

NPDES Compliance Summary
Report, Fiscal Year 2024
Clinton Wastewater Treatment Plant



Massachusetts Water Resources Authority
Environmental Quality, Water & Wastewater
Report 2026-02

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NPDES COMPLIANCE SUMMARY REPORT
Fiscal Year 2024
Clinton Wastewater Treatment Plant

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Executive Summary

The Massachusetts Water Resources Authority (MWRA) assumed formal operational responsibility of the Clinton Wastewater Treatment Plant in 1987 (Acts of 1987, Chapter 307). Major facility upgrades to primary, secondary, and advanced treatment processes were completed in 1992. In 2017, MWRA added a Phosphorus Reduction Facility to provide advanced tertiary treatment and reduce phosphorus concentrations. The plant treats collection system wastewater flows from the town of Clinton and the Lancaster Sewer District using an activated sludge process in combination with advanced nutrient removal. Effluent is chlorinated and dechlorinated before being discharged to the South Branch of the Nashua River, a Class B warm water fishery as defined by Massachusetts Surface Water Quality Standards (314 CMR 4.00).

MWRA operates the Clinton Plant under a 2022 National Pollution Discharge Elimination System (NPDES) general permit (MAG590033) that became effective on April 1, 2023. The NPDES permit requires MWRA to monitor the Clinton Plant effluent wastewater for specific parameters, which may have limits in the permit. These limits are derived from federal regulations, state water quality standards, available dilution in the South Branch of the Nashua River, and watershed-specific concerns. The Town of Clinton and Lancaster Sewer District Commission are listed as co-permittees related to the operation and maintenance of the sewer system upstream of the treatment plant under NPDES permits MAG59C133 and MAG59C233, respectively.

This report summarizes monitoring and compliance data from July 1, 2023 to June 30, 2024 (MWRA's Fiscal Year [FY] 2024). We examine wastewater influent and effluent quality trends against the limits of MWRA's NPDES permit over the past fiscal year and longer historical records. This report also highlights additional NPDES reporting including PFAS analytes, industrial wastewater, operations and maintenance, and sludge processing.

Permit Compliance

All effluent limitation exceedances during FY24 are summarized in Table 1, with further detail for each effluent characteristic provided in the following sections. Table 2 lists the limit for each parameter with FY24 monitoring results.

Table 1. Summary of NPDES Permit Effluent Limitation Exceedances, FY24

Effluent Characteristics ¹		FY24 Exceedances
Dissolved Oxygen	Daily Minimum	0
Biochemical Oxygen Demand	Average Monthly Load	0
	Average Weekly Load	0
	Average Monthly	0
	Average Weekly	0
	% Removal	0
pH	Minimum Daily	0
	Maximum Daily	0
Total Suspended Solids	Average Monthly Load	0
	Average Weekly Load	0
	Average Monthly	0
	Average Weekly	0
	% Removal	0
Ammonia Nitrogen: April 1 st – April 30 th	Average Monthly	0
Ammonia Nitrogen: May 1 st – May 31 st	Average Monthly	0
Ammonia Nitrogen: June 1st - October 31st	Average Monthly	0
	Maximum Daily	0
Ammonia Nitrogen: November 1 st – March 31 st	Average Monthly	0
	Maximum Daily	0
Total Phosphorus: April 1st - October 31st	Average Monthly Load	0
	Average Monthly	0
Total Phosphorus: November 1 st – March 31 st	Average Monthly Load	0
	Average Monthly	0
Total Recoverable Copper	Average Monthly	0
	Maximum Daily	0
Flow	12-month Rolling Average	9
Total Residual Chlorine (TRC)	Average Monthly	0
	Maximum Daily	0

Effluent Characteristics ¹			FY24 Exceedances
<i>Escherichia coli (E. coli)</i>	Monthly Geometric Mean		0
	Maximum Daily		0
Whole Effluent Toxicity ²	Acute (LC ₅₀)	Daily Minimum	1
	Chronic (C-NOEC)	Daily Minimum	1

¹ Report only effluent characteristics are not included.

² Whole Effluent Toxicity testing is conducted on a quarterly basis.

Table 2. NPDES Permit Compliance Results, FY24 (July 2023 – June 2024)

Parameter ^{1,2}	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Dissolved Oxygen												
<i>Limit (mg/L)</i>	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Daily Minimum	7.8	8.6	8.4	8.8	9.3	9.9	11.6	11.9	10.8	10.0	9.3	7.8
Biochemical Oxygen Demand												
<i>Limit (mg/L)</i>	20	20	20	20	20	20	20	20	20	20	20	20
Average Monthly	<1.7	<1.7	0.9	1.0	2.1	2.5	1.7	0.8	1.0	0.4	1.1	1.5
Average Weekly	<1.9	<1.8	2.1	1.4	3.8	3.0	2.5	1.1	2.1	2.2	1.5	1.8
<i>Limit (lb/day)</i>	500	500	500	500	500	500	500	500	500	500	500	500
Average Monthly	<65	<48	25	33	47	105	61	17	35	20	29	33
Average Weekly	<84	<55	62	55	78	186	109	27	82	99	36	46
<i>Limit (%)</i>	≥85	≥85	≥85	≥85	≥85	≥85	≥85	≥85	≥85	≥85	≥85	≥85
Percent Removal	97.6	98.8	99.2	99.1	98.6	97.2	98.8	99.5	99.0	99.7	99.3	99.0
pH												
<i>Limit (S.U.)</i>	6.5 -8.3	6.5 -8.3	6.5 -8.3	6.5 -8.3	6.5 -8.3	6.5 -8.3	6.5 -8.3	6.5 -8.3	6.5 -8.3	6.5 -8.3	6.5 -8.3	6.5 -8.3
Daily Range	7.1-7.6	7.4-7.8	7.3-7.7	7.3-7.7	7.4-7.9	7.0-7.6	7.0-7.5	7.2-7.5	7.0-7.7	7.1-7.7	7.3-7.7	7.2-7.7
Total Suspended Solids												
<i>Limit (mg/L)</i>	20	20	20	20	20	20	20	20	20	20	20	20
Monthly Average	1.2	1.1	1.4	1.2	2.7	3.7	4.1	2.9	2.9	3.1	2.9	2.4
Weekly Average	1.9	1.5	1.7	1.8	4.3	5.1	4.6	4.4	4.4	4.8	3.4	3.2
<i>Limit (lb/day)</i>	500	500	500	500	500	500	500	500	500	500	500	500
Monthly Average	46	30	44	40	59	155	155	67	103	110	74	53
Weekly Average	57	39	51	56	88	260	235	179	138	147	83	88
<i>Limit (%)</i>	≥85	≥85	≥85	≥85	≥85	≥85	≥85	≥85	≥85	≥85	≥85	≥85
Percent Removal	99.5	99.7	99.5	99.4	99.1	97.1	98.6	99.0	98.6	97.8	98.5	99.1
Ammonia Nitrogen												
<i>Limit (mg/L)</i>	2.0	2.0	2.0	2.0	6.6	6.6	6.6	6.6	6.6	3.9	2.1	2.0
Monthly Average	0.02	<0.1	<0.1	0.01	<0.1	<0.1	0.02	0.05	0.16	0.06	<0.1	0.04
<i>Limit (mg/L)</i>	3.0	3.0	3.0	3.0	35.0	35.0	35.0	35.0	35.0	-	-	3.0
Daily Maximum	0.05	<0.1	<0.1	0.03	<0.1	<0.1	0.04	0.21	0.32	0.17	<0.1	0.14
Total Phosphorus												
<i>Limit (mg/L)</i>	0.15	0.15	0.15	0.15	1.0	1.0	1.0	1.0	1.0	0.15	0.15	0.15
Average Monthly	0.07	0.05	0.03	0.06	0.15	0.14	0.09	0.07	0.04	0.04	0.03	0.06
<i>Limit (lb/day)</i>	3.8	3.8	3.8	3.8	25.1	25.1	25.1	25.1	25.1	3.8	3.8	3.8
Average Monthly	2.5	1.3	1.0	1.7	3.5	4.4	2.7	1.9	1.6	1.3	0.8	1.3

Parameter ^{1,2}	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Total Recoverable Copper												
Limit (ug/L)	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
Average Monthly	6.34	7.76	8.68	5.76	6.20	7.19	4.98	5.83	6.75	5.59	7.34	6.99
Limit (ug/L)	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Maximum Daily	7.04	7.76	8.68	6.30	6.20	7.19	6.64	5.83	6.75	5.79	7.34	6.99
Rolling Average Effluent Flow												
Limit (MGD)	3.01	3.01	3.01	3.01	3.01	3.01	3.01	3.01	3.01	3.01	3.01	3.01
12-Month Rolling Average	2.71	2.86	3.01	<u>3.17</u>	<u>3.23</u>	<u>3.35</u>	<u>3.46</u>	<u>3.48</u>	<u>3.57</u>	<u>3.74</u>	<u>3.74</u>	<u>3.75</u>
Total Residual Chlorine (TRC)												
Limit ³ (ug/L)	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6
Average Monthly	<20	0.13	<20	0.05	<20	0.13	0.11	0.14	0.13	0.27	<20	<20
Limit	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4
Maximum Daily	<20	4.0	<20	1.67	<20	4.0	3.33	4.0	4.0	4.0	<20	<20
Escherichia coli (E. coli)												
Limit (colonies/100mL)	126	126	126	126	126	126	126	126	126	126	126	126
Monthly Geometric Mean	6	10	6	7	5	10	5	5	5	6	7	5
Limit (colonies/100mL)	409	409	409	409	409	409	409	409	409	409	409	409
Maximum Daily	12	46	18	27	7	56	13	5	7	11	25	10
Whole Effluent Toxicity (WET) Testing												
Limit (%)	≥100			≥100			≥100			≥100		
Acute (LC50)	>100			>100			>100			<u>54.1</u>		
Limit (%)	≥62.5			≥62.5			≥62.5			≥62.5		
Chronic (C-NOEC)	100			100			100			<u>12.5</u>		

¹ Report only effluent characteristics are not included.

