RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
PERMITS SECTION
235 PROMENADE STREET
PROVIDENCE, RHODE ISLAND 02908-5767

PUBLIC NOTICE OF PROPOSED PERMIT ACTION UNDER THE RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES) PROGRAM WHICH REGULATES DISCHARGES INTO THE WATERS OF THE STATE UNDER CHAPTER 46-12 OF THE RHODE ISLAND GENERAL LAWS OF 1956, AS AMENDED.

DATE OF NOTICE: February 10, 2026

PUBLIC NOTICE NUMBER: PN 26-01

DRAFT RIPDES PERMIT

RIPDES PERMIT NUMBER: RI0100111

NAME AND MAILING ADDRESS OF APPLICANT:

City of Woonsocket
City Hall
169 Main Street
Woonsocket, Rhode Island 02895

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Woonsocket Regional Wastewater Commission
11 Cumberland Hill Road
Woonsocket, Rhode Island 02895

RECEIVING WATER: **Blackstone River (Waterbody ID# RI0001003R-01A)**

RECEIVING WATER CLASSIFICATION: **B1**

The facility, which is the source of the discharge, is located in Woonsocket and is engaged in the treatment of domestic and industrial wastewater contributed by the City of Woonsocket and the Towns of North Smithfield, RI and Blackstone and Bellingham, MA. The facility has applied to the Rhode Island Department of Environmental Management for reissuance of an individual RIPDES permit to discharge water from the treatment plant, which includes the use of the following equipment and processes: coarse screening, communition, aerated grit removal, primary settling, biological treatment with nutrient removal, secondary settling, effluent polishing filters, chlorination, and dechlorination. The discharge of treated effluent is made to the Blackstone River

through Outfall 001A. This permit includes limits to ensure that the discharge will not cause a water quality violation.

The draft permit contains new requirements for the following: monitoring of influent and effluent for perfluorinated compounds, species sensitivity screening as part of whole effluent toxicity testing, inspection of the facility's outfall, and submission of a cybersecurity plan.

FURTHER INFORMATION:

A fact sheet (describing the type of facility and significant factual, legal and policy questions considered in these permit actions) may be obtained at no cost by writing or calling DEM as noted below:

Aaron Mello, Environmental Engineer II
Rhode Island Department of Environmental Management
Office of Water Resources
Permits Section
235 Promenade Street
Providence, Rhode Island 02908-5767
Phone: (401) 537-4255 / Email: aaron.mello@dem.ri.gov

The administrative record containing all documents relating to these permit actions is on file and may be inspected, by appointment, at the DEM's Providence office mentioned above between 8:30 AM and 4:00 PM, Monday through Friday, except holidays.

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

Pursuant to Chapter 42-17.4 of the Rhode Island General Laws a public hearing has been scheduled to consider these permits if requested. Requests for a Public Hearing must be submitted in writing to the attention of Aaron Mello at the address indicated above. Notice should be taken that if DEM receives a request from twenty-five (25) people, a governmental agency or subdivision, or an association having no less than twenty-five (25) members on or before Thursday, March 12, 2026 at 4:00 PM, a public hearing will be held at the following time and place:

5:00 PM Thursday, March 19, 2026
Room 280
235 Promenade Street
Providence, Rhode Island 02908

Interested persons should contact DEM to confirm if a hearing will be held at the time and location noted above.

235 Promenade Street is accessible to individuals who are handicapped. If communication assistance (readers/interpreters/captioners) is needed, or any other accommodation to ensure equal participation, please call Aaron Mello or RI Relay 711 by 4:00 PM on Tuesday, March 17, 2026, so that arrangements can be made to provide such assistance at no cost to the person requesting.

Interested parties may submit comments on the permit actions and the administrative record to the address above no later than 4:00 PM on Friday, March 20, 2026.

If, during the public comment period, significant new questions are raised concerning the permit, DEM may require a new draft permit or fact sheet or may reopen the public comment period. A public notice will be issued for any of these actions.

Any person, including the permittee/applicant, who believes these permit actions are inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period under 250-RICR-150-10-1.43 of the Regulations of the Rhode Island Pollutant Discharge Elimination System. The public comment period is from Tuesday, February 10, 2026 to Friday, March 20, 2026. Commenters may request a longer comment period if necessary to provide a reasonable opportunity to comply with these requirements. Comments should be directed to DEM as noted above.

FINAL DECISION AND APPEALS:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Director will issue a final decision and forward a copy of the final decision to the permittee and each person who has submitted written comments or requested notice. Within 30 days following the notice of the final decision, any interested person may submit a request for a formal hearing in accordance with the requirements of 250-RICR-150-10-1.50 of the Regulations of the Rhode Island Pollutant Discharge Elimination System.

29 Jan 2026
Date

Heidi Travers
Heidi Travers, P.E.
Environmental Engineer IV
RIPDES Program, Office of Water Resources
Department of Environmental Management

AUTHORIZATION TO DISCHARGE UNDER THE

RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 46-12 of the Rhode Island General Laws, as amended, the

City of Woonsocket
City Hall
169 Main Street
Woonsocket, RI 02895

is authorized to discharge from a facility located at the

Woonsocket Regional Wastewater Commission
11 Cumberland Hill Road
Woonsocket, RI 02895

to receiving waters named

Blackstone River

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on _____.

This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on October 24, 2017.

This permit consists of 24 pages in Part I including effluent limitations, monitoring requirements, etc. and 8 pages in Part II including General Conditions.

Signed this _____ day of _____ , 2026.

_____
Jospeh B. Haberek, P.E., Administrator for Surface Water Protection
Office of Water Resources
Rhode Island Department of Environmental Management
Providence, Rhode Island

PART I

I.A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

I.A.1. During the period beginning on the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final treated discharge after disinfection). Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity – lbs/day		Concentration – Specify Units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow	16 MGD	--- MGD				Continuous	Recorder
$CBOD_5$ [1]							
(Nov. 1 – May 31)	3,335	6,005	25 mg/L	40 mg/L	45 mg/L	3/Week	24-Hr. Comp.
(June 1 – Oct. 31)	1,340	2,270	10 mg/L	15 mg/L	17 mg/L	3/Week	24-Hr. Comp.
$CBOD_5$ - % Removal[1]			≥85%			1/Month	Calculated
TSS[1]							
(Nov. 1 – May 31)	4,000	6,670	30 mg/L	45 mg/L	50 mg/L	3/Week	24-Hr. Comp.
(June 1 – Oct. 31)	2,000	3,335	15 mg/L	20 mg/L	25 mg/L	3/Week	24-Hr. Comp.
TSS - % Removal[1]			≥85%			1/Month	Calculated
Settleable Solids				--- mL/L	--- mL/L	1/Day	Grab
Oil and Grease					--- mg/L	1/Month	Grab[2]
Orthophosphorus (Nov. 1- March 31)			--- mg/L		--- mg/L	3/Week	24-Hr. Comp.

--- Signifies a parameter which must be monitored, and data must be reported; no limit has been established at this time.

[1] Sampling for $CBOD_5$ and TSS shall be performed Tuesday, Thursday, and either Saturday or Sunday. All $CBOD_5$ and TSS samples shall be taken on the influent and effluent with appropriate allowances for hydraulic detention (flow-through) time.

[2] Three (3) grab samples to be taken, with a minimum of three (3) hours between grabs, for a single twenty-four (24) hour period. Each of the three (3) grab samples must be analyzed individually and the maximum values reported.

Samples taken in compliance with the monitoring requirements specified above shall be taken Sunday through Saturday (except as noted by numbered footnotes).

PART I

I.A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

I.A.2. During the period beginning on the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final treated discharge after disinfection). Such discharges shall be monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity – lbs./day		Concentration – Specify Units				
	Average Monthly	Maximum Daily	Average Monthly *(Minimum)	Average Weekly	Maximum Daily *(Maximum)	Measurement Frequency	Sample Type
Phosphorus, Total (as P)							
(Nov. 1 – Mar. 31)			1.0 mg/L		--- mg/L	3/Week	24-Hr. Comp.
(April 1 – Oct. 31)			0.10 mg/L		--- mg/L	3/Week	24-Hr. Comp.
Enterococci			54 cfu/100 mL[1]		175 cfu/100 mL[1]	3/Week	Grab
Fecal Coliform			--- MPN/100 mL[1]		--- MPN/100 mL[1]	3/Week	Grab
Total Residual Chlorine (TRC)			49 µg/L		84 µg/L	3/Day[2]	Grab[2]
pH			(6.0 SU)		(9.0 SU)	2/Day	Grab

--- Signifies a parameter which must be monitored, and data must be reported; no limit has been established at this time.

* Values in parentheses () are to be reported as Minimum/Maximum for the reporting period rather than Average Monthly/Maximum Daily.

[1] The Fecal Coliform sample shall be taken at the same time as the Enterococci samples. These samples shall be taken at the same time as one of the daily TRC samples. The Geometric Mean shall be used to obtain the “maximum daily” (when there are multiple samples in a day) and the "monthly average" values for Fecal Coliform and Enterococci. The facility shall report any Fecal Coliform sample result that exceeds 400 MPN/100 mL to DEM in accordance with the 24-hour reporting requirements under Part II(l)(5) of the permit.

[2] The use of a continuous TRC recorder after chlorination and prior to dechlorination is required to provide a record that proper disinfection was achieved at all times. Compliance with these limitations shall be determined by taking three (3) grab samples per day, Monday - Friday (except holidays), with a minimum of three (3) hours between grabs. On Saturdays, Sundays and holidays, at least (2) grab samples shall be taken each day with a minimum of two (2) hours between grabs. The maximum daily and average monthly values are to be computed from the average grab sample results for each calendar day. The following methods may be used to analyze the grab samples: (1) Low Level Amperometric Titration, Standard Methods (18th Edition) No. 4500-Cl E-2011; and (2) DPD Spectrophotometric, Standard Methods (18th Edition) No. 4500-Cl G-2011.

Samples taken in compliance with the monitoring requirements specified above shall be taken Sunday through Saturday (except as noted by numbered footnotes).

PART I

I.A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

I.A.3 During the period beginning on the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final treated discharge after disinfection). Such discharges shall be monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity – lbs./day		Concentration – Specify Units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Ammonia, Total (as N)							
(Nov. 1 – Apr. 30)			15 mg/L		53.8 mg/L	1/Week	24-Hr. Comp.
(May 1 – May 31)			12 mg/L		53.8 mg/L	3/Week	24-Hr. Comp.
(June 1 – Oct. 31)			2.0 mg/L		49.4 mg/L	3/Week	24-Hr. Comp.
TKN (as N)							
(Nov. 1 – Apr. 30)			--- mg/L		--- mg/L	1/Week	24-Hr. Comp.
(May 1 – Oct. 31)			--- mg/L		--- mg/L	3/Week	24-Hr. Comp.
Nitrate, Total (as N)							
(Nov. 1 – Apr. 30)			--- mg/L		--- mg/L	1/Week	24-Hr. Comp.
(May 1 – Oct. 31)			--- mg/L		--- mg/L	3/Week	24-Hr. Comp.
Nitrite, Total (as N)							
(Nov. 1 – Apr. 30)			--- mg/L		--- mg/L	1/Week	24-Hr. Comp.
(May 1 – Oct. 31)			--- mg/L		--- mg/L	3/Week	24-Hr. Comp.
Nitrogen, Total (TKN + Nitrate + Nitrite, as N)							
(Nov. 1 – Mar. 31)[1]	--- lb/d		--- mg/L		--- mg/L	1/Week	Calculated
(Apr. 1 – Apr. 30)	--- lb/d		10.0 mg/L		--- mg/L	1/Week	Calculated
(May 1 – Oct. 31)	400 lb/d		3.0 mg/L		--- mg/L	3/Week	Calculated

--- signifies a parameter which must be monitored, and data must be reported; no limit has been established at this time.

[1] The permittee shall operate the treatment facility to reduce the discharge of total nitrogen, during the months of November through March, to the maximum extent possible using all available treatment equipment in place at the facility, except supplemental carbon addition.

Samples taken in compliance with the monitoring requirements specified above shall be taken Sunday through Saturday.

PART I

I.A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

I.A.4 During the period beginning on the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final treated discharge after disinfection). Such discharges shall be monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity – lbs./day		Concentration – Specify Units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Total Arsenic			17.4 µg/L		1,203 µg/L	1/Week	24-Hr. Comp.
Total Cadmium[1]			0.68 µg/L		4.7 µg/L	1/Month[3]	24-Hr. Comp.
Total Copper[1]			30.5 µg/L		66.8 µg/L	1/Week	24-Hr. Comp.
Total Selenium[1]			17.7 µg/L		70.7 µg/L	1/Week	24-Hr. Comp.
Total Aluminum[1]			189 µg/L		2,828 µg/L	See Footnote 4	24-Hr. Comp.
Total Iron			1,970 µg/L		--- µg/L	See Footnote 4	24-Hr. Comp.
Cyanide[1,2]			--- µg/L		--- µg/L	1/Quarter	Composite[2]
Phenols, Total[1]			--- µg/L		--- µg/L	1/Quarter	Grab
Hexavalent Chromium[1]			--- µg/L		--- µg/L	1/Quarter	24-Hr. Comp.
Total Lead[1]			--- µg/L		--- µg/L	1/Quarter	24-Hr. Comp.
Total Nickel[1]			--- µg/L		--- µg/L	1/Quarter	24-Hr. Comp.
Total Zinc[1]			--- µg/L		--- µg/L	1/Quarter	24-Hr. Comp.
Organic Carbon, Total[1]			--- mg/L		--- mg/L	1/Quarter	24-Hr. Comp.

--- signifies a parameter which must be monitored, and data must be reported; no limit has been established at this time.

[1] Monitoring data may be obtained in conjunction with the bioassay testing required in Part I.B. of the permit.

[2] Composite shall be conducted by taking three (3) grab samples per day, with a minimum of three (3) hours between grabs and preserved immediately upon collection. All three (3) samples shall be composited and then analyzed for Available Cyanide. Once the permittee receives written notification by DEM that laboratories have been certified by Rhode Island Department of Health to analyze for Free Cyanide, permittee will be required to analyze for Free Cyanide in place of Available Cyanide.

[3] If the pollutant is not detected in the discharge (i.e., non-detect using sufficiency sensitive detection limits) over twelve (12) consecutive months, after notifying the Department and receiving written approval from the Department, the permittee may discontinue monitoring.

[4] Weekly sampling for Total Iron and/or Total Aluminum is only in effect during months in which Iron based and/or Aluminum based chemicals are used in the treatment process. For all other periods sampling is only required for Total Aluminum on a quarterly basis in accordance with Part I.B of this permit.

Samples taken in compliance with the monitoring requirements specified above shall be taken Monday through Friday.

PART I

I.A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

I.A.5 During the period beginning on the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final treated discharge after disinfection). Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity – lbs./day		Concentration – Specify Units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Ceriodaphnia sp.							
LC_{50}[1]					≥ 100%	1/Quarter	24-Hr. Comp.
C-NOEC[2]					≥ 25%	1/Quarter	24-Hr. Comp.

[1] LC_{50} is defined as the concentration of wastewater that causes mortality to 50% of the test organisms. The limit of 100% or greater is defined as a sample that is composed of 100% effluent.

[2] Chronic - No Observed Effects Concentration (C-NOEC) is the concentration of toxicant or effluent to which organisms are exposed in a life-cycle or partial life-cycle which causes no adverse effect on growth, survival or reproduction (see Section I.B.). The limit of 25% or greater is defined as a sample that is composed of 25% effluent.

Samples taken in compliance with the monitoring requirements in accordance with Part 1.B. of the permit.

PART I

I.A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

I.A.6 During the period beginning on the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final treated discharge after disinfection). Such discharges shall be monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity – lbs./day		Concentration – Specify Units				
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
PFAS Analytes[1]					--- ng/L	1/Quarter	Grab [2]

--- signifies a parameter which must be monitored, and data must be reported; no limit has been established at this time.

[1]Influent and effluent sampling for the listed PFAS parameters listed in Attachment A. PFAS shall be analyzed using Clean Water Act wastewater draft analytical method 1633 until a 40 CFR Part 136 approved test method for wastewater is approved. Report in NetDMR the results of all PFAS analytes required to be tested as part of the method as shown in Attachment A.

[2]Influent samples taken in compliance with the monitoring requirements specified above shall be taken at the facility headworks at the same sampling location where influent $CBOD_5$ and influent TSS are sampled. Effluent samples shall be taken at a location after dechlorination.

I.A.7 Per 40 CFR 122.42(b), prior to acceptance, the permittee shall notify DEM of the following:

a. Any new introduction of pollutants into the Permittee's treatment facility from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging those pollutants; and

b. Any substantial change in the volume or character of pollutants being introduced into the Permittee's treatment facility by a source that was discharging pollutants into the facility at the time of permit issuance.

c. Notice shall include information on:
   i. the quality and quantity of effluent introduced into the Permittee's treatment facility, and
   ii. any anticipated impact of the change on the quantity and quality of effluent to be discharged from the Permittee's treatment facility.

I.A.8

a. The pH of the effluent shall not be less than 6.0 nor greater than 9.0 standard units at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.

b. The discharge shall not cause visible discoloration of the receiving waters.

c. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.

d. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and 5-day carbonaceous biochemical oxygen demand. The percent removal shall be based on monthly average values.

e. When the effluent discharged for a period of ninety (90) consecutive days exceeds 80 percent of the designed flow, the permittee shall submit to the Department a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

f. The permittee shall analyze its effluent annually for the EPA Priority Pollutants as listed in 40 CFR 122, Appendix D, Table II and III. Such analysis shall be conducted during the third calendar quarter bioassay sampling event. The effluent sample shall be collected during the same twenty-four (24) hour period as the bioassay sample. The results of these analyses shall be submitted to the Department of Environmental Management by October 15th of each year. All sampling and analysis shall be done in accordance with EPA Regulations, including 40 CFR, Part 136; grab and composite samples shall be taken as appropriate.

g. This permit serves as the State's Water Quality Certificate for the discharges described herein.

I.B. BIOMONITORING REQUIREMENT AND INTERPRETATION OF RESULTS

I.B.1 General

Beginning on the effective date of the permit, the permittee shall perform four (4) chronic toxicity tests per year on dechlorinated effluent samples collected from discharge Outfall 001A. The permittee shall conduct the tests during dry weather periods (no rain within forty-eight (48) hours prior to or during sampling unless approved by DEM) according to the following test frequency and protocols. Chronic and acute toxicity data shall be reported as outlined in Part I.B.10. The chronic daphnid tests shall be used to calculate the acute LC_{50} at the forty-eight (48) hour exposure interval. The State may require additional screening, range finding, definitive acute or chronic bioassays as deemed necessary based on the results of the initial bioassays required herein. Indications of toxicity could result in requiring a Toxicity Reduction Evaluation (TRE) to investigate the causes and to identify corrective actions necessary to eliminate or reduce toxicity to an acceptable level.

I.B.2 Test Frequency
On four (4) sampling events, (one (1) each calendar quarter) the permittee will conduct seven-day chronic toxicity tests on the specie listed below, for a total of four (4) chronic toxicity tests per year. This requirement entails performing one-species testing as follows:

Species	Test Type One (1) Species Test Four (4) Times Annually	Frequency
Daphnid (Ceriodaphnia sp.)	Reproduction/Survival (Chronic static renewal – report chronic results and acute results 48 hours into the test)	Quarterly

I.B.3 Test Methods
Toxicity testing shall be conducted in accordance with protocols listed in 40 CFR Part 136, incorporating any deviations from protocol listed herein, or additional methods if approved by the Director of DEM.

I.B.4 Sample Collection
For each sampling event a twenty-four (24) hour flow-proportioned composited effluent sample shall be collected at a location after dechlorination and during dry weather (no rain forty-eight (48) hours prior to or during sampling unless approved by DEM).

For the chronic toxicity tests, a sampling event shall consist of three (3) 24-hour composite samples collected over the seven (7) day test-period. The effluent samples shall be collected on Days 0, 3, and 5 of the seven (7) day exposure period. The first sample is used for test initiation, Day 1, and for test solution renewal on Day 2. The second sample would be used for test solution renewal on Days 3 and 4. The third sample would be used for test solution renewal on Days 5, 6, and 7.

To eliminate the problem of potential rainfall interference during the five (5) day sampling period for the chronic tests, enough sample shall be collected on Day 0 to properly store and use one-third (1/3) on both Days 3 and 5 if rain has occurred since Day 0. In addition, if no rainfall has occurred since Day 3, enough sample should also be collected on Day 3 to use for Day 5 if necessary.

In the laboratory, the initial sample (Day 0) will be split into two (2) subsamples, after thorough mixing, for the following:

A: Chemical Analysis
B: Acute and Chronic Toxicity Testing

Days 3 and 5 samples will be held until test completion. If either the Day 3 or 5 renewal sample causes lethality to 50 percent (50%) or more test organisms in any of the dilutions for the chronic tests, then a chemical analysis shall be performed on the appropriate sample(s) as well. All samples held overnight shall be refrigerated to ≤6°C. Grab samples must be used for pH and temperature.

I.B.5 Dilution Water
Dilution water used for freshwater toxicity analyses should be of sufficient quality to meet minimum acceptability of test results (see Part I.B.6). For the chronic and acute tests, natural freshwater shall be used as the dilution water. This water shall be collected from the Pawtucket Reservoir. If this natural freshwater diluent is found to be, or suspected to be toxic or unreliable during the preliminary screening for the toxicity tests, an alternate or laboratory source of water of known quality with a hardness and pH similar to that of the receiving water may be substituted AFTER RECEIVING APPROVAL FROM DEM.

I.B.6 Effluent Toxicity Test Conditions for the Daphnid (Ceriodaphnia sp.) Survival and Reproduction Test

Test conditions are required to be compliant with 40 CFR 136 using the following effluent concentrations:

Five (5) dilutions plus a control: 100%, 50%, 25%, 12.5%, 6.25%, and 0% effluent

I.B.7 Chemical Analysis

The following chemical analysis shall be performed for each sampling event. A sample analyzed as part of the required third-quarter priority pollutant scan may be used to satisfy this sampling requirement.

Parameter	Effluent	Diluent	Detection Limit
Hardness	√	√	0.5 mg/L
Alkalinity	√	√	2.0 mg/L
pH	√	√	--
Specific Conductance	√	√	--
Total Solids and Suspended Solids	√	√	--
Total Ammonia	√	√	0.1 mg/L
Total Organic Carbon	√		0.5 mg/L
Cyanide[1]	√		0.01 mg/L
Total Phenols	√		0.05 mg/L
Total Cadmium[2]	√	√	0.1 µg/L
Hexavalent Chromium[3]	√	√	20.0 µg/L
Total Copper[2]	√	√	1.0 µg/L
Total Lead[2]	√	√	1.0 µg/L
Total Zinc[2]	√	√	5.0 µg/L
Total Nickel[2]	√	√	1.0 µg/L
Total Aluminum	√	√	5.0 µg/L

[1] Available Cyanide analysis is in addition to the Total Cyanide analysis that is required as part of the priority pollutant scan. Once the permittee receives written notification by DEM that laboratories have been certified by Rhode Island Department of Health to analyze for Free Cyanide, permittee will be required to analyzed for Free Cyanide in place of Available Cyanide.

[2] Priority pollutant.

[3] Hexavalent chromium analysis is in addition to the total chromium analysis that is required as part of the priority pollutant scan.

The above metal analyses may be used to fulfill, in part or in whole, monitoring requirements in the permit for these specific metals.

During the third calendar quarter bioassay sampling event, the final effluent sample collected during the same twenty-four (24) hour period as the bioassay sample, shall be analyzed for priority pollutants (as listed in Tables II and III of Appendix D of 40 CFR 122). The bioassay priority pollutant scan shall be a full scan and may be coordinated with other permit conditions to fulfill any other pollutant scan requirements.

In addition, the following chemical analyses shall be performed for the chronic toxicity tests as part of each daily renewal procedure on each dilution and the controls.

Parameter	Beginning of 24-Hour Exposure Period	End of 24-Hour Exposure Period
Dissolved Oxygen	√	√
Temperature	√	√
pH	√	√
Specific Conductance	√	√
Alkalinity[1]	√	√
Hardness[1]	√	√

[1] These are performed on the 100% effluent and control samples only.

I.B.8 Toxicity Test Report Elements

A report of results will include the following:

- Description of sample collection procedures and site description.
- Names of individuals collecting and transporting samples, times, and dates of sample collection and analysis.
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests (quality assurance); light and temperature regime; dilution water description; other information on test conditions if different than procedures recommended.
- All chemical and physical data generated (include detection limits).
- Raw data and bench sheets.
- Any other observations or test conditions affecting test outcome.

Toxicity test data shall include the following:

Chronic

- Daily survival of test organisms in the controls and all replicates in each dilution. Survival data should be analyzed by Fisher's Exact Test prior to analysis of reproduction data.
- Young per female for all replicates in each dilution for Ceriodaphnia and weight for minnow larvae.
- Dissolved oxygen, pH, specific conductance and temperature for each dilution.
- Results of Dunnett's Procedure and/or other EPA recommended or approved methods for analyzing the data.
- C-NOEC = Chronic No Observed Effect Concentration
- LOEC = Lowest Observed Effect Concentration
- MATC = Maximum Allowable Toxicant Concentration

Acute (These data points are to be obtained 48 hours into the chronic test)

- Survival for each concentration and replication at time twenty-four (24) and forty-eight (48) hours.
- Dissolved oxygen, pH and specific conductance for each concentration.
- LC_{50} and 95% confidence limits using one of the following methods in order of preference: Probit, Trimmed Spearman Karber, Moving Average Angle, or the graphical method; printout or copy of these calculations. The Probit, Trimmed Spearman Karber and Moving Average Angle methods of analyses can only be used when mortality of some of the test organisms are observed in at least two (2) of the (% effluent) concentrations tested (i.e., partial mortality). If a test results in a 100% survival and 100% mortality in adjacent treatments ("all or nothing" effect), a LC_{50} may be estimated using the graphical method.

I.B.9 Species Sensitivity Screening Report

For four (4) quarters of the permit beginning the third year of the permit ( ), the permittee shall conduct a chronic species sensitivity screening for the discharge. Species sensitivity screening for chronic toxicity shall include, at minimum, chronic toxicity testing for four consecutive calendar quarters using 40 CFR Part 136 approved methods for fathead minnow (*Pimephales promelas*, larval survival and growth), daphnia (*Ceriodaphnia dubia*, survival and reproduction), and green alga (*Selenastrum capricornutum*, growth). Samples shall be obtained from the dechlorinated effluent collected from Outfall 001A during dry weather periods (no rain within forty-eight (48) hours prior to or during sampling unless approved by DEM). The above analysis may fulfill the quarterly acute monitoring requirements in Part I.A.5 provided that all tests are conducted in accordance with protocols listed in 40 CFR Part 136.

If only a single species in the species sensitivity screening testing exceeds 1 chronic Toxic Unit (TUc) (as 100/NOEC), then that species shall be established as the most sensitive species. If there are more than one species that exceed 1 TUc (as 100/NOEC), then the species with the highest TUc (as 100/NOEC) shall be established as the most sensitive species. DEM shall have final discretion to determine which species is the most sensitive considering the test results from the species sensitivity screening.

Test No.	Quarter Screening is to be Performed
1	( )
2	( )
3	( )
4	( )

The final Species Sensitivity Screening Report shall include all the elements required under Part I.B.8 for each quarterly test and shall be submitted to DEM by ( ).

I.B.10 Reporting of Bioassay Testing

Bioassay Testing shall be reported as follows:

Quarter Testing to be Performed	Report Due No Later Than	Results Submitted on DMR for
January 1 – March 31	April 15	March
April 1 – June 30	July 15	June
July 1 – September 30	October 15	September
October 1 – December 31	January 15	December

Reports shall be maintained by the permittee and shall be made available upon request by DEM.

I.C. INDUSTRIAL PRETREATMENT PROGRAM

I.C.1 Definitions

For the purpose of this permit, the following definitions apply.

a. 40 CFR 403 and sections thereof refer to the General Pretreatment regulations, 40 CFR Part 403 as revised.

b. Categorical Pretreatment Standards mean any regulation containing pollutant discharge limits promulgated by the USEPA in accordance with section 307(b) and (c) of the Clean Water Act (33 USC 1251), as amended, which apply to a specific category of industrial users and which appears in 40 CFR Chapter 1, subchapter N.

c. Pretreatment Standards include all specific prohibitions and prohibitive discharge limits established pursuant to 40 CFR 403.5, including but not limited to, local limits, and the Categorical Pretreatment Standards.

d. Regulated Pollutants shall include those pollutants contained in applicable categorical standards and any other pollutants listed in the Pretreatment Standards which have reasonable potential to be present in an industrial user's effluent.

I.C.2 Implementation

The authority and procedures of the Industrial Pretreatment Program shall at all times be fully and effectively exercised and implemented, in compliance with the requirements of this permit and in accordance with the legal authorities, policies, procedures and financial provisions described in the permittee's approved Pretreatment Program and Sewer Use Ordinance, the Rhode Island Pretreatment Regulations and the General Pretreatment Regulations 40 CFR 403. The permittee shall maintain adequate resource levels to accomplish the objectives of the Pretreatment Program.

