg/L
	625 (modified)	<5 ng/L
di-n-butylphthalate	625	<20 µg/L
di-n-octylphthalate	625	<20 µg/L
Dibenzo(a,h)anthracene	625	<20 µg/L
	625 (modified)	<5 ng/L
Dibenzofuran	625	<20 µg/L
	625 (modified)	<5 ng/L
Diethyl phthalate	625	<20 µg/L
Dimethyl phthalate	625	<20 µg/L
Fluoranthene	625	<20 µg/L
	625 (modified)	<5 ng/L
Fluorene	625	<20 µg/L
	625 (modified)	<5 ng/L

Parameter	EPA Method Number	MWRA RL
Hexachlorobenzene	608/612	<10 ng/L
	625	<20 µg/L
	625 (modified)	<1 ng/L
Hexachlorobutadiene	625	<20 µg/L
Hexachlorocyclopentadiene	625	<50 µg/L
Hexachoroethane	625	<20 µg/L
Indeno(1,2,3-cd) pyrene	625	<20 µg/L
	625 (modified)	<5 ng/L
Isophrone	625	<20 µg/L
n-nitroso-di-n-propylamine	625	<20 µg/L
n-nitrosodimethylamine	625	<20 µg/L
n-nitrosodiphenylamine	625	<20 µg/L
Naphthalene	625	<20 µg/L
	625 (modified)	<5 ng/L
Nitrobenzene	625	<20 µg/L
Pentachlorophenol	625	<50 µg/L
Phenanthrene	625	<20 µg/L
	625 (modified)	<5 ng/L
Phenol	625	<20 µg/L
Pyrene	625	<20 µg/L
	625 (modified)	<5 ng/L

Appendix I. Priority Pollutant List and Other Parameters

Table I-1. EPA List of 128 Priority Pollutants

Chlorinated Benzenes	**Chlorinated Ethanes**	**Chlorinated Phenols**
Chlorobenzene 1,2-dichlorobenzene 1,3-dichlorobenzene 1,4-dichlorobenzene 1,2,4-trichlorobenzene Hexachlorobenzene	Chloroethane 1,1-dichloroethane 1,2-dichloroethane 1,1,1-trichloroethane 1,1,2,2-tetrachloroethane Hexachloroethane	2-chlorophenol 2,4-dichlorophenol 2,4,6-trichlorophenol Parametachlorocresol (4-chloro-3-methyl phenol)
DDT and Metabolites	**Haloethers**	**Halomethanes**
4,4-DDT 4,4-DDE (p,p-DDX) 4,4-DDD (p,p-DDE)	4-chlorophenyl phenyl ether 2-bromophenyl phenyl ether Bis(2-chloroisopropyl) ether	Methylene chloride (dichloromethane) Methyl chloride (chloromethane) Methyl bromide (bromomethane) Bromoform (tribromomethane) Dichlorobromomethane Chlorodibromomethane
Inorganics	**Nitroamines**	**Pesticides and Metabolites**
Antimony Arsenic Asbestos Beryllium Cadmium Chromium (III) Chromium (VI) Copper Cyanide, total Lead Mercury Nickel Selenium Silver Thallium Zinc	N-nitrosodimethylamine N-nitrosodiphenylamine N-nitrosodi-n-propylamine	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
Phenols (other than chlorinated)	**Phthalate Esters**	**Polychlorinated Biphenyls (PCBs)**
2-nitrophenol 4-nitrophenol 2,4-dinitrophenol 4,6-dinitro-o-cresol (4,6-dinitro-2-methylphenol) Pentachlorophenol Phenol 2,4-dimethylphenol	Bis(2-ethylhexyl)phthalate Butyl benzyl phthalate Di-n-butyl phthalate Di-n-octyl phthalate Diethyl phthalate Dimethyl phthalate	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)
Polynuclear Aromatic Hydrocarbons (PAHs)	**Other Chlorinated Organics**	**Other Organics**
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	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)	Acrolein Acrylonitrile Benzene Benzidine 2,4-dinitrotolulene 2,6-dinitrotolulene Ethylbenzene Isophrone Naphthalene Nitrobenzene Tolulene

Table I-2. NPDES Permit Application Testing Requirements

(40 CFR 122, Appendix D, Tables II and III)

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

Massachusetts Water Resources Authority
Charlestown Navy Yard
100 First Avenue
Boston, MA 02129
(617) 242-6000