

**AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended, 33 U.S.C. §§ 1251 et seq. (the "CWA"),

**Town of Webster, Massachusetts**

is authorized to discharge from the facility located at

**Town of Webster Sewer Department  
38 Hill Street  
P.O. Box 793  
Webster, MA 01570-0793**

to receiving water named

**French River  
French & Quinebaug Watershed**

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

The Town of Dudley is a co-permittee for Part B, Unauthorized Discharges; Part C, Operation and Maintenance, which includes conditions regarding the operation and maintenance of the collection systems owned and operated by the Town; and Part D, Alternative Power Source.

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the terms and conditions of Part B, Part C, and Part D of this permit. The Permittee and co-permittee are severally liable under Part B, Part C and Part D for their own activities and required reporting with respect to the portions of the collection system that they own or operate. They are not liable for violations of Part B, Part C and Part D committed by others relative to the portions of the collection system owned and operated by others. Nor are they responsible for any reporting that is required of other Permittees under Part B, Part C and Part D. The responsible Town department is:

**Town of Dudley  
Sewer Department  
W Main Street  
Dudley, MA 01571**

This permit shall become effective on the first day of the calendar month immediately following 60 days after signature.

This permit expires at midnight, five years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on March 24, 2006.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013), **Attachment C** (Reassessment of Technically Based Industrial Discharge Limits), **Attachment D** (NPDES Permit Requirement for Industrial Pretreatment Annual Report) and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this    day of

**THELMA**  
**MURPHY**

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THELMA MURPHY  
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For Ken Moraff, Director  
Water Division  
Environmental Protection Agency  
Region 1  
Boston, MA

**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent through Outfall Serial Number 001 to the French River. The discharge shall be limited and monitored as specified below; the receiving water and the influent shall be monitored as specified below.

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3,4</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Rolling Average Effluent Flow <sup>5</sup>	6.0 MGD <sup>5</sup>	---	---	Continuous	Recorder
Effluent Flow <sup>5</sup>	Report MGD	---	Report MGD	Continuous	Recorder
BOD <sub>5</sub> (April 1 – September 30)	10 mg/L 500 lb/day	10 mg/L 500 lb/day	Report mg/L	3/week	Composite
BOD <sub>5</sub> (October 1 - March 31)	30 mg/L 1,500 lb/day	45 mg/L 2,250 lb/day	Report mg/L	3/week	Composite
BOD <sub>5</sub> Removal	≥ 85 %	---	---	---	Calculation
TSS (April 1 - September 30)	15 mg/L 750 lb/day	15 mg/L 750 lb/day	Report mg/L	3/week	Composite
TSS (October 1 - March 31)	30 mg/L 1,500 lb/day	45 mg/L 2,250 lb/day	Report mg/L	3/week	Composite
TSS Removal	≥ 85 %	---	---	---	Calculation
pH Range <sup>6</sup>	6.5 - 8.3 S.U.			1/day	Grab
Total Residual Chlorine <sup>7,8</sup>	17.1 µg/L	---	29.5 µg/L	1/day	Grab
<i>Escherichia coli</i> <sup>7,8</sup> (April 1 – October 31)	126 cfu/100 mL	---	409 cfu/100 mL	2/week	Grab
Total Copper	17.8 µg/L	---	25.7 µg/L	1/month	Composite
Total Aluminum <sup>9</sup>	112.9 µg/L	---	Report µg/L	1/month	Composite
Total Lead	5.1 µg/L	---	Report µg/L	1/month	Composite
Dissolved Oxygen (April 1 - October 31)	≥ 6.0 mg/L			1/day	Grab

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3,4</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Ammonia Nitrogen (April 1 – April 30)	7.1 mg/L Report lb/day	10.0 mg/L Report lb/day	15.0 mg/L	2/week	Composite
Ammonia Nitrogen (May 1 – May 31)	5.0 mg/L Report lb/day	5.0 mg/L Report lb/day	8.0 mg/L	2/week	Composite
Ammonia Nitrogen (June 1 – September 30)	2.0 mg/L Report lb/day	2.0 mg/L Report lb/day	3.0 mg/L	2/week	Composite
Total Kjeldahl Nitrogen <sup>10</sup>	Report mg/L	---	Report mg/L	1/month	Composite
Nitrate + Nitrite <sup>10</sup>	Report mg/L	---	Report mg/L	1/month	Composite
Total Nitrogen <sup>10</sup>	Report mg/L Report lb/day	---	Report mg/L	1/month	Calculation
Rolling Average Total Nitrogen <sup>11</sup>	400 lb/day	---	---	1/month	Calculation
Total Phosphorus (April 1 – October 31)	0.14 mg/L	---	Report mg/L	2/week	Composite
Total Phosphorus (November 1 – March 31)	1.0 mg/L	---	Report mg/L	1/week	Composite
Perfluorohexanesulfonic acid (PFHxS) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
<b>Whole Effluent Toxicity (WET) Testing<sup>13,14</sup></b>					
LC <sub>50</sub>	---	---	≥ 100 %	2/year	Composite
C-NOEC	---	---	≥ 65 %	2/year	Composite
Hardness	---	---	Report mg/L	2/year	Composite
Ammonia Nitrogen	---	---	Report mg/L	2/year	Composite
Total Aluminum	---	---	Report mg/L	2/year	Composite
Total Cadmium	---	---	Report mg/L	2/year	Composite
Total Copper	---	---	Report mg/L	2/year	Composite
Total Nickel	---	---	Report mg/L	2/year	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3,4</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Total Lead	---	---	Report mg/L	2/year	Composite
Total Zinc	---	---	Report mg/L	2/year	Composite
Total Organic Carbon	---	---	Report mg/L	2/year	Composite

Ambient Characteristic <sup>15</sup>	Reporting Requirements			Monitoring Requirements <sup>1,2,3,4</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Hardness	---	---	Report mg/L	2/year	Grab
Ammonia Nitrogen	---	---	Report mg/L	2/year	Grab
Total Aluminum	---	---	Report mg/L	2/year	Grab
Total Cadmium	---	---	Report mg/L	2/year	Grab
Total Copper	---	---	Report mg/L	2/year	Grab
Total Nickel	---	---	Report mg/L	2/year	Grab
Total Lead	---	---	Report mg/L	2/year	Grab
Total Zinc	---	---	Report mg/L	2/year	Grab
Total Organic Carbon	---	---	Report mg/L	2/year	Grab
Dissolved Organic Carbon <sup>16</sup>	---	---	Report mg/L	2/year	Grab
pH <sup>17</sup>	---	---	Report S.U.	2/year	Grab
Temperature <sup>17</sup>	---	---	Report °C	2/year	Grab
Total Phosphorus <sup>18</sup> (April 1 - October 31)	---	---	Report mg/L	1/month	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
BOD <sub>5</sub>	Report mg/L	---	---	2/month	Composite
TSS	Report mg/L	---	---	2/month	Composite
Perfluorohexanesulfonic acid (PFHxS) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite

Sludge Characteristic	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Perfluorohexanesulfonic acid (PFHxS) <sup>19</sup>	---	---	Report ng/g	1/quarter	Composite <sup>20</sup>
Perfluoroheptanoic acid (PFHpA) <sup>19</sup>	---	---	Report ng/g	1/quarter	Composite <sup>20</sup>
Perfluorononanoic acid (PFNA) <sup>19</sup>	---	---	Report ng/g	1/quarter	Composite <sup>20</sup>
Perfluorooctanesulfonic acid (PFOS) <sup>19</sup>	---	---	Report ng/g	1/quarter	Composite <sup>20</sup>
Perfluorooctanoic acid (PFOA) <sup>19</sup>	---	---	Report ng/g	1/quarter	Composite <sup>20</sup>
Perfluorodecanoic acid (PFDA) <sup>19</sup>	---	---	Report ng/g	1/quarter	Composite <sup>20</sup>

## Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented as an electronic attachment to the applicable discharge monitoring report. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and the State of any additional testing above that required herein, if testing is in accordance with 40 CFR Part 136.
2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is “sufficiently sensitive” when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term “minimum level” refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.
3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of “0” to all non-detects for that reporting period and report the average of all the results.
4. A “grab” sample is an individual sample collected in a period of less than 15 minutes.  
  
A “composite” sample is a composite of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.
5. The limit is a rolling annual average, reported in million gallons per day (MGD), which will be calculated as the arithmetic mean of the monthly

average flow for the reporting month and the monthly average flows of the previous eleven months. Also report monthly average and maximum daily flow in MGD.

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).
7. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. The testing compliance level for TRC is 20 µg/L.

Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine or dechlorination chemicals occurred. Any non-detects shall be reported in the DMR as non-detects (“NODI:B”), not as “0.”

8. The monthly average limit for *Escherichia coli* (*E. coli*) is expressed as a geometric mean. *E. coli* monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required.
9. See Part I.G.1 for aluminum compliance schedule.
10. Total Kjeldahl nitrogen and nitrate + nitrite samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen, as follows.

$$\text{Total Nitrogen (mg/L)} = \text{Total Kjeldahl Nitrogen (mg/L)} + \text{Nitrate} + \text{Nitrite (mg/L)}$$
$$\text{Total Nitrogen (lb/day)} = [(\text{average monthly Total Nitrogen (mg/L)} * \text{total monthly effluent flow (Millions of Gallons (MG))} / \# \text{ of days in the month}] * 8.34$$

11. The rolling annual total nitrogen limit is an annual average mass-based limit (lb/day), which shall be reported as a rolling 12-month average. The value will be calculated as the arithmetic mean of the monthly average total nitrogen for the reporting month and the monthly average total

nitrogen for the previous 11 months. Report both the rolling annual average and the monthly average each month.

See Part I.G.2 for special conditions related to nitrogen.

12. Report in nanograms per liter (ng/L). This reporting requirement for the listed per- and polyfluoroalkyl substances (PFAS) parameters takes effect the first full calendar quarter beginning at least 6 months after EPA notifies the Permittee that a multi-lab validated method for wastewater is available.
13. The Permittee shall conduct acute toxicity tests (LC<sub>50</sub>) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in **Attachment A and B** of this permit. LC<sub>50</sub> and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*. Toxicity test samples shall be collected and tests completed during the same weeks each time of calendar quarters ending March 31<sup>st</sup> and September 30<sup>th</sup>. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.
14. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A and B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
15. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A and B**. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
16. Monitoring and reporting for dissolved organic carbon (DOC) are not requirements of the Whole Effluent Toxicity (WET) tests but are additional requirements. The Permittee may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.
17. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate

DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

18. See Part I.G.3 for special conditions regarding ambient phosphorus monitoring.
19. This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter beginning at least 6 months after EPA notifies the Permittee that a multi-lab validated method for biosolids is available.
20. Sludge sampling shall be as representative as possible based on guidance found at <https://www.epa.gov/sites/production/files/2018-11/documents/potw-sludge-sampling-guidance-document.pdf>.

**Part I.A. continued.**

2. The discharge shall not cause a violation of the water quality standards of the receiving water.
3. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
4. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.
5. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.
6. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.
7. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.
8. The Permittee must provide adequate notice to EPA-Region 1 and the State of the following:
  - a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Part 301 or Part 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 CFR Part 122 Appendix A as amended) discharging process water; and
  - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
  - c. For purposes of this paragraph, adequate notice shall include information on:
    - (1) The quantity and quality of effluent introduced into the POTW; and
    - (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
    - (3) Pollutants introduced into the POTW by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

**B. UNAUTHORIZED DISCHARGES**

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit in accordance with Part II.D.1.e.(1) (24-hour reporting). See Part I.H below for reporting requirements.
2. Starting December 21, 2020, the Permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge, except SSOs that do not impact a surface water or the public, on a publicly available website, and it shall remain on the website for a minimum of 12 months. Such notification shall include the location and description of the discharge; estimated volume; 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.
3. Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at <https://www.mass.gov/how-to/sanitary-sewer-overflowbypassbackup-notification>.

**C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM**

Operation and maintenance (O&M) of the sewer system shall be in compliance with the Standard Conditions of Part II and the following terms and conditions. The Permittee and Co-permittee shall complete the following activities for the collection system which it owns:

1. Maintenance Staff

The Permittee and Co-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. Provisions to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

2. Preventive Maintenance Program

The Permittee and Co-permittee shall maintain an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. Plans and programs to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

### 3. Infiltration/Inflow

The Permittee and Co-permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

### 4. Collection System Mapping

Within 30 months of the effective date of this permit, the Permittee and Co-permittee shall prepare a map of the sewer collection system it owns. The map shall be on a street map of the community, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by federal, state, or local agencies. Such map(s) shall include, but not be limited to the following:

- a. All sanitary sewer lines and related manholes;
- b. All combined sewer lines, related manholes, and catch basins;
- c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);
- d. All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;
- e. All pump stations and force mains;
- f. The wastewater treatment facility(ies);
- g. All surface waters (labeled);
- h. Other major appurtenances such as inverted siphons and air release valves;
- i. A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- j. The scale and a north arrow; and
- k. The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

### 5. Collection System O&M Plan

The Permittee and Co-permittee shall develop and implement a Collection System O&M Plan.

- a. Within six (6) months of the effective date of the permit, the Permittee and Co-permittee shall submit to EPA and the State
  - (1) A description of the collection system management goals, staffing, information management, and legal authorities;
  - (2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
  - (3) A schedule for the development and implementation of the full Collection System O&M Plan including the elements in paragraphs b.1. through b.8. below.
  