² Values that are bold and underlined are permit limit exceedances.

³ The effluent limitation is 17.6 µg/L, but per Part II.B.9.a of the NPDES permit, the compliance level for TRC is 20 µg/L.

Flow

The Clinton Wastewater Treatment Plant (Clinton Plant) receives flow from the Town of Clinton (Clinton) and the Lancaster Sewer District (Lancaster). Figure 1 shows the average daily influent flow by month for both communities in FY24. Lancaster flow was approximately 10% of the total flow to the plant on average during the fiscal year.

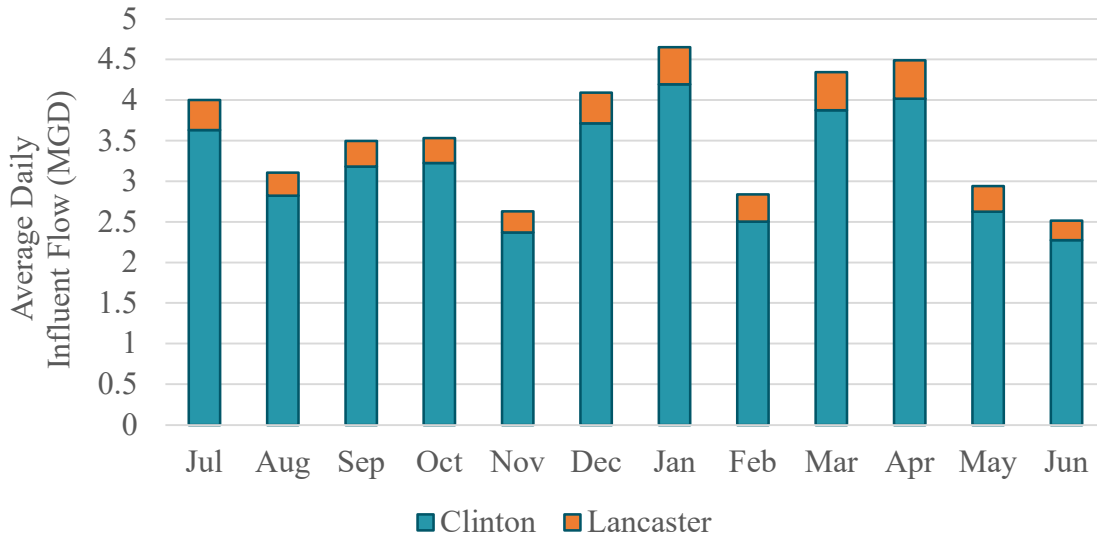


Figure 1. Average Daily Influent Flow by Town, FY24

Influent flow is influenced by rainfall, an indirect measure of infiltration and inflow to the Clinton and Lancaster collection systems. Figure 2 shows the FY24 monthly influent flow range in comparison to the monthly total rainfall. Average and maximum plant flows were highest in January 2024.

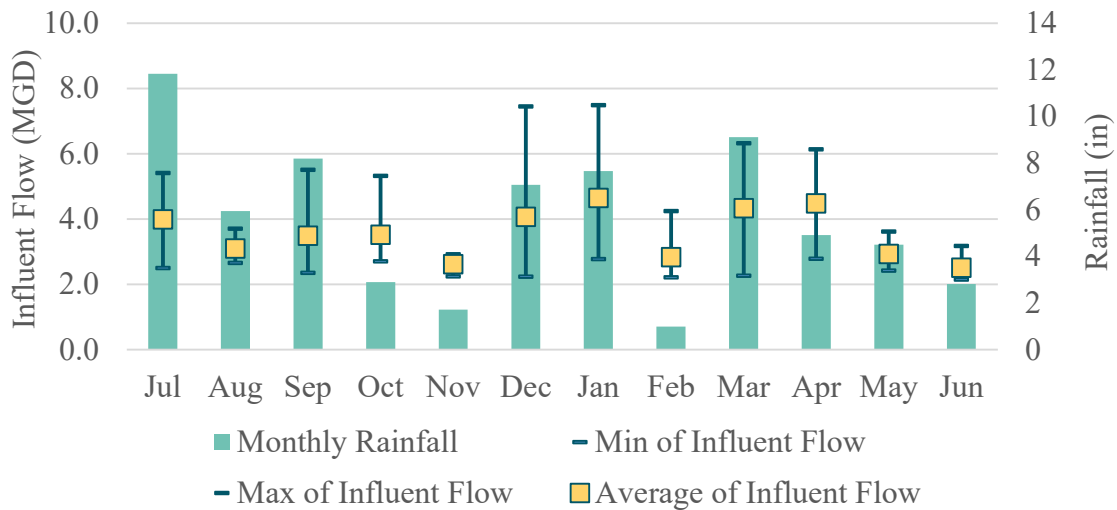


Figure 2. Influent Flow Compared to Precipitation, FY24

Figures 3 and 4 below detail 5-year and 15-year historical plant flows, respectively. Figure 3 compares the 12-month rolling average effluent flow against the permit limit of 3.01 million gallons per day (MGD). The daily flow in green shows the variability in plant flow due to rainfall, snowmelt and other factors. The Clinton Plant’s rolling annual average was calculated by averaging the monthly average of a month along with the monthly average flows of the previous eleven months. Months in which the rolling average flow limit was exceeded have been emphasized. As a result of prolonged periods of high flow in FY19 and FY22, the rolling average effluent flow exceeded the permit limit for months at a time in FY20 and FY22. In FY24, the rolling average flow limit was exceeded from October 2023 to the end of the fiscal year in June 2024, again because of high plant flows. Figure 4 compares annual average flows with annual total rainfall, based on observations from a gauge located at Clinton Plant