I.C.3 Local Limits Monitoring Plan

Woonsocket submitted a Local Limits Monitoring Plan (LLMP) on August 25, 2022, which DEM approved on August 30, 2022. The LLMP achieves the following minimum requirements:

a. Identify all sampling locations, including but not limited to: POTW influent, POTW effluent, POTW sludge, septage and hauled wastes, and domestic wastewater (i.e., key manhole sampling). Domestic sampling location(s) must be strictly domestic and separate from any potential commercial or industrial sources or contributions.

b. Pollutants of concern (POC) that will be sampled for at each sampling location. At minimum, the following pollutants should be sampled for: arsenic, cadmium, chromium, copper, cyanide, lead, mercury, nickel, silver, zinc, molybdenum, selenium, BOD, TSS, and ammonia. In addition, the IPP must identify as POCs any pollutants for which there are RIPDES permit effluent limitations or any other POCs that the IPP has identified. If any of the listed POCs would not be sampled for at a particular location, this must be justified by the LLMP.

c. Sampling type for each pollutant (grab, composite, time-proportioned, flow-proportioned). All sampling and reporting requirements shall be in accordance with 40 CFR 136.

d. Identification of analytical methods being used, which would include minimum detection levels (MDL) and minimum quantitative levels (MQL) for the analysis of each pollutant.

e. The sampling frequency at each sampling location. For pollutants that have an associated local limit, sampling must take place quarterly at a minimum. For POCs without a local limit, sampling must take place annually at a minimum. Other organic priority pollutants must be sampled at the influent at a minimum of annually. TCLP results must be taken for POTW sludge a minimum of annually.

f. The sampling plan must account for POTW detention time. For example, if the detention time through the facility is 24 hours, then effluent samples should be collected 24 hours after influent samples.

g. Identification of data to be recorded for each sample (date, time, initials of sampler, preservation, location, sample type, wastewater flow, etc.).

The LLMP shall be subject to DEM review and approval. Deviations from the above requirements may be approved at the DEM's discretion based on reasonable technical justifications. Changes to the LLMP shall be in accordance with Part I.C.6.f of this permit.

I.C.4 Local Limits

Pollutants introduced into POTWs by a non-domestic source (user) shall not: pass through the POTW, interfere with the operation or performance of the works, contaminate sludge as to adversely affect disposal options, or adversely affect worker safety and health.

a. Within one hundred twenty (120) days of the effective date of this permit and in accordance with 40 CFR 122.44(j)(2)(ii), the permittee shall submit to DEM a technically-based local limits evaluation. The evaluation must address whether the permittee will need to revise its current local limits in order to meet the discharge requirements contained in this permit, meet the permittee's current sludge disposal option criteria, protect against WWTF interference, and ensure protection of WWTF worker health and safety. If revision is required, the evaluation shall contain proposed numerical limitations developed by the permittee in accordance with the procedures set forth in the EPA's July 2004 Local Limits Guidance Manual. All supporting data and calculations must be submitted with the evaluation. In preparing this evaluation, the Permittee may complete and submit the attached form (see Attachment B – Reassessment of Technically Based Industrial Discharge Limits) with the technical evaluation to assist in determining whether existing local limits need to be revised. Upon review, DEM will provide

written notification either granting preliminary approval of the local limits evaluation or stating the deficiencies revealed therein. Should DEM determine that a deficiency exists in the local limits evaluation submittal, the permittee shall submit to the DEM, within thirty (30) days of the receipt of said notice (unless a longer timeframe is specified therein), a revised evaluation consistent with the DEM's notice of deficiency.

b. Should the evaluation determine the need to revise local limits, within sixty (60) days (unless a longer timeframe is granted) of the receipt of preliminary approval of the proposed limits, the permittee shall submit to the DEM a request for a pretreatment program modification in accordance with 40 CFR 403.18 and Part I.C.6.f of this permit. Upon final approval by the DEM and adoption by the permittee, these limits shall be deemed Pretreatment Standards for the purposes of Section 307(d) of the Clean Water Act. No longer than thirty (30) days (unless a longer timeframe is granted) following the DEM's final approval of the proposed local limits, the permittee shall commence implementation of the revised local limits and reissue or modify all applicable industrial user permits to contain the modified local limits.

I.C.5 Enforcement Response Plan (ERP)

The permittee has an approved ERP dated July 1997 that meets the requirements of 40 CFR 403.8(f)(5). The permittee shall continue to implement its approved ERP at all times.

I.C.6 General

a. The permittee shall carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with Pretreatment Standards. At a minimum, all significant industrial users shall be inspected and monitored for all regulated pollutants at the frequency established in the approved Industrial Pretreatment Program but in no case less than once per year (one (1) year being determined as the reporting year established in Part I.C.7 of this permit). In addition, these inspections, monitoring and surveillance activities must be conducted in accordance with EPA's Industrial User Inspection and Sampling Manual for POTW's, April 1994. All inspections, monitoring, and surveillance activities shall be performed, and have records maintained, with sufficient care to produce evidence admissible in enforcement proceedings or judicial actions. The permittee shall evaluate, at least every two years unless specific superseding 40 CFR 403 streamlining provisions have been adopted, whether each SIU requires a Slug Control Plan. If a Slug Control Plan is required, it shall include the contents specified by 40 CFR 403.8(f)(2)(vi).

b. The permittee shall reissue all necessary Industrial User (IU) control mechanisms within thirty (30) days of their expiration date. The permittee shall issue, within sixty (60) days after the determination that an IU is a Significant Industrial User (SIU), all SIU control mechanisms. All SIU control mechanisms must contain, at a minimum, those conditions stated in 40 CFR 403.8(f)(1)(iii)(B). All control mechanisms must be mailed via Certified Mail, Return Receipt Requested. A complete bound copy of the control mechanism with the appropriate receipt must be kept as part of the Industrial User's permanent file. In addition, the permittee must develop a fact sheet describing the basis for the SIU's permit and retain this fact sheet as part of the SIU's permanent file.

c. The permittee must identify each instance of noncompliance with any pretreatment standard and/or requirement and take a formal documented action for each instance of noncompliance. Copies of all such documentation must be maintained in the Industrial User's permanent file.

d. The permittee shall prohibit Industrial Users from the dilution of a discharge as a substitute for adequate treatment in accordance with 40 CFR 403.6(d).

e. The permittee shall prohibit Industrial Users from introducing into the POTW:

   i. any pollutant which causes pass-through or interference as defined in 40 CFR 403.3.

ii. pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21;

iii. Pollutants which will cause corrosive structural damage to the POTW, but in no case Discharges with pH lower than 5.0, unless the works is specifically designed to accommodate such Discharges;

iv. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;

v. Any pollutants, including oxygen demanding pollutants (BOD, etc.) released in a Discharge at a flowrate and/or pollutant concentration which will cause Interference with the POTW.

vi. Heat in amounts which will inhibit biological activity in the POTW resulting in Interference, but in no case heat in such quantities that the temperature at the POTW Treatment Plant exceeds 40°C (104°F) unless the Approval Authority, upon request of the POTW, approves alternative temperature limits.

vii. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

viii. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

ix. Any trucked or hauled pollutants, except at discharge points designated by the POTW.

f. The permittee shall comply with the procedures of 40 CFR 403.18 for instituting any modifications of the permittee's approved Pretreatment Program. Significant changes in the operation of a POTW's approved Pretreatment Program must be submitted and approved following the procedures outlined in 40 CFR 403.18(b) and 403.9(b). However, the endorsement of local officials responsible for supervising and/or funding the pretreatment program required by 403.9(b)(2) will not be required until DEM completes a preliminary review of the submission. The DEM will evaluate and review the permittee's initial proposal for a modification and provide written notification either granting preliminary approval of the proposed modifications or stating the deficiencies contained therein. DEM's written notification will also include a determination whether the submission constitutes a substantial or non-substantial program modification as defined by 40 CFR 403.18. Should DEM determine that a deficiency exists in the proposed modification, the permittee shall submit to DEM, within thirty (30) days of the receipt of said notice, a revised submission consistent with DEM's notice of deficiency.

Pretreatment program modifications which the permittee considers Non-substantial, shall be deemed to be approved within forty-five (45) days after submission of the request for modification, unless DEM determines that the modification is in fact a substantial modification or notifies the permittee of deficiencies. Upon receipt of notification that DEM has determined the modification is substantial, the permittee shall initiate the procedures and comply with the deadlines for substantial modifications, which are outlined below.

For substantial modifications, the permittee shall, within sixty (60) days (unless a longer time frame is granted) of the receipt of DEM's preliminary approval of the proposed modification, submit documentation (as required by 403.9(b)(2)) that any local public notification/participation procedures required by law have been completed, including any responses to public

comments, and a statement that the local officials will endorse and/or approve the modification upon approval by DEM.

Within thirty (30) days of DEM's final approval of the proposed modification(s), the permittee shall implement the modification and submit proof that the local officials have endorse and/or approved the modification(s) to the DEM. Upon final approval by the DEM and adoption by the permittee, this modification(s) shall become part of the approved pretreatment program and shall be incorporated into this permit in accordance with 40CFR 122.63(g).

g. All sampling and analysis required of the permittee, or by the permittee of any Industrial User, must be performed in accordance with the techniques described in 40 CFR 136.

h. For those Industrial Users with discharges that are not subject to Categorical Pretreatment Standards, the permittee shall require appropriate reporting in accordance with 40 CFR 403.12(h).

i. The permittee shall, in accordance with 40 CFR 403.12(f), require all Industrial Users to immediately notify the permittee of all discharges by the Industrial User that could cause problems to the POTW, including slug loadings, as summarized in 40 CFR 403.5(b).

j. The permittee shall require all Industrial Users to notify the permittee of substantial changes in discharge as specified in 40 CFR 403.12(j) and the permittee shall also notify DEM of each such substantial change in discharge prior to acceptance.

k. The permittee shall require New Sources to install and have in operation all pollution control equipment required to meet applicable Pretreatment Standards before beginning to discharge. In addition, the permittee shall require New Sources to meet all applicable Pretreatment Standards within the shortest feasible time which shall not exceed ninety (90) days in accordance with 40 CFR 403.6(b).

l. The permittee shall require all Industrial Users who are required to sample their effluent and report the results of analysis to the POTW to comply with signatory requirements contained in 40 CFR 403.12(l) when submitting such reports.

m. The permittee shall determine, based on the criteria set forth in 40 CFR 403.8(f)(2)(viii), using the EPA method of "rolling quarters", the compliance status of each Industrial User. Any Industrial User determined to meet Significant Non-Compliance (SNC) criteria shall be included in an annual public notification as specified in 40 CFR 403.8(f)(2)(viii).

n. The permittee shall require Industrial Users to comply with the notification and certification requirements of 40 CFR 403.12(p)(1), (3) and (4) pertaining to the discharge of substances to the POTW, which if disposed of otherwise, would be a hazardous waste under 40 CFR Part 261.

o. The permittee shall continue to designate, as SIUs, those Industrial Users (IUs) which meet the definition contained in 40 CFR 403.3 and the permittee's sewer use ordinance.

The permittee shall notify each newly designated SIU of its classification as an SIU within thirty (30) days of identification and shall inform the SIU of the requirements of an SIU contained in 40 CFR 403.12.

I.C.7 Categorical Industrial Users (CIUs)

a. The permittee shall require Industrial Users to comply with applicable Categorical Pretreatment Standards in addition to all applicable Pretreatment Standards and Requirements. The permittee shall require of all Categorical Industrial Users (CIUs), all reports on compliance with applicable Categorical Pretreatment Standards and Categorical Pretreatment Standard

deadlines as specified in and in accordance with Sections (b), (d), (e) and (g) of 40 CFR 403.12. In addition, the permittee shall require Categorical Industrial Users to comply with the report signatory requirements contained in 40 CFR 403.12(1) when submitting such reports.

b. If the permittee applies the Combined Wastestream Formula (CWF) to develop fixed alternative discharge limits of Categorical Pretreatment Standards, the application of the CWF and the enforcement of the resulting limits must comply with 40 CFR 403.6(e). The permittee must document all calculations within the control mechanism fact sheet and the resulting limits within the CIU's control mechanism. The permittee must ensure that the most stringent limit is applied to the CIU's effluent at end-of-pipe based upon a comparison of the resulting CWF limits and the permittee's local limits.

c. If the permittee has or obtains the authority to apply and enforce equivalent mass-per-day and/or concentration limitations of production-based Categorical Pretreatment Standards, then the permittee shall calculate and enforce the limits in accordance with 40 CFR 403.6(c). The permittee must document all calculations within the control mechanism fact sheet and the resulting limits within the CIU's control mechanism.

I.C.8 Annual Report

The annual report for the permittee's Industrial Pretreatment Program shall contain information pertaining to the reporting year which shall extend from July 1 through June 30 and shall be submitted electronically to the DEM by September 15th annually as a NetDMR attachment or by an alternative electronic reporting system as it becomes available. The requirements for the annual report are included in Attachment C of this permit.

I.C.9 Interjurisdictional Agreements

The permittee has approved Interjurisdictional Agreements with the Towns of North Smithfield, Rhode Island, Blackstone, Massachusetts, and Bellingham, Massachusetts and shall continue to implement its approved Interjurisdictional Agreements at all times.

I.C.10 Sewer Use Regulations

The permittee has approved Sewer Use Regulations (as amended) which shall continue to be implemented at all times.

I.C.11 Monitoring and Reporting for Emerging Contaminants

The Permittee shall commence annual sampling of the below-listed types of industrial discharges into the POTW. PFAS sampling requirements do not apply to any below-listed industries that only discharge sanitary waste. PFAS shall be analyzed using Clean Water Act wastewater draft analytical method 1633 until a 40 CFR Part 136 approved test method for wastewater is made available to the public.

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

Sampling shall be for the PFAS analytes as shown in Attachment A.

The industrial discharges sampled, and the sampling results shall be summarized and included in the Annual Report required by Part I.C.8. of the permit. In the case that there are no relevant dischargers, the Annual Report must include a description of the process used to determine that there were no relevant

dischargers. If the first year's PFAS sampling is not completed by the due date of the Annual Report, the Annual Report shall include a listing of the anticipated sampling date within one (1) year of the permit effective date.

I.D. Operation and Maintenance of the Sewer System

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

I.D.1 Maintenance Staff

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

I.D.2 Infiltration / Inflow

The permittee shall minimize infiltration/inflow to the sewer system. A summary report of all actions taken to minimize infiltration/inflow during the previous two (2) years shall be submitted to the DEM, Office of Water Resources, by the 15th day of January of each odd year (i.e., every two years). The first report is due January 15, 20XX.

I.D.3 Resiliency Planning

DEM received a Resiliency Plan from the City of Woonsocket on December 28, 2018. Within one (1) year of the effective date of this permit, the permittee shall submit a revised Resiliency Plan, updated as needed, to ensure that it complies with the requirements described below.

The Resiliency Plan shall include a schedule of short-term (within the next two years) and long-term (beyond two years) actions that will be taken to maintain operation and protect key collection and treatment system assets. Projects proposed in the plan must be consistent with the current DEM-approved Wastewater Facilities Plan, if applicable, or must be addressed in a future Facilities Plan amendment or update.

The Resiliency Plan shall be consistent with the DEM's Guidance for the Consideration of Climate Change Impacts in the Planning and Design of Municipal Wastewater Collection and Treatment Infrastructure and shall also include consideration of the findings of the 2017 DEM report Implications of Climate Change for Rhode Island Wastewater Collection and Treatment Infrastructure.

The Resiliency Plan shall include, but not be limited to: (i) an assessment of current and projected impacts from natural hazards on critical components within the collection and treatment systems, as well as on the systems themselves; (ii) a plan to adapt and protect vulnerable components and systems; (iii) an analysis that provides justification for selected adaptation methods. The analysis must consider component and system design life and sea-level rise projections. For the purposes of this plan, critical components are considered those necessary to ensure the forward flow and treatment of wastewater in accordance with the limits set forth in this permit.

The Resiliency Plan shall assess the need for additional fuel-storage capacity where it is necessary to maintain standby power during times of long-duration power grid outages.

The Resiliency Plan shall also consider impacts on the WWTF from neighboring facilities during high hazard events.

The Resiliency Plan shall be subject to DEM review and approval. If DEM determines that modifications need to be made to the Plan, DEM shall notify the permittee in writing which elements of the Plan need to be modified and the reason for the needed modification. This notification shall include a schedule for making the changes. After such notification from the DEM, the permittee shall make changes to the Plan and submit the revisions to the DEM for their approval.

I.D.4 Outfall Inspection

a. The outfall pipe shall be maintained to ensure proper operation. Proper operation means that the outfall pipe be intact, operating as designed, and have unobstructed flow. Maintenance may include dredging, removal of solids and debris, and repair/replacement.

b. To determine if maintenance will be required, the Permittee shall inspect and videotape the operation of the outfall pipe either remotely or using a qualified diver or marine contractor (if needed). Within one (1) year of the effective date of this permit, the Permittee shall inspect and videotape the operation of the outfall pipe and submit to the DEM a video of the outfall pipe inspection along with copies of reports summarizing the results of the outfall pipe inspection. Where it is determined that maintenance will be necessary, the Permittee shall provide the proposed schedule for the maintenance along with the results of the inspection.

c. Any necessary maintenance dredging must be performed only after receiving all necessary permits from DEM, Coastal Resources Management Council, U.S. Coast, U.S. Army Corps of Engineers, and other appropriate agencies (if applicable).

I.D.5 Cybersecurity Plan

Within one (1) year of the effective date of this permit, the permittee shall submit a Cybersecurity Plan and a schedule of short- and long-term actions that will be taken to maintain, operate, and protect key collection and treatment system assets. The Cybersecurity Plan must include consideration of the National Institute of Standards and Technology (NIST) Cybersecurity Framework[1] for the permitted wastewater collection and treatment system infrastructure. The Cybersecurity Plan must align with the NIST Cybersecurity Framework and the National Preparedness Goals of identification, prevention, protection, mitigation, response, and recovery and shall include, but not be limited to: (i) an assessment or Cyber Resilience Review of the facility's current cybersecurity risk and projected impacts from cyberattacks on critical components within the Permittee's collection and treatment systems, as well as on the systems themselves; (ii) an analysis that provides justification for selected actions; (iii) a list of positions/organizations to notify of any substantial cyber incidents or technical issues; and (iv) the relevant permittee staff that serve as the DEM point-of-contact for cybersecurity-related issues. The overall analysis must consider component and system design life. For the purposes of this Cybersecurity Plan, critical components are considered those necessary to ensure the forward flow and treatment of wastewater in accordance with the limits set forth in this permit. This Plan shall be subject to DEM review and approval. If DEM determines that modifications need to be made to the Plan, DEM shall notify the permittee in writing which elements of the Plan need to be modified and the reason for the needed modification. This notification shall include a schedule for making required changes. After such notification from the DEM, the permittee shall make changes to the Plan and submit the revisions to the DEM for their approval.

I.E. SLUDGE

The permittee shall conform and adhere to all conditions, practices and regulations as contained in the State of Rhode Island Rules and Regulations to the Treatment, Disposal, Utilization and Transportation of Wastewater Treatment Facility Sludge (250-RICR-150-10-3). The permittee shall comply with its DEM Order of Approval for the disposal of sludge.

I.F. DETECTION LIMITS

All analyses of parameters under this permit must comply with the National Pollutant Discharge Elimination System (NPDES): *Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting* rule. Only sufficiently sensitive test methods may be used for analysis of parameters under this permit. The permittee shall assure that all wastewater testing required by this permit, is performed in conformance with the method detection limits below or, if not listed below, has method detection limits that are "sufficiently sensitive". All sludge testing required by this permit shall be in conformance with the method detection limits found in 40 CFR 503.8. In accordance with 40 CFR Part 136, EPA approved analysis techniques, quality

[1] https://nvlpubs.nist.gov/nistpubs/CSWP/NIST.CSWP.29.pdf
https://www.nist.gov/cyberframework

assurance procedures and quality control procedures shall be followed for all reports required to be submitted under the RIPDES program. These procedures are described in "Methods for the Determination of Metals in Environmental Samples" (EPA/600/4-91/010) and "Methods for Chemical Analysis of Water and Wastes" (EPA/600/4-79/020).

The report entitled "Methods for the Determination of Metals in Environmental Samples" includes a test which must be performed in order to determine if matrix interferences are present, and a series of tests to enable reporting of sample results when interferences are identified. Each step of the series of tests becomes increasingly complex, concluding with the complete Method of Standard Additions analysis. The analysis need not continue once a result which meets the applicable quality control requirements has been obtained. Documentation of all steps conducted to identify and account for matrix interferences shall be submitted along with the monitoring reports.

If, after conducting the complete Method of Standard Additions analysis, the laboratory is unable to determine a valid result, the laboratory shall report "could not be analyzed." Documentation supporting this claim shall be submitted along with the monitoring report. If valid analytical results are repeatedly unobtainable, DEM may require that the permittee determine a method detection limit (MDL) for their effluent or sludge as outlined in 40 CFR Part 136, Appendix B.

Therefore, all sample results shall be reported as: an actual value, "could not be analyzed", less than the reagent water MDL, or less than an effluent or sludge specific MDL. The effluent or sludge specific MDL must be calculated using the methods outlined in 40 CFR Part 136, Appendix B. Samples which have been diluted to ensure that the sample concentration will be within the linear dynamic range shall not be diluted to the extent that the analyte is not detected. If this should occur the analysis shall be repeated using a lower degree of dilution.

When calculating sample averages for reporting on discharge monitoring reports (DMRs):

a. "could not be analyzed" data shall be excluded, and shall not be considered as failure to comply with the permit sampling requirements;

b. Results reported as less than the MDL shall be included as zeros for non-bacteria parameters in accordance with the DEM’s DMR Instructions;

c. For results reported as less than the MDL for bacteria parameters and for the calculation and reporting of mass loadings, values shall be determined in accordance with the above DEM DMR Instructions.

LIST OF TOXIC POLLUTANTS

The following list of toxic pollutants has been designated pursuant to Section 307(a)(1) of the Clean Water Act. The Method Detection limits (MDLs) represent the required Rhode Island MDLs.

Volatiles - EPA Method 624		MDL µg/L (ppb)
1V	acrolein	10.0
2V	acrylonitrile	5.0
3V	benzene	1.0
5V	bromoform	1.0
6V	carbon tetrachloride	1.0
7V	chlorobenzene	1.0
8V	chlorodibromomethane	1.0
9V	chloroethane	1.0
10V	2-chloroethylvinyl ether	5.0
11V	chloroform	1.0
12V	dichlorobromomethane	1.0
14V	1,1-dichloroethane	1.0
15V	1,2-dichloroethane	1.0
16V	1,1-dichloroethylene	1.0
17V	1,2-dichloropropane	1.0
18V	1,3-dichloropropylene	1.0
19V	ethylbenzene	1.0
20V	methyl bromide	1.0
21V	methyl chloride	1.0
22V	methylene chloride	1.0
23V	1,1,2,2-tetrachloroethane	1.0
24V	tetrachloroethylene	1.0
25V	toluene	1.0
26V	1,2-trans-dichloroethylene	1.0
27V	1,1,1-trichloroethane	1.0
28V	1,1,2-trichloroethane	1.0
29V	trichloroethylene	1.0
31V	vinyl chloride	1.0

Acid Compounds-EPA Method 625		MDL µg/L (ppb)
1A	2-chlorophenol	1.0
2A	2,4-dichlorophenol	1.0
3A	2,4-dimethylphenol	1.0
4A	4,6-dinitro-o-cresol	1.0
5A	2,4-dinitrophenol	2.0
6A	2-nitrophenol	1.0
7A	4-nitrophenol	1.0
8A	p-chloro-m-cresol	2.0
9A	pentachlorophenol	1.0
10A	phenol	1.0
11A	2,4,6-trichlorophenol	1.0

Pesticides-EPA Method 608		MDL µg/L (ppb)
1P	aldrin	0.059
2P	alpha-BHC	0.058
3P	beta-BHC	0.043
4P	gamma-BHC	0.048
5P	delta-BHC	0.034
6P	chlordane	0.211
7P	4,4 ' -DDT	0.251
8P	4,4 ' -DDE	0.049
9P	4,4 ' -DDD	0.139
10P	dieldrin	0.082
11P	alpha-endosulfan	0.031
12P	beta-endosulfan	0.036
13P	endosulfan sulfate	0.109
14P	endrin	0.050
15P	endrin aldehyde	0.062
16P	heptachlor	0.029
17P	heptachlor epoxide	0.040

Pesticides-EPA method 608		MDL µg/L (ppb)
18P	PCB-1242	0.289
19P	PCB-1254	0.298
20P	PCB-1221	0.723
21P	PCB-1232	0.387
22P	PCB-1248	0.283
23P	PCB-1260	0.222
24P	PCB-1016	0.494
25P	toxaphene	1.670

Base/Neutral-EPA Method 625		MDL µg/L (ppb)
1B	acenaphthene*	1.0
2B	acenaphthylene*	1.0
3B	anthracene*	1.0
4B	benzidine	4.0
5B	benzo(a)anthracene*	2.0
6B	benzo(a)pyrene*	2.0
7B	3,4-benzofluoranthene*	1.0
8B	benzo(ghi)perylene*	2.0
9B	benzo(k)fluoranthene*	2.0
10B	bis(2-chloroethoxy)methane	2.0
11B	bis(2-chloroethyl)ether	1.0
12B	bis(2-chloroisopropyl)ether	1.0
13B	bis(2-ethylhexyl)phthalate	1.0
14B	4-bromophenyl phenyl ether	1.0
15B	butylbenzyl phthalate	1.0
16B	2-chloronaphthalene	1.0
17B	4-chlorophenyl phenyl ether	1.0
18B	chrysene*	1.0
19B	dibenzo (a,h)anthracene*	2.0
20B	1,2-dichlorobenzene	1.0
21B	1,3-dichlorobenzene	1.0
22B	1,4-dichlorobenzene	1.0
23B	3,3 ' -dichlorobenzidine	2.0
24B	diethyl phthalate	1.0
25B	dimethyl phthalate	1.0
26B	di-n-butyl phthalate	1.0
27B	2,4-dinitrotoluene	2.0
28B	2,6-dinitrotoluene	2.0
29B	di-n-octyl phthalate	1.0
30B	1,2-diphenylhydrazine (as azobenzene)	1.0
31B	fluoranthene*	1.0
32B	fluorene*	1.0
33B	hexachlorobenzene	1.0
34B	hexachlorobutadiene	1.0
35B	hexachlorocyclopentadiene	2.0
36B	hexachloroethane	1.0
37B	indeno(1,2,3-cd)pyrene*	2.0
38B	isophorone	1.0
39B	naphthalene*	1.0
40B	nitrobenzene	1.0
41B	N-nitrosodimethylamine	1.0
42B	N-nitrosodi-n-propylamine	1.0
43B	N-nitrosodiphenylamine	1.0
44B	phenanthrene*	1.0
45B	pyrene*	1.0
46B	1,2,4-trichlorobenzene	1.0

*Polynuclear Aromatic Hydrocarbons

OTHER TOXIC POLLUTANTS

	MDL µg/L (ppb)
Antimony, Total	3.0
Arsenic, Total	1.0
Beryllium, Total	0.2
Cadmium, Total	0.1
Chromium, total	1.0
Chromium, Hexavalent	20.0
Copper, Total	1.0
Lead, Total	1.0
Mercury, Total	0.2
Nickel, Total	1.0
Selenium, Total	2.0
Silver, Total	0.5
Thallium, Total	1.0
Zinc, Total	5.0
Asbestos	**
Cyanide, (Total, Available, Free)	10.0
Phenols, Total	50.0
Aluminum	5.0
TCDD	**
MTBE (Methyl Tert Butyl Ether)	1.0
Aluminum, Total	5.0

**No Rhode Island Department of Environmental Management (DEM) MDL

NOTE:
The MDL for a given analyte may vary with the type of sample. MDLs which are determined in reagent water may be lower than those determined in wastewater due to fewer matrix interferences. Wastewater is variable in composition and may therefore contain substances (interferents) that could affect MDLs for some analytes of interest. Variability in instrument performance can also lead to inconsistencies in determinations of MDLs.

To help verify the absence of matrix or chemical interference the analyst is required to complete specific quality control procedures. For the metals analyses listed above the analyst must withdraw from the sample two equal aliquots; to one aliquot add a known amount of analyte, and then dilute both to the same volume and analyze. The unspiked aliquot multiplied by the dilution factor should be compared to the original. Agreement of the results within 10% indicates the absence of interference. Comparison of the actual signal from the spiked aliquot to the expected response from the analyte in an aqueous standard should help confirm the finding from the dilution analysis. (Methods for Chemical Analysis of Water and Wastes EPA-600/4-79/020).

For Methods 624 and 625 the laboratory must on an ongoing basis, spike at least 5% of the samples from each sample site being monitored. For laboratories analyzing 1 to 20 samples per month, at least one spiked sample per month is required. The spike should be at the discharge permit limit or 1 to 5 times higher than the background concentration determined in Section 8.3.2, whichever concentration would be larger. (40 CFR Part 136 Appendix B Method 624 and 625 subparts 8.3.1 and 8.3.11).

I.G. MONITORING AND REPORTING

The monitoring program in the permit specifies sampling and analysis, which will provide continuous information on compliance and the reliability and effectiveness of the installed pollution abatement equipment. The approved analytical procedures found in 40 CFR Part 136 are required unless other procedures are explicitly required in the permit. The Permittee is obligated to monitor and report sampling results to the DEM within the time specified within the permit.

Unless otherwise specified in this permit, the permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

I.G.1 Submittal of DMRs Using NetDMR

The permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to DEM no later than the 15th day of the month electronically using NetDMR. When the permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to DEM.

I.G.2 Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the permittee must submit electronic copies of documents in NetDMR that are directly related to the DMR. These include the following:

a. DMR Cover Letters
b. Below Detection Limit summary tables
c. Monthly Operating Reports
d. Pretreatment Annual Reports (see Part I.C.8) (September 15 each year) until such time that the permittee receives notification from DEM that an electronic reporting tool is available for submittal.

All other reports should be submitted to DEM hard copy via regular US mail (see Part I.G.5 below).

I.G.3 Submittal of Unauthorized Discharges Using NeT-SewerOverflow

The permittee shall submit, as needed to comply with Part II of this permit, written notice of unauthorized discharges, including Sanitary Sewer Overflow (SSO) reporting, bypasses, dry weather CSO reporting, extreme event, and anticipated bypasses using NeT-SewerOverflow. The permittee is not required to submit hard copies of these reports to DEM.