- b. The full Collection System O&M Plan shall be completed, implemented and submitted to EPA and the State within twenty-four (24) months from the effective date of this permit. The Plan shall include:
  - (1) The required submittal from paragraph 5.a. above, updated to reflect current information;
  - (2) A preventive maintenance and monitoring program for the collection system;
  - (3) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
  - (4) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
  - (5) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;
  - (6) A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts;
  - (7) An educational public outreach program for all aspects of I/I control, particularly private inflow; and
  - (8) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

## 6. Annual Reporting Requirement

The Permittee and Co-permittee shall submit a summary report of activities related to the implementation of its Collection System O&M Plan during the previous calendar year. The report shall be submitted to EPA and the State annually by March 31. The first annual report is due the first March 31<sup>st</sup> following submittal of the collection system O&M Plan required by Part I.C.5.b. of this permit. The summary report shall, at a minimum, include:

- a. A description of the staffing levels maintained during the year;
- b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;
- c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
- d. A map with areas identified for investigation/action in the coming year;
- e. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit; and
- f. If the average annual flow in the previous calendar year exceeded 80 percent of the facility's 6.0 MGD design flow (4.8 MGD), or there have been capacity related overflows, the report shall include:
  - (1) Plans for further potential flow increases describing how the Permittee will maintain compliance with the flow limit and all other effluent limitations and conditions; and
  - (2) A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.

## D. ALTERNATE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the Permittee and Co-permittee shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works it owns and operates, as defined in Part II.E.1 of this permit.

## E. INDUSTRIAL USERS AND PRETREATMENT PROGRAM

1. The Permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 90 days of the

effective date of this permit, the Permittee shall prepare and submit a written technical evaluation to EPA analyzing the need to revise local limits. As part of this evaluation, the Permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the Permittee shall complete and submit the attached form (see **Attachment C** – Reassessment of Technically Based Industrial Discharge Limits) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the Permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development Guidance (July 2004).

2. The Permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the Permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR Part 403. At a minimum, the Permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):
  - a. 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 the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.
  - b. Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
  - c. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.
  - d. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
3. The Permittee shall provide EPA and the State with an annual report describing the Permittee's pretreatment program activities for the twelve (12) month period ending 60 days prior to the due date in accordance with 403.12(i). The annual report shall be consistent with the format described in **Attachment D** (NPDES Permit Requirement for Industrial Pretreatment Annual Report) of this permit and shall be submitted no later than **November 30** of each year.
4. The Permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR 403.18(c).

5. The Permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR Part 405 et seq.
6. The Permittee must modify its pretreatment program, if necessary, to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The Permittee must provide EPA, in writing, within 180 days of this permit's effective date proposed changes, if applicable, to the Permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the Permittee must address in its written submission the following areas: (1) Enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The Permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR § 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.
7. Beginning the first full calendar quarter following 6 months after EPA has notified the Permittee that a multi-lab validated method for wastewater is available the Permittee shall commence annual sampling of the following types of industrial discharges into the POTW:
  - Commercial Car Washes
  - Platers/Metal Finishers
  - Paper and Packaging Manufacturers
  - Tanneries and Leather/Fabric/Carpet Treaters
  - Manufacturers of Parts with Polytetrafluoroethylene (PTFE) or teflon type coatings (i.e. bearings)
  - Landfill Leachate
  - Centralized Waste Treaters
  - Contaminated Sites
  - Fire Fighting Training Facilities
  - Airports
  - Any Other Known or Expected Sources of PFAS

Sampling shall be for the following PFAS chemicals:

Industrial User Effluent Characteristic	Maximum Daily	Monitoring Requirements	
		Frequency	Sample Type
Perfluorohexanesulfonic acid (PFHxS)	Report ng/L	1/year	Composite
Perfluoroheptanoic acid (PFHpA)	Report ng/L	1/year	Composite
Perfluorononanoic acid (PFNA)	Report ng/L	1/year	Composite
Perfluorooctanesulfonic acid (PFOS)	Report ng/L	1/year	Composite
Perfluorooctanoic acid (PFOA)	Report ng/L	1/year	Composite
Perfluorodecanoic acid (PFDA)	Report ng/L	1/year	Composite

The Industrial discharges sampled and the sampling results shall be summarized and included in the annual report (see Part I.E.3).

**F. SLUDGE CONDITIONS**

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 CFR Part 503, which prescribe “Standards for the Use or Disposal of Sewage Sludge” pursuant to § 405(d) of the CWA, 33 U.S.C. § 1345(d).
2. If both state and federal requirements apply to the Permittee’s sludge use and/or disposal practices, the Permittee shall comply with the more stringent of the applicable requirements.
3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge use or disposal practices:
  - a. Land application - the use of sewage sludge to condition or fertilize the soil
  - b. Surface disposal - the placement of sewage sludge in a sludge only landfill
  - c. Sewage sludge incineration in a sludge only incinerator
4. The requirements of 40 CFR Part 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 CFR § 503.4. These requirements also do not apply to facilities which do not use or dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g., lagoons, reed beds), or are otherwise excluded under 40 CFR § 503.6.
5. The 40 CFR Part 503 requirements include the following elements:
  - a. General requirements
  - b. Pollutant limitations
  - c. Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
  - d. Management practices
  - e. Record keeping
  - f. Monitoring
  - g. Reporting

Which of the 40 CFR Part 503 requirements apply to the Permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 guidance document, “EPA Region 1 - NPDES Permit Sludge Compliance

Guidance” (November 4, 1999), may be used by the Permittee to assist it in determining the applicable requirements.<sup>1</sup>

6. The sludge shall be monitored for pollutant concentrations (all Part 503 methods) and pathogen reduction and vector attraction reduction (land application and surface disposal) at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year, as follows:

less than 290	1/ year
290 to less than 1,500	1 /quarter
1,500 to less than 15,000	6 /year
15,000 +	1 /month

Sampling of the sewage sludge shall use the procedures detailed in 40 CFR § 503.8.

7. Under 40 CFR § 503.9(r), the Permittee is a “person who prepares sewage sludge” because it “is ... the person who generates sewage sludge during the treatment of domestic sewage in a treatment works ....” If the Permittee contracts with *another* “person who prepares sewage sludge” under 40 CFR § 503.9(r) – i.e., with “a person who derives a material from sewage sludge” – for use or disposal of the sludge, then compliance with Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the Permittee does not engage a “person who prepares sewage sludge,” as defined in 40 CFR § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR § 503.7. If the ultimate use or disposal method is land application, the Permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 CFR § 503 Subpart B.
8. The Permittee shall submit an annual report containing the information specified in the 40 CFR Part 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by **February 19** (*see also* “EPA Region 1 - NPDES Permit Sludge Compliance Guidance”). Reports shall be submitted electronically using EPA’s Electronic Reporting tool (“NeT”) (*see* “Reporting Requirements” section below).

## G. SPECIAL CONDITIONS

### 1. Aluminum Compliance Schedule

- a. The effluent limit for total aluminum shall be subject to a schedule of compliance whereby the limit takes effect three years after the effective date of the permit. For the period starting on the effective date of this permit and ending three (3) years after the effective date, the Permittee shall report only the monthly average aluminum concentration on the monthly DMR. After this initial three (3) year period, the Permittee shall comply with the monthly average total aluminum limit of 112.9 µg/L (“final aluminum effluent limit”). The Permittee shall submit an

<sup>1</sup> This guidance document is available upon request from EPA Region 1 and may also be found at: <http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf>

annual report due by January 15th of each of the first three (3) years of the permit that will detail its progress towards meeting the final aluminum effluent limit.

- b. If during the three-year period after the effective date of the permit, Massachusetts adopts revised aluminum criteria, then the Permittee may request a permit modification, pursuant to 40 CFR § 122.62(a)(3), for a further delay in the effective date of the final aluminum effluent limits. If new criteria are approved by EPA before the effective date of the final aluminum effluent limit, the Permittee may apply for a permit modification, pursuant to 40 CFR § 122.62(a)(3), to revise the time to meet the final aluminum effluent limit and/or for revisions to the permit based on whether there is reasonable potential for the facility's aluminum discharge to cause or contribute to a violation of the newly approved aluminum criteria.

## 2. Total Nitrogen

- a. The Permittee shall continue to optimize the treatment facility operations relative to total nitrogen ("TN") removal through measures such as continued ammonia removal, maximization of solids retention time while maintaining compliance with BOD<sub>5</sub> and TSS limits, and/or other operational changes designed to enhance the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen.
- b. The permittee shall submit an annual report to EPA and the MassDEP, by **February 1** each year, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous calendar year and the previous five (5) calendar years. If, in any year, the treatment facility discharges of TN on an average annual basis have increased, the annual report shall include a detailed explanation of the reasons why TN discharges have increased, including any changes in influent flows/loads and any operational changes. The report shall also include all supporting data.

## 3. Ambient Phosphorus Monitoring

Beginning in April of the first even numbered year that occurs at least six months after permit issuance, and during even numbered years thereafter, the Permittee shall collect samples at two locations:

- a. Once per month from April through October, in the receiving water immediately upstream of the facility. The samples taken upstream of the facility shall be analyzed for total phosphorus.
- b. Once per month in July, August and September only, in the French River reservoir, within 200 feet of the Perryville Dam. The samples taken in the downstream reservoir shall be analyzed for secchi disk transparency, non-rooted

vegetation percent visual coverage, planktonic chlorophyll-*a*, dissolved oxygen, pH, total phosphorus, and any cyanobacteria blooms<sup>2</sup>.

Sampling in both locations shall be conducted on any calendar day that is preceded by at least 72 hours with less than or equal to 0.1 inches of cumulative rainfall. A sampling plan shall be submitted to EPA and the State (in accordance with Part I.H.2 and Part I.H.7, respectively) at least three months prior to the first planned sampling date as part of a Quality Assurance Project Plan for review and State approval. For the years that monitoring is not required, the Permittee shall report NODI code “9” (conditional monitoring not required).

## H. REPORTING REQUIREMENTS

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

### 1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State electronically using NetDMR no later than the 15th day of the month. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA’s Central Data Exchange at <https://cdx.epa.gov/>.

### 2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. *See* Part I.H.7. for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

### 3. Submittal of Industrial User and Pretreatment Related Reports

- a. Prior to 21 December 2025, all reports and information required of the Permittee in the Industrial Users and Pretreatment Program section of this permit shall be submitted to the Pretreatment Coordinator in EPA Region 1 Water Division (WD). Starting on 21 December 2025, these submittals must be done electronically as NetDMR attachments and/or using EPA’s NPDES Electronic Reporting Tool (“NeT”), or another approved EPA system, which will be accessible through EPA’s Central Data Exchange at <https://cdx.epa.gov/>. These requests, reports and notices include:

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<sup>2</sup> *Massachusetts Consolidated Assessment and Listing Methodology (CALM) Guidance Manual for the 2018 Reporting Cycle*, Mass DEP, May 3, 2018.

## b. Annual Pretreatment Reports,

- (1) Pretreatment Reports Reassessment of Technically Based Industrial Discharge Limits Form,
- (2) Revisions to Industrial Discharge Limits,
- (3) Report describing Pretreatment Program activities, and
- (4) Proposed changes to a Pretreatment Program

This information shall be submitted to EPA WD as a hard copy at the following address:

U.S. Environmental Protection Agency  
Water Division  
Regional Pretreatment Coordinator  
5 Post Office Square - Suite 100 (06-03)  
Boston, MA 02109-3912

## 4. Submittal of Biosolids/Sewage Sludge Reports

By February 19 of each year, the Permittee must electronically report their annual Biosolids/Sewage Sludge Report for the previous calendar year using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which is accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

## 5. Submittal of Requests and Reports to EPA Water Division (WD)

- a. The following requests, reports, and information described in this permit shall be submitted to the NPDES Applications Coordinator in EPA Water Division (WD):
  - (1) Transfer of permit notice;
  - (2) Request for changes in sampling location;
  - (3) Report on unacceptable dilution water / request for alternative dilution water for WET testing.
- b. These reports, information, and requests shall be submitted to EPA WD electronically at [R1NPDESReporting@epa.gov](mailto:R1NPDESReporting@epa.gov).

## 6. Submittal of Reports to EPA Enforcement and Compliance Assurance Division (ECAD) in Hard Copy Form

- a. The following notifications and reports shall be signed and dated originals, submitted as hard copy, with a cover letter describing the submission:
  - (1) Prior to 21 December 2025, written notifications required under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows

(SSOs). Starting on 21 December 2025, such notifications must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

- (2) Collection System Operation and Maintenance Plan (from Co-permittee)
- (3) Report on annual activities related to O&M Plan (from Co-permittee)

b. This information shall be submitted to EPA ECAD at the following address:

U.S. Environmental Protection Agency  
Enforcement and Compliance Assurance Division  
Water Compliance Section  
5 Post Office Square, Suite 100 (04-SMR)  
Boston, MA 02109-3912

## 7. State Reporting

Duplicate signed copies of all WET test reports shall be submitted to the Massachusetts Department of Environmental Protection, Division of Watershed Management, at the following address:

Massachusetts Department of Environmental Protection  
Bureau of Water Resources  
Division of Watershed Management  
8 New Bond Street  
Worcester, Massachusetts 01606

## 8. Verbal Reports and Verbal Notifications

- a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part II.B.4.c.(2), Part II.B.5.c.(3), and Part II.D.1.e).
- b. Verbal reports and verbal notifications shall be made to:

EPA ECAD at 617-918-1510  
and  
MassDEP Emergency Response at 888-304-1133

## I. STATE PERMIT REQUIREMENTS

1. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, beginning six (6) months after the permittee has been notified by EPA of a multi-lab validated method for

wastewater, or two (2) years after the effective date of the 2021 Federal NPDES permit, whichever is earlier, the permittee shall conduct monitoring of the influent, effluent, and sludge for PFAS compounds as detailed in the tables below. If EPA's multi-lab validated method is not available by twenty (20) months after the effective date of the 2021 Federal NPDES permit, the permittee shall contact MassDEP ([massdep.npdes@mass.gov](mailto:massdep.npdes@mass.gov)) for guidance on an appropriate analytical method. Notwithstanding any other provision of the 2021 Federal NPDES Permit to the contrary, monitoring results shall be reported to MassDEP electronically, at [massdep.npdes@mass.gov](mailto:massdep.npdes@mass.gov), or as otherwise specified, within 30 days after they are received.