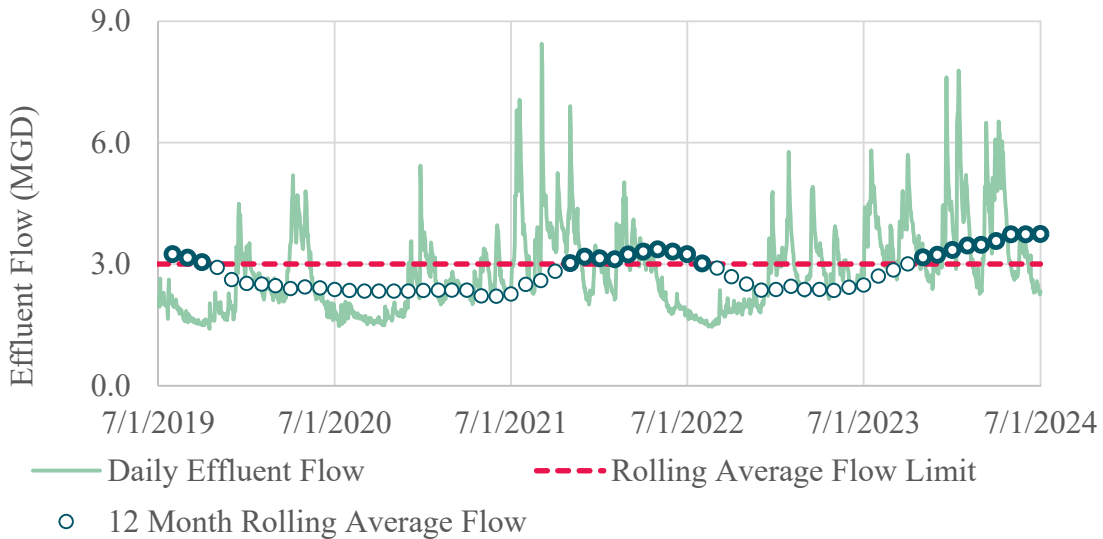


Figure 3. Daily Effluent Flow and 12-month Rolling Average Flow, FY20-FY24

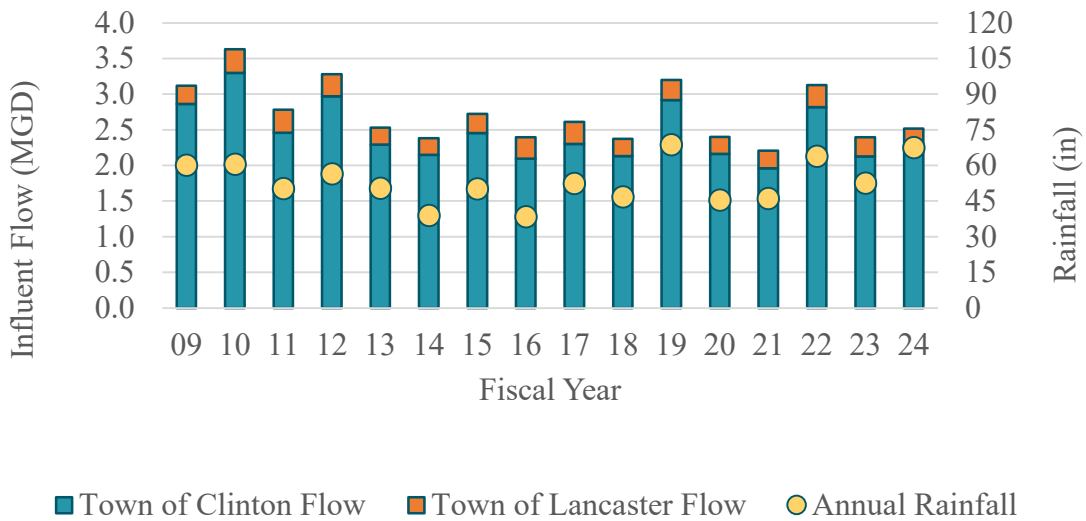


Figure 4. Historical Inflow Compared to Precipitation, FY09-FY24

Biochemical Oxygen Demand

Wastewater treatment plants measure Biochemical Oxygen Demand (BOD) as an index for the amount of organic material being discharged to the environment. It is measured as the 5-day oxygen consumption by organisms decomposing organic matter. The Clinton Plant has monthly and weekly average BOD effluent concentration limits of 20 mg/L, and monthly and weekly average BOD effluent loading limits of 500 lb/day. Additionally, the federal minimum secondary treatment standard of 85% removal of BOD must be met.

Figure 5 below is a plot of the monthly average influent BOD concentration and loading in FY24. Influent concentrations were highest in May 2024, while influent loadings were highest in January 2024.

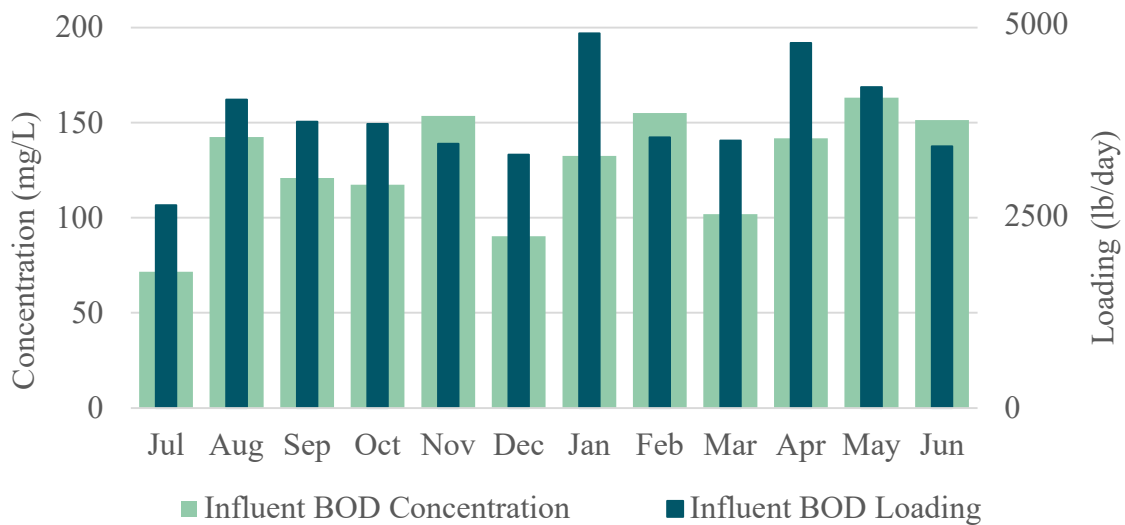


Figure 5. Influent BOD Concentrations and Loadings, FY24

Figure 6 compares effluent BOD monthly average concentration and effluent loading against the permit limits. The Clinton Plant effluent was well below permit limits throughout FY24. Figure 7 shows the plant's effectiveness at removing BOD from the influent, with monthly percent removal well above the 85% minimum with an average removal of 98.8%.

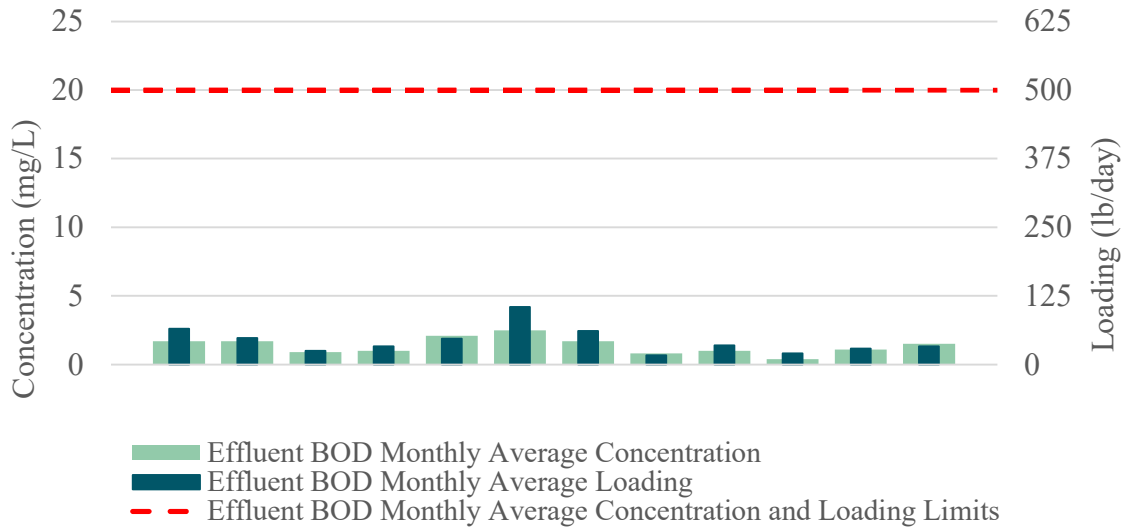


Figure 6. Effluent BOD Concentrations and Loadings, FY24

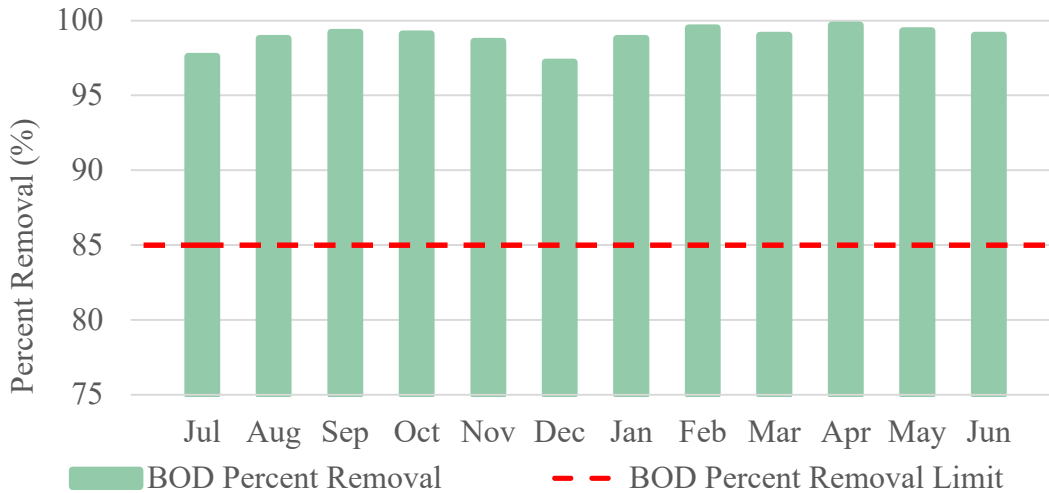


Figure 7. BOD Percent Removal, FY24

Figure 8 below contains individual influent and effluent BOD test results for the last five fiscal years. Effluent BOD concentrations were consistently below the monthly average permit limit despite variable influent concentrations.

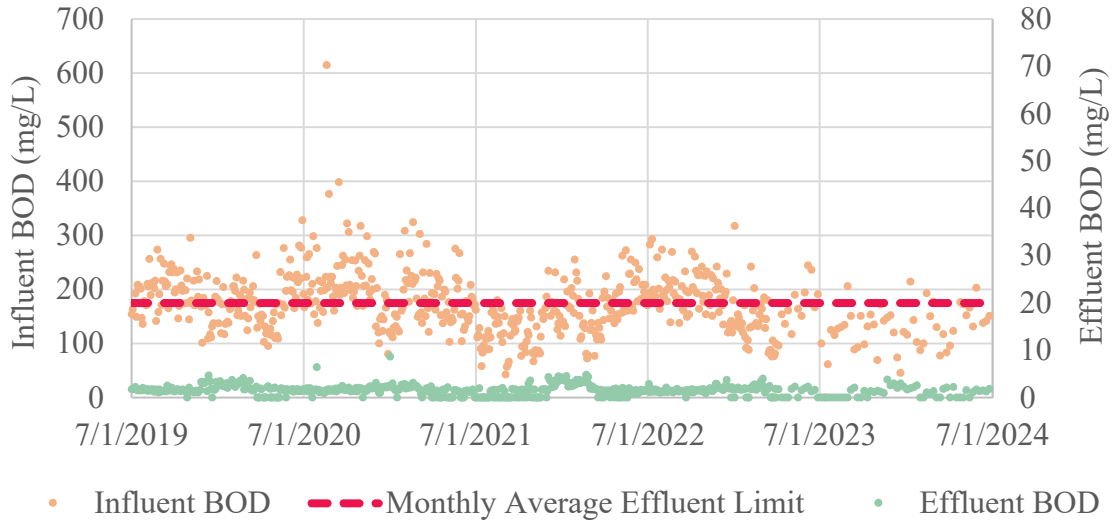


Figure 8. Influent and Effluent BOD Concentration Trends, FY20-FY24

Total Suspended Solids

Total suspended solids (TSS) is another conventional wastewater parameter included in NPDES permits. TSS is measured as the amount of solids that are trapped on a filter. As with BOD, the Clinton Plant has an effluent benchmark of 85% TSS removal, weekly and monthly concentration limits of 20 mg/L, and weekly and monthly loading limits of 500 lb/day.