I.G.4 Submittal of Requests and Reports to DEM

The following requests, reports, and information described in this permit shall be submitted to the DEM.

a. Transfer of Permit Notice
b. Request for Changes in Sampling Location
c. Request for Reduction in Testing Frequency
d. Request for Reduction in WET Testing Requirement
e. Report on Unacceptable Dilution Water/Request for Alternative Dilution Water for WET Testing

These reports, information, and requests shall be submitted to DEM by hard copy mail to the following address:

Rhode Island Department of Environmental Management
RIPDES Program
235 Promenade Street
Providence, Rhode Island 02908

I.G.5 Submittal of Reports in Hard Copy Form

The following notifications and reports shall be submitted as hard copy with a cover letter describing the submission. These reports shall be signed and dated originals submitted to DEM.

a. Written notifications required under Part II (as needed) other than those required to be submitted using NeT-SewerOverflow as described in Part I.G.3 above.
b. Priority Pollutant Scan Results (October 15 Each Year)
c. Species Sensitivity Report (Fourth Year of Permit)
d. Local Limits Evaluation (120 Days of Permit Effective Date)
e. Infiltration/Inflow Reports (January 15th every other odd ending year)
f. Resiliency Plan (within 1 year of Permit Effective Date)
g. Outfall Inspection (within 1 year of Permit Effective Date)
h. Cybersecurity Plan (within 1 year of Permit Effective Date)

This information shall be submitted to DEM at the following address:

Rhode Island Department of Environmental Management
RIPDES Program
235 Promenade Street
Providence, Rhode Island 02908

I.G.6 Verbal Reports and Verbal Notifications

Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to the DEM. This includes verbal reports and notifications which require reporting within 24 hours. (See Part II.(l)(5) General Requirements for 24-hour reporting) Verbal reports and verbal notifications shall be made to DEM at (401) 222-4700 or (401) 222-3070 at night.

PART II

TABLE OF CONTENTS

GENERAL REQUIREMENTS

a) Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Chapter 46-12 of the Rhode Island General Laws and the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

(1) The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

(2) The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307 or 308 of the Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment of not more than 1 year, or both.

(3) Chapter 46-12 of the Rhode Island General Laws provides that any person who violates a permit condition is subject to a civil penalty of not more than $5,000 per day of such violation. Any person who willfully or negligently violates a permit condition is subject to a criminal penalty of not more than $10,000 per day of such violation and imprisonment for not more than 30 days, or both. Any person who knowingly makes any false statement in connection with the permit is subject to a criminal penalty of not more than $5,000 for each instance of violation or by imprisonment for not more than 30 days, or both.

b) Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

c) Need to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

d) Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

e) Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures, and, where applicable, compliance with DEM "Rules and Regulations Pertaining to the Operation and Maintenance of Wastewater Treatment Facilities" and "Rules and Regulations Pertaining to the Disposal and Utilization of Wastewater Treatment Facility Sludge." This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

f) Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, including but not limited to: (1) Violation of any terms or conditions of this permit; (2) Obtaining this permit by misrepresentation or failure to disclose all relevant facts; or (3) A change in any conditions that requires either a temporary or

permanent reduction or elimination of the authorized discharge. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g) Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

h) Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

i) Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) Have access to and copy, at reasonable times any records that must be kept under the conditions of this permit;

(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

(4) Sample or monitor any substances or parameters at any location, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA or Rhode Island law.

j) Monitoring and Records

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the volume and nature of the discharge over the sampling and reporting period.

(2) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings from continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 5 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

(3) Records of monitoring information shall include:
   (i) The date, exact place, and time of sampling or measurements;
   (ii) The individual(s) who performed the sampling or measurements;
   (iii) The date(s) analyses were performed;
   (iv) The individual(s) who performed the analyses;
   (v) The analytical techniques or methods used; and
   (vi) The results of such analyses.

(4) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 and applicable Rhode Island regulations, unless other test procedures have been specified in this permit.

(5) The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall upon conviction, be punished by a fine of not more than $10,000 per violation or by imprisonment for not more than 6 months per violation or by both. Chapter 46-12 of the Rhode Island General Laws also provides

that such acts are subject to a fine of not more than $5,000 per violation, or by imprisonment for not more than 30 days per violation, or by both.

(6) Monitoring results must be reported on a Discharge Monitoring Report (DMR).

(7) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136, applicable State regulations, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

k) Signatory Requirement

All applications, reports, or information submitted to the Director shall be signed and certified in accordance with 250-RICR-150-10-1.12 of the Rhode Island Pollutant Discharge Elimination System (RIPDES) Regulations. Rhode Island General Laws, Chapter 46-12 provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $5,000 per violation, or by imprisonment for not more than 30 days per violation, or by both.

l) Reporting Requirements

(1) Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

(2) Anticipated noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with the permit requirements.

(3) Transfers. This permit is not transferable to any person except after written notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under State and Federal law.

(4) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(5) Twenty-four-hour reporting. The permittee shall immediately report any noncompliance which may endanger health or the environment by calling DEM at (401) 222-4700 or (401) 222-3070 at night.

A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following information must be reported immediately:

(i) Any unanticipated bypass which causes a violation of any effluent limitation in the permit; or
(ii) Any upset which causes a violation of any effluent limitation in the permit; or
(iii) Any violation of a maximum daily discharge limitation for any of the pollutants specifically listed by the Director in the permit.

The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

(6) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (1), (2), and (5), of this section, at the time monitoring reports are submitted. The reports shall contain the information required in paragraph (l)(5) of the section.

(7) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, they shall promptly submit such facts or information.

m) Bypass

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

(1) Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (2) and (3) of this section.

(2) Notice.

(i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass.

(ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in 250-RICR-150-10-1.14(R) of the RIPDES Regulations.

(3) Prohibition of bypass.

(i) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

(A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, where "severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production;

(B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(C) The permittee submitted notices as required under paragraph (2) of this section.

(ii) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (3)(i) of this section.

n) Upset

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

(1) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph (2) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

(2) Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(i) An upset occurred and that the permittee can identify the cause(s) of the upset;
(ii) The permitted facility was at the time being properly operated;
(iii) The permittee submitted notice of the upset as required in 250-RICR-150-10-1.14(R) of the RIPDES Regulations; and
(iv) The permittee complied with any remedial measures required under 250-RICR-150-10-1.14(E) of the RIPDES Regulations.

(3) Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

o) Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. Discharges which cause a violation of water quality standards are prohibited. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different or increased discharges of pollutants must be reported by submission of a new NPDES application at least 180 days prior to commencement of such discharges, or if such changes will not violate the effluent limitations specified in this permit, by notice, in writing, to the Director of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by the permit constitutes a violation.

p) Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner consistent with applicable Federal and State laws and regulations including, but not limited to the CWA and the Federal Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq., Rhode Island General Laws, Chapters 46-12, 23-19.1 and regulations promulgated thereunder.

q) Power Failures

In order to maintain compliance with the effluent limitation and prohibitions of this permit, the permittee shall either:

In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities;

or if such alternative power source is not in existence, and no date for its implementation appears in Part I,

Halt reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

r) Availability of Reports

Except for data determined to be confidential under paragraph (w) below, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the DEM, 235 Promenade Street, Providence, Rhode Island 02908. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA and under Section 46-12-14 of the Rhode Island General Laws.

s) State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law.

t) Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, and local laws and regulations.

u) Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

v) Reopener Clause

The Director reserves the right to make appropriate revisions to this permit in order to incorporate any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA or State law. In accordance with 250-RICR-150-10-1.16 and 250-RICR-150-10-1.24 of the RIPDES Regulations, if any effluent standard or prohibition, or water quality standard is promulgated under the CWA or under State law which is more stringent than any limitation on the pollutant in the permit, or controls a pollutant not limited in the permit, then the Director may promptly reopen the permit and modify or revoke and reissue the permit to conform to the applicable standard.

w) Confidentiality of Information

(1) Any information submitted to DEM pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, DEM may make the information available to the pubic without further notice.

(2) Claims of confidentiality for the following information will be denied:

(i) The name and address of any permit applicant or permittee;
(ii) Permit applications, permits and any attachments thereto; and
(iii) NPDES effluent data.

x) Best Management Practices

The permittee shall adopt Best Management Practices (BMP) to control or abate the discharge of toxic pollutants and hazardous substances associated with or ancillary to the industrial manufacturing or treatment process and the Director may request the submission of a BMP plan where the Director determines that a permittee's practices may contribute significant amounts of such pollutants to waters of the State.

y) Right of Appeal

Within thirty (30) days of receipt of notice of a final permit decision, the permittee or any interested person may submit a request to the Director for an adjudicatory hearing to reconsider or contest that decision. The request for a hearing must conform to the requirements of 250-RICR-150-10-1.50 of the RIPDES Regulations.

DEFINITIONS

1. For purposes of this permit, those definitions contained in the RIPDES Regulations, and the Rhode Island Pretreatment Regulations shall apply.

2. The following abbreviations, when used, are defined below.

cu. M/day or M^3/day	cubic meters per day
mg/L	milligrams per liter
µg/L	micrograms per liter
lbs/day	pounds per day
kg/day	kilograms per day
Temp. ^oC	temperature in degrees Centigrade
Temp. ^oF	temperature in degrees Fahrenheit
Turb.	turbidity measured by the Nephelometric Method (NTU)
TNFR or TSS	total nonfilterable residue or total suspended solids
DO	dissolved oxygen
BOD	five-day biochemical oxygen demand unless otherwise specified
TKN	total Kjeldahl nitrogen as nitrogen
Total N	total nitrogen
NH_3-N	ammonia nitrogen as nitrogen
Total P	total phosphorus
COD	chemical oxygen demand
TOC	total organic carbon
Surfactant	surface-active agent
pH	a measure of the hydrogen ion concentration
PCB	polychlorinated biphenyl
CFS	cubic feet per second
MGD	million gallons per day
Oil & Grease	Freon extractable material
Total Coliform	total coliform bacteria
Fecal Coliform	total fecal coliform bacteria
mL/L	milliliter(s) per liter
NO_3-N	nitrate nitrogen as nitrogen
NO_2-N	nitrite nitrogen as nitrogen
NO_3-NO_2	combined nitrate and nitrite nitrogen as nitrogen
Cl_2	total residual chlorine

Attachment A
PFAS Analyte List

Target Analyte Name	Abbreviation	CAS Number
Perfluoroalkyl carboxylic acids		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
Perfluoroalkyl sulfonic acids		
Acid Form		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentansulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorododecanesulfonic acid	PFDoS	79780-39-5
Fluorotelomer sulfonic acids		
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
Perfluorooctane sulfonamides		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
Perfluorooctane sulfonamidoacetic acids		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
Perfluorooctane sulfonamide ethanols		
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
Per- and Polyfluoroether carboxylic acids		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6
Ether sulfonic acids		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
Fluorotelomer carboxylic acids		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2H,2H,3H,3H-Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

Attachment B
Reassessment of Technically Based Industrial Discharge Limits
Adapted by RIDEM from EPA-New England

Under 40 CFR §122.2(U)(4), all Publicly Owned Treatment Works (POTWs) with approved Industrial Pretreatment Programs (IPPs) shall provide the following information to the Director: a written evaluation of the need to revise local industrial discharge limits under 40 CFR§403.5(c)(l).

Below is a form that was designed by the U.S. Environmental Protection Agency (EPA - New England) that POTWs with approved IPPs may use when evaluating whether their existing Technically Based Local Limits (TBLLs) need to be recalculated. The form allows the permittee and EPA to evaluate and compare pertinent information used in previous TBLLs calculations against present conditions at the POTW.

Please read the directions below before filling out form.
ITEM I.

- In Column (1), list what your POTW's influent flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present influent flow rate. Your current flow rate should be calculated using the POTW's average daily flow rate from the previous 12 months.

- In Column (1) list what your POTW's SIU flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present SIU flow rate.

- In Column (1), list what dilution ratio and/or 7Q10 value was used in your old/expired NPDES permit. In Column (2), list what dilution ration and/or 7Q10 value is presently being used in your new/reissued NPDES permit.

  The 7Q10 value is the lowest seven-day average flow rate, in the river, over a ten year period. The 7Q10 value and/or dilution ratio used by EPA in your new NPDES permit can be found in your NPDES permit "Fact Sheet."

- In Column (1), list the safety factor, if any, that was used when your existing TBLLs were calculated.

- In Column (1), note how your bio-solids were managed when your existing TBLLs were calculated. In Column (2), note how your POTW is presently disposing of its biosolids and how your POTW will be disposing of its biosolids in the future.

ITEM II

- List what your existing TBLLs are - as they appear in your current Sewer Use Ordinance (SUO).

ITEM III

- Identify how your existing TBLLs are allocated out to your industrial community. Some pollutants may be allocated differently than others, if so please explain.

ITEM IV

- Since your existing TBLLs were calculated, identify the following in detail:
  (1) if your POTW has experienced any upsets, inhibition, interference or pass-through as a result of an industrial discharge.
  (2) if your POTW is presently violating any of its current NPDES permit limitations - include toxicity.

ITEM V

- Using current sampling data, list in Column ()) the average and maximum amount of pollutants (in pounds·per day) received in the POTW's influent. Current sampling data is defined as data obtained over the last 24 month period.

  All influent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

- Based on your existing TBLLs, as presented in Item ll., list in Column (2), for each pollutant the Maximum Allowable Headwork Loading (MAHL) values derived from an applicable environmental criteria or standard, e.g. water quality, sludge, NPDES, inhibition, etc. For more information, please see EPA's Local Limit Guidance Document (July 2004).

Item VI

- Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in micrograms per liter) present your POTW's effluent. Current sampling data is defined as data obtained during the last 24 month period.

  All effluent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method{s), e.g. graphite furnace.

- List in Column {2A) what the Water Quality Standards (WQS) were (in micrograms per liter) when your TBLLs were calculated, please note what hardness value was used at that time. Hardness should be expressed in milligram per liter of Calcium Carbonate.

  List in Column (2B) the current WQSs or "Chronic Gold Book" values for each pollutant multiplied by the dilution ratio used in your new/reissued RIPDES permit. For example, with a dilution ratio of 25: 1 at a hardness of 25 mg/I - Calcium Carbonate (copper's chronic WQS equals 6.54 ug/1) the chronic NPDES permit limit for copper would equal 156.25 ug/1.

ITEM VII

- In Column (1), list all pollutants (in micrograms per liter) limited in your new/reissued NPDES permit. In Column (2), list all pollutants limited in your old/expired NPDES permit.

ITEM VIII

- Using current sampling data, list in Column (1) the average and maximum amount of pollutants in your POTW's biosolids. Current data is defined as data obtained during the last 24 month period. Results are to be expressed as total dry weight.

  All biosolids data collected and analyzed must be in accordance with 40 CFR §136.

  In Column (2A), list current State and/or Federal sludge standards that your facility's biosolids must comply with. Also note how your POTW currently manages the disposal of its biosolids. If your POTW is planning on managing its biosolids differently, list in Column (2B) what your new biosolids criteria will be and method of disposal.

In general, please be sure the units reported are correct and all pertinent information is included in your evaluation. If you have any questions, please contact your pretreatment representative at RIDEM.

REASSESSMENT OF TECHNICALLY BASED LOCAL LIMITS (TBLLs)

POTW Name & Address _____

_____

_____

RIPDES Permit # _____

Date RIDEM approved current TBLLs: _____

Date RIDEM approved current Sewer Use Ordinance _____

ITEM 1

In Column (1) list the conditions that existed when your current TBLLs were calculated. In Column (2), list current conditions or expected conditions at your POTW.

	Column (1) EXISTING TBLLs	**Column (2) PRESENT CONDITIONS**
POTW Flow (MGD)		
Dilution Factor or 7Q10 (from RIPDES Permit)		
SIU Flow (MGD)		
Safety Factor		
Biosolids Disposal Method		

ITEM II

EXISTING TBLLs

POLLUTANT	**NUMERICAL LIMIT (mg/L or lb/day)**	**POLLUTANT**	**NUMERICAL LIMIT (mg/L or lb/day)**

ITEM III

Note how your existing TBLLs, listed in Item II., are allocated to your Significant Industrial Users (SIUs), i.e. uniform concentration, contributory flow, mass proportioning, other. Please specify by circling.

ITEM IV

Has your POTW experienced any upsets, inhibition, interference or pass-through from industrial sources since your existing TBLLs were calculated?
If yes, explain.

_____

_____

Has your POTW violated any of its RIPDES permit limits and/or toxicity test requirements?
If yes, explain.

_____

_____

ITEM V

Using current POTW influent sampling data fill in Column (1). In Column (2), list your Maximum Allowable Headwork Loading (MAHL) values used to derive your TBLLs listed in Item II. In addition, please note the Environmental Criteria for which each MAHL value was established, i.e. water quality, sludge, NPDES etc.

POLLUTANT	Column (1) INFLUENT DATA ANALYSES		Column (2) MAHL VALUES	
	Maximum (lb/day)	Average (lb/day)	(lb/day)	Criteria
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Other (List)				

ITEM VI

Using current POTW effluent sampling data, fill in Column (1). In Column (2A) list what the Water Quality Standards (Gold Book Criteria) were at the time your existing TBLLs were developed. List in Column (2B) current Gold Book values multiplied by the dilution ratio used in your new/reissued NPDES permit.

POLLUTANT	Column (1) EFFLUENT DATA ANALYSES		Column (2) WATER QUALITY CRITERIA (GOLD BOOK)	
	Maximum (µg/L)	Average (µg/L)	(2A) From TBLLs (µg/L)	(2B) New (µg/L)
Arsenic				
***Cadmium**				
***Chromium**				
***Copper**				
Cyanide				
***Lead**				
Mercury				
***Nickel**				
Silver				
***Zinc**				
Other (List)				

*Hardness Dependent (mg/L as $CaCO_3$)

ITEM VII

In Column (1), identify all pollutants limited in your new/reissued RIPDES permit. In Column (2), identify all pollutants that were limited in your old/expired RIPDES permit.

Column (1) NEW PERMIT		Column (2) OLD PERMIT	
POLLUTANTS	LIMITATIONS (µg/L)	POLLUTANTS	LIMITATIONS (µg/L)

ITEM VIII

Using current POTW biosolids data, fill in Column (1). In Column (2A), list the biosolids criteria that was used at the time your existing TBLLs were calculated. If your POTW is planning on managing its biosolids differently, list in Column (2B) what your new biosolids criteria would be and method of disposal.

Column (1) Data Analyses		Column (2) Biosolids Criteria	
POLLUTANTS	**BIOSOLIDS AVERAGE (mg/kg)**	**(2A) FROM TBLLs (mg/kg)**	**(2B) NEW (mg/kg)**
Arsenic			
Cadmium			
Chromium			
Copper			
Cyanide			
Lead			
Mercury			
Nickel			
Silver			
Zinc			
Molybdenum			
Selenium			
Other (List)			

Attachment C
Industrial Pretreatment Program Annual Report Requirements

The permittee shall provide an annual report to the DEM that describes the POTW's pretreatment program activities, submitted electronically by September 15th annually as a NetDMR attachment or by an alternative electronic reporting system as it becomes available. Each item below must be addressed separately and any items which are not applicable must be so indicated. If any item is deemed not applicable a brief explanation must be provided.

Program Resources

1. A summary of the pretreatment program resources including the number of full-time equivalent positions, an estimate of the program budget, the source of the budget, whether there were significant changes (±20%) to the budget or to staffing in the last year, and whether the program received any additional support (i.e., contracts with consultant) that was not part of the FTE during the reporting period.
2. List all jurisdictions in the service area and whether intergovernmental agreements or other enforceable mechanism exists for these jurisdictions.

POTW Information

3. List any WET effluent violations along with the species tested.
4. List all RIPDES permit violations by parameter and violation date.
5. Include POTW design flow, BOD/CBOD capacity (lbs/day), TSS capacity (lbs/day), actual flow, and total significant industrial user (SIU) flow. Estimate percentage of all industrial flow.
6. List all parameters for which the POTW has a surcharge with the surcharge rate.

Industrial User Information

A listing of all Categorical Industrial Users (CIUs), Significant Industrial Users (SIUs), Non-Significant Categorical Industrial Users (NSCIUs), Middle Tier Categorical Industrial Users (MTCIUs), and any other categories of users established by the permittee. Include any deletions/reclassifications from previously submitted lists and the reasons for the deletions/reclassification.

7. For each SIU/CIU/NSCIU/MTCIU discharging at any point in the reporting year, provide the following information:
    a. Facility and Permit Information: name, permit id, industrial user type (SIU, CIU, etc.) permit status, permit effective date, permit expiration date, permit termination date, jurisdiction, mailing address, facility site name and address, facility type ownership. As applicable, provide reasons as to why a SIU/CIU was deleted and/or terminated since the last reporting year and/or why a SIU does not have a current, unexpired permit.
    b. Industry Information: all applicable SIC and NAICS codes. For each CIU, include the applicable categorical standard(s) by its 40 CFR part number (e.g., Metal Finishing – part 433, Electrical and Electronic Components – part 469).
    c. Baseline monitoring requirements for newly promulgated industries. Include a summary and if applicable, an evaluation of the quality and quantity of influent introduced into the POTW and any anticipated impact due to the changed discharge on the quantity or quality of effluent to be discharged from the POTW.
    d. Flow and Discharge Information: average daily process wastewater flow, average daily facility wastewater flow rate, whether there was a substantial change to the discharge, and whether notification was submitted of the changed discharge.
    e. Local Limits Information: specify by parameter whether the SIU is subject to local limits and whether the local limits are more stringent than categorical standards (if applicable).
    f. Compliance Information: specify whether the SIU is subject to an enforceable compliance schedule (e.g., consent agreements or compliance orders).
    g. Sampling and Inspection Information: number and dates of inspections and sampling event by the control authority, number of required self-monitoring events by the SIU, actual number of

self-monitoring events by the SIU, did the SIU comply with self-monitoring and reporting requirements.

h. SNC and Enforcement: specify whether the IU is in SNC, number of NOVs, whether formal or information enforcement actions were issued, dates of each action, a summary of each action, number of civil and criminal suits filed against the SIU/CIU, total penalties assessed, total penalties collected, and any additional information for all SNC and enforcement actions. Specify the violation that triggered each enforcement action, whether the IU is back into compliance, the return to compliance date, and an explanation as to how the IU was or will be returned to compliance.

i. For each NSCIU, identify whether the facility has reported its required annual compliance certification to the Control Authority, whether they discharged untreated concentrated wastewater, and whether they consistently complied with all applicable categorical pretreatment standards.

j. For each MTSIU, identify whether the Control Authority has granted reduced reporting requirements in accordance with 40 CFR 403.12(e)(3).

8. For any SIU/CIU/NSCIU/MTCIU with no permit at any time during the reporting period, provide the facility name and type, a permit status explanation, and whether the facility was unpermitted at the end of the reporting period.
9. Permitted non-SIUs – Provide a list of all permitted non-SIUs. Include any enforcement actions undertaken at non-SIUs.

Hauled Waste

10. Indicate whether the facility receives hauled waste, the type of hauled waste received (domestic, industrial, RCRA, categorical, leachate, RV Dump Station, etc.) and a description of the hauled waste discharge location. Include whether the POTW issues permits for hauled waste, has a designated site for hauled waste disposal, whether access to the disposal site is controlled, and whether the POTW uses a manifest system to track and control hauled waste. Did the POTW believe that illegal dumping may be occurring in the jurisdiction?
11. List the volume of septage received at the facility each calendar quarter.

Dental Office Compliance

12. Provide the total number of dental facilities that discharge to the POTW, the number of facilities subject to the dental amalgam rule, the number not subject to the dental amalgam rule, the number subject to the dental amalgam rule that do not place or remove dental amalgam except in limited emergency or unplanned circumstances, number of dental facilities that place or remove amalgam and are subject to the dental amalgam rule, number of dental facilities required to submit a one-time compliance report, number of one-time compliance reports received during the annual reporting year, number of enforcement actions issued.

Pass Through / Interference Information

13. Provide description, date, cause, corrective action of each instance of pass through at the facility.
14. Provide description, date, cause, and corrective action of each instance of interference at the facility.
15. If the POTW received notification of the discharge of any hazardous wastes, provide the name of the IU, date of notification, name hazardous waste, hazardous waste number, and the type of discharge.
16. Were there any other problems with the POTWs influent or effluent discharge not provided above?

Sludge Disposal

17. List all sludge disposal methods for the facility and percentage of sludge that was disposed of for each method.
18. Describe if the POTW had any disruptions in managing biosolids.

Enforcement Actions and SNC Information

19. Does the Enforcement Response Plan (ERP) include escalating enforcement actions for significant non-compliance (SNC). If not, provide and explanation.

20. List all quarters that an IU was in significant non-compliance (SNC) during the reporting period. Include the reason for SNC and whether the SNC was published in the newspaper.

Local Limits Information

21. Include the date of the most recent technically based Local Limits Evaluation and the date of the most recent adoption of local limits.
22. Submit a table with the following columns completed for each pollutant with a local limit. In Column (4) and Column (5), list the MAHL and MAIL values used to derive the facility's technically based Local Limits as submitted in the most recent approved Local Limits Evaluation.

Column 1	Column 2	Column 3	Column 4	Column 5
Pollutant	**Average Monthly Local Limit (Specify Unit)**	**Maximum Monthly Local Limit (Specify Unit)**	**MAHL (lb/day)**	**MAIL (lb/day)**

Monitoring Results

23. Submit a table with the following information calculated in the local limits section and influent sampling data.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Pollutant	**MAHL (lb/day)**	**Average Influent Data (lb/day)**	**Average Influent Data > MAHL**	**Maximum Influent Data (lb/day)**	**Maximum Influent Data > MAHL**	**Explanation**

Modification History

24. Include information on all program modification in the reporting year, including a description, the type of modification, whether the modification was substantial, the date of public notice (if applicable), and the date approved. List any planned modifications.

Additional Supporting Information

25. Results of any PFAS sampling for industrial discharges required by the facility's RIPDES permit. In the case that there are no relevant dischargers, the Annual Report must include a description of the process used to determine that there were no relevant dischargers.
26. A list including the report/notification type, due date, and receipt date for each report/notification required by 40 CFR 403.12.
27. A summary of public participation efforts including meetings and workshops held with the public and/or industry and notices/newsletters/bulletins published and/or distributed.
28. A program evaluation in terms of program effectiveness, local limits application and resources which addresses but is not limited to:
    - a description of actions being taken to reduce the incidence of SNC by Industrial Users.
    - Effectiveness of enforcement response program.
    - Sufficiency of the SUO, Rules and Regulations and/or statutory authority.

29. A completed Annual Pretreatment Summary Sheet (see below).

Annual Pretreatment Report Summary Sheet

POTW Name	
RIPDES Permit ID	
Pretreatment Annual Report Start Date	
Pretreatment Report Period End Date	
Significant Industrial Users (SIUs)[1]	
Number of SIUs:	
Number of SIUs Without Control Mechanisms	
Number of SIUs Not Inspected	
Number of SIUs Not Sampled	
SIUs in Significant Non-Compliance (SNC)	
Number of SIUs in SNC with Pretreatment Standards	
Number of SIUs in SNC with Reporting Requirements	
Number of SIUs in SNC with Pretreatment Compliance Schedule[2]	
Number of SIUs Published in Newspaper	
Categorical Industrial Users (CIUs)	
Number of CIUs	
Number of CIUs in SNC	
Compliance and Enforcement	
Number of SIUs with Compliance Schedules	
Number of Violation Notices Issued to SIUs	
Number of Administrative Orders Issued to SIUs	
Number of Civil Suits Filed Against SIUs	
Number of Criminal Suits Filed Against SIUs	
Penalties	
Total Dollar Amount of Penalties Collected ($)	
Number of IUs from which Penalties have been collected	

[1]The number of SIUs includes all SIUs, including CIUs that had a permit at any point in the reporting year.
[2]Compliance schedules include consent agreements, compliance orders, etc.

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
235 PROMENADE STREET
PROVIDENCE, RHODE ISLAND 02908-5767

FACT SHEET

RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES) PERMIT TO DISCHARGE TO WATERS OF THE STATE

RIPDES PERMIT NO. RI0100111

NAME AND ADDRESS OF APPLICANT:

City of Woonsocket
City Hall
169 Main Street
Woonsocket, Rhode Island 02895

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Woonsocket Regional Wastewater Commission
11 Cumberland Hill Road
Woonsocket, Rhode Island
02895

RECEIVING WATER: Blackstone River

WATERBODY ID NUMBER: RI0001003R-01A

CLASSIFICATION: B1

Table of Contents

I. Proposed Action, Type of Facility, and Discharge Location

The above-named applicant has applied to the Rhode Island Department of Environmental Management (DEM) for reissuance of a Rhode Island Pollutant Discharge Elimination System (RIPDES) Permit to discharge into the designated receiving water. The facility is engaged in the treatment of domestic and industrial wastewater.

The discharge to the Blackstone River is from the Woonsocket Regional Wastewater Treatment Facility (WWTF) at Outfall 001A. The latitude / longitude coordinates of the outfall are 41.999167, -71.495556, which is approximately 20 feet from the shoreline. The outfall consists of a single port without diffusers. An overall site plan and process flow diagram the facility are shown in Attachments 1 and 2, respectively.

II. Description of Discharge

A quantitative description of the discharge in terms of significant effluent parameters based on the facility's Discharge Monitoring Report (DMR) data from January 2018 date through June 2025 is shown in Attachment 3

III. Permit Limitation and Conditions

The final effluent limitations and monitoring requirements may be found in the permit.

IV. Permit Basis and Explanation of Effluent Limitation Derivation

Variances, Alternatives, and Justifications for Waivers of Application Requirements

No variances or alternatives to required standards were requested or granted. No waivers were requested or granted for any application requirements per 40 CFR §122.21(j) or (q).

Facility Description

The City of Woonsocket (City or Woonsocket) operates a regional wastewater treatment facility on Cumber- land Hill Road in Woonsocket. The discharge to the Blackstone River consists of treated domestic and industrial wastewater contributed by the City of Woonsocket and the Towns of North Smithfield, RI and Blackstone and Bellingham, MA. As of June 30, 2025, the end of the Woonsocket Wastewater Facility's most recent Industrial Pretreatment Program reporting year, there were fourteen (14) Significant Industrial Users (SIUs) and approximately 198 other (i.e., non-SIU) permitted industrial users contributing wastewater to the Woonsocket Wastewater Treatment Facility.