**Effluent (Outfall 001)**

Parameter	Units	Measurement Frequency	Sample Type
Perfluorohexanesulfonic acid (PFHxS)	ng/L	Quarterly <sup>3</sup>	24-hour Composite
Perfluoroheptanoic acid (PFHpA)	ng/L	Quarterly	24-hour Composite
Perfluorononanoic acid (PFNA)	ng/L	Quarterly	24-hour Composite
Perfluorooctanesulfonic acid (PFOS)	ng/L	Quarterly	24-hour Composite
Perfluorooctanoic acid (PFOA)	ng/L	Quarterly	24-hour Composite
Perfluorodecanoic acid (PFDA)	ng/L	Quarterly	24-hour Composite

**Sludge**

Parameter	Units	Measurement Frequency	Sample Type <sup>4</sup>
Perfluorohexanesulfonic acid (PFHxS)	ng/g	Quarterly	Grab/Composite
Perfluoroheptanoic acid (PFHpA)	ng/g	Quarterly	Grab/Composite
Perfluorononanoic acid (PFNA)	ng/g	Quarterly	Grab/Composite
Perfluorooctanesulfonic acid (PFOS)	ng/g	Quarterly	Grab/Composite
Perfluorooctanoic acid (PFOA)	ng/g	Quarterly	Grab/Composite
Perfluorodecanoic acid (PFDA)	ng/g	Quarterly	Grab/Composite

- Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, beginning six (6) months after permittee has been notified by EPA of a multi-lab validated method for wastewater, or two (2) years after the effective date of the 2021 Federal NPDES permit, whichever is earlier, the permittee shall commence annual monitoring of all Significant Industrial

<sup>3</sup> Quarters are defined as January to March, April to June, July to September, and October to December. Samples shall be taken during the same month each quarter and shall be taken 3 months apart (e.g., an example sampling schedule could be February, May, August, and November).

<sup>4</sup> Sludge sampling shall be as representative as possible based on guidance found at <https://www.epa.gov/sites/production/files/2018-11/documents/potw-sludge-sampling-guidance-document.pdf>.

Users<sup>5,6</sup> discharging into the POTW. Monitoring shall be in accordance with the table below. If EPA's multi-lab validated method is not available by twenty (20) months after the effective date of the 2021 Federal NPDES permit, the permittee shall contact MassDEP ([massdep.npdes@mass.gov](mailto:massdep.npdes@mass.gov)) for guidance on an appropriate analytical method. Notwithstanding any other provision of the 2021 Federal NPDES permit to the contrary, monitoring results shall be reported to MassDEP electronically at [massdep.npdes@mass.gov](mailto:massdep.npdes@mass.gov) within 30 days after they are received.

Parameter	Units	Measurement Frequency	Sample Type
Perfluorohexanesulfonic acid (PFHxS)	ng/L	Annual	24-hour Composite
Perfluoroheptanoic acid (PFHpA)	ng/L	Annual	24-hour Composite
Perfluorononanoic acid (PFNA)	ng/L	Annual	24-hour Composite
Perfluorooctanesulfonic acid (PFOS)	ng/L	Annual	24-hour Composite
Perfluorooctanoic acid (PFOA)	ng/L	Annual	24-hour Composite
Perfluorodecanoic acid (PFDA)	ng/L	Annual	24-hour Composite

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5 Significant Industrial User (SIU) is defined at 40 CFR part 403: All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR chapter I, subpart N; **and** any other industrial user that: discharges an average of 25,000 GPD or more of process wastewater to the POTW, contributes a process wastestream that makes up 5% or more of the average dry weather hydraulic or organic capacity of the POTW, or designated as such by the POTW on the basis that the industrial users has a reasonable potential for adversely affecting the POTW's operation or for violating any Pretreatment Standards or requirement.

6 This requirement applies to all Significant Industrial Users and not just those within the sectors identified by EPA in the NPDES permit.

## ATTACHMENT A

### USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

#### I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **Daphnid (Ceriodaphnia dubia) definitive 48 hour test.**

Acute toxicity test data shall be reported as outlined in Section VIII.

#### II. METHODS

The permittee shall use 40 CFR Part 136 methods. Methods and guidance may be found at:

[http://water.epa.gov/scitech/methods/cwa/wet/disk2\\_index.cfm](http://water.epa.gov/scitech/methods/cwa/wet/disk2_index.cfm)

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

#### III. SAMPLE COLLECTION

A discharge sample shall be collected. Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for chemical and physical analyses required. The remaining sample shall be measured for total residual chlorine and dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1.0 mg/L chlorine. If dechlorination is necessary, a thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) must also be run in the WET test.

All samples held overnight shall be refrigerated at 1- 6°C.

#### IV. DILUTION WATER

A grab sample of dilution water used for acute toxicity testing shall be collected from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. In the case where an alternate dilution water has been agreed upon an additional receiving water control (0% effluent) must also be tested.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate standard dilution water of known quality with a hardness, pH, conductivity, alkalinity, organic carbon, and total suspended solids similar to that of the receiving water may be substituted **AFTER RECEIVING WRITTEN APPROVAL FROM THE PERMIT ISSUING AGENCY(S)**. Written requests for use of an alternate dilution water should be mailed with supporting documentation to the following address:

Director  
Office of Ecosystem Protection (CAA)  
U.S. Environmental Protection Agency-New England  
5 Post Office Sq., Suite 100 (OEP06-5)  
Boston, MA 02109-3912

and

Manager  
Water Technical Unit (SEW)  
U.S. Environmental Protection Agency  
5 Post Office Sq., Suite 100 (OES04-4)  
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

*See the most current annual DMR instructions which can be found on the EPA Region 1 website at <http://www.epa.gov/region1/enforcement/water/dmr.html> for further important details on alternate dilution water substitution requests.*

It may prove beneficial to have the proposed dilution water source screened for suitability prior to toxicity testing. EPA strongly urges that screening be done prior to set up of a full definitive toxicity test any time there is question about the dilution water's ability to support acceptable performance as outlined in the 'test acceptability' section of the protocol.

#### V. TEST CONDITIONS

The following tables summarize the accepted daphnid and fathead minnow toxicity test conditions and test acceptability criteria:

**EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS<sup>1</sup>**

1.	Test type	Static, non-renewal
2.	Temperature (°C)	20 ± 1°C or 25 ± 1°C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hour light, 8 hour dark
5.	Test chamber size	Minimum 30 ml
6.	Test solution volume	Minimum 15 ml
7.	Age of test organisms	1-24 hours (neonates)
8.	No. of daphnids per test chamber	5
9.	No. of replicate test chambers per treatment	4
10.	Total no. daphnids per test concentration	20
11.	Feeding regime	As per manual, lightly feed YCT and <u>Selenastrum</u> to newly released organisms while holding prior to initiating test
12.	Aeration	None
13.	Dilution water <sup>2</sup>	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q <sup>R</sup> or equivalent deionized water and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	≥ 0.5, must bracket the permitted RWC
15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution

series.

- |                            |   |
|----------------------------|---|
| 16. Effect measured        | Mortality-no movement of body or appendages on gentle prodding  |
| 17. Test acceptability     | 90% or greater survival of test organisms in dilution water control solution  |
| 18. Sampling requirements  | For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must first be used within 36 hours of collection. |
| 19. Sample volume required | Minimum 1 liter   |

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Footnotes:

1. Adapted from EPA-821-R-02-012.
2. Standard prepared dilution water must have hardness requirements to generally reflect the characteristics of the receiving water.

**EPA NEW ENGLAND TEST CONDITIONS FOR THE FATHEAD MINNOW  
(PIMEPHALES PROMELAS) 48 HOUR ACUTE TEST<sup>1</sup>**

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1. Test Type	Static, non-renewal
2. Temperature (°C)	20 ± 1 ° C or 25 ± 1°C
3. Light quality	Ambient laboratory illumination
4. Photoperiod	16 hr light, 8 hr dark
5. Size of test vessels	250 mL minimum
6. Volume of test solution	Minimum 200 mL/replicate
7. Age of fish	1-14 days old and age within 24 hrs of each other
8. No. of fish per chamber	10
9. No. of replicate test vessels per treatment	4
10. Total no. organisms per concentration	40
11. Feeding regime	As per manual, lightly feed test age larvae using concentrated brine shrimp nauplii while holding prior to initiating test
12. Aeration	None, unless dissolved oxygen (D.O.) concentration falls below 4.0 mg/L, at which time gentle single bubble aeration should be started at a rate of less than 100 bubbles/min. (Routine D.O. check is recommended.)
13. dilution water <sup>2</sup>	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q <sup>R</sup> or equivalent deionized and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14. Dilution series	≥ 0.5, must bracket the permitted RWC

- |                            |  |
|----------------------------|--|
| 15. Number of dilutions    | 5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series. |
| 16. Effect measured        | Mortality-no movement on gentle prodding   |
| 17. Test acceptability     | 90% or greater survival of test organisms in dilution water control solution   |
| 18. Sampling requirements  | For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples are used within 36 hours of collection.  |
| 19. Sample volume required | Minimum 2 liters   |

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Footnotes:

1. Adapted from EPA-821-R-02-012
2. Standard dilution water must have hardness requirements to generally reflect characteristics of the receiving water.

## VI. CHEMICAL ANALYSIS

At the beginning of a static acute toxicity test, pH, conductivity, total residual chlorine, oxygen, hardness, alkalinity and temperature must be measured in the highest effluent concentration and the dilution water. Dissolved oxygen, pH and temperature are also measured at 24 and 48 hour intervals in all dilutions. The following chemical analyses shall be performed on the 100 percent effluent sample and the upstream water sample for each sampling event.

<u>Parameter</u>	Effluent	Receiving Water	ML (mg/l)
Hardness <sup>1</sup>	x	x	0.5
Total Residual Chlorine (TRC) <sup>2, 3</sup>	x		0.02
Alkalinity	x	x	2.0
pH	x	x	--
Specific Conductance	x	x	--
Total Solids	x		--
Total Dissolved Solids	x		--
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02
Other as permit requires			

### Notes:

- Hardness may be determined by:
  - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
    - Method 2340B (hardness by calculation)
    - Method 2340C (titration)
- Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
  - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
    - Method 4500-CL E Low Level Amperometric Titration
    - Method 4500-CL G DPD Colorimetric Method
- Required to be performed on the sample used for WET testing prior to its use for toxicity testing.

## **VII. TOXICITY TEST DATA ANALYSIS**

### LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-Kärber
- Trimmed Spearman-Kärber
- Graphical

See the flow chart in Figure 6 on p. 73 of EPA-821-R-02-012 for appropriate method to use on a given data set.

### No Observed Acute Effect Level (NOAEL)

See the flow chart in Figure 13 on p. 87 of EPA-821-R-02-012.

## **VIII. TOXICITY TEST REPORTING**

A report of the results will include the following:

- Description of sample collection procedures, site description
- Names of individuals collecting and transporting samples, times and dates of sample collection and analysis on chain-of-custody
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests; light and temperature regime; other information on test conditions if different than procedures recommended. Reference toxicant test data should be included.
- All chemical/physical data generated. (Include minimum detection levels and minimum quantification levels.)
- Raw data and bench sheets.
- Provide a description of dechlorination procedures (as applicable).
- Any other observations or test conditions affecting test outcome.

**ATTACHMENT B**  
**FRESHWATER CHRONIC**  
**TOXICITY TEST PROCEDURE AND PROTOCOL**  
**USEPA Region 1**

**I. GENERAL REQUIREMENTS**

The permittee shall be responsible for the conduct of acceptable chronic toxicity tests using three fresh samples collected during each test period. The following tests shall be performed as prescribed in Part 1 of the NPDES discharge permit in accordance with the appropriate test protocols described below. (Note: the permittee and testing laboratory should review the applicable permit to determine whether testing of one or both species is required).

- **Daphnid (Ceriodaphnia dubia) Survival and Reproduction Test.**

Chronic toxicity data shall be reported as outlined in Section VIII.

**II. METHODS**

Methods to follow are those recommended by EPA in: Short Term Methods For Estimating The Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002. United States Environmental Protection Agency. Office of Water, Washington, D.C., EPA 821-R-02-013. The methods are available on-line at <http://www.epa.gov/waterscience/WET/> . Exceptions and clarification are stated herein.

**III. SAMPLE COLLECTION AND USE**

A total of three fresh samples of effluent and receiving water are required for initiation and subsequent renewals of a freshwater, chronic, toxicity test. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. Fresh samples are recommended for use on test days 1, 3, and 5. However, provided a total of three samples are used for testing over the test period, an alternate sampling schedule is acceptable. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any hold time extension. All test samples collected may be used for 24, 48 and 72 hour renewals after initial use. All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6° C.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol.

Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate prior to sample use for toxicity testing.

If any of the renewal samples are of sufficient potency to cause lethality to 50 percent or more of the test organisms in any of the test treatments for either species or, if the test fails to meet its permit limits, then chemical analysis for total metals (originally required for the initial sample only in Section VI) will be required on the renewal sample(s) as well.