Figure 9 below is a plot of the monthly average influent TSS concentration and influent loading in FY24. Influent concentrations were highest in August 2023, while influent loadings were highest in January 2024.

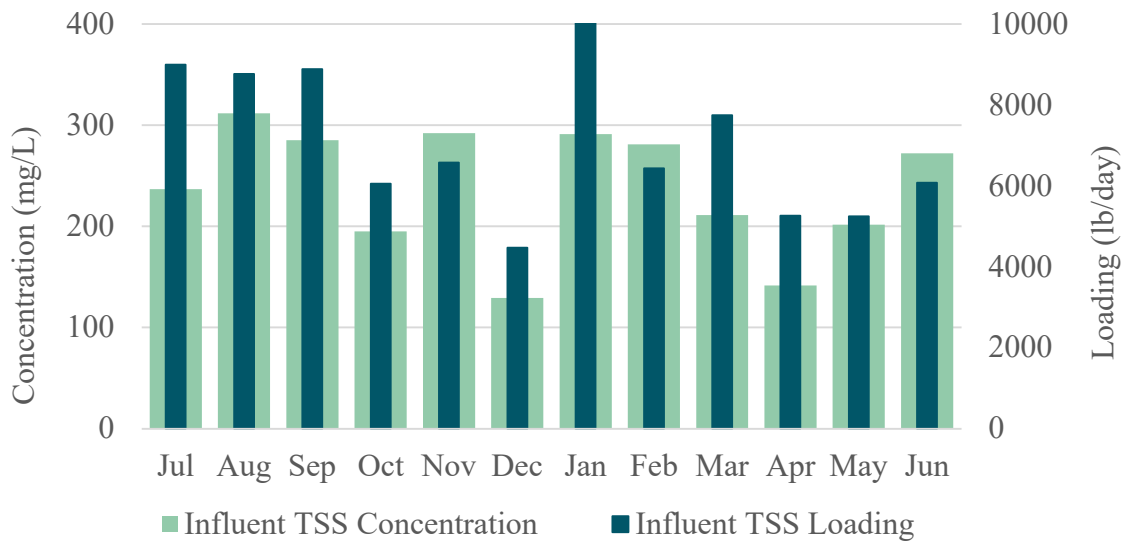


Figure 9. Influent TSS Concentrations and Loadings, FY24

Figure 10 compares TSS monthly average effluent concentration and effluent loading against the permit limits. The Clinton Plant effluent was well below permit limits throughout FY24. Figure 11 shows the plant's effectiveness at removing TSS from the influent, with monthly percent removal well above 85% and an average removal of 98.8%.

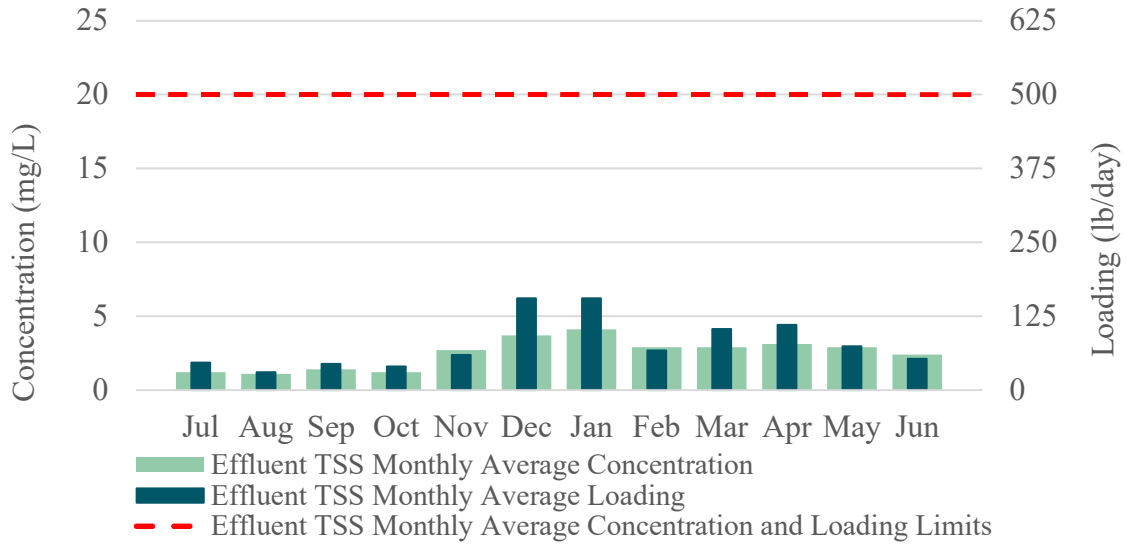


Figure 10. Effluent TSS Concentrations and Loadings, FY24

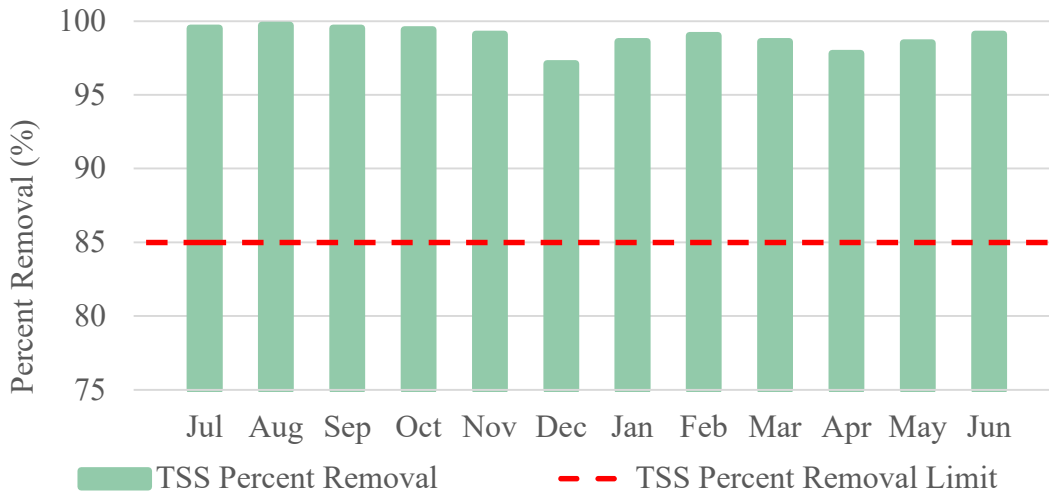


Figure 11. TSS Percent Removal, FY24

Figure 12 contains individual influent and effluent TSS test results for the previous five fiscal years. Effluent TSS concentrations were consistently below the monthly average permit limit despite variable influent concentrations.

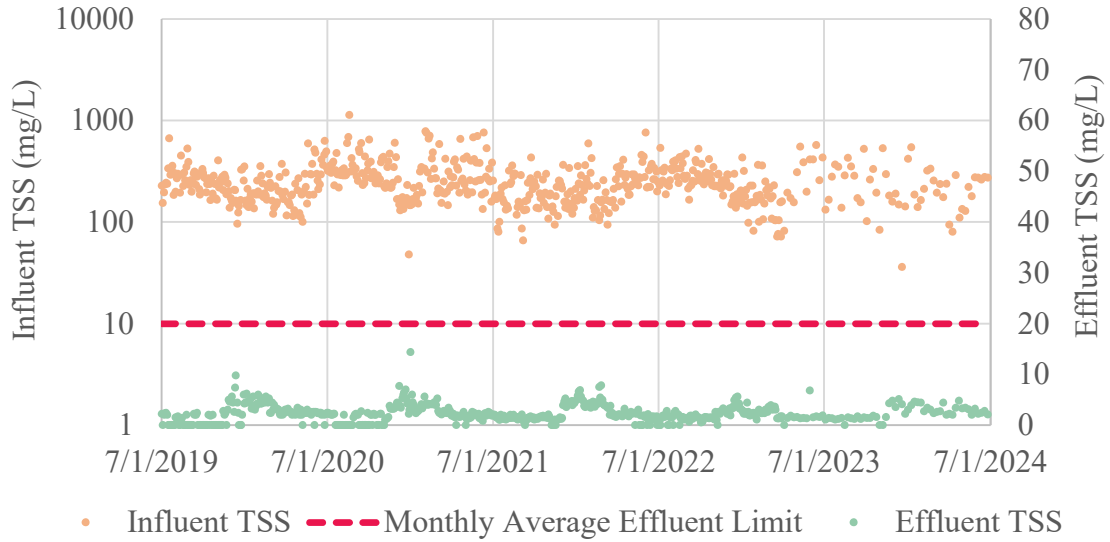


Figure 12. Influent and Effluent TSS Concentration Trends, FY20-FY24

pH

pH is a standard water quality measurement that determines how acidic or basic the water is. In the environment, pH that is too high or low can influence nutrient availability and environmental toxicity. In the Clinton Plant effluent, pH must fall between 6.5 and 8.3 Standard Units (S.U.) as required in the NPDES permit. At a minimum, samples were collected five times a week. Extra samples were collected when quarterly toxicity samples were scheduled. Figure 13 compares the monthly pH range in FY24 to these limits. Results were within the permit limits. Figure 14 contains all individual pH results for FY20-FY24.