Nutrient Treatment Upgrade

During the September 18, 2008 issuance of this RIPDES permit for the Woonsocket WWTF, the City of Woonsocket was required to meet lower seasonal effluent total nitrogen and total phosphorus concentrations. The facility was required to meet a seasonal total effluent nitrogen concentration of 3.0 mg/L between May 1 and October 31, and a total effluent phosphorus concentration of 0.1 mg/L between April 1 and October 31 along with a 1.0 mg/L effluent limit from November 1 to March 31. On June 27, 2008, Consent Agreement No. RIA-368 was signed and subsequently modified on March 3, 2011 establishing a compliance scheduled for the City to meet final permit limits established for Total Nitrogen, Total Phosphorus, and Total Cadmium. In compliance with RIA-368 an Order of Approval Application was submitted for upgrades to the wastewater treatment plant in order to incorporate nitrogen and phosphorus removal as well as other miscellaneous physical upgrades.

Based on the May 2013 Facility's Plan Amendment the recommended nutrient removal treatment system combines nitrogen and phosphorus removal processes. The "AB" process consists of three (3) "A" process trains followed by two (2) "B" process trains followed by secondary clarifiers and then existing traveling bridge sand filters. In addition, the existing aeration tanks were modified into a two-stage activated sludge AB process. A new 0.5 million gallon aeration tank was constructed adjacent to the existing tanks and the existing aeration tanks were reconfigured into two-stages with multiple anoxic and aerobic zones. The traveling bridge sand filters were reused, and the filter building was also retained. The

use of energy efficient equipment and systems were also integrated into the overall capital improvement efforts. Energy efficient features that were added include the use of efficient high speed turbo blowers for process aeration and the use of an enhanced nutrient removal process to optimize aeration and oxygen requirements. Final limits for Total Cadmium became effective on November 1, 2015 and the facility achieved compliance with Total Phosphorus and Total Nitrogen limits on September 1, 2016 following substantial completion of construction on August 23, 2016. The October 24, 2017 reissuance of the RIPDES permit included final permit limitations for the above-listed parameters.

The Woonsocket WWTF treatment process consists of the following: Coarse Screening, Communition, Aerated Grit Removal, Primary Settling, Biological Treatment w/ Nutrient Removal, Secondary Settling, Effluent Polishing Filters, Chlorination, and Dechlorination. Treated wastewater is discharged from Outfall 001A. A process flow diagram is provided in Attachment 2.

Woonsocket WWTF's most recent RIPDES permit, authorizing discharges from the above-mentioned facility, was issued on October 24, 2017. The permit became effective on January 1, 2018 and expired on December 31, 2022. The facility submitted an application for permit reissuance to the DEM on June 13, 2022 that was amended on June 24, 2022. On August 26, 2022, the DEM issued an application complete letter to the facility. In accordance with 250-RICR-150-10-1 §13 of the Regulations for the Rhode Island Pollutant Discharge Elimination System, the facility's October 24, 2017 permit remains in effect since the DEM has determined that a complete permit application was submitted. Once this permit is reissued, it will supersede the October 24, 2017 permit.

Receiving Water Description

The waterbody segment that receives the discharge from the Woonsocket WWTF is described as the Blackstone River from the MA-RI border to the CSO outfall located at River and Samoset Streets in Central Falls. The waterbody identification number for this water is RI0001003R-01A. This segment is located in Woonsocket, North Smithfield, Cumberland, Lincoln, and Central Falls. This segment is a class B1 waterbody according to the Rhode Island Water Quality Regulations. Class B1 waters are designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges. However, all Class B criteria must be met. In addition, this segment is classified as a warm waterfishery.

Impaired waters include those waters where a Total Maximum Daily Load (TMDL) is required (i.e., Category 5 Waters or 303d List of Impaired Waters) and those where a TMDL is not required (i.e., Category 4 Waters) because either a TMDL has already been completed, other pollution control measures are reasonably expected to result in attainment of water quality in near future, or the impairment is not caused by a pollutant. According to the DEM's 2024 Water Quality Assessment, this segment of the Blackstone River is not supporting the Fish and Wildlife Habitat use due to impairments associated with Cadmium, Iron, and Non- native aquatic plants. This segment is also not supporting the Fish Consumption use due to impairments associated with Mercury and PCBs in fish tissue. Lastly this segment is not supporting the primary and secondary contact recreation use due to impairments associated with Enterococcus and Fecal Coliform. DEM removed ammonia impairments to the Blackstone River from the 303d List in 2008. Phosphorus and dissolved oxygen impairments were removed in 2020 as part of the DEM 2018-2020 water quality assessment. Lead impairments were removed during the 2022 water quality assessment. This segment has a TMDL for Pathogens, Cadmium, and Lead that was approved on April 22, 2013. The TMDL indicates that the Woonsocket WWTF is not a significant source of trace metals and pathogens compared to other upstream wastewater and stormwater sources. The TMDL did not specifically identify any implementation measures to be carried out directly through the individual RIPDES permit.

Industrial Pretreatment Program

The permit contains a reporting requirement for a local program to regulate industrial discharges to the sewer system (referred to as pretreatment program). This program is being required under authority of Section 402(b)(8) of the Clean Water Act (CWA) and 40 CFR 122.44 (j) and 403.8, as the facility receives significant discharges from 14 SIUs. Five of the SIUs were Categorical Industrial Users (CIUs). The facility can also accept hauled waste.

The Woonsocket WWTF's Industrial Pretreatment Program was first approved by DEM on March 10, 1986, and was most recently modified in 2018 to clarify the definition of *substantial change*. This modification was approved by DEM as a non-substantial modification to the Industrial Pretreatment Program.

Local Limits

This permit requires a local limits evaluation to be submitted within 120 days of the effective date of the permit for consistency with federal requirements (see 40 CFR 122.440)(2)(ii). No later than thirty (30) days following the final approval of the Local Limits, the permittee shall commence implementation of these limits.

Annual Report

The permit requires that the City of Woonsocket submit an annual report for their industrial pretreatment program pertaining to the reporting year (July 1st- June 30th) by September 15th every year. These reports are to be submitted as NetDMR attachments as outlined in Part I.C.8 of this permit until the facility is notified by DEM that an electronic reporting tool is available for use. The requirements for the annual report are outlined in Attachment C of the permit.

Permit Limit Development

The requirements set forth in this permit are from the State's Water Quality Regulations (250-RICR-150-05-1) and the State's Regulations for the Rhode Island Pollutant Discharge Elimination System, both filed pursuant to RIGL Chapter 46-12, as amended. RIDEM's primary authority over the permit comes from EPA's delegation of the program in September 1984 under the Federal CWA.

Development of RIPDES permit limitations is a multi-step process consisting of the following steps: calculating allowable water quality-based discharge levels based on instream criteria, background data, and available dilution; assigning applicable technology-based limits and appropriate Best Professional Judgement (BPJ) based limits; determining if technology based limits apply; comparing existing and proposed limits; comparing discharge data to proposed limits; performing an antidegradation/antibacksliding analysis to determine the final permit limits; and evaluating the ability of the facility to meet the final permit effluent limits.

Water quality criteria are comprised of numeric and narrative criteria. Numeric criteria are scientifically derived ambient concentrations developed by EPA or the State for various pollutants of concern to protect human health and aquatic life. Narrative criteria are statements that describe the desired water quality goal. A water quality-based permit limit protects receiving water quality by ensuring that water quality standards are met.

A technology-based limit is a numeric limit, which is determined by examining the capability of a treatment process to reduce or eliminate pollutants.

WWTF Conventional Pollutant Permit Limitations Flow Limits

The basis for the facility's average monthly flow limit of 16.0 MGD is the Facility Plan Amendment dated May 2013.

$CBOD_5$, TSS, and pH

The "Average Monthly" and "Average Weekly" $CBOD_5$ and total suspended solids (TSS) limits for, November through May, the "Percent Removal" requirements for TSS and $CBOD_5$, and the pH limitations are based upon the secondary treatment requirements of the CWA, as defined in 40 CFR 133.102 (a) through (c). The "Average Monthly" and "Average Weekly" total suspended solids (TSS) limits for the summer months, June through October, have been reduced from the secondary treatment requirements due to the increased removal from the operation of the additional equipment that is necessary to meet other permit limits. The "Maximum Daily" $CBOD_5$ and TSS limits are based on Rhode Island requirements for Publicly Owned Treatment Works (POTWs) under Section 401(a)(1) of the CWA and as provided in 40 CFR 123.25. The above $CBOD_5$ limits have been determined to be protective for achieving dissolved oxygen standards throughout the year, as was recommended in the 'Blackstone River Watershed Dissolved Oxygen Wasteload Allocation for Massachusetts and Rhode Island (November 1997)'. This study is discussed further in the Blackstone Watershed Initiative Water Quality Modeling section of the Fact Sheet.

Settleable Solids

Settleable Solids has been included as a process-control parameters that can aid in the assessment of the operation of the plant but need not be an effluent limit.

Oil and Grease

Oil and Grease monitoring requirements have been maintained in this permit in order to serve as a process control parameter. Monitoring data will serve as a monitor of potential excessive levels of Oil and Grease in the collection system that may cause backups and blockages.

Bacteria

Table 10.D.1 of the Rhode Island Water Quality Regulations (250-RICR-150-05-1) includes Enterococci criteria for primary contact/swimming of a geometric mean of 54 colonies/100ml and a single sample maximum of 61 colonies/100ml. The "single sample maximum" value is only used to evaluate swimming advisories at designated public beaches and does not apply to the receiving water in the area of the outfall. EPA's November 12, 2008 memorandum regarding "Initial Zones of Dilution for Bacteria in Rivers and Streams Designated for Primary Contact Recreation" clarifies that it is not appropriate to use dilution for bacteria criteria in receiving waters that are designated for primary contact recreation. Therefore, because the receiving water is designated for primary contact recreation, the DEM has assigned a monthly average Enterococci limit of 54 colonies/100ml. The daily maximum enterococci limit has been set at the 90% upper confidence level value for "lightly used full body contact recreation" of 175 colonies/100ml.

The DEM has removed the fecal coliform limit from the permit but maintained Fecal Coliform monitoring to ensure that the WWTF is providing treatment that is comparable to historic treatment levels.

WWTF Toxic Pollutant Limits

Water Quality-Based Limit (WQBEL) Calculations

Permit limits for the Woonsocket WWTF were developed to be consistent with Rhode Island Water Quality Regulations (250-RICR-150-05-1) and the wasteload allocation. The allowable effluent limitations were established on the basis of acute and chronic aquatic life criteria and human health criteria using the following: available instream dilution; an allocation factor; and background concentrations when available and/or appropriate. The aquatic life and human health criteria are specified in the Rhode Island Water Quality Regulations (250-RICR-150-05-1). Aquatic life criteria have been established to ensure the protection and propagation of aquatic life while human health criteria represent the pollutant levels that would not result in a significant risk to public health from ingestion of aquatic organisms. The more stringent of the two criteria was then used in establishing allowable effluent limitations. Details concerning the calculation of potential permit limitations, selection of factors, which influence their calculation, and the selection of final permit limitations are included below or in the

attached documents. The facility's permit has contained WQBELs since at least the 1994 permit issuance.

Mixing Zones and Dilution Factors

Mixing for the Woonsocket WWTF discharge to the Blackstone River is assumed to be instantaneous and complete. Therefore, the whole flow of the river at critical flow conditions is used when calculating limits and accounting for dilution.

The Rhode Island Water Quality Regulations at 250-RICR-150-05-1.18(N)(1) require in-stream concentrations of discharged pollutants to be determined by specific formulas, or other methods which may be found to be acceptable. These formulas require the use of the seven-day, 10-year, low flow of the receiving stream immediately upstream of the discharge to be used in calculating the concentrations of discharged pollutants for the purpose of developing RIPDES permit conditions. This 7Q10 value is protective of water quality standards under critical flow conditions.

The 2008 and 2017 RIPDES permits determined the 7Q10 flow based on the nearest USGS gauging station on the Blackstone River, located upstream of the facility at the Blackstone Gauging Station (Number 01112500). To better account for site-specific hydrology, the 7Q10 flow for the Blackstone River at the Woonsocket WWTF was recalculated utilizing the above USGS gauge 7Q10 value for the water years 1930 through 2018 following the methodology in the 'RIPDES 7Q10 Policy'. The following documents the steps taken to determine the 7Q10 at the WWTF:

- A 7Q10 of 83.9 cfs and contributing drainage area of 416 square miles were taken for USGS Station 01112500 from the table included in the RIPDES Policy.
- A ratio of the drainage area at the WWTF discharge to the drainage area at the Blackstone River gauges was applied to the 7Q10 above from the RIPDES Policy to determine the 7Q10 at the WWTF. In order to determine the drainage area at the WWTF, the USGS StreamStats application (https://streamstats.usgs.gov/ss/) was used to derive a drainage area at the WWTF of 420 square miles. See Attachment 4 for the StreamStats Report that displays the upstream drainage area to the WWTF. The 7Q10 flow upstream of the Woonsocket WWTF was calculated to be 84.7 cfs.

Using the upstream 7Q10 river flow of 84.7 cfs (for aquatic life criteria) and a mean harmonic flow of 359 cfs (for human health criteria) the appropriate dilution factors were determined. Harmonic mean flow was determined using the USGS StreamStats application at the USGS Gauging Station 01112500 (See Attachment 5 for the StreamStats Gage report that displays the harmonic mean streamflow). Using the facility's design flow of 16 MGD (24.76 cfs), a water quality dilution factor of 4.421 for acute and chronic criteria and a human health dilution factor of 15.501 were calculated using the following equation:

$$DF = \frac{Q_D + Q_U}{Q_D}$$

Where: DF = Dilution Factor
Q_D = Design Flow
Q_U = Flow upstream of the WWTF (Receiving Water Flow)

An exception to these dilution factors was made for Ammonia limitations. Ammonia removal is strongly dependent on temperature (nitrification rate decreases as temperature decreases). Since Ammonia does not bioaccumulate or accumulate in sediment, seasonal dilution factors and historical pH and temperature background data were used to determine the appropriate Ammonia limitations. A winter 7Q10 river flow of cfs was used to yield a dilution factor of 6.097 and a summer 7Q10 of 84.7 cfs was used to give a dilution factor of 4.421. (The winter 7Q10 river flow of 126.2 cfs was calculated by taking the upstream 7Q10 river flow of 84.7 cfs and dividing by the ratio of summer to winter 7Q10 values from the 2017 RIPDES Permit.)

Hardness

It has been observed that there is generally a strong inverse correlation between river flow and hardness. This is due to the fact that major components of hardness (Mg2+, Ca2+) are more prevalent in groundwater rather than surface water. Therefore, during low flow periods, when the majority of flow in the river or stream is groundwater, hardness will be higher.

DEM has established that there is generally a strong inverse correlation between river flow and hardness. Therefore, a lognormal relationship was developed between flow and hardness from data collected at various USGS gaging stations to establish aquatic life criteria for metals (which are based on hardness). Based on this relationship, a hardness of 62.8 mg/L was determined for the 7Q10 flow of 84.7 cfs to determine the appropriate metals criteria. The following equation was used to calculate hardness of the receiving water at the Woonsocket WWTF:

Facility	USGS Gauge	Years of Data	Hardness Equation Based on Lognormal Relationship
Woonsocket WWTF	01112900	1978 – 2018	H = 186.29Q-0.245

Limit Calculations

Using the above-mentioned dilution factors and hardness, the allowable discharge limits were calculated as follows:

a. Background concentration unknown or available data is impacted by sources that have not yet achieved water quality-based limits.

*Limit*1 =(DF)* (Criteria)* (80%)

Where: DF = acute or chronic dilution factor, as appropriate

Note: The right side of this formula is divided by the appropriate metals translator when this formula is used to calculate limits for metals.

b. Using available background concentration data.

*Limit*1 =(DF)* (Criteria)* 90%- (Background)* (DF - 1)

Where: DF = acute or chronic dilution factor, as appropriate.

Note: The right side of this formula is divided by the appropriate metals translator when this formula is used to calculate limits for metals.

Because background concentrations were available for Aluminum, Copper, Lead, Iron, Chloride, and Ammonia, 90% of criteria was allocated for these pollutants. All other limits were calculated using 80% allocation, due to a lack of background data. Background data was obtained from sampling performed by the DEM's Ambient River Monitoring (ARM) Program at a sampling station BSN11, which aligns with the USGS Gauging Station 01112500. This monitoring point is located upstream of the Woonsocket WWTF. Sampling was performed on July 25, 2019, September 23, 2019, and October 16, 2019, and resulted in detections of Aluminum, Chloride, Dissolved Copper, Iron, Dissolved Lead, and Total Ammonia. A summary of the available background sampling data that was utilized in the calculations for allowable discharge limits is provided in Attachment 7.

Reference Attachment 7 for calculations of allowable limits based on Aquatic Life and Human Health Criteria. A summary of Discharge Monitoring Report (DMR) data for the period January 2018 - June 2025 and facility Priority Pollutant Scan data for the period 2018-2024 are provided in Attachment 8 and Attachment 9, respectively. Attachment 10 is a summary comparison of the allowable limits versus the DMR data, Priority Pollutant Scan data, and permit application data (if applicable). Note that permit application data includes Priority Pollutant Scan data from 2019-2022.

The formulas and data noted above were applied with the following exceptions:

a) Pollutants that, based on the acute and chronic dilution factors, have a higher allowable chronic limit than allowable acute limit. For this situation, both the "Monthly Average" and "Daily Maximum" limits were set at the allowable acute limit.

b) Total residual chlorine. The limits for total residual chlorine (TRC) were established in accordance with the DEM Effluent Disinfection Policy. The "Monthly Average" and "Daily Maximum" were based on a 100% allocation, a zero background concentration, and the appropriate dilution factor(s). The 100% allocation factor for TRC was used due to the non- conservative nature of chlorine and the improbability of the receiving water having a detectable background TRC concentration.

c) Pollutants with water quality based monthly average limits in the previous RIPDES permit. The relaxation of monthly average limits from the previous permit was restricted in accordance with the antibacksliding provisions of the Clean Water Act and the Policy on the Implementation of the Antidegradation Provisions of the Rhode Island Water Quality Regulations (RICR 250- RICR-150-05-1).

Wasteload Allocation

In accordance with 40 CFR Part 122.4(d)(1)(iii), it is only necessary to establish water-quality-based permit limits for those pollutants in the discharge which have the reasonable potential to cause or contribute to the exceedance of the instream criteria. Reasonable potential to cause an exceedance is determined using the dilution factors presented in the previous section as well as the freshwater aquatic life and non-Class AA human health criteria, from the Rhode Island Water Quality Regulations (250-RICR-150-05-1) to determine allowable discharge concentrations. Allowable discharge concentrations for all parameters in Attachment 6 were calculated using 80% allocation for pollutants without background data, 90% allocation for pollutants with background data, and 100% allocation of total residual chlorine (TRC) due to the fact that chlorine is not expected to be found in ambient water, and it is a non-conservative pollutant. In the case of ammonia, since removal is strongly dependent on temperature (nitrification rate decreases as temperature decreases) and ammonia does not bioaccumulate or accumulate in sediment, seasonal dilution factors and historical pH and temperature background data were used to determine the appropriate potential ammonia limitations. A further discussion on Ammonia is also presented below.

When evaluating reasonable potential, the allowable discharge concentrations (potential permit limits) were compared to Discharge Monitoring Report (DMR) data, Priority Pollutant Scan data, and data provided in the June 24, 2022 permit application. Specifically, the mean of the monthly average DMR data, the average of the Priority Pollutant Scan data reported as greater than the detection limit, and any applicable average concentration from the permit application, were compared to the “monthly average” allowable discharge concentrations, calculated using the chronic water quality criteria. Similarly, the mean of the daily maximum DMR data, the maximum of the Priority Pollutant data, and any applicable maximum reported in the permit application were compared to the “daily maximum” allowable discharge concentrations, calculated using the acute water quality criteria. For both these comparisons, DEM used DMR data collected during the previous seven and a half years (since the 2017 permit became effective). When the effluent monitoring data (i.e., DMR data, Priority Pollutants Scan data, and permit application data if applicable) exceeds fifty percent of the allowable discharge concentration, there is “reasonable potential”, and DEM assigns a water- quality-based permit limit. When the monitoring data is less than twenty-five percent of the allowable discharge concentration, there is not “reasonable potential”, and DEM does not assign a water-quality- based permit limit. While DEM does not typically assign a permit limit when data is between twenty-five and fifty percent of the allowable discharge concentration, a water-quality-based permit limit may be assigned if it is determined that one is needed to be protective of human health and/or aquatic life (e.g., there is a significant variability in effluent data). Based on these comparisons, water quality limitations have been deemed necessary for Total Residual Chlorine, Aluminum, Ammonia, Arsenic, Cadmium, Copper, Iron, and Selenium. With this permit reissuance, DEM has determined that based on recent data, there is no reasonable potential for Lead and has removed those limits from the permit. However, as noted below, monitoring for Lead is being maintained in this permit. Since the data set used to establish the Total Cadmium effluent limitations was limited, if the pollutant is not detected in the discharge (i.e., non-detect using sufficiency sensitive detection limits) over twelve (12) consecutive months, after notifying the DEM and receiving written

approval from the DEM, the permittee may discontinue monitoring. In addition, quarterly monitoring for Cyanide, Lead, Hexavalent Chromium, Nickel, Total Organic Carbon, Total Phenols, and Zinc has been included in the permit as part of the bioassay requirements. Cyanide samples shall be composited then analyzed for Available Cyanide. Once the permittee receives written notification by DEM that laboratories have been certified by Rhode Island Department of Health to analyze for Free Cyanide, permittee will be required to analyze for Free Cyanide in place of Available Cyanide.

As discussed in the 2017 RIPDES permit fact sheet, during the development of the nutrient removal upgrades for the Woonsocket WWTF it was determined that compliance with the water quality criteria for iron would not be problematic for the facility. Since the WWTF was using ferric chloride in the tertiary treatment process at the time of the 2017 reissuance a monthly average limit was applied in the permit. As an alternative to ferric chloride, the facility may decide to utilize an aluminum-based coagulant. Therefore, Total Aluminum monthly average and daily maximum effluent limits were included in the 2017 permit. As presented in the Mixing Zones and Dilution Factor section above, a lower dilution factor has been calculated due to an adjusted 7Q10 at the WWTF. The lower dilution in conjunction with available background data for Total Iron in the Blackstone River and an adjusted instream hardness value has resulted in more stringent effluent limits for both Total Aluminum (Daily Maximum = 2,828 µg/L; Monthly Average = 189 µg/L) and Total Iron (Monthly Average = 1,970 µg/L). Based on review of historical DMR data for the past seven and half years, the WWTF will be able to comply with the more stringent limits. Weekly sampling for Total Iron and/or Total Aluminum is only in effect during months in which Iron based or Aluminum based coagulation chemicals are used in the treatment process. For all other periods sampling is only required for Total Aluminum on a quarterly basis in accordance with Part I.B of the permit.

Blackstone River Initiative Water Quality Modeling

Established in the early 1990s, the Blackstone River Initiative was a collaborative effort between EPA, the Civil Engineering Department at the University of Rhode Island (URI), the Massachusetts Department of Environmental Protection (MADEP), and DEM. As part of the Blackstone River Initiative, a waste load allocation (WLA) was completed for the Blackstone River in November of 1997. WLAs establish effluent discharge limits for all point sources in a watershed that will ensure compliance with water quality standards. The Blackstone River WLA is based on a dissolved oxygen model developed by Dr. Ray Wright of the University of Rhode Island and funded by the EPA, the DEM, and the Massachusetts Department of Environmental Protection (MADEP). The WLA utilized a mathematical water quality simulation model (QUAL2E) to establish discharge limits necessary to achieve the minimum dissolved oxygen criteria of 5.0 mg/L in the river. The model was calibrated and verified using water quality survey data collected in 1991. The model showed that in Rhode Island, the dissolved oxygen sag was primarily driven by phosphorus, sediment oxygen demand, and ammonia decay. The water quality data and modeling report can be found in the Blackstone River Initiative document entitled 'Blackstone River Initiative: Water Quality Analysis of the Blackstone River Under Wet and Dry Weather Conditions (dated February 1998)'.

The dissolved oxygen based WLA established the following permit limits for Woonsocket: monthly average $CBOD_5$ of 10 mg/L for June through October and monthly average Total Ammonia (as N) of 2.0 mg/L for June through October, 12 mg/L for May, and 15.0 mg/L for November through April.

Ammonia

In the Blackstone River, ammonia limits must ensure that effluent protects aquatic life from low instream dissolved oxygen and from acute and chronic toxicity. The limits derived from each method are compared, with the stricter limit being set as the permit limit. Ammonia limits protective of instream dissolved oxygen were determined by the QUAL2E WLA model. These limits contributed to the Blackstone River being delisted for ammonia impairments in 2008.

The potential ammonia limits to protect aquatic life from acute and chronic water toxicity were derived from acute and chronic criteria for freshwater from the Rhode Island Water Quality Regulations (250-

RICR-150- 05-1.26.L.1), which are based upon instream pH and temperature. The instream pH and temperature values that represent the upper 90th percentile were used from previous permit reissuances (2000, 2008, and 2017). Using pH and temperature values for the summer season (May through October) and the winter season (November through April), DEM calculated the allowable water quality-based discharge levels for ammonia for each season. The monthly average and daily maximum water quality-based limits calculated to be protective of chronic and acute toxicity were compared to the average monthly dissolved oxygen based WLA limits noted in the previous section, and the daily maximum ammonia limits from the previously issued 2017 permit. The average monthly permit limits to be protective of dissolved oxygen were more stringent than those to be protective of chronic toxicity, while the maximum daily permit limit is determined by the acute toxicity limit. The average monthly and daily maximum permit limits are the same limits as in the previous permit. This analysis to determine the proposed monthly average and daily maximum ammonia limits is shown on the second page of Attachment 7 of the Fact Sheet.

Phosphorus

Phosphorus and other nutrients (e.g. nitrogen) promote the growth of nuisance algae that contributes to low dissolved oxygen when algae utilize oxygen in the evening (i.e. through respiration) and when algae die and decompose. In addition to the impact on dissolved oxygen, phosphorus and other nutrients also promote the growth of nuisance algae and rooted aquatic plants which results in reduced water clarity and poor aesthetic quality. Section 250-RICR-150-05-1.10.D.1 of the Rhode Island Water Quality Regulations establishes the following criteria for Nutrients:

> *"Average Total Phosphorus shall not exceed 0.025 mg/L in any lake, pond, kettlehole or reservoir, and average Total P in tributaries at the point where they enter such bodies of water shall not cause exceedance of this phosphorus criteria, except as naturally occurs, unless the Director determines, on a site-specific basis, that a different value for phosphorus is necessary to prevent cultural eutrophication."*

Determination of whether the water quality criterion of 25 µg/L is applicable to the Blackstone River requires an evaluation of whether the Blackstone River flows into a lake, pond or reservoir (including whether run of the river impoundments constitute a lake, pond or reservoir). For the development of nutrient criteria, the EPA document titled *Nutrient Criteria Technical Guidance Manual: Lakes and Reservoirs: First Edition* has defined lakes as natural and artificial impoundments with a surface area greater than 10 acres and having a minimum mean water residence time of 14 days. After evaluation, DEM has determined that none of the run of the river impoundments along the Rhode Island portion of the Blackstone River meet these criteria. However, Scott Pond receives most of its flow from the Blackstone River and, therefore, the criterion of 25 µg/L must be met in the Blackstone River at the point in which it enters Scott Pond in Lincoln, RI. Scott Pond is included on the DEM's 2024 303(d) List of Impaired Waters because it is not supporting its Fish and Wildlife Habitat use because of impairments associated with Copper, Dissolved Oxygen, and Total Phosphorus. Scott Pond has a TMDL for Dissolved Oxygen and Total Phosphorus that was approved on August 12, 2014. The TMDL identified the Woonsocket WWTF along with other upgradient WWTF discharges as a significant source of Phosphorus contributing to impairments in Scott Pond, and that implementation measures associated with the WWTFs would be the nutrient upgrades required by the 2008 RIPDES permit for the Woonsocket WWTF that are described below.

In addition to the 25 µg/L phosphorus water quality criterion for lakes, ponds, and reservoirs, the Rhode Island Water Quality Regulations contain narrative, but not numeric, nutrient water quality criteria for streams that do not impact a lake, pond, or reservoir. However, EPA has produced several guidance documents, which contain recommended numeric total phosphorus criteria for receiving waters. The 1986 Quality Criteria of Water (Gold Book) recommends in stream phosphorus concentrations of 50 µg/L in any stream entering a lake or reservoir, 100 µg/L for any stream not discharging directly to lakes or impoundments, and 25 µg/L within the lake or reservoir. In addition, in December 2000, EPA published guidelines, which vary based by eco-region. The recommended EPA criteria applicable to Rhode Island waters are described in the document titled *Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers*

and Streams in Nutrient Ecoregion XIV (EPA 822-B-00-022, December 2000). This document identifies the EPA recommended guidelines applicable to Rhode Island waters as 8 µg/L in lakes and 23.75 µg/L in rivers. However, these recommended guidelines do not substitute for the CWA or EPA's regulations, nor are the documents themselves regulations. Thus, they cannot impose legally binding requirements on EPA, States, Indian tribes or the regulated community. Therefore, for the portions of the Blackstone River that do not impact a lake, pond or reservoir DEM has decided to apply the Gold Book criterion (100 µg/L) rather than the more stringent eco-region criteria, given that it was developed from an effects-based approach, versus the eco-region criteria that were developed on the basis of reference conditions.

The effects-based approach was selected because it is often more directly associated with an impairment to a designated use (i.e. fishing, swimming). The effects-based approach provides a threshold value above which adverse effects (i.e., water quality impairments) are likely to occur using empirical observations of a causal variable (i.e., phosphorus) and a response variable (i.e., chlorophyll a) associated with designated use impairments. Reference-based values are statistically derived from a comparison within a population of rivers in the same eco-region class and are a quantitative set of river characteristics (physical, chemical, and biological) that represent minimally impacted conditions.