#### IV. DILUTION WATER

Samples of receiving water must be collected from a location in the receiving water body immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2, Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of an alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable an ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first is the case where repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use be made by the permittee and toxicity testing laboratory. The second is in the case where two of the most recent documented incidents of unacceptable site dilution water toxicity requires ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use **and** written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW must be mailed with supporting documentation to the following addresses:

Director  
Office of Ecosystem Protection (CAA)  
U.S. Environmental Protection Agency, Region 1  
Five Post Office Square, Suite 100  
Mail Code OEP06-5  
Boston, MA 02109-3912

and

Manager  
Water Technical Unit (SEW)  
U.S. Environmental Protection Agency  
Five Post Office Square, Suite 100  
Mail Code OES04-4  
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

*See the most current annual DMR instructions which can be found on the EPA Region 1 website at <http://www.epa.gov/region1/enforcementandassistance/dmr.html> for further important details on alternate dilution water substitution requests.*

## **V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA**

Method specific test conditions and TAC are to be followed and adhered to as specified in the method guidance document, EPA 821-R-02-013. If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

### **V.1. Use of Reference Toxicity Testing**

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

If reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

#### V.1.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e.  $\geq 3$  standard deviations for IC25 values and  $\geq$  two concentration intervals for NOECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

V.2. For the *C. dubia* test, the determination of TAC and formal statistical analyses must be performed using only the first three broods produced.

V.3. Test treatments must include 5 effluent concentrations and a dilution water control. An additional test treatment, at the permitted effluent concentration (% effluent), is required if it is not included in the dilution series.

## VI. CHEMICAL ANALYSIS

As part of each toxicity test's daily renewal procedure, pH, specific conductance, dissolved oxygen (DO) and temperature must be measured at the beginning and end of each 24-hour period in each test treatment and the control(s).

The additional analysis that must be performed under this protocol is as specified and noted in the table below.

<u>Parameter</u>	Effluent	Receiving Water	ML (mg/l)
Hardness <sup>1, 4</sup>	x	x	0.5
Total Residual Chlorine (TRC) <sup>2, 3, 4</sup>	x		0.02
Alkalinity <sup>4</sup>	x	x	2.0
pH <sup>4</sup>	x	x	--
Specific Conductance <sup>4</sup>	x	x	--
Total Solids <sup>6</sup>	x		--
Total Dissolved Solids <sup>6</sup>	x		--
Ammonia <sup>4</sup>	x	x	0.1
Total Organic Carbon <sup>6</sup>	x	x	0.5
Total Metals <sup>5</sup>			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02

Other as permit requires

#### Notes:

1. Hardness may be determined by:

- APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
    - Method 2340B (hardness by calculation)
    - Method 2340C (titration)
2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
    - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
      - Method 4500-CL E Low Level Amperometric Titration
      - Method 4500-CL G DPD Colorimetric Method
    - USEPA 1983. Manual of Methods Analysis of Water and Wastes
      - Method 330.5
  3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing
  4. Analysis is to be performed on samples and/or receiving water, as designated in the table above, from all three sampling events.
  5. Analysis is to be performed on the initial sample(s) only unless the situation arises as stated in Section III, paragraph 4
  6. Analysis to be performed on initial samples only

## **VII. TOXICITY TEST DATA ANALYSIS AND REVIEW**

### **A. Test Review**

#### **1. Concentration / Response Relationship**

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported. The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-013.

Guidance for this review can be found at

<http://water.epa.gov/scitech/methods/cwa/> . In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

#### **2. Test Variability (Test Sensitivity)**

This review step is separate from the determination of whether a test meets or does not meet TAC. Within test variability is to be examined for the purpose of evaluating test sensitivity. This evaluation is to be performed for the sub-lethal hypothesis testing endpoints reproduction and growth as required by the permit. The test report is to include documentation of this evaluation to support that the endpoint values reported resulted from a toxicity test of adequate sensitivity. This evaluation must be performed as required in Section 10.2.8 of EPA-821-R-02-013.

To determine the adequacy of test sensitivity, USEPA requires the calculation of test percent minimum significant difference (PMSD) values. In cases where NOEC determinations are made based on a non-parametric technique, calculation of a test PMSD value, for the sole purpose of assessing test sensitivity, shall be calculated using a comparable parametric statistical analysis technique. The calculated test PMSD is then compared to the upper and lower PMSD bounds shown for freshwater tests in Section 10.2.8.3, p. 52, Table 6 of EPA-821-R-02-013. The comparison will yield one of the following determinations.

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.
- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-R-00-003, June 2002, Section 6.4.2. The following link: [Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program](#) can be used to locate the USEPA website containing this document. If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater than the PMSD lower bound, then the treatment is considered statistically significant.
- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

## B. Statistical Analysis

### 1. General - Recommended Statistical Analysis Method

Refer to general data analysis flowchart, EPA 821-R-02-013, page 43

For discussion on Hypothesis Testing, refer to EPA 821-R-02-013, Section 9.6

For discussion on Point Estimation Techniques, refer to EPA 821-R-02-013, Section 9.7

### 2. *Pimephales promelas*

Refer to survival hypothesis testing analysis flowchart, EPA 821-R-02-013, page 79

Refer to survival point estimate techniques flowchart, EPA 821-R-02-013, page 80

Refer to growth data statistical analysis flowchart, EPA 821-R-02-013, page 92

### 3. *Ceriodaphnia dubia*

Refer to survival data testing flowchart, EPA 821-R-02-013, page 168

Refer to reproduction data testing flowchart, EPA 821-R-02-013, page 173

## VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Test summary sheets (2007 DMR Attachment F) which includes:
  - Facility name
  - NPDES permit number
  - Outfall number
  - Sample type
  - Sampling method
  - Effluent TRC concentration
  - Dilution water used
  - Receiving water name and sampling location
  - Test type and species
  - Test start date
  - Effluent concentrations tested (%) and permit limit concentration
  - Applicable reference toxicity test date and whether acceptable or not
  - Age, age range and source of test organisms used for testing
  - Results of TAC review for all applicable controls
  - Test sensitivity evaluation results (test PMSD for growth and reproduction)
  - Permit limit and toxicity test results
  - Summary of test sensitivity and concentration response evaluation

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s)
- Reference toxicity test control charts
- All sample chemical/physical data generated, including minimum limits (MLs) and analytical methods used
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis
- A discussion of any deviations from test conditions
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint

## ATTACHMENT C

### EPA - New England

#### Reassessment of Technically Based Industrial Discharge Limits

Under 40 CFR §122.21(j)(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)(1).

Below is a form designed by the U.S. Environmental Protection Agency (EPA - New England) to assist POTWs with approved IPPs in 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 direction 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 (1) 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 II., 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.

**(Item VI. continued)**

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 NPDES permit. For example, with a dilution ratio of 25:1 at a hardness of 25 mg/l - Calcium Carbonate (copper's chronic WQS equals 6.54 ug/l) the chronic NPDES permit limit for copper would equal 156.25 ug/l.

**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 EPA - New England.



**ITEM II.**

EXISTING TBLs			
POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)	POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)

**ITEM III.**

Note how your existing TBLs, 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 TBLs were calculated?  
If yes, explain.

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Has your POTW violated any of its NPDES permit limits and/or toxicity test requirements?

If \_\_\_\_\_ yes, \_\_\_\_\_ explain.

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**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 (lb/day)	Criteria
	Maximum (lb/day)	Average (lb/day)		
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)		Columns (2A) (2B)	
	Effluent Data Analyses		Water Quality Criteria (Gold Book) From TBLLs Today	
	Maximum (ug/l)	Average (ug/l)	(ug/l)	(ug/l)
Arsenic				
*Cadmium				
*Chromium				
*Copper				
Cyanide				
*Lead				
Mercury				
*Nickel				
Silver				
*Zinc				
Other (List)				

\*Hardness Dependent (mg/l - CaCO3)



**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 planing on managing its biosolids differently, list in Column (2B) what your new biosolids criteria would be and method of disposal.

Pollutant	Column (1) Data Analyses  Average (mg/kg)	Biosolids	Columns (2A) (2B) Biosolids Criteria From TBLLs New (mg/kg) (mg/kg)
Arsenic			
Cadmium			
Chromium			
Copper			
Cyanide			
Lead			
Mercury			
Nickel			
Silver			
Zinc			
Molybdenum			
Selenium			
Other (List)			

## ATTACHMENT D

### NPDES PERMIT REQUIREMENT FOR INDUSTRIAL PRETREATMENT ANNUAL REPORT

The information described below shall be included in the pretreatment program annual reports:

1. An updated list of all industrial users by category, as set forth in 40 C.F.R. 403.8(f)(2)(i), indicating compliance or noncompliance with the following:
  - baseline monitoring reporting requirements for newly promulgated industries
  - compliance status reporting requirements for newly promulgated industries
  - periodic (semi-annual) monitoring reporting requirements,
  - categorical standards, and
  - local limits;
2. A summary of compliance and enforcement activities during the preceding year, including the number of:
  - significant industrial users inspected by POTW (include inspection dates for each industrial user),
  - significant industrial users sampled by POTW (include sampling dates for each industrial user),
  - compliance schedules issued (include list of subject users),
  - written notices of violations issued (include list of subject users),
  - administrative orders issued (include list of subject users),
  - criminal or civil suits filed (include list of subject users) and,
  - penalties obtained (include list of subject users and penalty amounts);
3. A list of significantly violating industries required to be published in a local newspaper in accordance with 40 C.F.R. 403.8(f)(2)(vii);
4. A narrative description of program effectiveness including present and proposed changes to the program, such as funding, staffing, ordinances, regulations, rules and/or statutory authority;
5. A summary of all pollutant analytical results for influent, effluent, sludge and any toxicity or bioassay data from the wastewater treatment facility. The summary shall include a comparison of influent sampling results versus threshold inhibitory concentrations for the Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraph below or any similar sampling program described in this Permit.

At a minimum, annual sampling and analysis of the influent and effluent of the Wastewater Treatment Plant shall be conducted for the following pollutants:

- |                    |                   |
|--------------------|-------------------|
| a.) Total Cadmium  | f.) Total Nickel  |
| b.) Total Chromium | g.) Total Silver  |
| c.) Total Copper   | h.) Total Zinc    |
| d.) Total Lead     | i.) Total Cyanide |
| e.) Total Mercury  | j.) Total Arsenic |

The sampling program shall consist of one 24-hour flow-proportioned composite and at least one grab sample that is representative of the flows received by the POTW. The composite shall consist of hourly flow-proportioned grab samples taken over a 24-hour period if the sample is collected manually or shall consist of a minimum of 48 samples collected at 30 minute intervals if an automated sampler is used. Cyanide shall be taken as a grab sample during the same period as the composite sample. Sampling and preservation shall be consistent with 40 CFR Part 136.

6. A detailed description of all interference and pass-through that occurred during the past year;
7. A thorough description of all investigations into interference and pass-through during the past year;
8. A description of monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying parameters and frequencies;
9. A description of actions being taken to reduce the incidence of significant violations by significant industrial users; and,
10. The date of the latest adoption of local limits and an indication as to whether or not the permittee is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.

NPDES PART II STANDARD CONDITIONS  
(April 26, 2018)<sup>1</sup>

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<sup>1</sup>Updated July 17, 2018 to fix typographical errors.

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A. GENERAL REQUIREMENTS

1. Duty to Comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA or Act) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

- a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
- b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L. 114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

- (a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than \$2,500 nor more than \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation or by imprisonment of not more than 2 years, or both.
- (b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both.
- (c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than \$250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing

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endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

- (d) *False Statement.* 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, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further 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 non-compliance 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.
- (2) *Civil Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
- (3) *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:
- (a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
- (b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

### 2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. 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

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condition.

3. 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.

4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from responsibilities, liabilities or penalties to which the Permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

5. Property Rights

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

6. Confidentiality of Information

a. In accordance with 40 C.F.R. Part 2, any information submitted to EPA 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, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 C.F.R. Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

- (1) The name and address of any permit applicant or Permittee;
- (2) Permit applications, permits, and effluent data.

c. Information required by NPDES application forms provided by the Director under 40 C.F.R. § 122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

7. 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.)

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity

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covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

### 9. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

## B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

### 1. 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. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

### 2. 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.

### 3. Duty to Mitigate

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

### 4. Bypass

#### a. Definitions

- (1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.
- (2) *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. *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 (c) and (d) of this Section.

#### c. Notice

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- (1) *Anticipated bypass.* If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass. As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.
- (2) *Unanticipated bypass.* The Permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (24-hour notice). As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or required to do so by law.

### d. *Prohibition of bypass.*

- (1) 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;
  - (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 back-up 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 preventative maintenance; and
  - (c) The Permittee submitted notices as required under paragraph 4.c of this Section.
- (2) 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 4.d of this Section.

### 5. Upset

- a. *Definition.* *Upset* means an exceptional incident in which there is an 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

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- improper operation.
- b. *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 B.5.c. 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.
  - c. *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:
    - (1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
    - (2) The permitted facility was at the time being properly operated; and
    - (3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
    - (4) The Permittee complied with any remedial measures required under B.3. above.
  - d. *Burden of proof.* In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

C. MONITORING REQUIREMENTS

1. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for 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 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
- c. Records of monitoring information shall include:
  - (1) The date, exact place, and time of sampling or measurements;
  - (2) The individual(s) who performed the sampling or measurements;
  - (3) The date(s) analyses were performed;
  - (4) The individual(s) who performed the analyses;
  - (5) The analytical techniques or methods used; and
  - (6) The results of such analyses.
- d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.
- e. The Clean Water Act provides that any person who falsifies, tampers with, or

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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, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The Permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- a. 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;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

- a. *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. Notice is required only when:
  - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or
  - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).
  - (3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. *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 permit requirements.