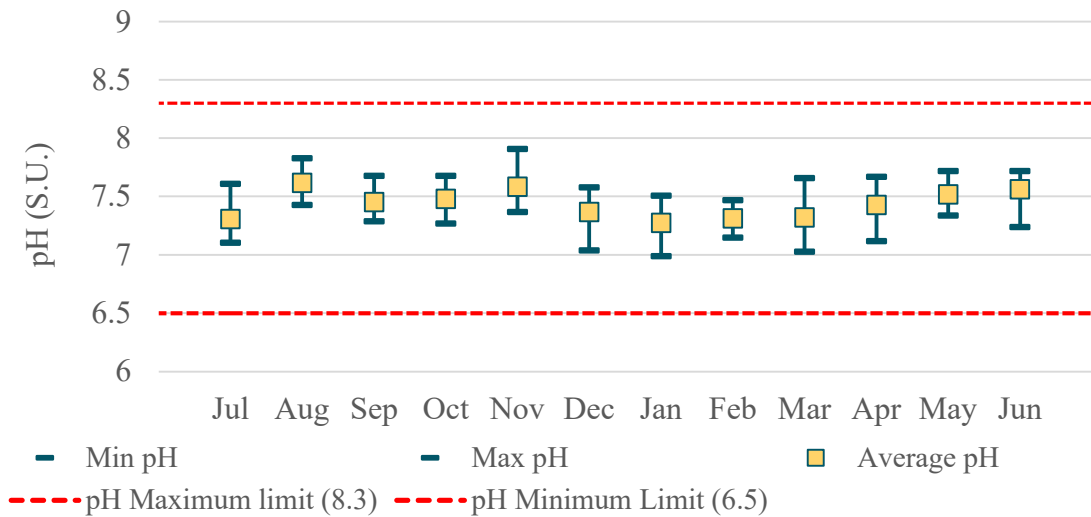


Figure 13. Effluent pH Range, FY24

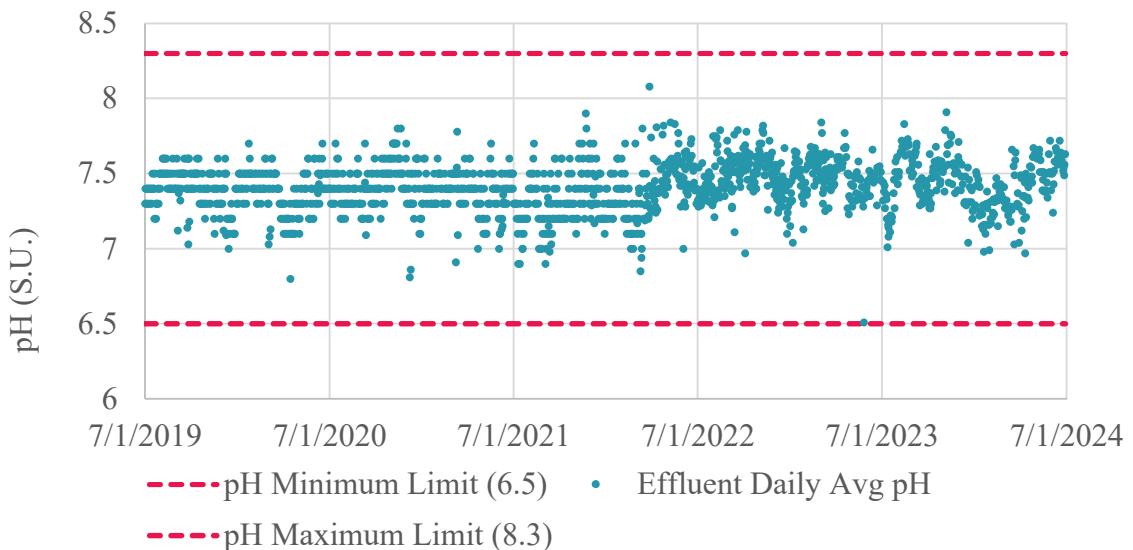


Figure 14. Effluent pH, FY20-FY24

Dissolved Oxygen

Dissolved oxygen (DO) is a measure of the oxygen available to aquatic organisms. The Clinton Plant NPDES permit requires a minimum effluent DO of 6.0 mg/L, collected twice daily. Figure 15 plots the monthly DO range in FY24 against this minimum permit limit. Results demonstrate DO levels were higher than the minimum requirements.

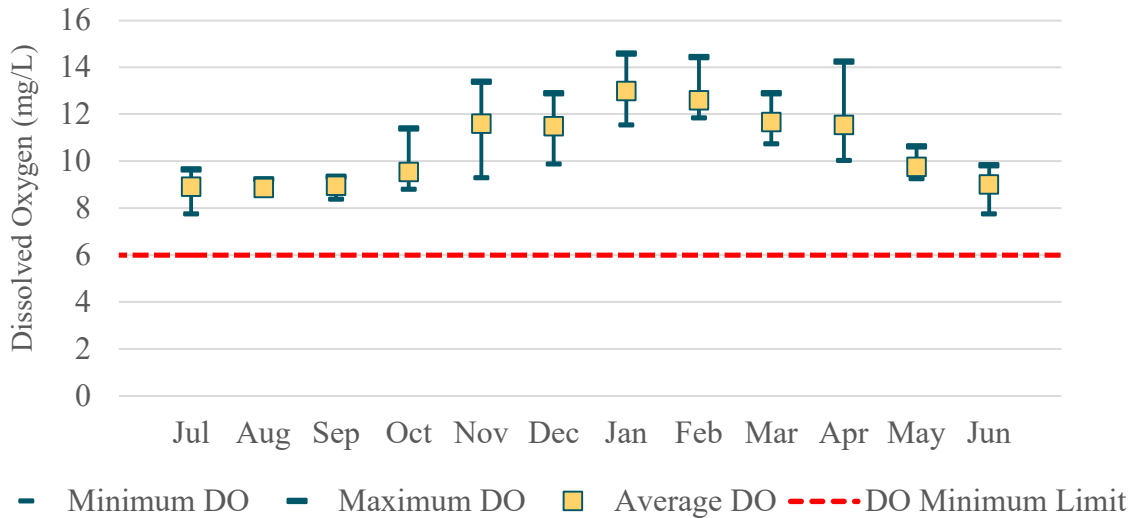


Figure 15. Effluent DO Range, FY24

Figure 16 plots the 5-year daily average DO results against the minimum DO requirement of 6.0 mg/L. There is seasonality to DO in the effluent, as oxygen is more soluble in water at lower temperatures. During all seasons, DO levels were above minimum requirements.

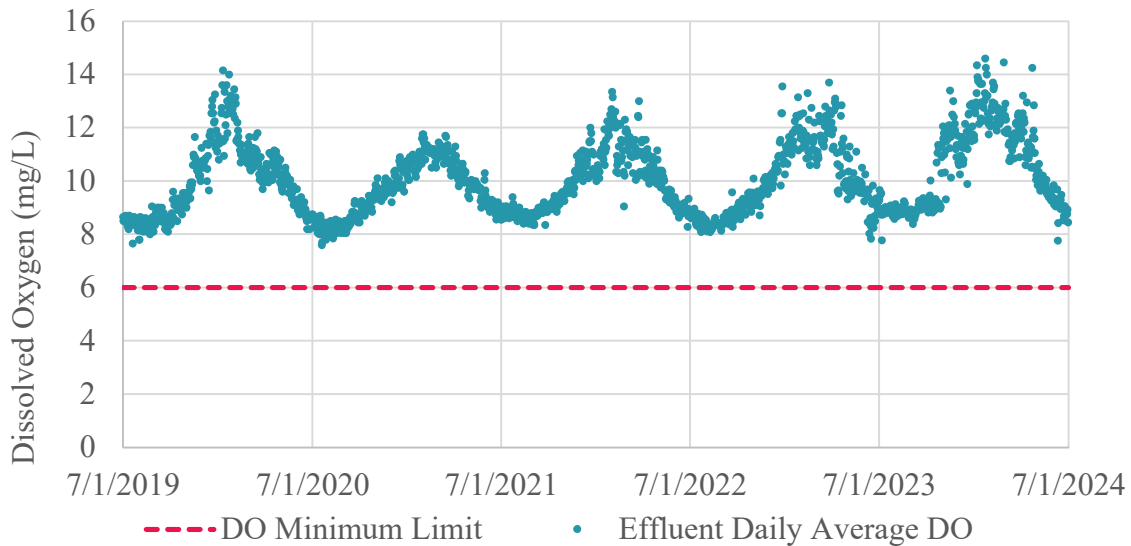


Figure 16. Effluent Daily Average Dissolved Oxygen, FY20-FY24

E. coli

Wastewater treatment plants monitor indicator bacteria to measure the effectiveness of disinfection at the end of the treatment process. As a freshwater discharger in Massachusetts, the Clinton Plant NPDES permit requires weekly monitoring of *Escherichia coli* (*E. coli*), with a daily maximum limit of 409 colonies per 100mL. The permit further requires a monthly average limit of 126 colonies per 100mL calculated as a geometric mean (geomean). Figure 17 below shows the results for FY24, plotted on a logarithmic scale. Results were below the effluent limits.