When issuing the 2008 permit, DEM evaluated the results of the QUAL2E model to determine how the phosphorus limits at WWTFs would impact water quality entering Scott Pond. The model predicted that the following instream conditions would exist after compliance with the WWTF limits:

	Chlorophyll a (µg/L)	**Phosphorus (µg/L)**
Blackstone River downstream of Woonsocket WWTF	Range from 15-22	Range 120-170
Blackstone River at Entrance to Scott Pond	17	120

As can be seen from the above table, the predicted instream phosphorus concentrations for both the RI portion of the Blackstone River downstream of the Woonsocket WWTF and at the entrance to Scott Pond will exceed the applicable water quality criteria (100 µg/L for the River and 25 µg/L at the entrance to Scott Pond).

DEM used the QUAL2E model to predict the impact of various levels of phosphorus reduction from WWTFs on the Blackstone River's phosphorus concentrations and determined that an effluent limit of 0.1 mg (100 µg/L) for the Woonsocket WWTF was necessary to achieve compliance with the Gold Book criterion for free flowing streams and to ensure the Blackstone River does not cause a violation of the RI Water Quality criteria in Scott Pond (note: the model predicted 30 µg/L at the entrance to Scott Pond as rounded to the precision level of the model to the nearest 10 µg/L). The Gold Book-recommended criterion was applied based on the best currently available information. Furthermore, this limit is consistent with the requirement to remove phosphates to the extent that such removal is technically and reasonably feasible, found in 250-RICR-150-05-1.10.D.1 of the Rhode Island Water Quality Regulations.

The 2008 permit required that the facility reduce the concentration of phosphorus in its effluent from 1 mg/L to 0.1 mg/L from April through October. The facility achieved compliance with Total Phosphorus limits on September 1, 2016 following substantial completion of construction on August 23, 2016, and the 2017 RIPDES permit reissuance included final permit limitations.

By the summer of 2017, due to reductions in phosphorus discharges at the WWTFs in Rhode Island and Massachusetts, instream phosphorus concentrations in the Blackstone River were lower than the Gold Book standard. Additionally, continuous oxygen measurements in Rhode Island at two locations where the QUAL2E model predicted "sag points" in the river showed compliance with the dissolved oxygen

criteria. As a result, the dissolved oxygen and phosphorus impairments in the Rhode Island portions of the Blackstone River were removed during the 2018-2020 Water Quality Assessment[1].

This permit maintains the previous total phosphorus permit limits. The total phosphorous warm weather limit (0.1 mg/L) is applied April 1st to October 31st, the period during which eutrophic conditions are most likely to occur and during which phosphorus effluent loading is most detrimental to water quality goals. The total phosphorous cold weather limit (1.0 mg/L) applies November 1st to March 31st. A higher phosphorus effluent discharge limitation in the winter period is appropriate because the predominant form of phosphorus (dissolved fraction) lacks plant growth to absorb it and will likely remain dissolved and flow out of the system. Imposing a limit on phosphorous during the cold weather months is, however, necessary to ensure that phosphorous discharged during the cold weather months does not result in the accumulation of phosphorous in the sediments, which would then subsequently be released into the water column during the warm weather growing season. To ensure DEM's understanding of the anticipated behavior of dissolved and particulate phosphorus is correct, a monitoring requirement for orthophosphorous has been included for the cold weather months (November 1st through March 31st) to determine the dissolved particulate fraction.

Total Nitrogen

The Providence and Seekonk Rivers have historically been impacted by low dissolved levels and high phytoplankton concentrations that are related to excessive nitrogen loadings. Significant areas of the Providence and Seekonk Rivers suffer from hypoxic (low dissolved oxygen) and anoxic (lack of dissolved oxygen) conditions and violate water quality standards. Available data shows that nitrogen loads are dominated by wastewater treatment facility inputs.

In the late 1990s and early 2000s, DEM hired a consultant and worked with a technical advisory committee, consisting primarily of scientists and engineers representing academic, municipal, state, and federal organizations, to calibrate a model and develop a water quality restoration plan, or TMDL for this area. It was concluded that the hydrodynamic model could not adequately simulate conditions due to the relatively severe changes in the bathymetry in the Providence River. Therefore, in the early 2000s, DEM concluded that the best method available for evaluating impacts and setting nitrogen load reduction targets for the Providence River was to use the set of empirical relations developed from the Marine Ecosystems Research Laboratory (MERL) enrichment gradient studies at the University of Rhode Island.

In February 2004, DEM developed an analysis titled *Evaluation of Nitrogen Targets and WWTF Load Reductions for the Providence and Seekonk Rivers*. This analysis indicated that even if the WWTFs discharges were reduced to the limit of technology (total nitrogen of 3 mg/l), the Seekonk River and portions of the Providence River may not fully comply with existing water quality standards for dissolved oxygen. DEM evaluated the implementation costs, the performance of available technology, and estimates of water quality improvement to develop a phased plan for implementation of WWTF improvements at Massachusetts and Rhode Island WWTFs which maximizes the dissolved oxygen levels relative to implementation cost. Estimates of capital costs to modify existing facilities to achieve the target levels on a seasonal basis were developed. These costs included allowances for planning, design, construction, and administration and must be considered Order-of-Magnitude estimates, since specific facility characteristics were not evaluated.

Based on this evaluation the DEM has determined that it would be appropriate to establish seasonal (May through October) limits for total nitrogen of 3.0 mg/L to the Woonsocket WWTF. In 2012, this limit, in combination with the reductions assigned to the other WWTFs, achieved a 50% reduction from the 1995- 1996 Rhode Island WWTF loading, consistent with the recommendations from The Governor's

[1] RIDEM. January 2021. *Final 2018-2020 Delisting Document: Waterbody Impairment Removed from the Impaired Waters List*. https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/quality/pdf/iwlr1820.pdf

Narragansett Bay and Watershed Planning Commission. In addition to adding a seasonal total nitrogen limit of 3.0 mg/L, this permit also requires that the permittee operate the treatment facility to reduce the discharge of total nitrogen, during the months of November through March, to the maximum extent possible using all available treatment equipment in place at the facility, and carries over the 10.0 mg/L total nitrogen limit during April from the previous permit.

Priority Pollutants

The required priority pollutant scans are to be performed annually for the EPA Priority Pollutants as listed in 40 CFR 122, Appendix D, Tables II and III. The priority pollutant scans are typically performed during the third calendar quarter bioassay sampling event.

WET Testing

The biomonitoring requirements are set forth in 40 CFR 131.11 and in the State's Water Quality Regulations, containing narrative conditions at 250-RICR-150-05-1.10(B) that state, at a minimum, all waters shall be free of pollutants in concentrations or combinations or from anthropogenic activities subject to these regulations that: adversely affect the composition of fish and wildlife; adversely affect the physical, chemical, or biological integrity of the habitat; interfere with the propagation of fish and wildlife; adversely alter the life cycle functions, uses, processes, and activities of fish and wildlife; or adversely affect human health. In order to determine compliance with many of these conditions, Whole Effluent Toxicity (WET) testing is required. If toxicity is demonstrated, then toxicity identification and reduction will be required.

DEM's toxicity permitting policy is based on past toxicity data and the level of available dilution. Determining WET limits for facilities with a dilution factor of <10:1, requires that the toxicity permit limit for the No Observed Effects Concentration (C-NOEC) is greater than the receiving water concentration (RWC). The RWC is determined by taking the design flow of the facility (16 MGD) and dividing it by the total flow of the receiving water downstream of the discharge (facility design flow plus 7Q10 of the Blackstone River at the point of discharge). The 7Q10 at the point of discharge for the Blackstone River had previously been determined and discussed in the 'Mixing Zones and Dilution Factors' section of the Fact Sheet. After performing this analysis, the RWC was determined to be 22.6%. Therefore, a chronic C-NOEC limit of ≥25% for Ceriodaphnia is appropriate and satisfies DEM's WET Testing policy for RIPDES permits.

Woonsocket's bioassay limits of ≥100% effluent for an LC_{50} value (LC50 = the concentration of wastewater that causes mortality to 50% of the test organisms) and ≥25% effluent for a C-NOEC value are based on requirements from 40 CFR 131.11(b)(2). The permit requires that chronic toxicity tests be conducted on a twenty-four (24) hour flow proportioned composite sample, taken just after dechlorination, once per quarter on Daphnids (Ceriodaphnia sp.). The chronic daphnid test shall be used to calculate the acute LC_{50} at the forty-eight (48) hour exposure interval. If recurrent toxicity is demonstrated, then toxicity identification and reduction will be required. WET testing requirements can be found in Section I.B. of the permit. Section I.B.9 contains a requirement for a Species Sensitivity Screening Report to be submitted during the Fourth Year of the Permit. Section I.B.9 of the permit has been added to ensure the WET limits in the permit are evaluated using the most sensitive applicable freshwater species.

Past bioassay monitoring data for the Woonsocket WWTF indicate that the facility had no toxicity exceedances between January 2018 and June 2025. The data can be found in Attachment 3.

Emerging Contaminants

Per-and polyfluoroalkyl substances (PFAS) are a group of synthetic chemicals that have been in use since the 1940s. They are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed

to PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects[2]. DEM is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream uses, which can include drinking water, recreational and aquatic life uses depending on the receiving water.

The Environmental Protection Agency (EPA) established a Drinking Water Health Advisory in 2016 for Perfluorooctanoic Acid (PFOA), Perfluorooctanesulfonic Acid (PFOS), or a combination of these chemicals at 70 parts per trillion (ppt) or 70 nanogram per liter (ng/L). This Drinking Water Health Advisory was established to protect against adverse health effects that studies have indicated can be caused by exposure to these chemicals. In 2017, the Rhode Island Department of Health (DOH) began the process of sampling public wells for these pollutants due to increasing public health concerns about their possible presence in drinking water. Also in 2017, DEM adopted the EPA health advisory as a groundwater quality standard.

In 2022, Rhode Island passed a law concerning PFAS in drinking water, groundwater and surface waters. The Rhode Island law establishes monitoring requirements for public water supplies as well as drinking water treatment requirements if the sum of the concentrations of the following six species of PFAS exceed 20 ppt.

Perfluorohexanesulfonic acid (PFHxS)
Perfluoroheptanoic acid (PFHpA)
Perfluorononanoic acid (PFNA)
Perfluorooctanesulfonic acid (PFOS)
Perfluorooctanoic acid (PFOA)
Perfluorodecanoic acid (PFDA)

The 2022 Rhode Island law is consistent with the Massachusetts Department of Environmental Protection (Mass DEP) public drinking water standard regarding allowable concentrations and PFAS species. In addition to drinking water requirements, the 2022 Rhode Island law also compelled DEM to adopt a groundwater quality standard and a surface water action level by December 31, 2023.

Although the Rhode Island Water Quality Regulations (250-RICR-150-05-1) do not include numeric criteria for PFAS, the RI Water Quality Regulations § 1.10(D)(1)(freshwater) under Chemical Constituents have narrative requirements that prohibits the discharge of pollutants in concentration or combinations that could be harmful to humans or fish and wildlife for the most sensitive and governing water class use.

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the Permit requires that the facility conduct quarterly influent and effluent sampling for PFAS chemicals and annual sampling of certain industrial users using draft EPA Method 1633 until a 40 CFR Part 136 approved method is made available to the public.

The purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality- based effluent limits on the facility-specific basis. DEM is authorized to require this monitoring and reporting by CWA § 308(a), which states:

> "SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other

[2] EPA, *EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan,* EPA 823R18004, February 2019. http://www.epa.gov/sites/production/files/201902/documents/pfas_action_plan_021319_508compliant_1.pdf

limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act –

a. The Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require…"

Since an EPA method for sampling and analyzing PFAS in wastewater is not currently available, the permit requires that PFAS be analyzed using draft EPA method 1633 until a 40 CFR Part 136 approved test method for wastewater is made available to the public. This approach is consistent with 40 CFR § 122.44(i)(1)(iv)(b) which states that in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters.

The PFAS Analytes that are required to be reported are listed in Attachment A of the permit. Sampling requirements include influent, effluent, and any relevant industrial users.

Antibacksliding and Antidegredation

Provided below is a brief introduction to Antibacksliding and Antidegradation, as well as a discussion on how the two policies were used to calculate water quality-based limits.

Antibacksliding

Antibacksliding restricts the level of relaxation of water quality-based limits from the previous permit. Section 303(d)(4) of the Clean Water Act addresses antibacksliding as the following:

1. Standards not attained – For receiving waters that have not attained the applicable water quality standards, limits based on a TMDL or WLA can only be revised if the water quality standards will be met. This may be done by (i) determining that the cumulative effect of all such revised limits would assure the attainment of such water quality standards; or (ii) removing the designated use which is not being attained in accordance with regulations under Section 303.

2. Standards attained – For receiving waters achieving or exceeding applicable water quality standards, limits can be relaxed if the revision is consistent with the State's Antidegradation Policy.

Therefore, in order to determine whether backsliding is permissible, the first question that must be asked is whether or not the receiving water is attaining the water quality standard. The Office has determined the most appropriate evaluation of existing water quality is by calculating pollutant levels, which would result after the consideration of all currently valid RIPDES permit limits or historic discharge data (whichever is greater), background data (when available), and any new information (i.e., dilution factors).

Antidegradation

The DEM's "*Policy on the Implementation of the Antidegradation Provisions of the Rhode Island Water Quality Regulations July 2006*" (the Policy) established four tiers of water quality protection:

Tier 1. In all surface waters, existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

Tier 2. In waters where the existing water quality criteria exceeds the levels necessary to support the propagation of fish and wildlife and recreation in and on the water, that quality shall be maintained and protected except for insignificant changes in water quality as determined by the Director and in accordance with the Antidegradation Implementation Policy, as amended. In addition, the Director may allow significant degradation, which is determined to be necessary to achieve important economic or social benefits to the State in accordance with the Antidegradation Policy.

Tier 2½. Where high quality waters constitute Special Resource Protection Waters SRPWs[3], there shall be no measurable degradation of the existing water quality necessary to protect the characteristics which cause the waterbody to be designated a SRPW. Notwithstanding that all public drinking water supplies are SRPWs, public drinking water suppliers may undertake temporary and short-term activities within the boundary perimeter of a public drinking water supply impoundment for essential maintenance or to address emergency conditions in order to prevent adverse effect on public health or safety. These activities must comply with the requirements set forth in Tier 1 and Tier 2.

Tier 3. Where high quality waters constitute an Outstanding Natural Resource ONRWs[4], that water quality shall be maintained and protected. The State may allow some limited activities that result in temporary or short-term changes in the water quality of an ONRW. Such activities must not permanently degrade water quality or result in water quality lower than necessary to protect the existing uses in the ONRW.

The formulas previously presented ensure that permit limitations are based upon water quality criteria and methodologies established to ensure that all designated uses will be met.

In terms of the applicability of Tier 2 of the Policy, a waterbody is assessed as being high quality on a parameter-by-parameter basis. In accordance with Part II of the Policy, "Antidegradation applies to all new or increased projects or activities which may lower water quality or affect existing water uses, including but not limited to all 401 Water Quality Certification reviews and any new, reissued, or modified RIPDES permits." Part VI.A of the Policy indicates that it is not applicable to activities which result in insignificant (i.e., short-term minor) changes in water quality and that significant changes in water quality will only be allowed if it is necessary to accommodate important economic and social development in the area in which the receiving waters are located (important benefits demonstration). Part VI.B.4 of the Policy states that: "Theoretically, any new or increased discharge or activity could lower existing water quality and thus require the important benefits demonstration. However, DEM will: 1) evaluate applications on a case-by-case basis, using BPJ and all pertinent and available facts, including scientific and technical data and calculations as provided by the applicant; and 2) determine whether the incremental loss is significant enough to require the important benefits demonstration described below. [If not then as a general rule DEM will allocate no more than 20%.] Some of the considerations which will be made to determine if an impact is significant in each site specific decision are: 1) percent change in water quality parameter value and their temporal distribution; 2) quality and value of the resource; 3) cumulative impact of discharges and activities on water quality to date; 4) measurability of the change; 5) visibility of the change; 6) impact on fish and wildlife habitat; and 7) impact on potential and existing uses. As a general guide, any discharge or activity which consumes greater than 20% of the remaining assimilative capacity may be deemed significant and invoke full requirements to demonstrate important economic or social benefits."

In terms of a RIPDES permit, an increased discharge is defined as an increase in any limitation, which would result in an increased mass loading to a receiving water. The baseline for this comparison would be the monthly average mass loading established in the previous permit. It would be inappropriate to use the daily maximum mass loading since the Policy is not applicable to short-term changes in water quality.

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[3] SRPWs are surface waters identified by the Director as having significant recreational or ecological uses.

[4] ONRWs are a special subset of high-quality water bodies, identified by the State as having significant recreational or ecological water uses

For the purposes of ensuring that the revised limit is consistent with the requirements of antidegradation, existing water quality must be defined. As explained earlier, DEM evaluates existing water quality by determining the pollutant levels which would result under the design conditions appropriate for the particular criteria (i.e., background water quality, when available and/or appropriate, non-point source inputs; and existing RIPDES permit limitations or recent historical discharge data, whichever is higher). In general, available data would be used to make this determination.

Use the above-mentioned criteria, the present instream water quality Cp is defined as:

$$C_p = \frac{(DF - 1) \cdot C_B + (1 \cdot C_d)}{DF}$$

where: C_b = background concentration[5]
C_d = discharge data[6]
DF = dilution factor

In this permit, the monthly average limits for Total Copper were calculated to be higher than the 2017 permit for water quality-based permit limitations. Because this constitutes a relaxation of permit limitations, Antibacksliding and Antidegradation apply. The above parameter was evaluated to be consistent with the Department's Antidegradation policy and relevant regulations. The Antidegradation limit calculations and data are presented in Attachment 11 of this Fact Sheet.

Operations and Maintenance

Resiliency Planning Requirements

On March 30, 2017, DEM's Office of Water Resources issued *Guidance for the Consideration of Climate Change Impacts in the Planning and Design of Municipal Wastewater Collection and Treatment Infrastructure*. This guidance built on and clarified existing studies, resources, and coastal efforts, including the "TR-16" *Guide for the Design of Waste Treatment Works* that was issued by the New England Interstate Water Pollution Control Commission and the DEM report *Implications of Climate Change for RI Wastewater Collection and Treatment Infrastructure*. DEM's goal with Resiliency Plan requirements is to protect systems from interruptions in operations, damages to structural and electrical integrity, and achievement of these protections to the maximum extent practicable.

DEM received a Resiliency Plan from the City of Woonsocket on December 28, 2018. Within one year of the effective date of this permit, the permittee shall submit update the Resiliency Plan, as needed, to ensure that it complies with the requirements described in Section I.D.3 of the permit.

Outfall Inspection

Per Part I.D.4 of the permit, the facility is required maintain their outfall to ensure proper operation. In addition, the facility must conduct an outfall inspection within one year of the effective date of the permit.

Cybersecurity

Per Part I.D.5 of the permit, the facility is required to submit a Cybersecurity Plan and a schedule of short- and long-term actions that will be taken to maintain, operate, and protect key collection and treatment system assets. The plan shall be submitted within one year of the effective date of the permit.

[5] Data collected at a location that is unimpacted by significant point source discharges.

[6] Discharge data refers to the maximum of the permit limit or the historic discharge level. The historic discharge level is determined by calculating the upper 95th confidence interval for the monthly average reported data for the past five (5) years. For specific cases, changes in treatment efficiency or pretreatment limitations may support the use of an alternative period of time.

Sludge Requirements

The permit contains requirements for the permittee to comply with the State's Sludge Regulations and the most current Order of Approval for sludge disposal in accordance with the requirements of Section 405(d) of the CWA. Permits must contain sludge conditions requiring compliance with limits, state laws, and applicable regulations as per Section 405(d) of the CWA and 40 CFR 503. The RIDEM Sludge Order of Approval sets forth the conditions to ensure this compliance.

Inflow and Infiltrations Reports

The permit requires that infiltration/inflow reports be submitted every two (2) years by January 15th of each odd year. The report must summarize all actions taken to minimize infiltration/inflow.

Other Conditions

The remaining general and specific conditions of the permit are based on the RIPDES regulations as well as 40 CFR Parts 122 through 125 and consist primarily of management requirements common to all permits.

Permit Limit Summary

Presented in the following Table is a summary of the permit limitations and monitoring requirements for outfall 001A set forth in the Final Permit.

Table 1 Permit Limits – Outfall 001A (final treated discharge from the WWTF after disinfection)

Parameter	Monthly Average (Minimum)	Weekly Average	Daily Maximum (Maximum)	Measurement Frequency
Flow	16 MGD		--- MGD	Continuous
CBOD5 Concentration (Nov. 1 – May 31)[1]	25 mg/L	40 mg/L	45 mg/L	3/Week
CBOD5 Concentration (June 1 – Oct. 31) [1]	10 mg/L	15 mg/L	17 mg/L	3/Week
CBOD5 Load (Nov. 1 – May 31) [1]	3,335 lbs/day		6,005 lbs/day	3/Week
CBOD5 Load (June 1 – Oct. 31) [1]	1,340 lbs/day		2,270 lbs/day	3/Week
CBOD5 - % removal[1]	85% or greater			1/Month
TSS Concentration (Nov. 1 – May 31) [1]	30 mg/L	45 mg/L	50 mg/L	3/Week
TSS Concentration (June 1 – Oct. 31) [1]	15 mg/L	20 mg/L	25 mg/L	3/Week
TSS Load (Nov. 1 – May 31) [1]	4,000 lbs/day		6,670 lbs/day	3/Week
TSS Load (June 1 – Oct. 31) [1]	2,000 lbs/day		3,335 lbs/day	3/Week
TSS - % removal[1]	85% or greater			1/Month
Settleable Solids		--- mL/L	---mL/L	1/Day
Oil and Grease			--- mg/L	1/Month
Orthophosphorus (Nov. 1 – March 31)	--- mg/L		--- mg/L	3/Week
Phosphorus (Nov. 1 – March 31)	1.0 mg/L		--- mg/L	3/Week
Phosphorus (April 1 – Oct. 31)	0.10 mg/L		--- mg/L	3/Week
Enterococci	54/100 cfu/mL		175/100 cfu/mL	3/Week
Fecal Coliform	--- MPN/100 mL		--- MPN/100 mL	3/Week
Total Residual Chlorine	49 µg/L		84 µg/L	3/Day
pH	(6.0 S.U.)		(9.0 S.U.)	2/Day
Total Ammonia (Nov. 1 – April 30)	15 mg/L		53.8 mg/L	1/Week
Total Ammonia (May 1 - 31)	12 mg/L		53.8 mg/L	3/Week
Total Ammonia (June 1 – Oct. 31)	2.0 mg/L		49.4 mg/L	3/Week
Nitrate (Nov. 1 - April 30)	--- mg/L		--- mg/L	1/Week

Parameter	Monthly Average (Minimum)	Weekly Average	Daily Maximum (Maximum)	Measurement Frequency
Nitrate (May 1 - Oct. 31)	--- mg/L		--- mg/L	3/Week
Nitrite (Nov. 1 - April 30)	--- mg/L		--- mg/L	1/Week
Nitrite (May 1 - Oct. 31)	--- mg/L		--- mg/L	3/Week
TKN (Nov. 1 - April 30)	--- mg/L		--- mg/L	1/Week
TKN (May 1 - Oct. 31)	--- mg/L		--- mg/L	3/Week
Total Nitrogen (Nov. 1 – March 31)	--- mg/L		--- mg/L	1/Week
Total Nitrogen (April 1 - 30)	10.0 mg/L		--- mg/L	1/Week
Total Nitrogen (May 1 - Oct. 31)	3.0 mg/L		--- mg/L	3/Week
Total Nitrogen Load (Nov. 1 – March 31)	--- lbs/day			1/Week
Total Nitrogen Load (April 1 - 30)	--- lbs/day			1/Week
Total Nitrogen Load (May 1 - Oct. 31)	400 lbs/day			3/Week
Total Arsenic[2]	17.4 µg/L		1,203 µg/L	1/Week
Total Cadmium[2]	0.68 µg/L		4.7 µg/L	1/Month
Total Copper[2]	30.5 µg/L		66.8 µg/L	1/Week
Total Selenium[2]	17.7 µg/L		70.7 µg/L	1/Week
Total Aluminum[2]	189 µg/L		2,828 µg/L	See Footnote 4
Total Iron[2]	1,970 µg/L		--- µg/L	See Footnote 4
Cyanide[2, 3]	--- µg/L		--- µg/L	1/Quarter
Phenols, Total[2]	--- µg/L		--- µg/L	1/Quarter
Hexavalent Chromium[2]	--- µg/L		--- µg/L	1/Quarter
Total Lead [2]	--- µg/L		--- µg/L	1/Quarter
Total Nickel [2]	--- µg/L		--- µg/L	1/Quarter
Total Zinc [2]	--- µg/L		--- µg/L	1/Quarter
Organic Carbon, Total[2]	--- mg/L		--- mg/L	1/Quarter
Ceriodaphnia sp. (LC_{50})[5]			100% or greater	1/Quarter
Ceriodaphnia sp. (C-NOEC)[6]			25% or greater	1/Quarter
PFAS Analytes[1,7]			--- ng/L	1/Quarter

() Values in parentheses represent the minimum and maximum values.
--- Signifies a parameter which must be monitored, and data must be reported; no limit has been established at this time.
[1]Samples shall be taken on the influent and effluent with appropriate allowances for hydraulic detention (flow-throµgh) time.
[2]Monitoring data may be obtained in conjunction with the bioassay testing required in Part I.B of the permit.
[3]Composite shall be conducted by taking three (3) grab samples per day, with a minimum of three (3) hours between grabs and preserved immediately upon collection. All three (3) samples shall be composited then analyzed for Available Cyanide. Once the permittee receives written notification by DEM that laboratories have been certified by Rhode Island Department of Health to analyze for Free Cyanide, permittee will be required to analyze for Free Cyanide in place of Available Cyanide.
[4]Weekly sampling for Total Iron and/or Total Aluminum is only in effect during months in which Iron based and/or Aluminum based chemicals are used in the treatment process. For all other periods sampling is only required for Total Aluminum on a quarterly basis in accordance with Part I.B of this permit.
[5]LC_{50} is defined as the concentration of wastewater that causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a samples of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
[6]Chronic - No Observed Effects Concentration (C-NOEC) is the concentration of toxicant or effluent to which organisms are exposed in a life-cycle or partial life-cycle which causes no adverse effect on growth, survival or reproduction (see Section I.B.). The limit of 25% or greater is defined as a sample that is composed of 25% effluent.
[7]PFAS shall be analyzed using Clean Water Act wastewater draft analytical method 1633 until a 40 CFR Part 136

approved test method for wastewater is approved. Additionally, report in NetDMR the results of all other PFAS analytes required to be tested as part of the method as shown in Attachment A of the permit.

V. Comment Period, Hearing Requests, and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the Rhode Island Department of Environmental Management, Office of Water Resources, 235 Promenade Street, Providence, Rhode Island, 02908-5767. In accordance with Chapter 46-17.4 of Rhode Island General Laws, a public hearing will be held prior to the close of the public comment period. In reaching a final decision on the draft permit the Director will respond to all significant comments and make these responses available to the public at DEM's Providence office.

Following the close of the comment period, and after a public hearing, the Director will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments, provided oral testimony, or requested notice. Within thirty (30) days following the notice of the final permit decision any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of 250-RICR-150-10-1.50 of the Regulations for the Rhode Island Pollutant Discharge Elimination System.