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- c. *Transfers.* This permit is not transferable to any person except after 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 the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.
- d. *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.
  - (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.
  - (2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
  - (3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
- e. *Twenty-four hour reporting.*
  - (1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report 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. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

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reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section.

- (2) The following shall be included as information which must be reported within 24 hours under this paragraph.
    - (a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
    - (b) Any upset which exceeds any effluent limitation in the permit.
    - (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).
  - (3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.
- f. *Compliance Schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.
- h. *Other information.* Where the Permittee becomes aware that it failed to submit any

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relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

- i. *Identification of the initial recipient for NPDES electronic reporting data.* The owner, operator, or the duly authorized representative of an NPDES-regulated entity is required to electronically submit the required NPDES information (as specified in Appendix A to 40 C.F.R. Part 127) to the appropriate initial recipient, as determined by EPA, and as defined in 40 C.F.R. § 127.2(b). EPA will identify and publish the list of initial recipients on its Web site and in the FEDERAL REGISTER, by state and by NPDES data group (see 40 C.F.R. § 127.2(c) of this Chapter). EPA will update and maintain this listing.

2. Signatory Requirement

- a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §122.22.
- b. The CWA 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 non-compliance 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.

3. Availability of Reports.

Except for data determined to be confidential under paragraph A.6. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Director. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

For more definitions related to sludge use and disposal requirements, see EPA Region 1's NPDES Permit Sludge Compliance Guidance document (4 November 1999, modified to add regulatory definitions, April 2018).

*Administrator* means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

*Applicable standards and limitations* means all, State, interstate, and federal standards and limitations to which a "discharge," a "sewage sludge use or disposal practice," or a related activity is subject under the CWA, including "effluent limitations," water quality standards, standards of performance, toxic effluent standards or prohibitions, "best management practices," pretreatment standards, and "standards for sewage sludge use or disposal" under Sections 301, 302, 303, 304, 306, 307, 308, 403 and 405 of the CWA.

*Application* means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in

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“approved States,” including any approved modifications or revisions.

*Approved program* or *approved State* means a State or interstate program which has been approved or authorized by EPA under Part 123.

*Average monthly discharge limitation* means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.

*Average weekly discharge limitation* means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.

*Best Management Practices (“BMPs”)* means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

*Bypass* see B.4.a.1 above.

*C-NOEC* or “*Chronic (Long-term Exposure Test) – No Observed Effect Concentration*” means the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.

*Class I sludge management facility* is any publicly owned treatment works (POTW), as defined in 40 C.F.R. § 501.2, required to have an approved pretreatment program under 40 C.F.R. § 403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 C.F.R. § 403.10 (e)) and any treatment works treating domestic sewage, as defined in 40 C.F.R. § 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.

*Contiguous zone* means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

*Continuous discharge* means a “discharge” which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or similar activities.

*CWA* means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483 and Public Law 97-117, 33 U.S.C. 1251 *et seq.*

*CWA and regulations* means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. In the case of an approved State program, it includes State program requirements.

*Daily Discharge* means the “discharge of a pollutant” measured during a calendar day or any

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other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

*Direct Discharge* means the “discharge of a pollutant.”

*Director* means the Regional Administrator or an authorized representative. In the case of a permit also issued under Massachusetts’ authority, it also refers to the Director of the Division of Watershed Management, Department of Environmental Protection, Commonwealth of Massachusetts.

*Discharge*

- (a) When used without qualification, *discharge* means the “discharge of a pollutant.”
- (b) As used in the definitions for “interference” and “pass through,” *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

*Discharge Monitoring Report (“DMR”)* means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by Permittees. DMRs must be used by “approved States” as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA’s.

*Discharge of a pollutant* means:

- (a) Any addition of any “pollutant” or combination of pollutants to “waters of the United States” from any “point source,” or
- (b) Any addition of any pollutant or combination of pollutants to the waters of the “contiguous zone” or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any “indirect discharger.”

*Effluent limitation* means any restriction imposed by the Director on quantities, discharge rates, and concentrations of “pollutants” which are “discharged” from “point sources” into “waters of the United States,” the waters of the “contiguous zone,” or the ocean.

*Effluent limitation guidelines* means a regulation published by the Administrator under section 304(b) of CWA to adopt or revise “effluent limitations.”

*Environmental Protection Agency (“EPA”)* means the United States Environmental Protection

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Agency.

*Grab Sample* means an individual sample collected in a period of less than 15 minutes.

*Hazardous substance* means any substance designated under 40 C.F.R. Part 116 pursuant to Section 311 of CWA.

*Incineration* is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

*Indirect discharger* means a nondomestic discharger introducing “pollutants” to a “publicly owned treatment works.”

*Interference* means a discharge (see definition above) which, alone or in conjunction with a discharge or discharges from other sources, both:

- (a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- (b) Therefore is a cause of a violation of any requirement of the POTW’s NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

*Landfill* means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile.

*Land application* is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

*Land application unit* means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for agricultural purposes or for treatment and disposal.

*LC<sub>50</sub>* means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC<sub>50</sub> = 100% is defined as a sample of undiluted effluent.

*Maximum daily discharge limitation* means the highest allowable “daily discharge.”

*Municipal solid waste landfill (MSWLF) unit* means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be

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publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

### *Municipality*

- (a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.
- (b) As related to sludge use and disposal, *municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

*National Pollutant Discharge Elimination System* means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an “approved program.”

*New Discharger* means any building, structure, facility, or installation:

- (a) From which there is or may be a “discharge of pollutants;”
- (b) That did not commence the “discharge of pollutants” at a particular “site” prior to August 13, 1979;
- (c) Which is not a “new source;” and
- (d) Which has never received a finally effective NPDES permit for discharges at that “site.”

This definition includes an “indirect discharger” which commences discharging into “waters of the United States” after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a “site” for which it does not have a permit; and any offshore or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a “site” under EPA’s permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Director in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Director shall consider the factors specified in 40 C.F.R. §§ 125.122 (a) (1) through (10).

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An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a “new discharger” only for the duration of its discharge in an area of biological concern.

*New source* means any building, structure, facility, or installation from which there is or may be a “discharge of pollutants,” the construction of which commenced:

- (a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or
- (b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

*NPDES* means “National Pollutant Discharge Elimination System.”

*Owner or operator* means the owner or operator of any “facility or activity” subject to regulation under the NPDES programs.

*Pass through* means a Discharge (see definition above) which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW’s NPDES permit (including an increase in the magnitude or duration of a violation).

*Pathogenic organisms* are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

*Permit* means an authorization, license, or equivalent control document issued by EPA or an “approved State” to implement the requirements of Parts 122, 123, and 124. “Permit” includes an NPDES “general permit” (40 C.F.R § 122.28). “Permit” does not include any permit which has not yet been the subject of final agency action, such as a “draft permit” or “proposed permit.”

*Person* means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

*Person who prepares sewage sludge* is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

*pH* means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

*Point Source* means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 C.F.R. § 122.3).

*Pollutant* means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials

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(except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

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

*Primary industry category* means any industry category listed in the NRDC settlement agreement (*Natural Resources Defense Council et al. v. Train*, 8 E.R.C. 2120 (D.D.C. 1976), *modified* 12 E.R.C. 1833 (D.D.C. 1979)); also listed in Appendix A of 40 C.F.R. Part 122.

*Privately owned treatment works* means any device or system which is (a) used to treat wastes from any facility whose operator is not the operator of the treatment works and (b) not a “POTW.”

*Process wastewater* means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

*Publicly owned treatment works (POTW)* means a treatment works as defined by Section 212 of the Act, which is owned by a State or municipality (as defined by Section 504(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

*Regional Administrator* means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

*Secondary industry category* means any industry which is not a “primary industry category.”

*Septage* means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

*Sewage Sludge* means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

*Sewage sludge incinerator* is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

*Sewage sludge unit* is land on which only sewage sludge is placed for final disposal. This does

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not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 C.F.R. § 122.2.

*Sewage sludge use or disposal practice* means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

*Significant materials* includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substance designated under Section 101(14) of CERCLA; any chemical the facility is required to report pursuant to Section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

*Significant spills* includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 C.F.R. §§ 110.10 and 117.21) or Section 102 of CERCLA (see 40 C.F.R. § 302.4).

*Sludge-only facility* means any “treatment works treating domestic sewage” whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to section 405(d) of the CWA, and is required to obtain a permit under 40 C.F.R. § 122.1(b)(2).

*State* means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an Indian Tribe as defined in the regulations which meets the requirements of 40 C.F.R. § 123.31.

*Store or storage of sewage sludge* is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

*Storm water* means storm water runoff, snow melt runoff, and surface runoff and drainage.

*Storm water discharge associated with industrial activity* means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

*Surface disposal site* is an area of land that contains one or more active sewage sludge units.

*Toxic pollutant* means any pollutant listed as toxic under Section 307(a)(1) or, in the case of “sludge use or disposal practices,” any pollutant identified in regulations implementing Section 405(d) of the CWA.

*Treatment works treating domestic sewage* means a POTW or any other sewage sludge or waste water treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, “domestic sewage” includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Director may designate any person subject to the standards for sewage sludge use and

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disposal in 40 C.F.R. Part 503 as a “treatment works treating domestic sewage,” where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

*Upset* see B.5.a. above.

*Vector attraction* is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

*Waste pile or pile* means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

*Waters of the United States or waters of the U.S.* means:

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (b) All interstate waters, including interstate “wetlands;”
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
  - (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;
  - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland.

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Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

*Wetlands* means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

*Whole Effluent Toxicity (WET)* means the aggregate toxic effect of an effluent measured directly by a toxicity test.

*Zone of Initial Dilution (ZID)* means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards.

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl <sub>2</sub>	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M <sup>3</sup> /day	Cubic meters per day
DO	Dissolved oxygen

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kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH <sub>3</sub> -N	Ammonia nitrogen as nitrogen
NO <sub>3</sub> -N	Nitrate as nitrogen
NO <sub>2</sub> -N	Nitrite as nitrogen
NO <sub>3</sub> -NO <sub>2</sub>	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	“Whole effluent toxicity”
ZID	Zone of Initial Dilution

**RESPONSE TO COMMENTS  
NPDES PERMIT NO. MA0100439  
WEBSTER WASTEWATER TREATMENT PLANT  
WEBSTER, MASSACHUSETTS**

The U.S. Environmental Protection Agency's New England Region (EPA) is issuing a Final National Pollutant Discharge Elimination System (NPDES) Permit for the Webster Wastewater Treatment Plant (WWTP) located in Webster, Massachusetts. This permit is being issued under the Federal Clean Water Act (CWA), 33 U.S.C., §§ 1251 *et seq.*

In accordance with the provisions of 40 Code of Federal Regulations (CFR) §124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit # MA0100439 ("Draft Permit"). The Response to Comments explains and supports EPA's determinations that form the basis of the Final Permit. From June 30, 2021 through July 29, 2021, solicited public comments on the Draft Permit.

EPA received comments from:

- City of Webster (via Tighe & Bond), dated July 27, 2021
- Connecticut Department of Energy and Environmental Protection, dated July 28, 2021

Although EPA's knowledge of the facility has benefited from the various comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit that warranted a reopening of the public comment period. EPA does, however, make certain clarifications and changes in response to comments. These are explained in this document and reflected in the Final Permit. Below EPA provides a summary of the changes made in the Final Permit. The analyses underlying these changes are contained in the responses to individual comments that follow.

A copy of the Final Permit and this response to comments document will be posted on the EPA Region 1 web site: <https://www.epa.gov/npdes-permits/massachusetts-final-individual-npdes-permits>.

A copy of the Final Permit may be also obtained by writing or calling Doug MacLean, U.S. EPA, 5 Post Office Square, Suite 100 (Mail Code: 06-4), Boston, MA 02109-3912; Telephone: (617) 918-1608; Email: [maclean.douglas@epa.gov](mailto:maclean.douglas@epa.gov).

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Appendix A – GENERAL RESPONSE TO COMMENTS ON LONG ISLAND SOUND (“LIS”) NPDES OUT-OF-BASIN TOTAL NITROGEN PERMITTING APPROACH

**I. Summary of Changes to the Final Permit**

- 1. The Final Permit has been corrected to say “2/year” for all WET effluent and ambient monitoring frequencies. See Response 5.

**II. Responses to Comments**

Comments are reproduced below as received; they have not been edited.

**A. Comments from Ian Catlow, Vice President, Tighe & Bond, on behalf of the City of Webster:**

**Comment 1**

Aluminum Effluent Limitation

In the Draft Permit, a new average monthly total aluminum effluent limitation of 112.9 µg/L has been proposed. This limitation has been added to protect the health of aquatic organisms, and is based on EPA’s 1988 guidance that features fixed acute (750 µg/L) and chronic (87 µg/L) values for aluminum criteria. Section 5.1.11.2 of the 2021 Fact Sheet acknowledges that EPA is aware of ongoing efforts by MassDEP to soon revise the Massachusetts aluminum criteria based (at least in part) on new EPA aluminum criteria recommendations which were finalized in 2018.

The new guidance uses multiple linear regression models (MLR) models that incorporate local pH, hardness, and dissolved organic carbon (DOC) data to derive aluminum criteria. These MLR criteria better reflect the impact of local water chemistry on the bioavailability and toxicity of aluminum. MassDEP has proposed default aluminum criteria for river basins and coastal drainage areas across the state; the revised acute and chronic values for aluminum criteria for the French/Quinebaug River Basin (where the WWTF discharges) are 580 µg/L and 280 µg/L, respectively

[https://www.mass.gov/files/documents/2019/10/04/FactSheet\\_MassDEP\\_314CMR4\\_Aluminum](https://www.mass.gov/files/documents/2019/10/04/FactSheet_MassDEP_314CMR4_Aluminum)

[.pdf](#)). These revisions were proposed in 2019, but they have not yet been finalized. MassDEP expects the revisions to be finalized in 2021.