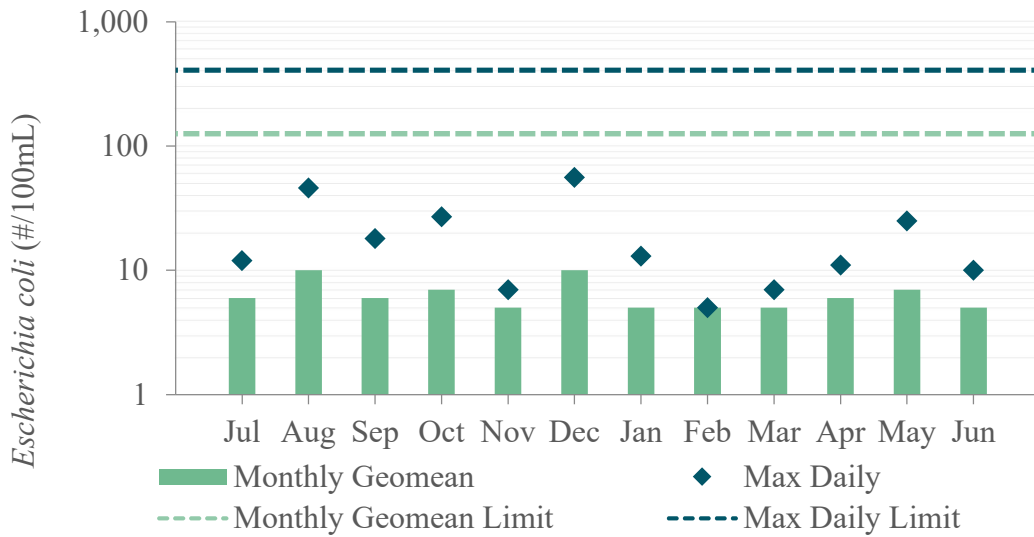


Figure 17. Effluent *E. coli* Monthly Geometric Mean (Geomean) and Daily Maximum Concentrations, FY24.

Total Residual Chlorine

Total Residual Chlorine (TRC) is a measure of free chlorine and bound chlorine present in water. Chlorine is the disinfecting agent in the final stages of wastewater treatment at the Clinton Plant. Following disinfection, the plant dechlorinates the wastewater with sodium bisulfite to ensure the disinfecting agents and chlorine compounds do not reach the environment. The NPDES permit contains TRC limits for monthly average and daily maximum; 17.6 ug/L and 30.4 ug/L, respectively. TRC was sampled five times a week at minimum. As shown plotted on a logarithmic scale in Figure 18, the monthly chlorine residual in FY24 was 0.13 ug/L on average. The highest monthly average occurred in April 2024 at 0.27 ug/L. If residual chlorine was not detected, it was reported as “< 20.0 ug/L” in accordance with the compliance level listed in Part II.B.9.a of the NPDES permit. Note that only months where there was chlorine detected in any sample are displayed.

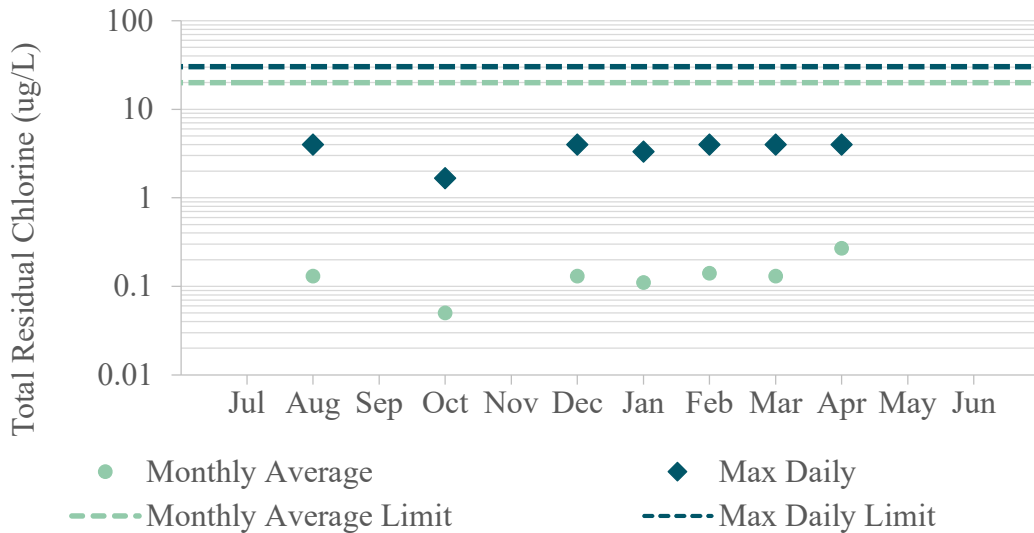


Figure 18. Effluent Total Residual Chlorine Concentrations, FY24.

Total Recoverable Copper

Copper, like other metals, can be toxic to aquatic life. The Clinton Plant has monthly Total Recoverable Copper (copper) average and daily maximum effluent limits of 11.6 and 14.0 $\mu\text{g/L}$, respectively. Copper is sampled once per month, but additional samples are collected during months with quarterly toxicity sampling (July, October, January, April). All copper effluent limits were met in FY24. The highest copper monthly average and daily maximum during FY24 occurred in September 2023.

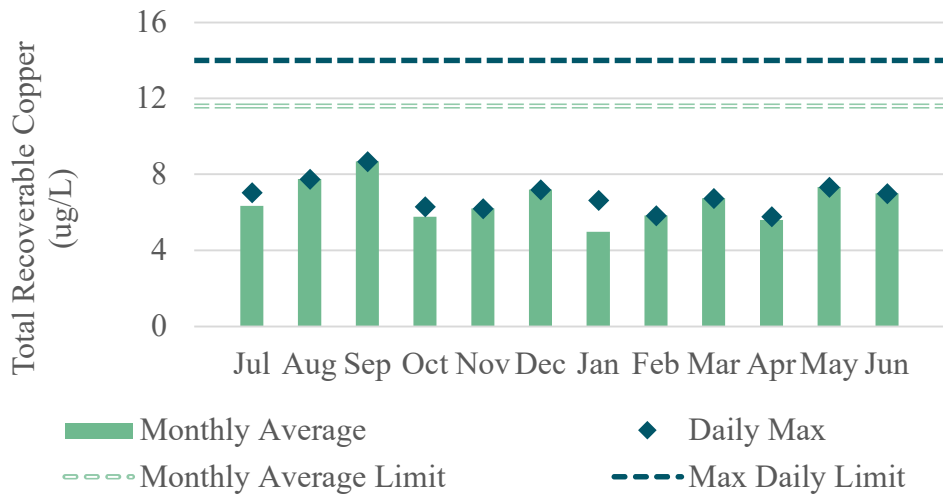


Figure 19. Effluent Copper Monthly Average and Daily Maximum Concentrations, FY24

Figure 20 presents FY20-FY24 individual and monthly average copper results. There were no exceedances of the maximum daily limit. The monthly average limit was exceeded on three occasions: June, July, and August of 2022. There were no exceedances in FY24.

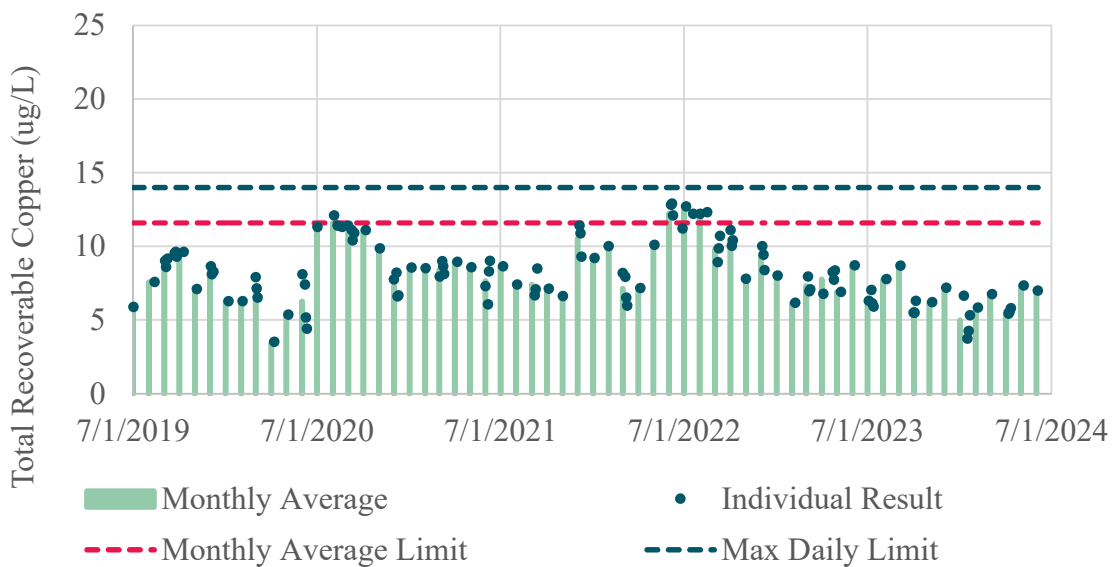


Figure 20. Effluent Copper Monthly Average and Individual Concentrations, FY20-FY24

Ammonia Nitrogen

EPA is concerned about nitrogen loadings to waterways like the South Branch of the Nashua River. Like other nutrients, excess nitrogen in an aquatic environment can cause eutrophication, an overgrowth of aquatic vegetation which then depletes the available dissolved oxygen in the water. This lower DO can result in fish kills or other detriments to aquatic life. Under the Clinton Plant’s current 2022 NPDES permit, EPA is requiring year-round monitoring and reporting of total nitrogen, calculated from total Kjeldahl nitrogen and nitrate + nitrite samples, to inform future decisions about nitrogen limits. At present, there are only permit limits on ammonia nitrogen (NH₃-N).