VI. DEM Contact

Additional information concerning the permit may be obtained between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday, excluding holidays from:

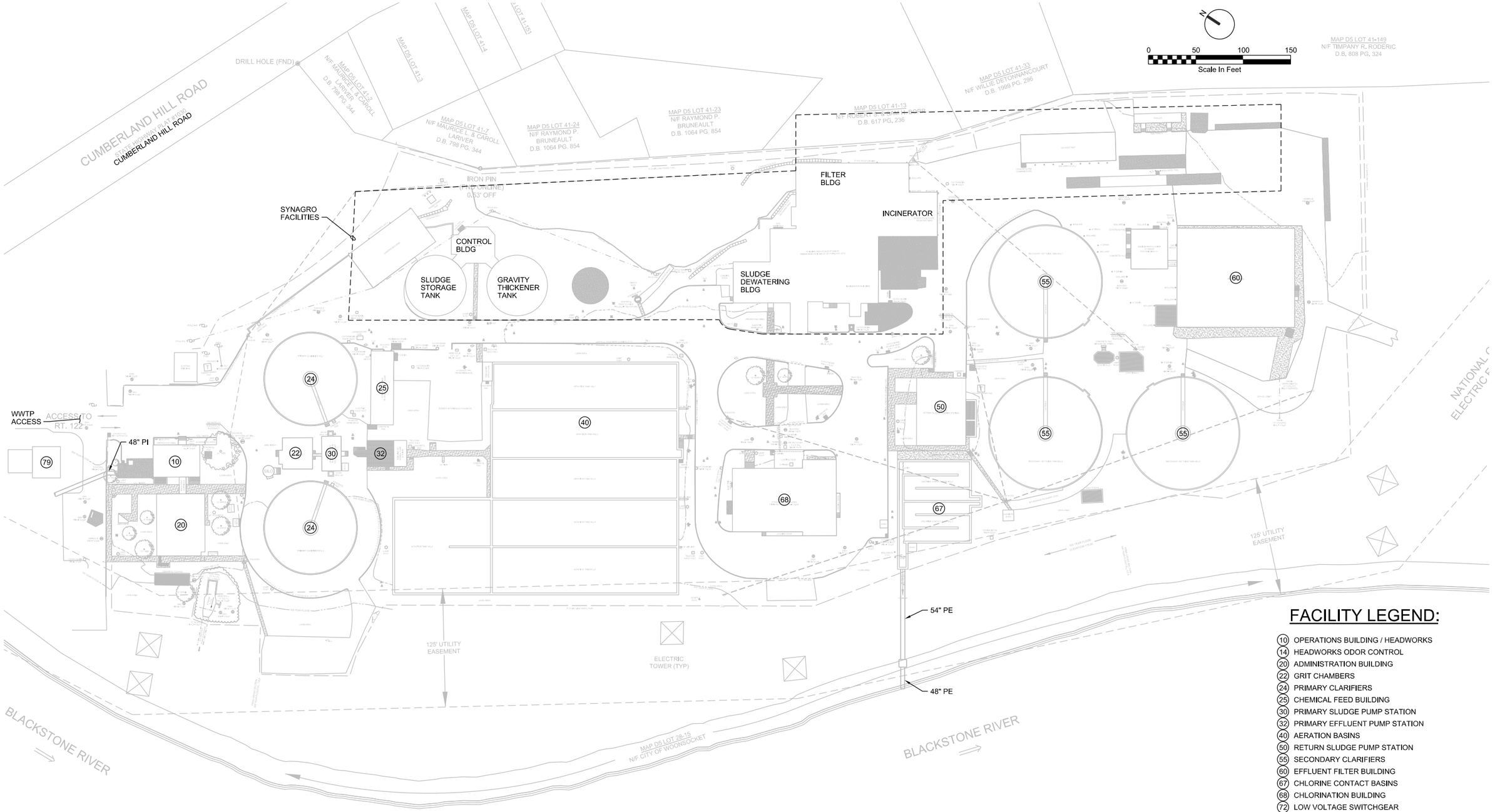
Aaron Mello, Environmental Engineer II
Department of Environmental Management
Office of Water Resources / RIPDES Program
235 Promenade Street
Providence, Rhode Island 02908
Telephone: (401) 537-4255
Email: aaron.mello@dem.ri.gov

03 Feb 2026
Date

Heidi Travers
Heidi Travers, P.E., Environmental Engineer IV
RIPDES Program, Office of Water Resources
Department of Environmental Management

Attachment 1

Overall Site Plan for the Woonsocket Regional WWTF



FACILITY LEGEND:

- (10) OPERATIONS BUILDING / HEADWORKS
- (14) HEADWORKS ODOR CONTROL
- (20) ADMINISTRATION BUILDING
- (22) GRIT CHAMBERS
- (24) PRIMARY CLARIFIERS
- (25) CHEMICAL FEED BUILDING
- (30) PRIMARY SLUDGE PUMP STATION
- (32) PRIMARY EFFLUENT PUMP STATION
- (40) AERATION BASINS
- (50) RETURN SLUDGE PUMP STATION
- (55) SECONDARY CLARIFIERS
- (60) EFFLUENT FILTER BUILDING
- (67) CHLORINE CONTACT BASINS
- (68) CHLORINATION BUILDING
- (72) LOW VOLTAGE SWITCHGEAR
- (79) OLD PUMP HOUSE

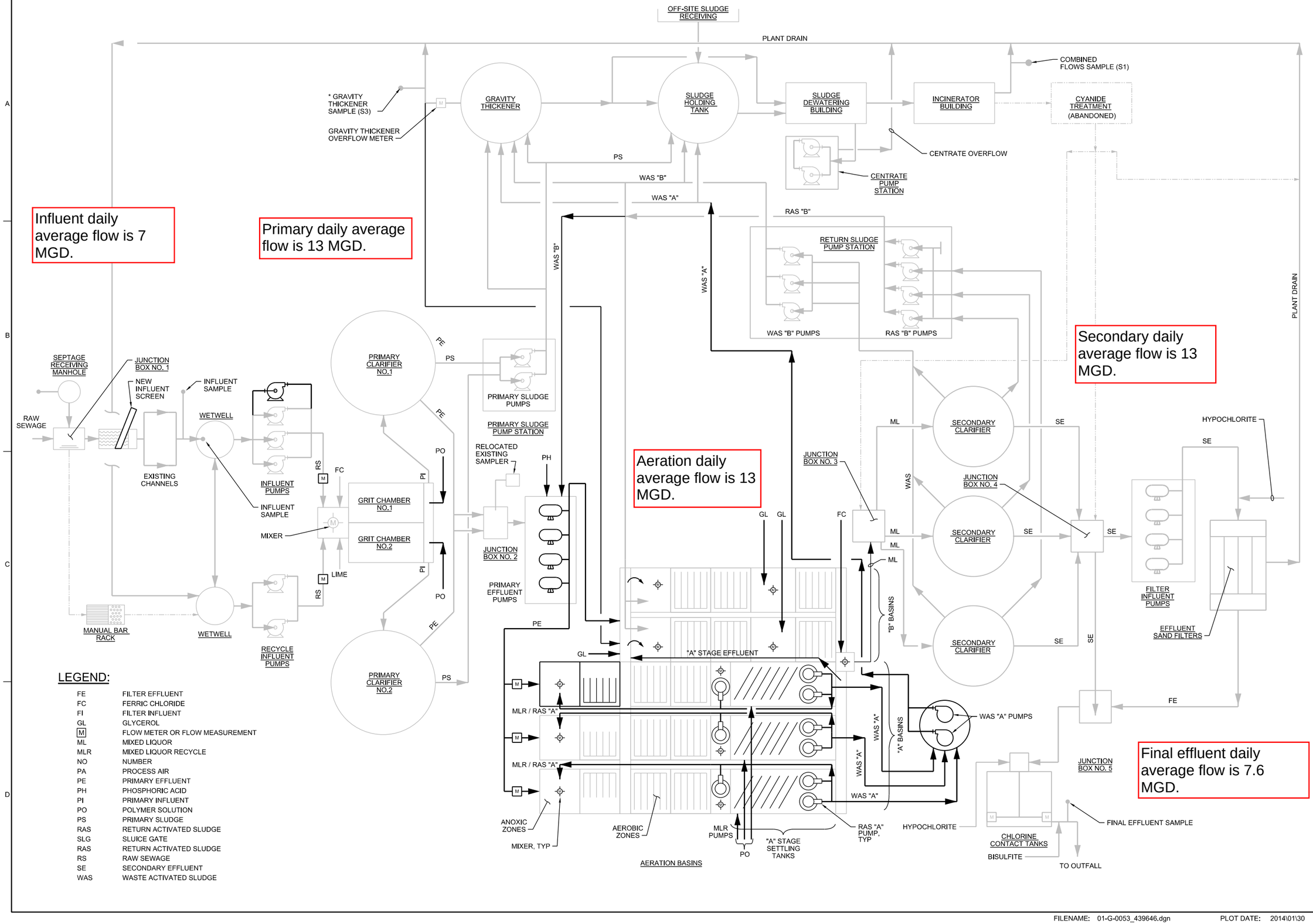
FIGURE 1
OVERALL SITE PLAN
EXISTING PLANT
WOONSOCKET RIPDES, PERMIT APPLICATION 2013
REGIONAL WASTEWATER TREATMENT FACILITY
CITY OF WOONSOCKET, RHODE ISLAND

CH2MHILL®

03-CP-2001_439646.dgn 2013/03/29

Attachment 2

Process Flow Diagram for the Woonsocket Regional WWTF



LEGEND:

FE	FILTER EFFLUENT
FC	FERRIC CHLORIDE
FI	FILTER INFLUENT
GL	GLYCEROL
M	FLOW METER OR FLOW MEASUREMENT
ML	MIXED LIQUOR
MLR	MIXED LIQUOR RECYCLE
NO	NUMBER
PA	PROCESS AIR
PE	PRIMARY EFFLUENT
PH	PHOSPHORIC ACID
PI	PRIMARY INFLUENT
PO	POLYMER SOLUTION
PS	PRIMARY SLUDGE
RAS	RETURN ACTIVATED SLUDGE
SLG	SLUICE GATE
RAS	RETURN ACTIVATED SLUDGE
RS	RAW SEWAGE
SE	SECONDARY EFFLUENT
WAS	WASTE ACTIVATED SLUDGE

DATE OF SIGNING: 01/29/2014

NO.	DATE	REVISION	DR	CHK	APVD	BY	APVD
DSGN	BA ENGLESON		ER BROWN	DW BRUNKOW	APVD	BA ENGLESON	

CITY OF WOONSOCKET, RI
REGIONAL WASTEWATER TREATMENT FACILITY
CAPITAL IMPROVEMENTS

CH2MHILL®

GENERAL

PROCESS FLOW DIAGRAM

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEB 2014
PROJ	439646
DWG	01-G-0053
SHEET	28

FILENAME: 01-G-0053_439646.dgn PLOT DATE: 2014\01\30 PLOT TIME: 8:57:21 AM

Attachment 3

Historical Effluent

Data

DESCRIPTION OF DISCHARGE: Secondary Treated Domestic and Industrial Wastewater.
DISCHARGE: 001A - Secondary Treatment

Discharge EFFLUENT CHARACTERISTICS AT POINT OF

Parameter	Monthly Average[1]	Weekly Average[2]	Daily Maximum[3]
Flow, MGD	7.23		9.77
$CBOD_5$, mg/L			
(Nov.1 – May 31)	2.18	3.83	7.25
(June 1 – Oct. 31)	0.91	2.36	5.03
$CBOD_5$, lbs/day			
(Nov.1 – May 31)	220		625
(June 1 – Oct. 31)	120		277
$CBOD_5$, % removal	98.9		
TSS, mg/L			
(Nov.1 – May 31)	7.17	11.7	19.7
(June 1 – Oct. 31)	3.79	7.71	14.3
TSS, lbs/day			
(Nov.1 – May 31)	519		1470
(June 1 – Oct. 31)	238		762
TSS, % removal	96.8		
Fecal Coliform, MPN/100 ml	1.48[4]	2.50[5]	8.06[6]
Enterococci, CFU/100 ml	3.25[4]		25.9[6]
pH, S.U.	6.27 (minimum)		7.29 (maximum)
Total Residual Chlorine, µg/L	13.2		60.7
Settleable Solids, ml/L		0.276	0.709
Oil & Grease, mg/L			1.75
Phosphorus (Total as P), mg/L			
(Nov.1 – March 31)	0.78		2.01
(April 1 – Oct. 31)	0.12		0.31
Orthophosphorus, mg/L (Nov. 1-Mar 31)	0.529		1.48
Nitrogen, Nitrite (Total as N), mg/L			
(Nov.1 – April 30)	0.08		0.20
(May 1 – Oct. 31)	0.03		0.21

Parameter	Monthly Average[1]	Weekly Average[2]	Daily Maximum[3]
Nitrogen, Nitrate (Total as N), mg/L			
(Nov.1 – April 30)	6.07		9.06
(May 1 – Oct. 31)	0.95		3.44
Nitrogen, Total Kjeldhal (Total as N), mg/L			
(Nov.1 – April 30)	4.55		9.15
(May 1 – Oct. 31)	1.35		5.51
Nitrogen (Total), mg/L			
(Nov.1 – Mar. 31)	11.8		16.5
(April 1 – 30)	6.33		14.3
(May 1 – Oct. 31)	2.31		7.15
Nitrogen (Total as N), lbs/day			
(Nov.1 – Mar. 31)	782		
(April 1 – 30)	410		
(May 1 – Oct. 31)	129		
Ammonia (Total as N), mg/L			
(Nov.1 – April 30)	3.65		7.42
(May 1 – 31)	0.70		5.24
(June 1 – Oct. 31)	0.327		2.85
Aluminum, Total, µg/L	64.2		97.2
Cadmium, Total, µg/L	0.357		0.357
Hexavalent Chromium, µg/L	0		0
Copper, Total, µg/L	7.79		14.2
Cyanide, µg/L[6]	0.580		0.597
Iron, Total, µg/L	877		1514
Lead, Total, µg/L	0.609		1.62
Nickel, Total, µg/L	10.1		10.7
Selenium, Total, µg/L	5.23		10.8
Zinc, Total, µg/L	28.6		31.7

[1]Data represents the mean of the monthly average data from January 2018 – June 2025. [2]Data represents the mean of the weekly average data from January 2018 – June 2025. [3]Data represents the mean of the daily maximum data from January 2018 – June 2025.
[4]Data represents the geometric mean of the monthly average data from January 2018 – June 2025.
[5]Data represents the geometric mean of the weekly average data from January 2018 – June 2025.
[6]Data represents the geometric mean of the daily maximum data from January 2018 – June 2025.

Biotoxicity Data LC50 Values (in percent effluent)

Biotoxicity Data LC50 Values (in percent effluent) Ceriodaphnia sp.

Year	Quarter 1	Quarter 2	Quarter 3	Quarter 4
2018	100	100	100	100
2019	100	100	100	100
2020	100	100	100	100
2021	100	100	100	>100
2022	100	100	100	100
2023	100	100	100	100
2024	100	100	100	100
2025	100	100		

Biotoxicity Data C-NOEC Values (in percent effluent) Ceriodaphnia sp.

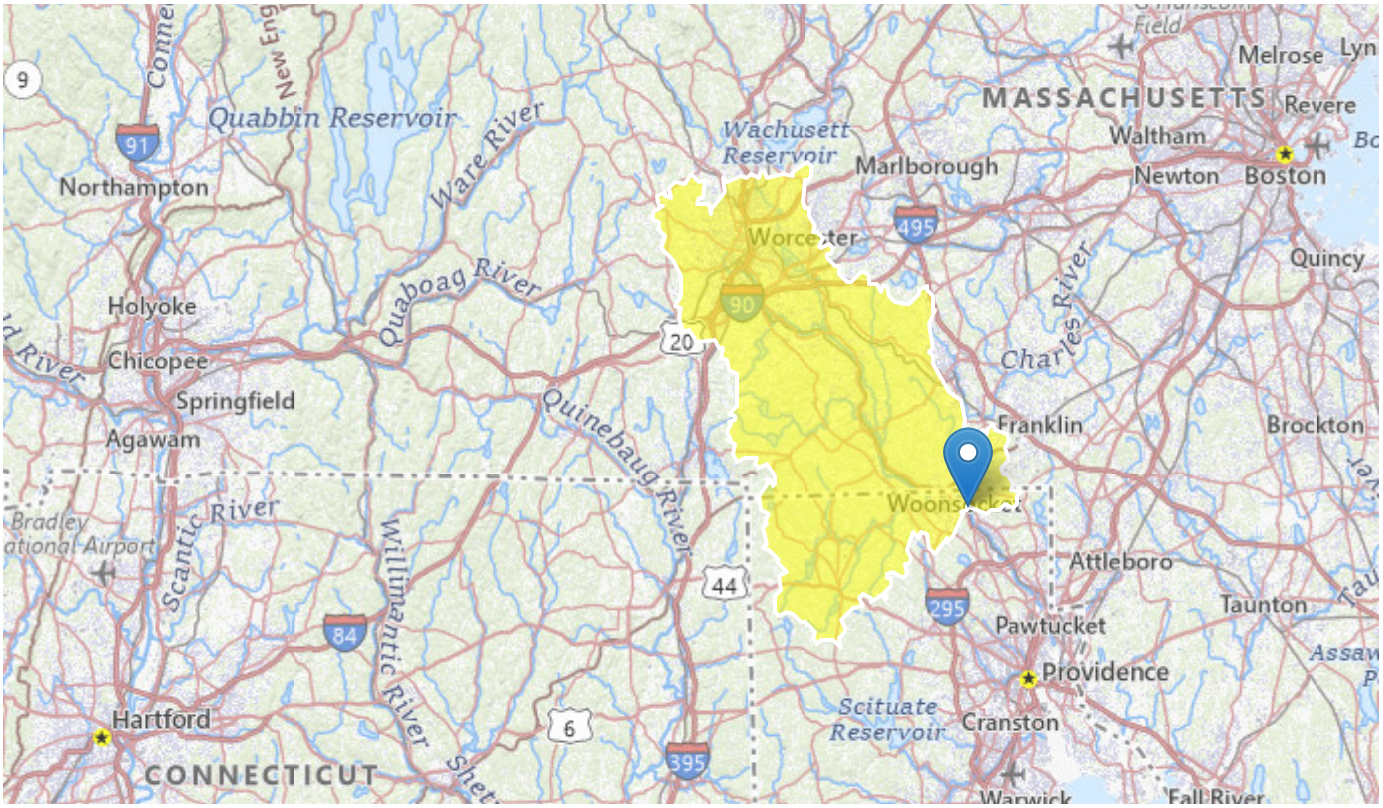
Year	Quarter 1	Quarter 2	Quarter 3	Quarter 4
2018	100	100	100	100
2019	100	50	100	25
2020	100	100	100	100
2021	100	100	100	100
2022	50	50	100	100
2023	50	50	50	50
2024	100	50	100	50
2025	100	100		

Attachment 4

USGS StreamStats Report used to determine the Upstream Drainage Area to the WWTF

StreamStats Report

Region ID: RI
Workspace ID: RI20250822182823693000
Clicked Point (Latitude, Longitude): 41.99898, -71.49577
Time: 2025-08-22 14:28:45 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	420	square miles
STRDENED	Stream Density -- total length of streams divided by drainage area, edited from NHD	2.37	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Statewide Low Flow 2014 5010]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	420	square miles	0.52	294
STRDENED	Stream Density Edited	2.37	miles per square mile	0.94	3.49

Low-Flow Statistics Disclaimers [Statewide Low Flow 2014 5010]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Statewide Low Flow 2014 5010]

Statistic	Value	Unit
7 Day 2 Year Low Flow	162	ft^3/s
7 Day 10 Year Low Flow	107	ft^3/s

Low-Flow Statistics Citations

Bent, G.C., Steeves, P.A., and Waite, A.M.,2014, Equations for estimating selected streamflow statistics in Rhode Island: U.S. Geological Survey Scientific Investigations Report 2014–5010, 65 p. (http://dx.doi.org/10.3133/sir20145010)

imply endorsement by the U.S. Government.

Application Version: 4.29.2

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

Attachment 5

USGS StreamStats Gage Report used to determine the Harmonic Mean Streamflow

StreamStats Gage Page

Gage Information

Name	Value
USGS Station Number	**01112500 (https://waterdata.usgs.gov/monitoring-location/01112500)**
Station Name	BLACKSTONE RIVER AT WOONSOCKET, RI
Station Type	Gaging Station, continuous record
Latitude	42.00620944
Longitude	-71.5031169
NWIS Latitude	42.0064871
NWIS Longitude	-71.5025613
Is regulated?	false
Agency	United States Geological Survey
NWIS Discharge Period of Record	02/22/1929 - 08/21/2025

Physical Characteristics

Filter By Statistic Group: Select Filter By Citation: Select

Basin Dimensional Characteristics

Characteristic Name	Value	Units	Citation
Contributing Drainage Area	416	square miles	**193**
Drainage Area	416	square miles	**193**

Streamflow Statistics

Filter By Statistic Group: Select Filter By Citation: Select Show Only Preferred

Peak-Flow Statistics

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Variance	Lower 90% Prediction Interval	Upper 90% Prediction Interval	Citation	Comments
20-percent AEP flood	9160	cubic feet per second	✓	82	7.29	0.001	8290	10300	**44**	
10-percent AEP flood	11800	cubic feet per second	✓	82	10.32	0.002	10500	13600	**44**	
4-percent AEP flood	15800	cubic feet per second	✓	82	12.66	0.003	13800	18800	**44**	
2-percent AEP flood	19300	cubic feet per second	✓	82	14.64	0.004	16400	23500	**44**	
1-percent AEP flood	23100	cubic feet per second	✓	82	17.98	0.006	19400	28900	**44**	
0.5-percent AEP flood	27500	cubic feet per second	✓	82	22.11	0.009	22700	35100	**44**	
0.2-percent AEP flood	34200	cubic feet per second	✓	82	25.63	0.012	27500	44900	**44**	
Regression est 20-percent AEP flood	9530	cubic feet per second	✓		27.76	0.014			**44**	
Regression est 10-percent AEP flood	12500	cubic feet per second	✓		26.71	0.013			**44**	
Regression est 4-percent AEP flood	17000	cubic feet per second	✓		24.51	0.011			**44**	
Regression est 2-percent AEP flood	20000	cubic feet per second	✓		24.51	0.011			**44**	
Regression est 1-percent AEP flood	23400	cubic feet per second	✓		24.51	0.011			**44**	

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Variance	Lower 90% Prediction Interval	Upper 90% Prediction Interval	Citation	Comments
Regression est 0.5-percent AEP flood	27400	cubic feet per second	✓		26.71	0.013			**44**	
Regression est 0.2-percent AEP flood	33100	cubic feet per second	✓		29.75	0.016			**44**	
Weighted 20-percent AEP flood	9180	cubic feet per second	✓		7.29	0.001			**44**	
Weighted 10-percent AEP flood	11900	cubic feet per second	✓		7.29	0.001			**44**	
Weighted 4-percent AEP flood	16000	cubic feet per second	✓		10.32	0.002			**44**	
Weighted 2-percent AEP flood	19500	cubic feet per second	✓		12.66	0.003			**44**	
Weighted 1-percent AEP flood	23200	cubic feet per second	✓		14.64	0.004			**44**	
Weighted 0.5-percent AEP flood	27500	cubic feet per second	✓		16.39	0.005			**44**	
Weighted 0.2-percent AEP flood	33700	cubic feet per second	✓		19.44	0.007			**44**	
Regional skew	0.52	Log base 10	✓						**44**	
Regional skew mean squared error	0.215	Log base 10 squared	✓						**44**	

Flow-Duration Statistics

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Citation	Comments
1 Percent Duration	3900	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
2 Percent Duration	3090	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
3 Percent Duration	2680	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
5 Percent Duration	2250	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
10 Percent Duration	1690	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
15 Percent Duration	1390	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
20 Percent Duration	1170	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
25 Percent Duration	1020	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
30 Percent Duration	894	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
35 Percent Duration	785	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
40 Percent Duration	694	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
45 Percent Duration	616	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
50 Percent Duration	544	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Citation	Comments
55 Percent Duration	476	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
60 Percent Duration	414	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
65 Percent Duration	355	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
70 Percent Duration	304	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
75 Percent Duration	261	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
80 Percent Duration	223	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
85 Percent Duration	190	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
90 Percent Duration	160	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
95 Percent Duration	129	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
97 Percent Duration	111	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
98 Percent Duration	100	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
99 Percent Duration	83	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015

Annual Flow Statistics

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Citation	Comments
Mean Annual Flow	788	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
Stand Dev of Mean Annual Flow	203	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
Maximum Annual Mean Flow	1250	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
Minimum Annual Mean Flow	345	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015

General Flow Statistics

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Citation	Comments
Minimum daily flow	21	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
Maximum daily flow	25900	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
Std Dev of daily flows	839	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
Harmonic Mean Streamflow adjusted for proportion of zero flow days	359	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
Mean_of_Logs_of_Daily_Values	2.722662	Log base 10	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
Std_Dev_of_Logs_of_Daily_Values	0.391068	Log base 10	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Citation	Comments
Skew_of_Logs_of_Daily_Values	0.052466	Log base 10	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015
Non_Zero_Adjusted_Harmonic_Mean_Flow	359	cubic feet per second	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015

Base Flow Statistics

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Citation	Comments
Number of years to compute BFI	74	years	✓	75		**87**	
Average BFI value	0.585	dimensionless	✓	75		**87**	
Std dev of annual BFI values	0.068	dimensionless	✓	75		**87**	

Probability Statistics

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Citation	Comments
Probability zero flow durations	0	dimensionless	✓	86		**52**	Statistic Date Range 10/1/1929 - 9/30/2015

Citations

ID	Citation
193	**Imported from NWIS file (http://waterdata.usgs.gov/nwis/si)**

ID	Citation
44	**Zarriello, P.J., Ahearn, E.A., and Levin, S.B., 2012, Magnitude of flood flows for selected annual exceedance probabilities in Rhode Island through 2010: U.S. Geological Survey Scientific Investigations Report 2012–5109, 93 p. (http://pubs.usgs.gov/sir/2012/5109)**
52	**Granato G.E., Ries, K.G., III, and Steeves, P.A., 2017, Compilation of streamflow statistics calculated from daily mean streamflow data collected during water years 1901–2015 for selected U.S. Geological Survey streamgages: U.S. Geological Survey Open-File Report 2017-1108, 17 p. (https://pubs.er.usgs.gov/publication/ofr20171108)**
87	**Wolock, D.M., 2003, Base-flow index grid for the conterminous United States: U.S. Geological Survey Open-File Report 03-263, digital data set (https://water.usgs.gov/GIS/metadata/usgswrd/XML/bfi48grd.xml)**

Attachment 6

Summary of DEM's Ambient River Monitoring Program Data in the Blackstone River at Sampling Location BSN11

Waterbody	Station	StationType	SampleDate	Parameter	Result	Unit	Reported Result	DetectionLimit	Quantitation Level	Average	Maximum
Blackstone River	BSN11	Grab	7/25/2019 0:00	Aluminum	87.6	Micrograms per Liter	87.6	5.44	5.44	**45.8**	**87.6**
Blackstone River	BSN11	Grab	9/23/2019 0:00	Aluminum	24.7	Micrograms per Liter	24.7	5.44	5.44		
Blackstone River	BSN11	Grab	10/16/2019 0:00	Aluminum	25.1	Micrograms per Liter	25.1	5.44	5.44		
Blackstone River	BSN11	Grab	7/25/2019 0:00	Chloride	80.4	Milligrams per Liter	80.4	0.09	0.2	**98.8**	**111**
Blackstone River	BSN11	Grab	9/23/2019 0:00	Chloride	111	Milligrams per Liter	111	0.09	0.2		
Blackstone River	BSN11	Grab	10/16/2019 0:00	Chloride	105	Milligrams per Liter	105	0.09	0.2		
Blackstone River	BSN11	Grab	7/25/2019 0:00	Copper, Dissolved	4.62	Micrograms per Liter	4.62	0.042	0.042	**4.98**	**5.76**
Blackstone River	BSN11	Grab	9/23/2019 0:00	Copper, Dissolved	5.76	Micrograms per Liter	5.76	0.042	0.042		
Blackstone River	BSN11	Grab	10/16/2019 0:00	Copper, Dissolved	4.57	Micrograms per Liter	4.57	0.042	0.042		
Blackstone River	BSN11	Grab	7/25/2019 0:00	Hardness	45.7	Milligrams per Liter	45.7	1.18	6.62	**63.33**	**78.2**
Blackstone River	BSN11	Grab	9/23/2019 0:00	Hardness	66.1	Milligrams per Liter	66.1	1.18	6.62		
Blackstone River	BSN11	Grab	10/16/2019 0:00	Hardness	78.2	Milligrams per Liter	78.2	1.18	6.62		
Blackstone River	BSN11	Grab	7/25/2019 0:00	Iron	1050	Micrograms per Liter	1050	5.04	11.1	**587.33**	**1050**
Blackstone River	BSN11	Grab	9/23/2019 0:00	Iron	384	Micrograms per Liter	384	5.04	11.1		
Blackstone River	BSN11	Grab	10/16/2019 0:00	Iron	328	Micrograms per Liter	328	5.04	11.1		
Blackstone River	BSN11	Grab	7/25/2019 0:00	Lead, Dissolved	1.03	Micrograms per Liter	1.03	0.051	0.051	**0.687**	**1.03**
Blackstone River	BSN11	Grab	9/23/2019 0:00	Lead, Dissolved	0.565	Micrograms per Liter	0.565	0.051	0.051		
Blackstone River	BSN11	Grab	10/16/2019 0:00	Lead, Dissolved	0.466	Micrograms per Liter	0.466	0.051	0.051		
Blackstone River	BSN11	Grab	7/25/2019 0:00	Nitrogen, Ammonia Total as N	0.05	Milligrams per Liter	0.08	0.1	0.1	**0.063**	**0.08**
Blackstone River	BSN11	Grab	9/26/2019 0:00	Nitrogen, Ammonia Total as N	0.05	Milligrams per Liter	0.06	0.1	0.1		
Blackstone River	BSN11	Grab	10/17/2019 0:00	Nitrogen, Ammonia Total as N	0.05	Milligrams per Liter	0.05	0.1	0.1		

Source:	DEM Ambient River Monitoring Program	
WBID:	RI0001003R-01A	
WB Description:	Blackstone River from the MA-RI border to the CSO outfall located at River and Samoset Streets in Central Falls. Woonsocket, North Smithfield, Cumberland, Lincoln and Central Falls.	
Station Location:	Lat	Long
	42.00649	-71.5032

Attachment 7

Calculation of Allowable Acute and Chronic Discharge Limitations Based on Freshwater Aquatic Life Criteria and Human Health Criteria

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY SPECIFIC DATA INPUT SHEET

NOTE: LIMITS BASED ON RI WATER QUALITY CRITERIA FROM THE DECEMBER 2023 WATER QUALITY REGULATIONS (250-RICR-150-05-1.26)

FACILITY NAME: **Woonsocket Regional WWTF**

RIPDES PERMIT #: **RI0100111**

	DISSOLVED BACKGROUND DATA (ug/L)	ACUTE METAL TRANSLATOR	CHRONIC METAL TRANSLATOR
ALUMINUM	**45.8**	**NA**	**NA**
ARSENIC	**NA**	**1**	**1**
CADMIUM	**NA**	**0.96346456**	**0.92846456**
CHROMIUM III	**NA**	**0.316**	**0.86**
CHROMIUM VI	**NA**	**0.982**	**0.962**
COPPER	**4.98**	**0.96**	**0.96**
LEAD	**0.687**	**0.858788866**	**0.858788866**
MERCURY	**NA**	**0.85**	**0.85**
NICKEL	**NA**	**0.998**	**0.997**
SELENIUM	**NA**	**NA**	**NA**
SILVER	**NA**	**0.85**	**NA**
ZINC	**NA**	**0.978**	**0.986**
AMMONIA (as N)	**0.063**		

USE NA WHEN NO DATA IS AVAILABLE

NOTE 1: METAL TRANSLATORS FROM RI WATER QUALITY REGS.

pH =	**7.0**	S.U.
HARDNESS =	**62.8**	(mg/L as CaCO3)

FLOW DATA			
DESIGN FLOW	=	**16.000**	MGD
	=	24.757	CFS
7Q10 FLOW	=	**84.700**	CFS
7Q10 (JUNE-OCT)	=	**84.700**	CFS
7Q10 (NOV-MAY)	=	**126.200**	CFS
HARMONIC FLOW	=	**359.000**	CFS
HARMONIC FLOW	=	**359.000**	CFS