We acknowledge that the schedule of compliance provided in the Draft Permit allows the Town three (3) years to achieve compliance with the total aluminum effluent limit. Based on our experience in the planning, design, and construction of numerous wastewater treatment facility upgrades in Massachusetts, it is unlikely that the Town could secure funding, select a consultant, determine the type and extent of upgrade needed to meet the new limit, design the upgrade, advertise for bids, award a construction contract, permit the project, complete construction, and initiate operation of the facility improvements to achieve the total aluminum effluent limitation within 36 months. We are requesting a more reasonable, yet aggressive schedule of 60 months to achieve compliance with the final aluminum effluent limit, as follows:

- Within six (6) months, submit a status report relative to the planning of the facilities necessary to achieve the permit limit
- Within 18 months, finalize planning and commence design of the facility improvements
- Within 36 months, complete design of the facility improvements
- Within 42 months, commence construction of the facility improvements
- Within 60 months, complete construction and initiate operation of the facility improvements

[https://www.mass.gov/files/documents/2019/10/04/FactSheet\\_MassDEP\\_314CMR4\\_Aluminum.pdf](https://www.mass.gov/files/documents/2019/10/04/FactSheet_MassDEP_314CMR4_Aluminum.pdf)

While we recognize that the lower limit in the Draft Permit will not become effective if the revised aluminum criteria are accepted within 36 months, we have noticed that the current pandemic has impacted MassDEP's time to act on pending permits and a number of other issues. Future delays are not out of the question and the EPA and MassDEP can easily extend the compliance timeline for particular limit to 5 years, as it is within the life of the permit.

### **Response 1**

The Clean Water Act (CWA) Section 301(b)(1)(C) requires that NPDES permits include effluent limits to achieve state water quality standards whenever there is reasonable potential to exceed a state water quality standard, pursuant to 40 CFR § 122.44(d)(1)(i). The regulation states:

“Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including State narrative criteria for water quality.”

The total aluminum limit in the Draft Permit is a water quality-based effluent limitation that reflects Massachusetts Water Quality Standards. The State's regulation at 314 CMR Section 4.05(e) uses the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002 as a basis for allowable receiving water concentrations not enumerated in previous sections of the chapter. According to the National Recommended

Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002, the acute and chronic criteria for total aluminum in freshwater are 87 µg/L and 750 µg/L currently.

EPA is obligated pursuant to 40 CFR § 122.44(d) to include any effluent limit in a permit that is necessary to comply with the water quality standards (WQSs) that are in effect at the time the permit is issued. If there is a reasonable potential to violate WQSs, then pursuant to 40 CFR § 122.44(d) an effluent limitation is “necessary,” and EPA is obligated to include a limit in the permit. EPA does not forestall permit issuance, pending development, submission and approval of revised WQS, particularly where, as here, the previous permit has long since expired. To do so would subject the permitting process to significant delay and uncertainty. The criteria development and adoption process often takes years. The Massachusetts’ WQS now in effect require that EPA base effluent limitations for metals on the criteria published in the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002, unless site-specific criteria are established or MassDEP determines that natural background concentrations are higher than the criteria (314 CMR § 4.05(5)(e)). MassDEP has not issued site-specific aluminum criteria for the French River or determined that natural background concentrations are higher than the current aluminum criteria.

Based on the reasons described above, the aluminum limit is necessary and will remain in the Final Permit. Once the Massachusetts Water Quality Standard revisions are finalized, the Permittee may request a permit modification or permit reissuance to reevaluate the aluminum limit.

Regarding the request to lengthen the compliance schedule beyond 3 years, EPA notes that a compliance schedule in a permit must comply with 40 CFR § 122.47(a) and (a)(1) which indicates that a permitting authority must make a reasonable determination that a schedule of compliance is “appropriate” and that the schedule proposed requires compliance “as soon as possible.” Based on the ongoing efforts by MassDEP to revise the aluminum criteria within 3 years, EPA considers the current schedule to be appropriate. However, if the limit becomes effective and the Permittee is unable to comply with the limit, the permittee may contact EPA’s Enforcement and Compliance Assurance Division (ECAD) to discuss a potential administrative order with additional time to achieve the aluminum limit as described in the comment.

## **Comment 2**

Section 5.1.12 of the 2021 Fact Sheet states that a more stringent C-NOEC effluent limit of greater than or equal to 65% (including the same test organism and testing frequency of the previous permit) has been proposed, based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the dilution factor of 1.55, and in accordance with EPA national and regional policy and 40 CFR § 122.44(d). No calculations are provided to support this revised C-NOEC effluent limit. Is the update based solely on the revised dilution factor, or are there more factors influencing this revised limit? The Town requests backup calculations.

## Response 2

EPA confirms that the C-NOEC limit has been adjusted to 65% based on an updated dilution factor. The policies and regulations from which the calculation derives (as identified in Section 5.1.12) are based on the other factors identified in the comment. The new C-NOEC limit is based on the following calculation:

$$100\% / \text{Dilution Factor} = 100\% / 1.55 = 64.5\%, \text{ rounded to } 65\%.$$

## Comment 3

### PFAS Testing for Industrial Discharges

The Draft Permit requires that the WWTF conduct quarterly influent, effluent, and sludge sampling for PFAS chemicals, and annual sampling of certain industrial users, the first full calendar quarter beginning six (6) months after EPA has notified the Town that appropriate, multi-lab validated test methods for wastewater are made available by EPA to the public.

We understand that PFAS chemicals are very persistent in the environment and in the human body, and that exposure to PFAS chemicals can lead to adverse human health effects. While this additional sampling requirement will be a large expense for the Town, we understand the need to better understand the flow of PFAS both into and out of the WWTF. Our comment here is focused on the annual sampling requirement of the following types of industrial discharges to the POTW:

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

Currently, there is one industrial user that discharges into the POTW: Shield Packaging, consisting of process and non-process wastewater which contributes an average of 545 gallons per day. We propose annual sampling of the Shield Packaging discharge for PFAS chemicals, as this aligns with the Town's existing Industrial Pretreatment Program.

The identification and subsequent sampling of PFAS compounds at an unidentified (and possibly unbounded) number of additional industrial discharges across the collection system places an unfair cost and labor burden on the WWTF, and we believe that this requirement should be removed from the Draft Permit.

Moreover, CWA § 308(a), as quoted on page 41 of the 2021 Fact Sheet, states that “the owner or operator of any point source [shall be required to] ... sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe).” Based on this quote, it is our understanding that the onus should be placed on the industrial users themselves, rather than the WWTF, to conduct annual PFAS sampling at the industrial locations.

### **Response 3**

EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES Permits. See, e.g., CWA § 308. As discussed in the Fact Sheet at 31, 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 a facility-specific basis.” These permitting decisions may include whether there is reasonable potential to cause or contribute to a violation of the State water quality standards in the next permit reissuance, and if there is, to inform the development of numeric effluent limits or pollutant minimization practices, or some combination. Therefore, EPA is taking steps to address this environmental concern, as outlined in EPA’s 2019 PFAS Action Plan and the 2020 PFAS Action Plan Update<sup>1</sup>.

Regarding the cost of conducting PFAS monitoring on industrial dischargers with known or suspected sources of PFAS, EPA notes that permittees have other regulatory avenues, such as local limits, pretreatment programs, industrial discharge permits, and/or sewer use ordinances, that they may utilize to require industrial dischargers to conduct PFAS testing for their own discharges. The annual PFAS monitoring requirement for industrial dischargers in the permit may be implemented through any of those regulatory avenues, and the Town of Webster may then submit those results to satisfy the permit requirement. Thus, the Permittee may transfer all or part of the cost associated with this annual PFAS monitoring requirement to the industrial user(s), as it deems appropriate.

### **Comment 4**

#### MassDEP PFAS Testing Timeline

Item 6 of the Massachusetts Permit to Discharge Pollutants to Surface Waters states that testing of PFAS chemicals within the influent, effluent, sludge, and Significant Industrial Users’ discharge shall begin six (6) months after the Town has been notified by EPA of a multi-lab validated method for wastewater, or two (2) years after the effective date of the 2021 Federal NPDES Permit, whichever is earlier. We request that Massachusetts revise this condition to align with the Federal NPDES Permit’s PFAS testing timeline (discussed in Comment 3). If a method is not released within the first two (2) years of the effective date of the 2021 Federal NPDES Permit, how does MassDEP anticipate collecting PFAS data? And what purpose will this PFAS data serve, if the laboratory method is not validated?

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<sup>1</sup> Available at <https://www.epa.gov/pfas/epas-pfas-action-plan>.

#### **Response 4**

This comment is in regard to the PFAS requirement in the Commonwealth of Massachusetts' Clean Water Act (CWA) section 401 Certification and State Draft Permit. Therefore, EPA defers to MassDEP to respond below.

In the absence of an approved method for testing PFAS in residuals, MassDEP has been reviewing and approving Standard Operating Procedures (SOPs) of select laboratories in order to better ensure precision of the data. Before testing will be required for Webster, if the EPA methods are not available, MassDEP will determine what review and approval process is necessary for testing PFAS in wastewater. The purpose of the data is to start developing a better understanding of PFAS levels in wastewater influent, effluent, and sludge. Also, MassDEP is developing a database to collect wastewater and residuals PFAS data.

MassDEP notes in its state certification that if EPA has not issued a validated test method by twenty (20) months after the effective date of this Final Permit, the permittee shall contact MassDEP ([massdep.npdes@mass.gov](mailto:massdep.npdes@mass.gov)) for guidance on an appropriate analytical method.

#### **Comment 5**

WET Testing

Page 4 of the Draft Permit calls for quarterly WET sampling, whereas Footnote 13 on page 9 of the Draft Permit states that “toxicity test samples shall be collected and tests completed during the same weeks each time of calendar quarters ending March 31st and September 30th.” Can you please clarify the required frequency of sampling—twice per year or four (4) times per year?

The WWTF is currently undertaking WET sampling twice per year, during the calendar quarters ending March 31st and September 30th. Given past performance, we do not see a need to increase the frequency of this testing requirement.

#### **Response 5**

EPA agrees that this was merely a topographical error in the Draft Permit. The table in Part I.A.1 should say “2/year” for WET effluent and ambient monitoring frequency and footnote 13 is correct, requiring samples to be collected in the first and third calendar quarters. EPA confirms that this frequency is based on a previous reduction in WET frequency approved in 2010 and that the Permittee has consistently complied with WET limits since that time. The Final Permit has been corrected to say “2/year” for all WET effluent and ambient monitoring frequencies.

#### **Comment 6**

DOC Testing

Page 40 of the 2021 Fact Sheet states that dissolved organic carbon (DOC) testing has been added to each WET test because aluminum testing is included in the WET test, and DOC is a

water chemistry parameter that impacts aluminum toxicity based on the EPA's 2018 National Recommended Water Quality Criteria.

Based on information shared by MassDEP in February 2019

(<https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/201902-madeep-314cmr4-pres.pdf>), we understand that entities will have the option of using the default aluminum criteria (discussed in Comment 1) or collecting data at the relevant location to use as inputs to the aluminum criteria calculator. Is the collection of DOC data as a part of WET testing an indication that the default aluminum criteria for the French/Quinebaug River Basin will not be included in future permits? If the intent of future permits is indeed to incorporate these default aluminum criteria, then we believe that the new DOC sampling requirement is unnecessary. The default criteria have already incorporated local DOC values.

### **Response 6**

EPA agrees that the anticipated aluminum criteria will either be based on default values or site-specific information (if available). At this time, EPA is unable to apply the anticipated criteria because they are not yet approved. Once they are approved, EPA and MassDEP intend to apply the default values unless there is site-specific data available. EPA notes that site-specific data is more appropriate for a specific location to protect water quality standards and has determined that it is appropriate to require the collection of site-specific information to apply site-specific criteria in the future. Therefore, the Final Permit continues to include DOC monitoring and these data will be used if available at the time the updated aluminum criteria are applied either through a permit modification or the next permit reissuance.

### **Comment 7**

Chlorination and Dechlorination Systems

Page 8 of the 2021 Draft Permit states that chlorination and dichlorination systems shall include an alarm system for indicating system interruptions or malfunctions, and that any interruption or malfunction of the chlorine dosing system resulting in insufficient/excess chlorine dosing shall be reported with the monthly DMRs. The existing supervisory control and data acquisition (SCADA) system has the capacity to indicate when the chlorine and sulfur dioxide systems have lost vacuum and we believe that this capability should be sufficient to meet this requirement.

### **Response 7**

Based on the comment, EPA notes that the existing SCADA system is only sufficient to meet this permit requirement if it indicates all potential "system interruptions or malfunctions" and not only the loss of vacuum. If the current system is not adequate, an additional alarm will be necessary to comply with the requirement.

### **Comment 8**

Nitrogen Optimization Report

Page 20 of the Draft Permit stipulates that the Town submit an annual report to EPA and MassDEP, that summarizes activities related to optimizing nitrogen removal efficiencies,

documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous calendar year and the previous five (5) calendar years. We ask that this reporting requirement be removed – ammonia and total nitrogen effluent limitations are included in the Draft Permit (as well as monitoring requirements for total Kjeldahl nitrogen, nitrite, and nitrate), and the Town has consistently been meeting these effluent limitations. If the Town is consistently meeting its nitrogen discharge limitations further optimization should not be required at this point.

### **Response 8**

EPA notes that Part I.G.2.a of the Draft Permit states the following:

“The Permittee shall continue to optimize the treatment facility operations relative to total nitrogen (“TN”) removal through measures such as continued ammonia removal, maximization of solids retention time while maintaining compliance with BOD<sub>5</sub> and TSS limits, and/or other operational changes designed to enhance the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen.”