Nitrogen removal is a critical and challenging process for wastewater treatment plants. It is present in high concentrations in wastewater and potentially toxic in the environment if not removed. Ammonia nitrogen samples are collected twice a month as per the NPDES permit. The Clinton Plant’s ammonia nitrogen limits are most stringent during the growing season, from June through October, with a monthly average limit of 2.0 mg/L and a daily maximum of 3.0 mg/L. During the winter months, November through March, the monthly average limit is 6.6 mg/L with a daily maximum of 35.0 mg/L. The April and May monthly average limits are 3.9 mg/L and 2.1 mg/L, respectively. There are no maximum daily limits in April and May; results are to be reported. The plant met both the daily maximum and monthly average concentration limits in FY24 as shown in Figure 21 below plotted on a logarithmic scale. If ammonia nitrogen was not detected, it was reported as “< 0.1 mg/L” (the minimum detection level). Note that only months where there was ammonia nitrogen detected in any sample are displayed.

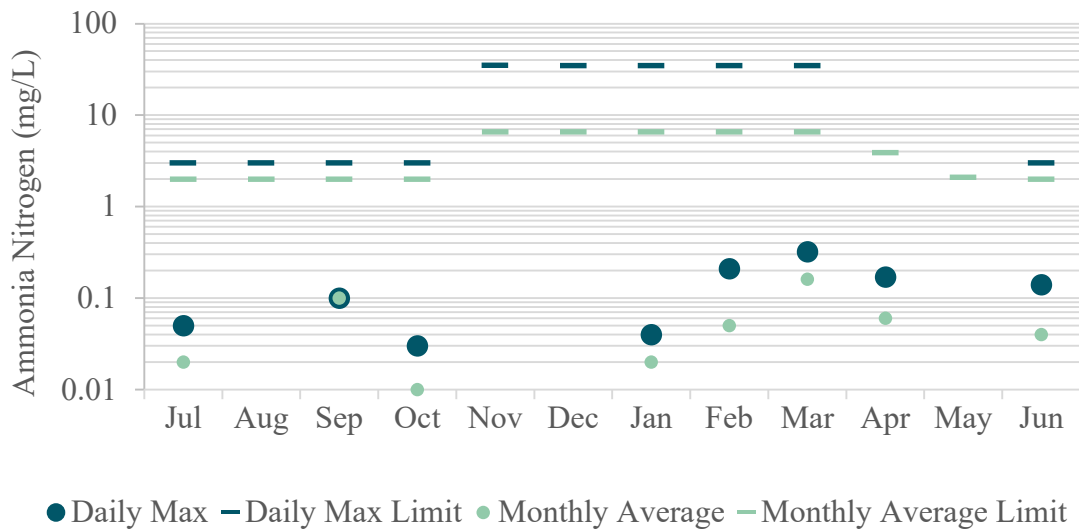


Figure 21. Effluent Ammonia Nitrogen Concentrations, FY24.

Total Phosphorus

In a freshwater system, over-enrichment of phosphorus can result in eutrophication and subsequent oxygen depletion. Elevated phosphorus and eutrophic conditions have been observed in the Nashua River Watershed well downstream of the Clinton Plant, particularly in the Pepperell Pond Impoundment. The Massachusetts Department of Environmental Protection developed a draft Total Maximum Daily Load (TMDL) for the Nashua River¹ for phosphorus in 2007.

While the Clinton Plant and the South Branch of the Nashua River represent a small portion of the watershed’s phosphorus load, more stringent seasonal total phosphorus limits were added to the Clinton Plant’s NPDES permit in 2017, requiring the construction of a phosphorus reduction facility. The permit included a compliance schedule, with the current total phosphorus limits ultimately going into effect on April 1, 2019. From April through October (the growing season) average monthly concentration and loading limits are 0.15 mg/L and 3.8 lb/day, respectively, with samples collected weekly. During the winter months, November through March, average monthly concentration limits are 1.0 mg/L and 25.1 lb/day, samples collected twice a month. The Clinton Plant met its total phosphorus limits in FY24 as shown in Figure 22 below.

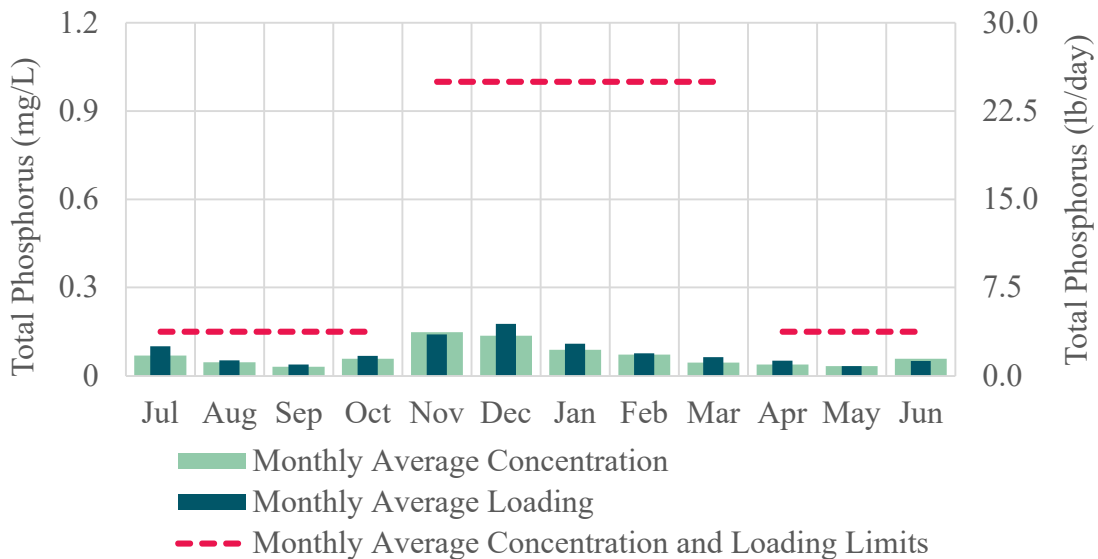


Figure 22. Effluent Total Phosphorus Concentrations and Loadings, FY24

¹ Draft - Nashua River, Massachusetts – Total Maximum Daily Load for the Nutrient Phosphorus
<https://archives.lib.state.ma.us/server/api/core/bitstreams/d451ee4d-494b-4d9a-b966-04774b0e9817/content>

Figure 23 below contains individual influent and effluent phosphorus test results for the last five fiscal years plotted on a logarithmic scale. Although a few individual effluent phosphorus concentrations were slightly elevated between FY20 and FY24, the monthly average concentration permit limit was consistently met during that timeframe.

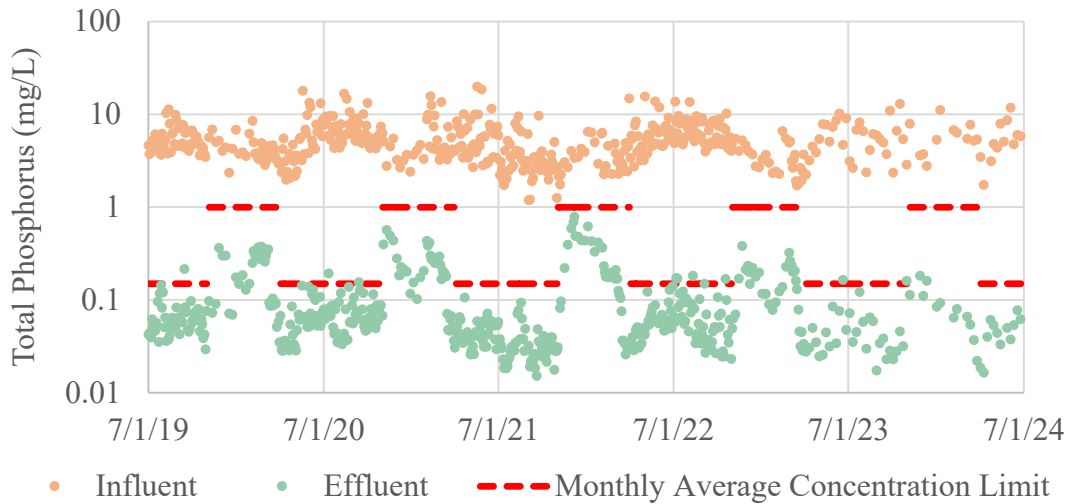


Figure 23. Influent and Effluent Total Phosphorus Concentration Trends, FY20-FY24.