DILUTION FACTORS		
ACUTE	=	**4.421**
CHRONIC	=	**4.421**
(MAY-OCT)	=	**4.421**
(NOV-APR)	=	**6.097**
HARMONIC FLOW	=	**15.501**
HARMONIC FLOW	=	**15.501**

WATER QUALITY BASED EFFLUENT LIMITS - FRESHWATER

Woonsocket WWTF Design Flow = 24.76 cfs

Month	pH	Temperature (oC)	Chronic Criteria (mg/l)	Acute Criteria (mg/l)	WLA Flow (cfs)	Dilution Factor	Monthly Ave Limit	Daily Max Limit	DO Based Ave Limit	Previous Max Limit	Final Limits: Monthly Ave Limit (mg/l)	Final Limits: Daily Max Limit (mg/l)
May	7.22	16.7	4.9	29.5	126.2	6.10	26.57	161.57	12.0	53.8	12.0	53.8
June	7	23	3.21	36.1	84.7	4.42	12.56	143.43	2.0	49.4	2.0	49.4
July	7.4	25.5	2.26	23	84.7	4.42	8.78	91.30	2.0	49.4	2.0	49.4
August	7.2	25.2	2.57	29.5	84.7	4.42	10.01	117.17	2.0	49.4	2.0	49.4
Sept	7.19	20.9	3.78	29.5	84.7	4.42	14.83	117.17	2.0	49.4	2.0	49.4
Oct	7.04	15.9	5.37	36.1	84.7	4.42	21.15	143.43	2.0	49.4	2.0	49.4
Nov	7.06	11.1	7.41	32.8	126.2	6.10	40.34	179.68	15.0	53.8	15.0	53.8
Dec	7.8	4.1	5.17	12.10	126.2	6.10	28.05	66.08	15.0	53.8	15.0	53.8
January	7.72	4.7	5.81	14.40	126.2	6.10	31.56	78.70	15.0	53.8	15.0	53.8
February	7.26	3.2	8.24	26.2	126.2	6.10	44.90	143.46	15.0	53.8	15.0	53.8
March	7.3	5.4	8.24	26.2	126.2	6.10	44.90	143.46	15.0	53.8	15.0	53.8
April	7.11	12.5	6.25	32.8	126.2	6.10	33.98	179.68	15.0	53.8	15.0	53.8

Chronic criteria derived using early life stages present May 1 - September 30 and acute criteria devloped using salmonids absent
pH values represent upper 90% from previous permit (note: no new data has been gathered since the previous permit was issued)
Temperatures represent upper 90% from previous permit (note: no new data has been gathered since the previous permit was issued)
River Flows from "Blackstone River Watershed Dissolved Oxygen Wasteload Allocation for Massachusetts and Rhode Island" (November 1997)
Ammonia background concentration of 0.063 mg/L obtained from the DEM's Ambient River Monitoring Program 2019 sampling efforts

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: Woonsocket Regional WWTF RIPDES PERMIT #: RI0100111

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
PRIORITY POLLUTANTS:							
TOXIC METALS AND CYANIDE							
ANTIMONY	7440360		450	1591.632864	10	640	35.3696192
ARSENIC (limits are total recoverable)	7440382	NA	340	1202.567053	150	1.4	17.36081536
ASBESTOS	1332214			No Criteria			No Criteria
BERYLLIUM	7440417		7.5	26.5272144	0.17		0.601283526
CADMIUM (limits are total recoverable)	7440439	NA	1.280766533	4.701804972	0.178007365		0.678114489
CHROMIUM III (limits are total recoverable)	16065831	NA	389.2454571	4356.792276	50.63283685		208.2400184
CHROMIUM VI (limits are total recoverable)	18540299	NA	16	57.62870745	11		40.44343152
COPPER (limits are total recoverable) NOTE: Site specific criteria used [250-RICR-150-05-1.26(J)(1)])	7440508	4.98	20.41	66.84945722	14.45		42.14598881
CYANIDE	57125		22	77.81316224	5.2	140	18.39220198
LEAD (limits are total recoverable)	7439921	0.687	38.78100757	176.9497199	1.511240189		4.265289144
MERCURY (limits are total recoverable)	7439976	NA	1.4	5.825584339	0.77	0.15	2.188338071
NICKEL (limits are total recoverable)	7440020	NA	315.8918757	1119.536608	35.08583484	4600	124.4706738
SELENIUM (limits are total recoverable)	7782492	NA	20	70.7392384	5	4200	17.6848096
SILVER (limits are total recoverable)	7440224	NA	1.549920744	6.449424296	NA		No Criteria
THALLIUM	7440280		46	162.7002483	1	0.47	3.53696192
ZINC (limits are total recoverable)	7440666	NA	79.00714764	285.7313626	79.65342287	26000	285.7313626
VOLATILE ORGANIC COMPOUNDS							
ACROLEIN	107028		2.9	10.25718957	0.06	290	0.212217715
ACRYLONITRILE	107131		378	1336.971606	8.4	2.5	29.71048013
BENZENE	71432		265	937.2949088	5.9	510	20.86807533
BROMOFORM	75252		1465	5181.649213	33	1400	116.7197434
CARBON TETRACHLORIDE	56235		1365	4827.953021	30	16	106.1088576
CHLOROBENZENE	108907		795	2811.884726	18	1600	63.66531456
CHLORODIBROMOMETHANE	124481			No Criteria		130	1612.075712
CHLOROFORM	67663		1445	5110.909974	32	4700	113.1827814
DICHLOROBROMOMETHANE	75274			No Criteria		170	2108.099008
1,2DICHLOROETHANE	107062		5900	20868.07533	131	370	463.3420115
1,1DICHLOROETHYLENE	75354		580	2051.437914	13	7100	45.98050496
1,2DICHLOROPROPANE	78875		2625	9284.52504	58	150	205.1437914
1,3DICHLOROPROPYLENE	542756			No Criteria		21	260.4122304
ETHYLBENZENE	100414		1600	5659.139072	36	2100	127.3306291
BROMOMETHANE (methyl bromide)	74839			No Criteria		1500	18600.8736
CHLOROMETHANE (methyl chloride)	74873			No Criteria			No Criteria
METHYLENE CHLORIDE	75092		9650	34131.68253	214	5900	756.9098509

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: Woonsocket Regional WWTF RIPDES PERMIT #: RI0100111

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
1,1,2,2TETRACHLOROETHANE	79345		466	1648.224255	10	40	35.3696192
TETRACHLOROETHYLENE	127184		240	848.8708608	5.3	33	18.74589818
TOLUENE	108883		635	2245.970819	14	15000	49.51746688
1,2TRANSDICHLOROETHYLENE	156605			No Criteria		10000	124005.824
1,1,1TRICHLOROETHANE	71556			No Criteria			No Criteria
1,1,2TRICHLOROETHANE	79005		900	3183.265728	20	160	70.7392384
TRICHLOROETHYLENE	79016		1950	6897.075744	43	300	152.0893626
VINYL CHLORIDE	75014			No Criteria		2.4	29.76139776
2CHLOROPHENOL	95578		129	456.2680877	2.9	150	10.25718957
2,4DICHLOROPHENOL	120832		101	357.2331539	2.2	290	7.781316224
2,4DIMETHYLPHENOL	105679		106	374.9179635	2.4	850	8.488708608
4,6DINITRO2METHYL PHENOL	534521			No Criteria		280	3472.163072
2,4DINITROPHENOL	51285		31	109.6458195	0.69	5300	2.440503725
4NITROPHENOL	88755			No Criteria			No Criteria
PENTACHLOROPHENOL	87865		0.054292982	0.192032211	0.041653899	30	0.147328255
PHENOL	108952		251	887.7774419	5.6	1700000	19.80698675
2,4,6TRICHLOROPHENOL	88062		16	56.59139072	0.36	24	1.273306291
ACENAPHTHENE	83329		85	300.6417632	1.9	990	6.720227648
ANTHRACENE	120127			No Criteria		40000	496023.296
BENZIDINE	92875			No Criteria		0.002	0.024801165
POLYCYCLIC AROMATIC HYDROCARBONS				No Criteria		0.18	2.232104832
BIS(2CHLOROETHYL)ETHER	111444			No Criteria		5.3	65.72308672
BIS(2CHLOROISOPROPYL)ETHER	108601			No Criteria		65000	806037.856
BIS(2ETHYLHEXYL)PHTHALATE	117817		555	1963.013866	12	22	42.44354304
BUTYL BENZYL PHTHALATE	85687		85	300.6417632	1.9	1900	6.720227648
2CHLORONAPHTHALENE	91587			No Criteria		1600	19840.93184
1,2DICHLOROBENZENE	95501		79	279.4199917	1.8	1300	6.366531456
1,3DICHLOROBENZENE	541731		390	1379.415149	8.7	960	30.7715687
1,4DICHLOROBENZENE	106467		56	198.0698675	1.2	190	4.244354304
3,3DICHLOROBENZIDENE	91941			No Criteria		0.28	3.472163072
DIETHYL PHTHALATE	84662		2605	9213.785802	58	44000	205.1437914
DIMETHYL PHTHALATE	131113		1650	5835.987168	37	1100000	130.867591
DI-n-BUTYL PHTHALATE	84742			No Criteria		4500	55802.6208
2,4DINITROTOLUENE	121142		1550	5482.290976	34	34	120.2567053

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: Woonsocket Regional WWTF RIPDES PERMIT #: RI0100111

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
1,2DIPHENYLHYDRAZINE	122667		14	49.51746688	0.31	2	1.096458195
FLUORANTHENE	206440		199	703.8554221	4.4	140	15.56263245
FLUORENE	86737			No Criteria		5300	65723.08672
HEXACHLOROBENZENE	118741			No Criteria		0.0029	0.035961689
HEXACHLOROBUTADIENE	87683			No Criteria		180	2232.104832
HEXACHLOROCYCLOPENTADIENE	77474		0.35	1.237936672	0.008	1100	0.028295695
HEXACHLOROETHANE	67721		49	173.3111341	1.1	33	3.890658112
ISOPHORONE	78591		5850	20691.22723	130	9600	459.8050496
NAPHTHALENE	91203		115	406.7506208	2.6		9.196100992
NITROBENZENE	98953		1350	4774.898592	30	690	106.1088576
N-NITROSODIMETHYLAMINE	62759			No Criteria		30	372.017472
N-NITROSODI-N-PROPYLAMINE	621647			No Criteria		5.1	63.24297024
N-NITROSODIPHENYLAMINE	86306		293	1036.329843	6.5	60	22.99025248
PYRENE	129000			No Criteria		4000	49602.3296
1,2,4trichlorobenzene	120821		75	265.272144	1.7	70	6.012835264
ALDRIN	309002		3	10.61088576		0.0005	0.006200291
Alpha BHC	319846			No Criteria		0.049	0.607628538
Beta BHC	319857			No Criteria		0.17	2.108099008
Gamma BHC (Lindane)	58899		0.95	3.360113824		1.8	22.32104832
CHLORDANE	57749		2.4	8.488708608	0.0043	0.0081	0.015208936
4,4DDT	50293		1.1	3.890658112	0.001	0.0022	0.003536962
4,4DDE	72559			No Criteria		0.0022	0.027281281
4,4DDD	72548			No Criteria		0.0031	0.038441805
DIELDRIN	60571		0.24	0.848870861	0.056	0.00054	0.006696314
ENDOSULFAN (alpha)	959988		0.22	0.778131622	0.056	89	0.198069868
ENDOSULFAN (beta)	33213659		0.22	0.778131622	0.056	89	0.198069868
ENDOSULFAN (sulfate)	1031078			No Criteria		89	1103.651834
ENDRIN	72208		0.086	0.304178725	0.036	0.06	0.127330629
ENDRIN ALDEHYDE	7421934			No Criteria		0.3	3.72017472
HEPTACHLOR	76448		0.52	1.839220198	0.0038	0.00079	0.00979646
HEPTACHLOR EPOXIDE	1024573		0.52	1.839220198	0.0038	0.00039	0.004836227
POLYCHLORINATED BIPHENYLS3	1336363			No Criteria	0.014	0.00064	0.007936373
2,3,7,8TCDD (Dioxin)	1746016			No Criteria		0.000000051	6.3243E-07
TOXAPHENE	8001352		0.73	2.581982202	0.0002	0.0028	0.000707392
TRIBUTYLTIN			0.46	1.627002483	0.072		0.254661258

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: Woonsocket Regional WWTF RIPDES PERMIT #: RI0100111

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
ALUMINUM (limits are total recoverable)	7429905	45.8	750	2827.62055	87		189.489078
AMMONIA as N(winter/summer)	7664417			CALCULATED SEPERATELY			
4BROMOPHENYL PHENYL ETHER			18	63.66531456	0.4		1.414784768
CHLORIDE	16887006	98800	860000	3083995.86	230000		577174.0997
CHLORINE	7782505		19	84.0028456	11		48.6332264
4CHLORO2METHYLPHENOL			15	53.0544288	0.32		1.131827814
1CHLORONAPHTHALENE			80	282.9569536	1.8		6.366531456
4CHLOROPHENOL	106489		192	679.0966886	4.3		15.20893626
2,4DICHLORO6METHYLPHENOL			22	77.81316224	0.48		1.697741722
1,1DICHLOROPROPANE			1150	4067.506208	26		91.96100992
1,3DICHLOROPROPANE	142289		303	1071.699462	6.7		23.69764486
2,3DINITROTOLUENE			17	60.12835264	0.37		1.30867591
2,4DINITRO6METHYL PHENOL			12	42.44354304	0.26		0.919610099
IRON	7439896	587.33		No Criteria	1000		1969.707354
pentachlorobenzene	608935		13	45.98050496	0.28		0.990349338
PENTACHLOROETHANE			362	1280.380215	8		28.29569536
1,2,3,5tetrachlorobenzene			321	1135.364776	7.1		25.11242963
1,1,1,2TETRACHLOROETHANE	630206		980	3466.222682	22		77.81316224
2,3,4,6TETRACHLOROPHENOL	58902		7	24.75873344	0.16		0.565913907
2,3,5,6TETRACHLOROPHENOL			8.5	30.06417632	0.19		0.672022765
2,4,5TRICHLOROPHENOL	95954		23	81.35012416	0.51		1.803850579
2,4,6TRINITROPHENOL	88062		4235	14979.03373	94		332.4744205
XYLENE	1330207		133	470.4159354	3		10.61088576

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: Woonsocket WWTF RIPDES PERMIT #: RI0100111

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
PRIORITY POLLUTANTS:			
TOXIC METALS AND CYANIDE			
ANTIMONY	7440360	1591.63	35.37
ARSENIC, TOTAL	7440382	1202.57	17.36
ASBESTOS	1332214	No Criteria	0.00
BERYLLIUM	7440417	26.53	0.60
CADMIUM, TOTAL	7440439	4.70	0.68
CHROMIUM III, TOTAL	16065831	4356.79	208.24
CHROMIUM VI, TOTAL	18540299	57.63	40.44
COPPER, TOTAL	7440508	66.85	42.15
CYANIDE	57125	77.81	18.39
LEAD, TOTAL	7439921	176.95	4.27
MERCURY, TOTAL	7439976	5.83	2.19
NICKEL, TOTAL	7440020	1119.54	124.47
SELENIUM, TOTAL	7782492	70.74	17.68
SILVER, TOTAL	7440224	6.45	6.45
THALLIUM	7440280	162.70	3.54
ZINC, TOTAL	7440666	285.73	285.73
VOLATILE ORGANIC COMPOUNDS			
ACROLEIN	107028	10.26	0.21
ACRYLONITRILE	107131	1336.97	29.71
BENZENE	71432	937.29	20.87
BROMOFORM	75252	5181.65	116.72
CARBON TETRACHLORIDE	56235	4827.95	106.11
CHLOROBENZENE	108907	2811.88	63.67
CHLORODIBROMOMETHANE	124481	No Criteria	1612.08
CHLOROFORM	67663	5110.91	113.18
DICHLOROBROMOMETHANE	75274	No Criteria	2108.10
1,2DICHLOROETHANE	107062	20868.08	463.34
1,1DICHLOROETHYLENE	75354	2051.44	45.98
1,2DICHLOROPROPANE	78875	9284.53	205.14
1,3DICHLOROPROPYLENE	542756	No Criteria	260.41
ETHYLBENZENE	100414	5659.14	127.33
BROMOMETHANE (methyl bromide)	74839	No Criteria	18600.87
CHLOROMETHANE (methyl chloride)	74873	No Criteria	0.00
METHYLENE CHLORIDE	75092	34131.68	756.91
1,1,2,2TETRACHLOROETHANE	79345	1648.22	35.37
TETRACHLOROETHYLENE	127184	848.87	18.75
TOLUENE	108883	2245.97	49.52
1,2TRANSDICHLOROETHYLENE	156605	No Criteria	124005.82
1,1,1TRICHLOROETHANE	71556	No Criteria	0.00
1,1,2TRICHLOROETHANE	79005	3183.27	70.74
TRICHLOROETHYLENE	79016	6897.08	152.09
VINYL CHLORIDE	75014	No Criteria	29.76
ACID ORGANIC COMPOUNDS			
2CHLOROPHENOL	95578	456.27	10.26
2,4DICHLOROPHENOL	120832	357.23	7.78
2,4DIMETHYLPHENOL	105679	374.92	8.49
4,6DINITRO2METHYL PHENOL	534521	No Criteria	3472.16
2,4DINITROPHENOL	51285	109.65	2.44
4NITROPHENOL	88755	No Criteria	0.00
PENTACHLOROPHENOL	87865	0.19	0.15
PHENOL	108952	887.78	19.81
2,4,6TRICHLOROPHENOL	88062	56.59	1.27
BASE NEUTRAL COMPUNDS			
ACENAPHTHENE	83329	300.64	6.72
ANTHRACENE	120127	No Criteria	496023.30
BENZIDINE	92875	No Criteria	0.02
PAHs		No Criteria	2.23
BIS(2CHLOROETHYL)ETHER	111444	No Criteria	65.72
BIS(2CHLOROISOPROPYL)ETHER	108601	No Criteria	806037.86
BIS(2ETHYLHEXYL)PHTHALATE	117817	1963.01	42.44
BUTYL BENZYL PHTHALATE	85687	300.64	6.72
2CHLORONAPHTHALENE	91587	No Criteria	19840.93
1,2DICHLOROBENZENE	95501	279.42	6.37
1,3DICHLOROBENZENE	541731	1379.42	30.77
1,4DICHLOROBENZENE	106467	198.07	4.24
3,3DICHLOROBENZIDENE	91941	No Criteria	3.47
DIETHYL PHTHALATE	84662	9213.79	205.14
DIMETHYL PHTHALATE	131113	5835.99	130.87
DI-n-BUTYL PHTHALATE	84742	No Criteria	55802.62
2,4DINITROTOLUENE	121142	5482.29	120.26
1,2DIPHENYLHYDRAZINE	122667	49.52	1.10
FLUORANTHENE	206440	703.86	15.56

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: Woonsocket WWTF RIPDES PERMIT #: RI0100111

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
FLUORENE	86737	No Criteria	65723.09
HEXACHLOROBENZENE	118741	No Criteria	0.04
HEXACHLOROBUTADIENE	87683	No Criteria	2232.10
HEXACHLOROCYCLOPENTADIENE	77474	1.24	0.03
HEXACHLOROETHANE	67721	173.31	3.89
ISOPHORONE	78591	20691.23	459.81
NAPHTHALENE	91203	406.75	9.20
NITROBENZENE	98953	4774.90	106.11
N-NITROSODIMETHYLAMINE	62759	No Criteria	372.02
N-NITROSODI-N-PROPYLAMINE	621647	No Criteria	63.24
N-NITROSODIPHENYLAMINE	86306	1036.33	22.99
PYRENE	129000	No Criteria	49602.33
1,2,4trichlorobenzene	120821	265.27	6.01
PESTICIDES/PCBs			
ALDRIN	309002	10.61	0.01
Alpha BHC	319846	No Criteria	0.61
Beta BHC	319857	No Criteria	2.11
Gamma BHC (Lindane)	58899	3.36	3.36
CHLORDANE	57749	8.49	0.02
4,4DDT	50293	3.89	0.00
4,4DDE	72559	No Criteria	0.03
4,4DDD	72548	No Criteria	0.04
DIELDRIN	60571	0.85	0.01
ENDOSULFAN (alpha)	959988	0.78	0.20
ENDOSULFAN (beta)	33213659	0.78	0.20
ENDOSULFAN (sulfate)	1031078	No Criteria	1103.65
ENDRIN	72208	0.30	0.13
ENDRIN ALDEHYDE	7421934	No Criteria	3.72
HEPTACHLOR	76448	1.84	0.01
HEPTACHLOR EPOXIDE	1024573	1.84	0.00
POLYCHLORINATED BIPHENYLS3	1336363	No Criteria	0.01
2,3,7,8TCDD (Dioxin)	1746016	No Criteria	0.00
TOXAPHENE	8001352	2.58	0.00
TRIBUTYLTIN		1.63	0.25

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
NON PRIORITY POLLUTANTS:			
OTHER SUBSTANCES			
ALUMINUM, TOTAL	7429905	2827.62	189.49
AMMONIA (as N), WINTER (NOV-API	7664417	Calculated Separately	
AMMONIA (as N), SUMMER (MAY-OC	7664417	Calculated Separately	
4BROMOPHENYL PHENYL ETHER		63.67	1.41
CHLORIDE	16887006	3083995.86	577174.10
CHLORINE	7782505	84.00	48.63
4CHLORO2METHYLPHENOL		53.05	1.13
1CHLORONAPHTHALENE		282.96	6.37
4CHLOROPHENOL	106489	679.10	15.21
2,4DICHLORO6METHYLPHENOL		77.81	1.70
1,1DICHLOROPROPANE		4067.51	91.96
1,3DICHLOROPROPANE	142289	1071.70	23.70
2,3DINITROTOLUENE		60.13	1.31
2,4DINITRO6METHYL PHENOL		42.44	0.92
IRON	7439896	No Criteria	1969.71
pentachlorobenzene	608935	45.98	0.99
PENTACHLOROETHANE		1280.38	28.30
1,2,3,5tetrachlorobenzene		1135.36	25.11
1,1,1,2TETRACHLOROETHANE	630206	3466.22	77.81
2,3,4,6TETRACHLOROPHENOL	58902	24.76	0.57
2,3,5,6TETRACHLOROPHENOL		30.06	0.67
2,4,5TRICHLOROPHENOL	95954	81.35	1.80
2,4,6TRINITROPHENOL	88062	14979.03	332.47
XYLENE	1330207	470.42	10.61

Attachment 8

Summary of Discharge Monitoring Report Data
January 2018 through June 2025

WOONSOCKET WWTF

DMR Data Summary 9/12/25

***** NOT ICIS CERTIFIED*****

001A

Aluminum, total [as Al] Location= 1

	MO AVG ug/L	DAILY MX ug/L
Mean	64.1856	97.2367
Minimum	0	0
Maximum	435.	940.
Data Count	90	90

BOD, carbonaceous [5 day, 20 C] Location= 1

	MO AVG lb/d	DAILY MX lb/d
Mean	180.0131	485.8904
Minimum	65.	94.
Maximum	778.	5028.
Data Count	90	90

	MO AVG mg/L	WKLY AVG mg/L	DAILY MX mg/L
Mean	1.6704	3.2396	6.36
Minimum	0	0	0
Maximum	11.	21.	51.
Data Count	90	90	90

Chlorine, total residual Location= 1

	MO AVG ug/L	DAILY MX ug/L
Mean	13.1778	60.7333
Minimum	5.	13.
Maximum	38.	770.
Data Count	90	90

Coliform, fecal general Location= 1

	MOAV GEO MPN/100mL	WKAV GEO MPN/100mL	DAILY MX MPN/100mL
Mean	2.1222	9.8512	266996.6333
Minimum	1.	1.	1.
Maximum	16.	363.	24000000.
Data Count	90	90	90

Copper, total [as Cu] Location= 1

	MO AVG ug/L	DAILY MX ug/L
Mean	7.7889	14.1533
Minimum	0	0
Maximum	28.9	159.
Data Count	90	90

Enterococci Location= 1

	MOAV GEO CFU/100mL	DAILY MX CFU/100mL
Mean	7.8	533735.6222
Minimum	1.	1.
Maximum	120.	24000000.
Data Count	90	90

Flow, in conduit or thru treatment plant Location= 1

	MO AVG MGD	DAILY MX MGD
Mean	7.2282	9.7721
Minimum	3.79	4.83
Maximum	12.71	35.47
Data Count	90	90

Iron, total [as Fe] Location= 1

	MO AVG ug/L	DAILY MX ug/L
Mean	877.0667	1513.5889
Minimum	95.	113.
Maximum	3059.	7520.
Data Count	90	90

Lead, total [as Pb] Location= 1

	MO AVG ug/L	DAILY MX ug/L
Mean	.609	1.6222
Minimum	0	0
Maximum	12.5	28.
Data Count	90	90

Nitrogen, ammonia total [as N] Location= 1

	MO AVG mg/L	DAILY MX mg/L
Mean	2.0568	5.3968
Minimum	0	0
Maximum	34.6	45.4
Data Count	90	90

Nitrogen, Kjeldahl, total [as N] Location= 1

	MO AVG mg/L	DAILY MX mg/L
Mean	2.9848	7.3696
Minimum	0	0
Maximum	43.7	61.7
Data Count	90	90

Nitrogen, nitrate total [as N] Location= 1

	MO AVG mg/L	DAILY MX mg/L
Mean	3.5666	6.3106
Minimum	0.11	0.42
Maximum	15.55	21.6
Data Count	90	90

Nitrogen, nitrite total [as N] Location= 1

	MO AVG mg/L	DAILY MX mg/L
Mean	.0555	.2043
Minimum	0	0
Maximum	.74	1.72
Data Count	90	90

Nitrogen, total [as N] Location= 1

	MO AVG lb/d
Mean	429.5221
Minimum	50.
Maximum	2648.
Data Count	90

	MO AVG mg/L	DAILY MX mg/L
Mean	6.664	11.739
Minimum	.9	2.4
Maximum	44.	61.7
Data Count	90	90

Oil & Grease Location= 1

	DAILY MX mg/L
Mean	1.7508
Minimum	0
Maximum	8.
Data Count	89

pH Location= 1

	MINIMUM SU	MAXIMUM SU
Mean	6.2703	7.2911
Minimum	5.4	6.5
Maximum	7.1	8.
Data Count	90	90

Phosphorus, ortho Location= 1

	MO AVG mg/L	DAILY MX mg/L
Mean	.5287	1.4816
Minimum	.07	.28
Maximum	1.1	5.69
Data Count	38	38

Phosphorus, total [as P] Location= 1

	MO AVG mg/L	DAILY MX mg/L
Mean	.3961	1.0277
Minimum	.005	.06
Maximum	1.6	4.93
Data Count	90	90

Selenium, total [as Se] Location= 1

	MO AVG ug/L	DAILY MX ug/L
Mean	5.2322	10.7944
Minimum	0	0
Maximum	15.	48.
Data Count	90	90

Solids, settleable Location= 1

	WKLY AVG mL/L	DAILY MX mL/L
Mean	.2759	.7089
Minimum	0	0
Maximum	10.9	40.
Data Count	90	90

Solids, total suspended Location= 1

	MO AVG lb/d	DAILY MX lb/d
Mean	406.6111	1186.3333
Minimum	83.	127.
Maximum	2029.	8725.
Data Count	90	90

	MO AVG mg/L	WKLY AVG mg/L	DAILY MX mg/L
Mean	5.8153	10.0962	17.5667
Minimum	.38	1.	3.
Maximum	24.	89.	180.
Data Count	90	90	90

BOD, carbonaceous [5 day, 20 C] Location= G

	MO AVG lb/d	DAILY MX lb/d
Mean	13447.1	23705.7778
Minimum	5118.	9971.
Maximum	52292.	125226.
Data Count	90	90

	MO AVG mg/L	WKLY AVG mg/L	DAILY MX mg/L
Mean	185.1444	236.0444	320.6778
Minimum	76.	90.	120.
Maximum	389.	607.	935.
Data Count	90	90	90

Solids, total suspended Location= G

	MO AVG lb/d	DAILY MX lb/d
Mean	19709.9444	40430.2778
Minimum	6056.	9306.
Maximum	59069.	147166.
Data Count	90	90

	MO AVG mg/L	WKLY AVG mg/L	DAILY MX mg/L
Mean	272.6444	369.0889	587.7778
Minimum	75.	90.	127.
Maximum	812.	1036.	3500.
Data Count	90	90	90

BOD, carb-5 day, 20 deg C, percent removal Location= K

	MO AV MN %
Mean	98.8956
Minimum	90.
Maximum	100.
Data Count	90

Solids, suspended percent removal Location= K

	MO AV MN %
Mean	96.8333
Minimum	74.3
Maximum	99.9
Data Count	90

001Q

Cadmium, total [as Cd] Location= 1

	MO AVG ug/L	DAILY MX ug/L
Mean	.3567	.3567
Minimum	0	0
Maximum	10.	10.
Data Count	30	30

Chromium, hexavalent [as Cr] Location= 1

	MO AVG ug/L	DAILY MX ug/L
Mean	0	0
Minimum	0	0
Maximum	0	0
Data Count	30	30

Cyanide, free available Location= 1

	MO AVG ug/L	DAILY MX ug/L
Mean	.5803	.5967
Minimum	0	0
Maximum	10.	10.
Data Count	30	30

Nickel, total [as Ni] Location= 1

	MO AVG ug/L	DAILY MX ug/L
Mean	10.11	10.6933
Minimum	0	0
Maximum	27.	27.
Data Count	30	30

Zinc, total [as Zn] Location= 1

	MO AVG ug/L	DAILY MX ug/L
Mean	28.5733	31.7
Minimum	0	0
Maximum	142.	142.
Data Count	30	30