This requirement indicates that the Permittee must optimize the treatment process for the removal of total nitrogen. This requirement is not dependent on whether the facility is in compliance with the total nitrogen limit. EPA recognizes that the facility currently discharges an average rolling annual average load of approximately 310 lb/day, which is well below the rolling annual average permit limit of 400 lb/day. Nevertheless, this optimization requirement stipulates that the Permittee must optimize for the removal of total nitrogen even below the level of the permit limit, to the maximum extent achievable at the existing facility. The optimization report referenced in the comment (Part I.G.2.b of the Draft Permit) requires the Permittee to submit an annual report as documentation that such optimization has been achieved. This requirement is consistent with EPA’s greater Long Island Sound nitrogen strategy, which Webster is included in since the French River ultimately discharges to Long Island Sound. For further explanation of this strategy and the rationale for the optimization requirement, see Appendix A.

### **Comment 9**

#### Ambient Phosphorus Monitoring

Page 20 of the Draft Permit includes new ambient phosphorus monitoring requirements in the receiving water immediately upstream of the facility, and in the French River Reservoir, within 200 feet of the Perryville Dam. Samples taken for ambient phosphorus monitoring shall be analyzed for secchi disk transparency, non-rooted vegetation percent visual coverage, planktonic chlorophyll-a, dissolved oxygen, pH, total phosphorus, and cyanobacteria blooms.

While there is a historical record of green and blue-green algae blooms during the summer months in the Perryville impoundment, we believe that the sampling burden is unfairly being placed on the Webster WWTF. There are at least two additional wastewater treatment facilities whose discharge reaches the French River Reservoir (Oxford-Rochdale Wastewater Treatment Facility and Leicester Water Supply District Treatment Facility) and their NPDES Permits do not

include an Ambient Phosphorus Monitoring requirement, as well as urban stormwater runoff from Webster and additional upstream communities that also reaches the French River Reservoir.

Moreover, the costs for these sample analyses will not be minimal. Standard environmental testing laboratories (such as Microbac, where the WWTF currently sends their samples) do not run these tests. Instead, a limnology consultant will need to be identified and contracted to perform the analyses listed above. We request that this ambient phosphorus monitoring requirement to be removed from the Draft Permit.

### **Response 9**

In the development of the Town of Webster's Draft Permit, EPA conducted a site-specific analysis on the discharge and applied the Gold Book phosphorus threshold of 0.1 mg/L to protect narrative water quality standards. See Section 5.1.10.2. In the same section, EPA also noted the following:

“However, as the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophic response to phosphorus inputs; in some waters more stringent phosphorus reductions may be needed, while in some others a higher total phosphorus threshold could be assimilated without inducing a eutrophic response. EPA is not aware of any site-specific factors relevant to the receiving water that would result in it being unusually more or less susceptible to phosphorus loading.”

Given that there is an impoundment (*i.e.*, the French River Reservoir) roughly 1.5 miles downstream of the Webster discharge and immediately upstream of the Perryville Dam, EPA included a downstream ambient monitoring requirement in the Draft Permit. These results may be used to inform EPA as to whether this downstream waterbody is more susceptible to phosphorus loadings, has an increased eutrophic response to phosphorus inputs, and necessitates a more stringent phosphorus limit at the Webster WWTF to protect water quality standards in the future.

The comment acknowledges that there is historical evidence of algae blooms in the French River Reservoir and does not object to the ambient monitoring requirement on grounds that the Webster discharge does not contribute to the eutrophic impact in this downstream impoundment. Rather, the comment merely suggests that the monitoring has a substantial cost and other upstream dischargers that do not currently have ambient phosphorus monitoring requirements should be required to share the cost.

First, EPA notes that the two other upstream WWTFs (Oxford-Rochdale and Leicester Water Supply District) are both much smaller than the Webster WWTF, are both much farther from the French River Reservoir and are both subject to a nutrient-related TMDL<sup>2</sup>

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<sup>2</sup> See TMDL on EPA's website at:

[https://ofmpub.epa.gov/waters10/attains\\_impaired\\_waters.show\\_tmdl\\_document?p\\_tmdl\\_doc\\_blobs\\_id=70194](https://ofmpub.epa.gov/waters10/attains_impaired_waters.show_tmdl_document?p_tmdl_doc_blobs_id=70194).

EPA also notes that this TMDL addresses urban stormwater runoff (as mentioned in the comment) in the vicinity of the French Basin Lakes.

to protect water quality standards in the French Basin lakes in the proximity of their discharges. In contrast to the Webster WWTF which is roughly 1.5 miles upstream of the French River Reservoir and has a design flow of 6.0 MGD, the Oxford-Rochdale facility is roughly 10 miles upstream with a design flow of 0.5 MGD and the Leicester facility is roughly 15 miles upstream with a design flow of 0.35 MGD. Given the small size of these facilities, they are eligible for coverage under the Small WWTF General Permit (permit number MAG580000) which is currently being reissued (see the Draft Small WWTF General permit at <https://www.epa.gov/npdes-permits/region-1-draft-small-wastewater-treatment-facilities-general-permit>). In developing the Draft General Permit, EPA conducted a site-specific analysis for each of these facilities and determined that they also must conduct upstream ambient monitoring for phosphorus, so that EPA has sufficient data to ensure that their limits are protective of water quality standards in the future. Additionally, both facilities were already subject to a phosphorus limit of 0.2 mg/L and the Draft Small WWTF General Permit includes a more stringent phosphorus limit of 0.16 mg/L for Leicester to protect water quality standards in the proximity of their discharge. Based on this comparison of these WWTFs, EPA confirms that the Webster discharge is responsible for the vast majority of the WWTF load of phosphorus to the French River Reservoir (*i.e.*, over 80% of the total WWTF load, not accounting for any attenuation from the upstream facilities that may occur). Therefore, all three of these facilities will be required to limit phosphorus loadings and conduct ambient phosphorus monitoring in an appropriate manner based on all information available at this time regarding site-specific factors and differences among the facilities.

Second, EPA acknowledges the historical algae blooms in the French River Reservoir and anticipates that Webster's more stringent limit as well as Leicester's more stringent limit will result in substantial phosphorus reductions under critical low flow conditions which should alleviate the impact. If the eutrophic impacts continue (as evidenced by the downstream monitoring), EPA may need to reduce these limits further in the future.

## **B. Comments from Jennifer Perry, Director, Water Planning and Management Division, Connecticut Department of Energy and Environmental Protection**

### **Comment 10**

The Connecticut Department of Energy and Environmental Protection (CTDEEP) is providing comment on the draft NPDES permit for the Webster wastewater treatment plant (WWTP) referenced above. The draft permit authorizes discharges of treated wastewater to the French River in Massachusetts which subsequently flows through Connecticut and drains to Long Island Sound (LIS).

As a downstream state, Connecticut has a keen interest in WWTP discharges and potential impacts to both the major receiving tributaries and LIS. LIS is affected by hypoxic conditions, which occur annually in the summer. Hypoxia in LIS has been well documented to result from excessive amounts of nitrogen. Discharges from wastewater treatment plants contribute to the nitrogen loading and subsequent hypoxic conditions in LIS.

In response to the occurrence of hypoxia in LIS, Connecticut and New York jointly developed a

Total Maximum Daily Load (TMDL) for nitrogen which was approved by the Federal Environmental Protection Agency (EPA) in April 2001. In addition to a number of nitrogen reduction efforts required of Connecticut and New York, the TMDL specified a 25% reduction in the baseline nitrogen load from WWTPs located upstream of Connecticut with discharges that ultimately flow to LIS (MA, NH, and VT). At that time, nitrogen monitoring data was not available and the baseline load for the upstream state's WWTPs was determined using design flows and an average discharge concentration (15 mg/L). It is important to note that very few, if any, WWTPs were operating at design flow capacity at that time. Because of this, the baseline load estimated in the TMDL for WWTPs located upstream of Connecticut was grossly overestimated.

Nitrogen loads from the upstream state's WWTPs were later determined using 2004-2005 monitoring data and average flows. In cases where nitrogen monitoring data were not available, an assumed concentration was used that varied based on the level of treatment. Based on this analysis, it was stated that the upstream states "are meeting" the TMDL target nitrogen load.

However, little if any actual nitrogen removal efforts were implemented at that time. The total nitrogen load estimate was used as a "not to exceed" cap in WWTP discharge permits. We believe the 2004-2005 nitrogen load estimate more accurately reflects actual total nitrogen discharges from WWTP's located in the upstream states. As such, this estimate represents the baseline load from which a 25% reduction target should be established in accordance with the TMDL. Additionally, it is a misrepresentation to state or infer that the upstream states are meeting the LIS TMDL.

### **Response 10**

EPA acknowledges that there is uncertainty regarding to the actual load of nitrogen being discharged in 1998. In developing its approach to nitrogen effluent limits in the Connecticut River watershed, along with 2004-2005 estimate, referenced by the commenter, EPA considered the scientific papers published after the completion of the TMDL that cast doubt on the 1998 out-of-basin baseline point source loading of 21,672 lb/day from which a 25% reduction in nitrogen was assumed in the TMDL. These later estimates suggest that the baseline loading may have been significantly lower than assumed in the TMDL which, in turn, casts doubt on claims of out-of-basin point source load reductions achieved so far.

Furthermore, in 2013 the United States Geological Survey (USGS) published an estimation of the total nitrogen load to LIS from Connecticut and contributing areas to the north for October 1998 to September 2009.<sup>3</sup> Available total nitrogen and continuous flow data from 37 water-quality monitoring stations in the LIS watershed, for some or all of these years, were used to compute total annual nitrogen yields and loads. In order to extract the non-point source loadings from the total nitrogen measured, the authors relied on point source estimates from the SPARROW model of nutrient delivery to waters in the Northeastern and Mid-Atlantic states in 2002, including the Connecticut River, that was

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<sup>3</sup> Mullaney, J.R., and Schwarz, G.E., 2013, Estimated Nitrogen Loads from Selected Tributaries in Connecticut Draining to Long Island Sound, 1999–2009: U.S. Geological Survey Scientific Investigations Report 2013–5171, 65

published by Moore and others in 2011.<sup>4</sup> The SPARROW model estimated that 1,776.7 metric tons per year (MT/yr) (or annual average 10,820 lb/day) of total nitrogen was discharged to the Connecticut River from Massachusetts, New Hampshire and Vermont in 2002.<sup>5</sup> These estimates were based on an approach by Maupin and Ivahnenko, published the same year, which used discharge monitoring data available from EPA's Permit Compliance System (PCS) database for 2002.<sup>6,7</sup> Where no data was available, an estimated typical pollutant concentration (TPC) and flow was used to approximate nitrogen loading from point sources according to their industrial category.<sup>8</sup>

Uncertainty regarding to the out-of-basin load assumed in the TMDL can never be removed because there is very little out-of-basin point source nitrogen effluent data from 1998. Rather than attempting to recalculate or refine the baseline, EPA has determined that the imposition of the TN effluent limitations is consistent with requirements and assumptions of the TMDL by imposing (for the first time) enforceable load restrictions on the facility to prevent the discharge from increasing and contributing to further degradation of LIS. Capping the aggregate out-of-basin load while allowing the receiving waters to respond to significant in-basin reductions is a reasonable approach to meeting EPA's obligations under Section 301 of the Act. LIS is subject to extensive monitoring, and the impact of nutrient reductions on water bodies can take time to manifest. EPA will be evaluating the receiving water response over this permit cycle and will take this information into account when determining the need, if any, for more stringent TN effluent limitations. For this reason, despite the irreducible uncertainty regarding the 1998 out-of-basin load, EPA will implement the TMDL as described in the Fact Sheet, including the effluent limit and the optimization requirement for Webster as proposed in the Draft Permit.

## Comment 11

The states of Connecticut and New York met the TMDL target reductions for nitrogen in 2014 and 2017, respectively. Currently, Connecticut's WWTPs discharge 5.2 mg/l of nitrogen in aggregate, including WWTPs that have not pursued technology upgrades for nitrogen removal. In 2016, Connecticut initiated additional reductions in nitrogen at WWTPs, which will exceed the TMDL target nitrogen load when completed.

As Connecticut continues to achieve greater nitrogen reductions at its WWTPs, the load from the upstream states consequently becomes a greater portion of the total load to LIS and warrants full

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<sup>4</sup> Moore, Richard B., Craig M. Johnston, Richard A. Smith, and Bryan Milstead, 2011. Source and Delivery of Nutrients to Receiving Waters in the Northeastern and Mid-Atlantic Regions of the United States. *Journal of the American Water Resources Association (JAWRA)* 47(5):965-990. DOI: 10.1111/j.1752-1688.2011.00582.x

<sup>5</sup> Extrapolated from Moore, et.al 2011, Table 3 on page 977 which estimated that for 2002 an 33.2 % of the total 4,553 MT/yr Massachusetts nitrogen load was from point sources, 2.5% of the total 3,795 MT/yr Vermont nitrogen load was from point sources and 6.1 percent of the total 2,790 MT/yr New Hampshire nitrogen load was from point sources.

<sup>6</sup> Moore (2011), page 968.

<sup>7</sup> Maupin, Molly A. and Tamara Ivahnenko, 2011. Nutrient Loadings to Streams of the Continental United States From Municipal and Industrial Effluent. *Journal of the American Water Resources Association (JAWRA)* 47(5):950-964.

<sup>8</sup> Maupin (2011), page 954.

attention. A study of nitrogen loading trends to LIS from New England states found that approximately 50% of the nitrogen load to LIS comes from areas north of Connecticut (Mullaney and Schwarz, 2013). This study was based on 10 years (1999-2009) of data and compared computed nitrogen loads from four gaging stations located along the Connecticut-Massachusetts border to the total nitrogen load computed from gages (and estimates) within Connecticut.