The 2022 NPDES permit added requirements to monitor upstream ambient total phosphorus levels to better inform future permits. It outlined the sampling frequency and weather conditions for a biennial monitoring program. MWRA submitted the required Quality Assurance Project Plan on January 31, 2024. Samples were collected May – September 2024 and reported to EPA and DEP. The next sampling period will occur between May – September 2026.

Whole Effluent Toxicity

Whole Effluent Toxicity (WET) testing measures specific organisms' response to the cumulative effect of all potential pollutants in wastewater effluent. Clinton Plant toxicity tests were performed quarterly to determine acute and chronic effects of the effluent using the freshwater flea, *Ceriodaphnia dubia*. The acute toxicity test measures the concentration of effluent that kills 50% of the test organisms (LC_{50}) during a 48-hour exposure. The chronic toxicity test measures the highest effluent concentration whose effect on freshwater flea reproduction is not significantly different from the control, river water, over a period of seven days. This is referred to as the no observed effect concentration (C-NOEC).

The WET permit limits for the Clinton Plant require an $LC_{50} \geq 100\%$ effluent and a C-NOEC $\geq 62.5\%$ effluent. The Clinton Plant met acute and chronic toxicity limits in FY24 during all quarters except the fourth as shown in Figures 24 and 25 (below and the next page). Staff investigations did not yield anything unusual that would explain the toxicity.

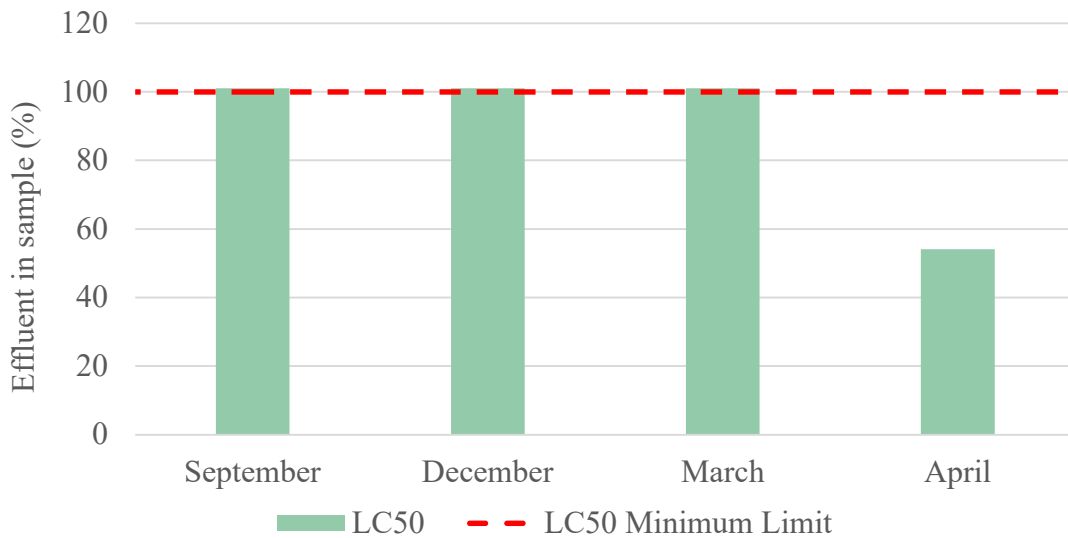


Figure 24. Quarterly Acute (LC_{50}) Toxicity Results, FY24

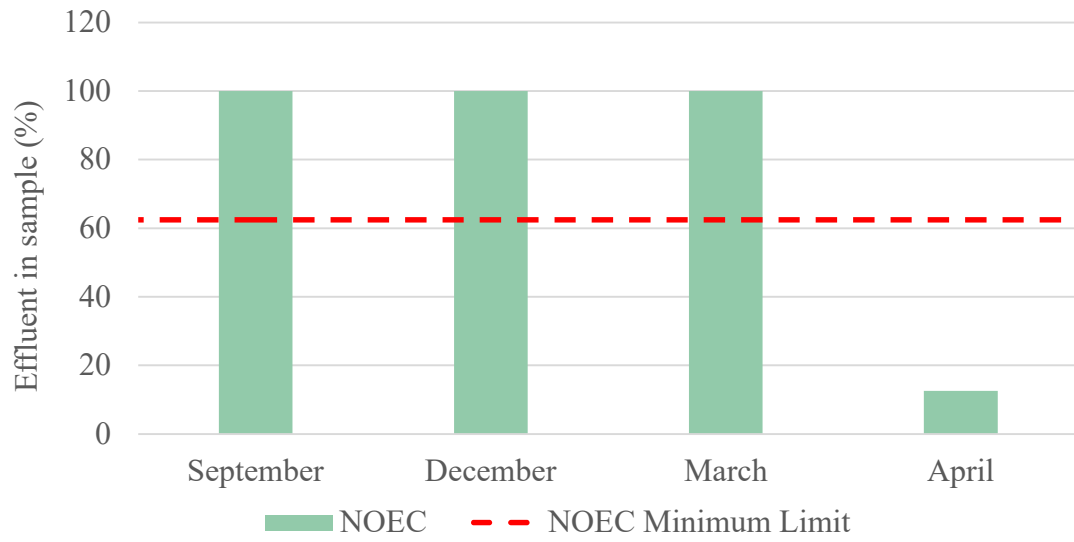


Figure 25. Quarterly Chronic (C-NOEC) Toxicity Results, FY24

Additional Permit Requirements

PFAS Analytes

MWRA collects quarterly samples of the Clinton Plant's influent, effluent, and sludge to test for a total of 40 PFAS analytes. Results are sent to EPA and DEP by the 15th of the month following the end of each calendar quarter (April 15th, July 15th, October 15th, and January 15th). This data will be used to inform future permitting decisions.

Industrial users' discharges are sampled annually. Monitoring and reporting requirements vary between EPA and DEP. EPA requires sampling of the following types of industrial discharges into the collection system for 40 PFAS analytes:

- Commercial Car Washes
- Platers/Metal Finishers
- Paper and Packaging Manufacturers
- Tanneries and Leather/Fabric/Carpet Treaters
- Manufacturers of Parts with Polytetrafluoroethylene (PTFE) or teflon type coatings (i.e. bearings)
- Landfill Leachate
- Centralized Waste Treaters
- Known or Suspected PFAS Contaminated Sites
- Fire Fighting Training Facilities
- Airports
- Any Other Known or Expected Sources of PFAS

Results are submitted as part of the Industrial Pretreatment Annual Report.

DEP requires monitoring of all Significant Industrial Users discharging into the collection system for six PFAS analytes. Results are submitted electronically to DEP within 30 days after they are received.

Industrial Pretreatment Program

MWRA's Toxic Reduction and Control (TRAC) Department is responsible for developing and enforcing local limits for industrial users discharging to the Clinton Plant collection system. The local limits program is designed to prevent pollutants from entering the treatment system that would interfere with the operation of the treatment plant or pass through untreated to contaminate the receiving water. TRAC also submits the Industrial Waste Annual Report² for each fiscal year by October 31st of the following year as required by the Industrial Pretreatment Program. The appendices of these reports contain information on concentrations of priority pollutants in the Clinton Plant influent and effluent.

² <https://www.mwra.com/your-sewer-system/toxic-reduction-and-control-trac#IWR>

Operation and Maintenance of the Sewer System

MWRA submits an annual report detailing activities related to the operation and maintenance of the MWRA-owned portion of the collection system leading to the Clinton Plant – a single, 5,399-foot long interceptor. The annual Operation and Maintenance report is submitted to EPA and DEP by March 31st each year.

Unauthorized Discharges

Discharge of wastewater from any other point source, including sanitary sewer overflows (SSOs), is not authorized by the Clinton NPDES permit. There were no unauthorized discharges from the Clinton Plant or the MWRA-owned portion of the collection system in FY24.

Sludge Processing

MWRA trucks dewatered sludge to a dedicated residuals landfill located in the Town of Clinton, owned and operated by MWRA. This sludge landfill is double-lined and includes a leachate collection system that pumps leachate and runoff to the Town of Clinton's sewer system to be treated at the Clinton Plant. Clean soil cover is applied to the sludge following each delivery to keep the sludge from attracting pests as required by 40 CFR 503.33(b)(11). By February 19th of each year, MWRA submits to EPA a Biosolids Annual Report that includes (i) certification that this requirement is being met, and (ii) the number of dry metric tons of sludge disposed of in the landfill. Groundwater and stormwater around the landfill are monitored in the Spring and Fall to ensure that metals and other pollutants do not pass through the liner. Groundwater and stormwater monitoring results are reported semiannually to DEP and the Clinton Conservation Commission.

Appendices

Appendix A – Clinton Wastewater Treatment Plant Schematic

CLINTON WASTEWATER TREATMENT PLANT Process Flow Diagram