001T

LC50 Static Renewal 48Hr Acute Ceriodaphnia dubia Location= B

	MINIMUM %
Mean	100.
Minimum	100.
Maximum	100.
Data Count	30

NOEL Static Renewal 7Day Chronic Ceriodaphnia dubia Location= B

	MINIMUM %
Mean	82.5
Minimum	25.
Maximum	100.
Data Count	30

Attachment 9

Summary of Priority Pollutant Scan Data for Calendar Years 2018 through 2024

Woonsocket WWTF - RIPDES Permit No. RI0100111

Summary of Effluent Priority Pollutant Scan Detections

Parameter (ug/l)	2018	2019	2020	2021	2022	2023	2024	Average	Maximum
Sample Date	8/29/2018	7/29/2019	7/28/2020	8/19/2021	7/25/2022	8/23/2023	8/19/2024		
Total Aluminum	159	16	16	21	NS	NS	NS	53.00	159
Total Antimony	2	1.1	1	0.5	0.5	0.4	0.2	0.81	2
Total Arsenic	0	4.2	17.8	2.7	1.3	1.5	1.6	4.16	17.8
Total Cadimum	0.2	0	0	0	0	0	0	0.03	0.2
Total Copper	9	10	6	11	3	6	4	7.00	11
Total Chromium	0	0.6	0.7	0.9	0.4	0.8	1.1	0.64	1.1
Total Lead	0	0.3	0.4	0.1	0	0.1	0	0.13	0.4
Total Nickel	11	15	13	16	1.1	11	38	15.01	38
Total Selenium	0	8	0	7	6	0	0	3.00	8
Total Zinc	38	29	20	30	11	33	7	24.00	38
Total Phenols	0	0	0	60	0	0	0	8.57	60
Bromodichloromethane	2	9	5	4	7	6	2	5.00	9
Bromoform	3	0	2	1	2	0	0	1.14	3
Chloroform	0	8	3	2	4	4	2	3.29	8
Chlorodibromomethane	3	6	5	4	7	4	1	4.29	7

Attachment 10

Comparison of Allowable Limits with Discharge Monitoring Report Data and Priority Pollutant Scan Data

Facility Name: ***Woonsocket Regional WWTF***
RIPDES Permit #: ***RI0100111***
Outfall #: ***001A***

NOTE: METALS LIMITS ARE TOTAL METALS

Parameter	Concentration Limits (ug/L) Based on WQ Criteria		Antideg. Limits (ug/L)	Priority Pollutant Scan (ug/L) Data 2018-2024		Ave. DMR Data (ug/L) 1/18 - 6/25		Potential Permit Limits (ug/L)		Reasonable Potential (Yes/No)
	Daily Max	Monthly Ave	Monthly Ave	Max	Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	
TOXIC METALS AND CYANIDE										
ANTIMONY	1591.63	35.37	---	2	0.81	---	---	1591.63	35.37	No
ARSENIC, TOTAL	1202.57	17.36	---	17.8	4.16	---	---	1202.57	17.36	Yes
ASBESTOS	No Criteria	0.00	---	---	---	---	---	---	0.00	
BERYLLIUM	26.53	0.60	---	---	---	---	---	26.53	0.60	
CADMIUM, TOTAL	4.70	0.68	---	0.2	0.03	0.357	0.357	4.70	0.68	Yes
CHROMIUM III, TOTAL	4356.79	208.24	---	---	---	---	---	4356.79	208.24	
CHROMIUM VI, TOTAL	57.63	40.44	---	---	---	0	0	57.63	40.44	No
COPPER, TOTAL	66.80	42.10	30.5	11	7	14.2	7.8	66.80	30.50	No
CYANIDE	77.81	18.39	---	---	---	0.597	0.58	77.81	18.39	No
LEAD, TOTAL	176.95	4.27	---	0.4	0.13	1.62	0.609	176.95	4.27	No
MERCURY, TOTAL	5.83	2.19	---	---	---	---	---	5.83	2.19	
NICKEL, TOTAL	1119.54	124.47	---	38	15	10.7	10.1	1119.54	124.47	No
SELENIUM, TOTAL	70.74	17.68	---	8	3	10.8	5.23	70.74	17.68	Yes
SILVER, TOTAL	6.45	6.45	---	---	---	---	---	6.45	6.45	
THALLIUM	162.70	3.54	---	---	---	---	---	162.70	3.54	
ZINC, TOTAL	285.73	285.73	---	38	24	31.7	28.6	285.73	285.73	No
VOLATILE ORGANIC COMPOUNDS										
ACROLEIN	10.26	0.21	---	---	---	---	---	10.26	0.21	
ACRYLONITRILE	1336.97	29.71	---	---	---	---	---	1336.97	29.71	
BENZENE	937.29	20.87	---	---	---	---	---	937.29	20.87	
BROMOFORM	5181.65	116.72	---	3	1.14	---	---	5181.65	116.72	No
CARBON TETRACHLORIDE	4827.95	106.11	---	---	---	---	---	4827.95	106.11	
CHLOROBENZENE	2811.88	63.67	---	---	---	---	---	2811.88	63.67	
CHLORODIBROMOMETHANE	No Criteria	1612.08	---	7	4.3	---	---	---	1612.08	No
CHLOROFORM	5110.91	113.18	---	8	3.3	---	---	5110.91	113.18	No
DICHLOROBROMOMETHANE	No Criteria	2108.10	---	9	5	---	---	---	2108.10	No
1,2DICHLOROETHANE	20868.08	463.34	---	---	---	---	---	20868.08	463.34	
1,1DICHLOROETHYLENE	2051.44	45.98	---	---	---	---	---	2051.44	45.98	
1,2DICHLOROPROPANE	9284.53	205.14	---	---	---	---	---	9284.53	205.14	
1,3DICHLOROPROPYLENE	No Criteria	260.41	---	---	---	---	---	---	260.41	
ETHYLBENZENE	5659.14	127.33	---	---	---	---	---	5659.14	127.33	
BROMOMETHANE (methyl bromide)	No Criteria	18600.87	---	---	---	---	---	---	18600.87	

Facility Name: ***Woonsocket Regional WWTF***
RIPDES Permit #: ***RI0100111***
Outfall #: ***001A***

NOTE: METALS LIMITS ARE TOTAL METALS

Parameter	Concentration Limits (ug/L) Based on WQ Criteria		Antideg. Limits (ug/L)	Priority Pollutant Scan (ug/L) Data 2018-2024		Ave. DMR Data (ug/L) 1/18 - 6/25		Potential Permit Limits (ug/L)		Reasonable Potential (Yes/No)
	Daily Max	Monthly Ave	Monthly Ave	Max	Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	
CHLOROMETHANE (methyl chloride)	No Criteria	0.00	---	---	---	---	---	---	0.00	
METHYLENE CHLORIDE	34131.68	756.91	---	---	---	---	---	34131.68	756.91	
1,1,2,2TETRACHLOROETHANE	1648.22	35.37	---	---	---	---	---	1648.22	35.37	
FLUORENE	No Criteria	65723.09	---	---	---	---	---	---	65723.09	
HEXACHLOROBENZENE	No Criteria	0.04	---	---	---	---	---	---	0.04	
HEXACHLOROBUTADIENE	No Criteria	2232.10	---	---	---	---	---	---	2232.10	
HEXACHLOROCYCLOPENTADIENE	1.24	0.03	---	---	---	---	---	1.24	0.03	
HEXACHLOROETHANE	173.31	3.89	---	---	---	---	---	173.31	3.89	
ISOPHORONE	20691.23	459.81	---	---	---	---	---	20691.23	459.81	
NAPHTHALENE	406.75	9.20	---	---	---	---	---	406.75	9.20	
NITROBENZENE	4774.90	106.11	---	---	---	---	---	4774.90	106.11	
N-NITROSODIMETHYLAMINE	No Criteria	372.02	---	---	---	---	---	---	372.02	
N-NITROSODI-N-PROPYLAMINE	No Criteria	63.24	---	---	---	---	---	---	63.24	
N-NITROSODIPHENYLAMINE	1036.33	22.99	---	---	---	---	---	1036.33	22.99	
PYRENE	No Criteria	49602.33	---	---	---	---	---	---	49602.33	
1,2,4 TRICHLOROBENZENE	265.27	6.01	---	---	---	---	---	265.27	6.01	
PESTICIDES/PCBs										
ALDRIN	10.61	0.01	---	---	---	---	---	10.61	0.01	
Alpha BHC	No Criteria	0.61	---	---	---	---	---	---	0.61	
Beta BHC	No Criteria	2.11	---	---	---	---	---	---	2.11	
Gamma BHC (Lindane)	3.36	3.36	---	---	---	---	---	3.36	3.36	
CHLORDANE	8.49	0.02	---	---	---	---	---	8.49	0.02	
4,4DDT	3.89	0.00	---	---	---	---	---	3.89	0.00	
4,4DDE	No Criteria	0.03	---	---	---	---	---	---	0.03	
4,4DDD	No Criteria	0.04	---	---	---	---	---	---	0.04	
DIELDRIN	0.85	0.01	---	---	---	---	---	0.85	0.01	
ENDOSULFAN (alpha)	0.78	0.20	---	---	---	---	---	0.78	0.20	
ENDOSULFAN (beta)	0.78	0.20	---	---	---	---	---	0.78	0.20	
ENDOSULFAN (sulfate)	No Criteria	1103.65	---	---	---	---	---	---	1103.65	
ENDRIN	0.30	0.13	---	---	---	---	---	0.30	0.13	
ENDRIN ALDEHYDE	No Criteria	3.72	---	---	---	---	---	---	3.72	
HEPTACHLOR	1.84	0.01	---	---	---	---	---	1.84	0.01	

Facility Name: ***Woonsocket Regional WWTF***
RIPDES Permit #: ***RI0100111***
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NOTE: METALS LIMITS ARE TOTAL METALS

Parameter	Concentration Limits (ug/L) Based on WQ Criteria		Antideg. Limits (ug/L)	Priority Pollutant Scan (ug/L) Data 2018-2024		Ave. DMR Data (ug/L) 1/18 - 6/25		Potential Permit Limits (ug/L)		Reasonable Potential (Yes/No)
	Daily Max	Monthly Ave	Monthly Ave	Max	Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	
HEPTACHLOR EPOXIDE	1.84	0.00	---	---	---	---	---	1.84	0.00	
POLYCHLORINATED BIPHENYLS3	No Criteria	0.01	---	---	---	---	---	---	0.01	
2,3,7,8TCDD (Dioxin)	No Criteria	0.00	---	---	---	---	---	---	0.00	
TOXAPHENE	2.58	0.00	---	---	---	---	---	2.58	0.00	
TRIBUTYLTIN	1.63	0.25	---	---	---	---	---	1.63	0.25	
TETRACHLOROETHYLENE	848.87	18.75	---	---	---	---	---	848.87	18.75	
TOLUENE	2245.97	49.52	---	---	---	---	---	2245.97	49.52	
1,2TRANSDICHLOROETHYLENE	No Criteria	124005.82	---	---	---	---	---	---	124005.82	
1,1,1TRICHLOROETHANE	No Criteria	0.00	---	---	---	---	---	---	0.00	
1,1,2TRICHLOROETHANE	3183.27	70.74	---	---	---	---	---	3183.27	70.74	
TRICHLOROETHYLENE	6897.08	152.09	---	---	---	---	---	6897.08	152.09	
VINYL CHLORIDE	No Criteria	29.76	---	---	---	---	---	---	29.76	
ACID ORGANIC COMPOUNDS			---	---	---	---	---	---	---	
2CHLOROPHENOL	456.27	10.26	---	---	---	---	---	456.27	10.26	
2,4DICHLOROPHENOL	357.23	7.78	---	---	---	---	---	357.23	7.78	
2,4DIMETHYLPHENOL	374.92	8.49	---	---	---	---	---	374.92	8.49	
4,6DINITRO2METHYL PHENOL	No Criteria	3472.16	---	---	---	---	---	---	3472.16	
2,4DINITROPHENOL	109.65	2.44	---	---	---	---	---	109.65	2.44	
4NITROPHENOL	No Criteria	0.00	---	---	---	---	---	---	0.00	
PENTACHLOROPHENOL	0.19	0.15	---	---	---	---	---	0.19	0.15	
PHENOL	887.78	19.81	---	---	---	---	---	887.78	19.81	
2,4,6TRICHLOROPHENOL	56.59	1.27	---	---	---	---	---	56.59	1.27	
BASE NEUTRAL COMPOUNDS										
ACENAPHTHENE	300.64	6.72	---	---	---	---	---	300.64	6.72	
ANTHRACENE	No Criteria	496023.30	---	---	---	---	---	---	496023.30	
BENZIDINE	No Criteria	0.02	---	---	---	---	---	---	0.02	
PAHs	No Criteria	2.23	---	---	---	---	---	---	2.23	
BIS(2CHLOROETHYL)ETHER	No Criteria	65.72	---	---	---	---	---	---	65.72	
BIS(2CHLOROISOPROPYL)ETHER	No Criteria	806037.86	---	---	---	---	---	---	806037.86	
BIS(2ETHYLHEXYL)PHTHALATE	1963.01	42.44	---	---	---	---	---	1963.01	42.44	
BUTYL BENZYL PHTHALATE	300.64	6.72	---	---	---	---	---	300.64	6.72	
2CHLORONAPHTHALENE	No Criteria	19840.93	---	---	---	---	---	---	19840.93	
1,2DICHLOROBENZENE	279.42	6.37	---	---	---	---	---	279.42	6.37	
1,3DICHLOROBENZENE	1379.42	30.77	---	---	---	---	---	1379.42	30.77	

Facility Name: ***Woonsocket Regional WWTF***
RIPDES Permit #: ***RI0100111***
Outfall #: ***001A***

NOTE: METALS LIMITS ARE TOTAL METALS

Parameter	Concentration Limits (ug/L) Based on WQ Criteria		Antideg. Limits (ug/L)	Priority Pollutant Scan (ug/L) Data 2018-2024		Ave. DMR Data (ug/L) 1/18 - 6/25		Potential Permit Limits (ug/L)		Reasonable Potential (Yes/No)
	Daily Max	Monthly Ave	Monthly Ave	Max	Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	
1,4DICHLOROBENZENE	198.07	4.24	---	---	---	---	---	198.07	4.24	
3,3DICHLOROBENZIDENE	No Criteria	3.47	---	---	---	---	---	---	3.47	
DIETHYL PHTHALATE	9213.79	205.14	---	---	---	---	---	9213.79	205.14	
DIMETHYL PHTHALATE	5835.99	130.87	---	---	---	---	---	5835.99	130.87	
DI-n-BUTYL PHTHALATE	No Criteria	55802.62	---	---	---	---	---	---	55802.62	
2,4DINITROTOLUENE	5482.29	120.26	---	---	---	---	---	5482.29	120.26	
1,2DIPHENYLHYDRAZINE	49.52	1.10	---	---	---	---	---	49.52	1.10	
FLUORANTHENE	703.86	15.56	---	---	---	---	---	703.86	15.56	
OTHER SUBSTANCES										
ALUMINUM, TOTAL	2827.62	189.49	---	159	53	97.2	64.2	2827.62	189.49	Yes
AMMONIA (as N), WINTER (NOV-APR)	53800.00	15000.00	---	---	---	7420	3650	53800.00	15000.00	Yes - WQ
AMMONIA (as N), SUMMER (JUNE-OCT)	49400.00	2000.00	---	---	---	2847	327	49400.00	2000.00	Yes - WQ
AMMONIA (as N), SUMMER (MAY)	53800.00	12000.00	---	---	---	5240	700	53800.00	12000.00	Yes - WQ
4BROMOPHENYL PHENYL ETHER	63.67	1.41	---	---	---	---	---	63.67	1.41	
CHLORIDE	3083995.86	577174.10	---	---	---	---	---	3083995.86	577174.10	
CHLORINE	84.00	48.63	---	---	---	60.7	13.2	84.00	48.63	Yes
4CHLORO2METHYLPHENOL	53.05	1.13	---	---	---	---	---	53.05	1.13	
1CHLORONAPHTHALENE	282.96	6.37	---	---	---	---	---	282.96	6.37	
4CHLOROPHENOL	679.10	15.21	---	---	---	---	---	679.10	15.21	
2,4DICHLORO6METHYLPHENOL	77.81	1.70	---	---	---	---	---	77.81	1.70	
1,1DICHLOROPROPANE	4067.51	91.96	---	---	---	---	---	4067.51	91.96	
1,3DICHLOROPROPANE	1071.70	23.70	---	---	---	---	---	1071.70	23.70	
2,3DINITROTOLUENE	60.13	1.31	---	---	---	---	---	60.13	1.31	
2,4DINITRO6METHYL PHENOL	42.44	0.92	---	---	---	---	---	42.44	0.92	
IRON	No Criteria	1969.71	---	---	---	1514	877	---	1969.71	Yes
PENTACHLOROBENZENE	45.98	0.99	---	---	---	---	---	45.98	0.99	
PENTACHLOROETHANE	1280.38	28.30	---	---	---	---	---	1280.38	28.30	
1,2,3,5 TETRACHLOROBENZENE	1135.36	25.11	---	---	---	---	---	1135.36	25.11	
1,1,1,2TETRACHLOROETHANE	3466.22	77.81	---	---	---	---	---	3466.22	77.81	
2,3,4,6TETRACHLOROPHENOL	24.76	0.57	---	---	---	---	---	24.76	0.57	
2,3,5,6TETRACHLOROPHENOL	30.06	0.67	---	---	---	---	---	30.06	0.67	
2,4,5TRICHLOROPHENOL	81.35	1.80	---	---	---	---	---	81.35	1.80	

Facility Name: ***Woonsocket Regional WWTF***
RIPDES Permit #: ***RI0100111***
Outfall #: ***001A***

NOTE: METALS LIMITS ARE TOTAL METALS

Parameter	Concentration Limits (ug/L) Based on WQ Criteria		Antideg. Limits (ug/L)	Priority Pollutant Scan (ug/L) Data 2018-2024		Ave. DMR Data (ug/L) 1/18 - 6/25		Potential Permit Limits (ug/L)		Reasonable Potential (Yes/No)
	Daily Max	Monthly Ave	Monthly Ave	Max	Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	
2,4,6TRINITROPHENOL	14979.03	332.47	---	---	---	---	---	14979.03	332.47	
XYLENE	470.42	10.61	---	---	---	---	---	470.42	10.61	
OTHER PARAMETERS:										
NON WATER-QUALITY BASED										
CHROMIUM (total recoverable)	No Criteria	No Criteria	---	1.1	0.64	---	---	---	---	N/A
TOTAL PHENOLS	No Criteria	No Criteria	---	60	8.6	---	---	---	---	N/A

Attachment 11

Antidegradation Calculations and Data Analysis for Total Copper

Historical Total Copper Data

WOONSOCKET WWTF RI0100111

001A

Copper, total [as Cu] 01042 Monitoring Location = 1

Limit Start Date = 01/01/2018 Limit End Date = 12/31/2022
Season 0

2025 Limit	42.2	66.9
2018 Limit	21.1	29.8

	ug/L C1 MO AVG	ug/L C3 DAILY MX
01/31/2018	7.1	16
02/28/2018	2.3	7
03/31/2018	4	13
04/30/2018	1	6
05/31/2018	2.6	10
06/30/2018	0	0
07/31/2018	1	6
08/31/2018	5	12
09/30/2018	4	14
10/31/2018	6	16
11/30/2018	13.6	25
12/31/2018	28.9	50
01/31/2019	28.1	42
02/28/2019	11.8	26
03/31/2019	11.3	14
04/30/2019	12.9	18
05/31/2019	3.6	7
06/30/2019	4.9	8
07/31/2019	7	8
08/31/2019	6.3	9
09/30/2019	8.3	13
10/31/2019	9.2	14
11/30/2019	14.3	18
12/31/2019	13.3	18
01/31/2020	9.3	16
02/29/2020	9.9	14
03/31/2020	11.1	13
04/30/2020	11.6	15
05/31/2020	4.3	6
06/30/2020	6	9
07/31/2020	4.7	8
08/31/2020	5.5	8
09/30/2020	6.3	9
10/31/2020	6.1	10
11/30/2020	14.1	17
12/31/2020	16.7	23
01/31/2021	23.4	34
02/28/2021	22	32
03/31/2021	13.8	19
04/30/2021	8.1	11
05/31/2021	6.3	9
06/30/2021	9	13
07/31/2021	7.7	10
08/31/2021	9.6	13
09/30/2021	11.8	14
10/31/2021	11.2	14
11/30/2021	9.4	16
12/31/2021	8	18
01/31/2022	8	10
02/28/2022	8.1	14
03/31/2022	6.1	13
04/30/2022	4.3	6
05/31/2022	3.2	6
06/30/2022	7.8	21

Historical Total Copper Data

07/31/2022	4.6	8
08/31/2022	6	13
09/30/2022	3.6	5
10/31/2022	2.3	3
11/30/2022	3.1	6
12/31/2022	3.3	7
01/31/2023	4.2	9
02/28/2023	6.8	13
03/31/2023	4	7
04/30/2023	4.9	7
05/31/2023	3.3	8
06/30/2023	1.9	2
07/31/2023	3.9	5
08/31/2023	5.7	9
09/30/2023	4.3	5
10/31/2023	3.6	5
11/30/2023	3.6	4
12/31/2023	4.2	8
01/31/2024	2.4	5
02/29/2024	2.7	4
03/31/2024	3.7	6
04/30/2024	25	159
05/31/2024	3.1	5
06/30/2024	4	6
07/31/2024	3.6	6
08/31/2024	4.1	5
09/30/2024	4	7
10/31/2024	6.3	16
11/30/2024	6.3	9
12/31/2024	11.6	14
01/31/2025	18.6	61
02/28/2025	10.7	14
03/31/2025	9.1	13
04/30/2025	7.2	9.3
05/31/2025	6.6	7.5
06/30/2025	8.8	12
Average	7.788888889	14.15
Max	28.9	159

Woonsocket WWTF
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Historical Discharge Concentration
Total Copper

Notes
Changed the one non-detect (06/30/18) to the detection limit.
Per Guidance - Used half the expected frequency (n = 2) since analysis uses the monthly averages vs the individual sample points.

X_{95} is 14.9 µg/L.

$$\mu y := \sum_i \frac{y_i}{k}$$

$$\sigma y := \sqrt{\sum_i \frac{(y_i - \mu y)^2}{k - 1}}$$

$$E(x) := \exp\left(\mu y + 0.5 \cdot \sigma y^2\right)$$

$$Vx := \exp\left(2 \cdot \mu y + \sigma y^2\right) \cdot \left(\exp\left(\sigma y^2\right) - 1\right)$$

$$Vn := \frac{Vx}{n}$$

$$X_{95} := E(n) + 1.645 \cdot Vn^{.5}$$

$$X_{99} := \exp(\mu y + 2.326 \cdot \sigma y)$$

	x_i	$y_i = \ln(x_i)$	y_i/k	
01/31/18	7	1.9601	0.0218	0.0002
02/28/18	2	0.8329	0.0093	0.0108
03/31/18	4	1.3863	0.0154	0.0021
04/30/18	1	0.0000	0.0000	0.0366
05/31/18	3	0.9555	0.0106	0.0083
06/30/18	1	0.0000	0.0000	0.0366
07/31/18	1	0.0000	0.0000	0.0366
08/31/18	5	1.6094	0.0179	0.0005
09/30/18	4	1.3863	0.0154	0.0021
10/31/18	6	1.7918	0.0199	0.0000
11/30/18	14	2.6101	0.0290	0.0068
12/31/18	**29**	3.3638	0.0374	0.0260
01/31/19	**28**	3.3358	0.0371	0.0251
02/28/19	12	2.4681	0.0274	0.0046
03/31/19	11	2.4248	0.0269	0.0040
04/30/19	13	2.5572	0.0284	0.0059
05/31/19	4	1.2809	0.0142	0.0032
06/30/19	5	1.5892	0.0177	0.0006
07/31/19	7	1.9459	0.0216	0.0002
08/31/19	6	1.8405	0.0205	0.0000
09/30/19	8	2.1163	0.0235	0.0009
10/31/19	9	2.2192	0.0247	0.0017
11/30/19	14	2.6603	0.0296	0.0077
12/31/19	13	2.5878	0.0288	0.0064
01/31/20	9	2.2300	0.0248	0.0018
02/29/20	10	2.2925	0.0255	0.0024
03/31/20	11	2.4069	0.0267	0.0037
04/30/20	12	2.4510	0.0272	0.0043
05/31/20	4	1.4586	0.0162	0.0015
06/30/20	6	1.7918	0.0199	0.0000
07/31/20	5	1.5476	0.0172	0.0008
08/31/20	6	1.7047	0.0189	0.0002
09/30/20	6	1.8405	0.0205	0.0000
10/31/20	6	1.8083	0.0201	0.0000
11/30/20	14	2.6462	0.0294	0.0074
12/31/20	17	2.8154	0.0313	0.0108
01/31/21	**23**	3.1527	0.0350	0.0194
02/28/21	**22**	3.0910	0.0343	0.0176
03/31/21	14	2.6247	0.0292	0.0070
04/30/21	8	2.0919	0.0232	0.0008
05/31/21	6	1.8405	0.0205	0.0000
06/30/21	9	2.1972	0.0244	0.0015
07/31/21	8	2.0412	0.0227	0.0005
08/31/21	10	2.2618	0.0251	0.0021
09/30/21	12	2.4681	0.0274	0.0046
10/31/21	11	2.4159	0.0268	0.0038
11/30/21	9	2.2407	0.0249	0.0019
12/31/21	8	2.0794	0.0231	0.0007
01/31/22	8	2.0794	0.0231	0.0007
02/28/22	8	2.0919	0.0232	0.0008
03/31/22	6	1.8083	0.0201	0.0000
04/30/22	4	1.4586	0.0162	0.0015
05/31/22	3	1.1632	0.0129	0.0048
06/30/22	8	2.0541	0.0228	0.0006
07/31/22	5	1.5261	0.0170	0.0010
08/31/22	6	1.7918	0.0199	0.0000
09/30/22	4	1.2809	0.0142	0.0032

n	2	**Number of time permittee will sample per month**
k	90	**Sample Size of Data Set**
µy	1.82	
σy^2	0.47	
σy	0.6853	
E(x)	7.8	
Vx	36.86233	
Vn	18.43116	
X_{95}	**14.9**	**95th Percentile:Monthly Average Limit Normally Distributed**
X_{99}	**30.5**	**99th Percentile: Daily Maximum Limit Log-Normally Distributed**

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Historical Discharge Concentration
Total Copper

10/31/22	2	0.8329	0.0093	0.0108
11/30/22	3	1.1314	0.0126	0.0053
12/31/22	3	1.1939	0.0133	0.0044
01/31/23	4	1.4351	0.0159	0.0017
02/28/23	7	1.9169	0.0213	0.0001
03/31/23	4	1.3863	0.0154	0.0021
04/30/23	5	1.5892	0.0177	0.0006
05/31/23	3	1.1939	0.0133	0.0044
06/30/23	2	0.6419	0.0071	0.0154
07/31/23	4	1.3610	0.0151	0.0024
08/31/23	6	1.7405	0.0193	0.0001
09/30/23	4	1.4586	0.0162	0.0015
10/31/23	4	1.2809	0.0142	0.0032
11/30/23	4	1.2809	0.0142	0.0032
12/31/23	4	1.4351	0.0159	0.0017
01/31/24	2	0.8755	0.0097	0.0099
02/29/24	3	0.9933	0.0110	0.0076
03/31/24	4	1.3083	0.0145	0.0029
04/30/24	**25**	3.2189	0.0358	0.0214
05/31/24	3	1.1314	0.0126	0.0053
06/30/24	4	1.3863	0.0154	0.0021
07/31/24	4	1.2809	0.0142	0.0032
08/31/24	4	1.4110	0.0157	0.0019
09/30/24	4	1.3863	0.0154	0.0021
10/31/24	6	1.8405	0.0205	0.0000
11/30/24	6	1.8405	0.0205	0.0000
12/31/24	12	2.4510	0.0272	0.0043
01/31/25	19	2.9232	0.0325	0.0133
02/28/25	11	2.3702	0.0263	0.0033
03/31/25	9	2.2083	0.0245	0.0016
04/30/25	7	1.9741	0.0219	0.0002
05/31/25	7	1.8871	0.0210	0.0000
06/30/25	9	2.1748	0.0242	0.0013
		164.22	**1.82**	**0.47**

Facility : Woonsocket Regional WWTF

Parameter : COPPER

Input required data (use N/A when data is not available):

Chronic Metals Translator	:	0.69	
Previous monthly average limit (Total)	:	21.1	ug/L
Historical discharge concentration (Total)	:	14.9	ug/L
Waterbody background concentration (Dissolved)	:	4.98	ug/L
Facility chronic dilution factor	:	4.421	x
Chronic criteria (Dissolved)	:	14.45	ug/L
Remaining Assimilative Capacity to be Allocated	:	20	%

Note: 20 % of the remaining assimilative capacity was allocated because Woonsocket has a well running approved pretreatment program and the facility has been given an excellent rating by the Department

Determine existing water quality:

$$Cp = \frac{(DF - 1)*Cb + 1*(Cd*MT)}{DF} = 7.1467 \text{ ug/L}$$

DF = Chronic Dilution Factor Cb = Background Data (Dissolved)

Cd = Maximum of Historical Data or Previous Monthly Limit

MT = Metals Translator (Use RI Conversion Factor if Site-Specific is Unavailable)

Since the resulting instream concentration is less than the chronic criteria, the water body is attaining and pursuant to 303(d)(4)(b) backsliding is only possible if the requirements of antidegradation can be met.

Calculation of the new chronic permit limit:

Crac = Ccriteria - Cp = 7.3033 ug/L

Proposed Limit = (Cp + %*Crac)*DF - (DF-1)*Cb = 21.017 ug/L Dissolved

Proposed Limit = (Proposed Dissolved Limit/MT) = 30.459 ug/L Total

Traditional Limit = 42.1 ug/L

The antidegradation permit limit is less than the limit which would result from using traditional procedures. Therefore, use the antidegradation permit limit.

Chronic limit = 30.459 ug/L

Calculation of the new acute permit limit:

Acute Limit = 66.8 ug/L

Final Limits:

MONTHLY AVERAGE PERMIT LIMIT	:	30.459	ug/L
DAILY MAXIMUM PERMIT LIMIT	:	66.8	ug/L