#### **Response 11**

EPA acknowledges this comment.

#### **Comment 12**

CT DEEP notes that the draft Webster permit includes a total nitrogen limit in pounds per day which is to be reported as the rolling annual average. This total nitrogen limit of 400 pounds per day exceeds the annual average loading of 326 pounds per day based on 2016-2020 data (Appendix C). This equates to an allowable increase of 18.5% in the total nitrogen load to LIS. It has been assumed that this permit limit will not result in an increase of total nitrogen above the target load. However, as stated in the above paragraphs, the TMDL baseline total nitrogen load for upstream states was overestimated and therefore, the TMDL target for plants such as this, is an overestimate. WWTPs located in the upstream states have initiated little nitrogen removal efforts, none of which would result in a 25% reduction. Any increase in total nitrogen loading from the WWTP likely represents an actual total nitrogen increase since the TMDL was established in 2001, and such increased load has the potential to adversely impact LIS.

#### **Response 12**

EPA acknowledges that the nitrogen limit of 400 lb/day is above Webster's 2016-2020 annual average load. However, EPA is adopting a systematic permitting approach that includes continued optimization with effluent limits that provides assurance that long term loads will not increase. The permit allocates the current TN load so that: the aggregate out-of-basin TN load does not increase; effluent limits are annual average mass-based; consistent with the assumptions of the TMDL, no individual facility is left with an effluent limit that is not achievable using readily available treatment technology at the facility's design flow; and smaller facilities can achieve their limits through optimization. Under this systematic permitting approach, nitrogen effluent limits and/or optimization will be pursued for all facilities in the LIS watershed with design flow greater than 100,000 gpd. This aggregate, gross-level approach is appropriate given the large number of facilities whose discharges contribute to TN loading into LIS and the geographic expanse in which they are situated.

#### **Comment 13**

The draft permit contains a condition for the WWTP to continue to optimize treatment in order to achieve the greatest performance of nitrogen removal and minimize the annual average mass discharge of nitrogen. This condition also includes a requirement for WWTP to report annually on the nitrogen load discharged from the facility and track changes in the load relative to the previous year and past five years. We note that if annual average total nitrogen increases, the permittee must include an explanation for this increase. We concur with this condition.

### **Response 13**

As CT DEEP suggests, the Draft Permit requires the Permittee to continue to optimize facility operations in order to improve nitrogen removal performance. Specifically, Section I.G.1.a of the Draft Permit states:

The Permittee shall optimize the treatment facility operations relative to total nitrogen (“TN”) removal through measures such as continued ammonia removal, maximization of solids retention time while maintaining compliance with BOD<sub>5</sub> and TSS limits, and/or other operational changes designed to enhance the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen.

Thus, EPA agrees with CT DEEP that the Permittee should incorporate such nitrogen reduction methods and required it in the Draft Permit. This provision will be retained in the Final Permit.

### **Comment 14**

While we greatly appreciate the initial steps taken by EPA to include an enforceable nitrogen load limit, we have concerns that any allowable increase in nitrogen loads will exceed the actual nitrogen load that was occurring at the time the TMDL was developed. Because any increase in nitrogen loads will impact LIS, we request that EPA assure that no increase in total nitrogen loads from the upstream states be allowed.

As always, we are available to meet to discuss our comments and achieve our common goal of providing the best possible protection for the environment.

### **Response 14**

EPA acknowledges this comment and is making efforts to limit nitrogen loading in LIS from upstream states, as evidenced by the holistic approach presented in new LIS permits in both Massachusetts and New Hampshire. This is discussed in more detail in Section 5.1.10.1 of the Fact Sheet.

See Appendix A General Response.

## APPENDIX A

### GENERAL RESPONSE TO COMMENTS ON LONG ISLAND SOUND (“LIS”) NPDES OUT-OF-BASIN TOTAL NITROGEN PERMITTING APPROACH

Numerous comments were received regarding the new total nitrogen (“TN”) effluent limits. This General Nitrogen Response (“General Response”) provides a comprehensive explanation of the overall approach EPA has adopted to address TN effluent limitations for out-of-basin POTWs discharging to Long Island Sound, taking into account the Clean Water Act (CWA or “the Act”), implementing regulations, case law and varied technical and policy considerations. It addresses the comments received regarding the new TN effluent limits and is referenced in many of the responses to those specific comments. EPA’s methodology for establishing TN limitations for out-of-basin POTWs in Massachusetts was been challenged in the United States Environmental Appeals Board, where review of the permit was denied in its entirety in a 93-page opinion. *In re Springfield Water and Sewer Commission*, 18 E.A.D. 430 (EAB 2021).<sup>1</sup> That decision is incorporated by reference into this Appendix.

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<sup>1</sup> On September 30, 2020, Region 1 issued a final NPDES permit to the Springfield Water and Sewer Commission and 6 co-permittees for discharges from the Springfield Regional Wastewater Treatment Facility and CSOs to the Connecticut River, which flows into Long Island Sound, for which there is an existing TMDL developed by CT and NY, and approved by EPA, to address total nitrogen. Springfield challenged multiple aspects of the permit, including the total nitrogen WQBEL, CSO requirements, the inclusion of the 6 co-permittees and related requirements, and various other monitoring and technical provisions.

Regarding Springfield’s arguments around the Region’s development and imposition of the nitrogen WQBEL, the EAB held that the Region thoroughly explained its decision-making and responded to comments as they related to a tiering approach based on facility size and assessing the use of facility design flow. For example, the Region explained that it used its best professional judgment and information available at the time of permit issuance to cap nitrogen loads to prevent further contributions to nitrogen impairment of Long Island Sound. The EAB held that Springfield failed to confront the Region’s explanation of its allocation of nitrogen loads to the facility based on design flow and failed to demonstrate that the Region’s allocation was clearly erroneous in light of the record. The EAB also rejected Springfield’s argument that the Region clearly erred by removing allowances for increased nitrogen loadings for future activities, noting that Springfield did not present any substantiated reason to question the Region’s considered judgment on the technical considerations of incremental flow increases.

As to Springfield’s arguments regarding the Region’s derivation of the nitrogen WQBEL, the EAB held that the Region derived the limit consistent with EPA regulations and guidance, which do not require use of any particular methodology in determining whether there is “reasonable potential” for a discharge to cause or contribute to an exceedance of WQS, but rather accord significant flexibility when making this technical determination. The EAB also held that Springfield failed to demonstrate that the nitrogen limit is not consistent with the assumptions and requirements of the wasteload allocations in the Long Island Sound TMDL and misapprehends the CWA and EPA regulations, which require the Region to issue a permit that will ensure compliance with the antidegradation requirements of CT as a downstream affected state. Finally, the EAB held that Springfield failed to demonstrate that the Region clearly erred in declining to include a compliance schedule for the nitrogen WQBEL and by imposing a narrative nitrogen optimization standard.

## I. Introduction and Description of Permitting Approach<sup>2</sup>

EPA has adopted a systemic, state-by-state approach to reduce out-of-basin loading of nitrogen pollution into Long Island Sound from POTW point sources in Massachusetts, New Hampshire, and Vermont, through the coordinated issuance of individual NPDES permits (“Out-of-Basin Permitting Approach”). These out-of-basin facilities have not been assigned waste load allocations (“WLAs”) under the Long Island Sound Total Maximum Daily Load<sup>3</sup> (“TMDL”) approved by EPA in 2001. The task of allocating nitrogen loads among these facilities in a manner that ensures compliance with water quality standards, as required under Section 301 of the Act, falls to EPA. That EPA would implement any necessary reductions through the issuance and oversight of NPDES permits was expressly assumed by the TMDL. Uncontested on the record before EPA in this permit proceeding are two facts: first, that significant amounts of nitrogen from out-of-basin facilities are discharged to the LIS watershed (as much as 6 million pounds per year, based on the sum of the maximum annual discharge from each out-of-basin discharger from 2013 to 2017), and, second, that ongoing nitrogen-driven water quality impairments exist in LIS.

When confronting the difficult environmental regulatory problem of controlling or accounting for dozens of discharges into a complex water body like Long Island Sound, EPA was presented with a variety of potential permitting approaches. Long Island Sound is a nitrogen-impaired water body spanning 1,268 square miles that implicates the sometimes divergent interests of five states, dozens of municipalities and numerous non-governmental organizations (“NGOs”), along with interested members of the public. In developing its overarching permitting approach, as well as each individual permit, EPA carefully considered, but ultimately rejected, several possible alternatives, on two principal grounds: (1) that they were not sufficiently protective to assure that all the applicable requirements of the Act would be met (*i.e.*, they lacked enforceable TN effluent limitations to *ensure* as a matter of law that nitrogen loads would be maintained at protective levels), or (2) that they would entail unwarranted uncertainty and delay (*i.e.*, they called for the development of new or revised TMDLs or for development of extensive new data

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<sup>2</sup> The NPDES out-of-basin permitting approach described here is distinct from the Long Island Sound Nitrogen Reduction Strategy. In December 2015, EPA sent a letter to the environmental agency commissioners of MA, CT, NY, VT and NH setting forth a post-TMDL EPA Long Island Sound Nitrogen Reduction Strategy (the “LIS Strategy”) for waters in the LIS watershed. The strategy recognizes that more work may need to be done to reduce nitrogen levels, further improve dissolved oxygen (“DO”) conditions, and attain other related water quality standards in LIS, particularly in coastal embayments and the estuarine portions of rivers that flow into the Sound. EPA is working to establish nitrogen thresholds for Western LIS and several coastal embayments, including the mouth of the Housatonic River. Currently, EPA is responding to comments on our threshold modelling methodology from the public, external technical reviewers and our state and county partners. Documents regarding the LIS Strategy are available for public access on EPA’s Long Island Sound website (<http://longislandsoundstudy.net/issues-actions/water-quality/nitrogen-strategy/>). Upon completion of establishing thresholds and assessing the water quality conditions of the estuarine waters of the Connecticut River, allocations of total nitrogen loadings may be lowered if further reductions are necessary. Thus, while EPA’s current systemic NPDES permitting approach discussed in this general comment, and embodied in this permit, does not currently rely on data from the LIS Strategy, future efforts to establish permit limits could be informed by relevant data and recommendations that result from the LIS Strategy effort. If reductions are needed for this particular discharge, a lower water quality-based effluent limit will be added in a future permit cycle. If so, EPA anticipates exploring possible trading approaches for nitrogen loading in the Massachusetts portion of the Connecticut River watershed.

<sup>3</sup> Connecticut Department of Environmental Protection and New York State Department of Environmental Conservation, *A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound* (LIS TMDL), December 2000.

collection or modelling in an attempt refine or pinpoint necessary targets and loads, even though the permits at issue have long-since expired and water quality impairments are ongoing).

Rather than approach this complex permitting task on an *ad hoc* basis, EPA instead fashioned a systemic permitting approach designed to comprehensively regulate nitrogen loading from out-of-basin nitrogen sources on a gross, basin-level scale. EPA addressed the existing TN loading to ensure achievement of the following overarching objectives:

- the overall out-of-basin TN load does not increase, given that the LIS is already nitrogen impaired;
- effluent limits are annual average mass-based, consistent with the assumptions of the TMDL;
- no individual facility is left with an effluent limit that is not achievable using readily available treatment technology at the facility's design flow; and
- smaller facilities can achieve their limits through optimization.

EPA's derivation of effluent limitations to implement these objectives, based on its best professional judgment and information reasonably available to the permit writer at the time of permit issuance, consists of three essential parts:

- First, EPA *identified* the existing aggregate load from all contributing facilities in a given state.
- Second, because Long Island Sound is already nitrogen impaired and failing to achieve applicable water quality standards,<sup>4</sup> EPA *capped* that load to avoid contributing to further impairments and fully protect existing uses.
- Third, EPA *allocated* the load according to a water quality-related consideration rationally related to achieving water quality standards in Long Island Sound and carrying out the objectives of the Act.

In the case of Massachusetts, that consideration was facility *size*, with loads distributed based on the design flow of the POTW treatment plants. In deriving design-flow-based effluent limitations, EPA utilized the following methodology:

- EPA estimated the current maximum out-of-basin annual point source load using data for the five years prior to the year of the Draft Permit, consistent with Region 1's ordinary practice of using the most recent five years of data in the derivation of effluent limits for permits, which is in accordance with the recommendation in EPA guidance to use three to five years and, by use of the longer timeframe, is intended to more fully capture a representative data set<sup>5</sup> (see estimate of recent effluent loadings appended to the Fact Sheet);

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<sup>4</sup> CTDEEP, Interstate Environmental Commission, EPA, *2019 Long Island Sound Hypoxia Season Review*, available at: [http://www.iec-nynjct.org/sites/default/files/2020-07/FINAL\\_LISound-Hypoxia-2019-Combined-Report\\_april2020.pdf](http://www.iec-nynjct.org/sites/default/files/2020-07/FINAL_LISound-Hypoxia-2019-Combined-Report_april2020.pdf)

<sup>5</sup> *NPDES Permit Writer's Manual*, EPA-833-K-10-001, September 2010, page 5-30, available at: [https://www.epa.gov/sites/production/files/2015-09/documents/pwm\\_2010.pdf](https://www.epa.gov/sites/production/files/2015-09/documents/pwm_2010.pdf), page.

- It prioritized effluent limits for major POTW facilities with design flow greater than 1 MGD, consistent with the definition of major facility in 40 CFR §122.2;<sup>6</sup>
- It developed mass-based rolling annual average TN effluent limits based on design flow (consistent with 40 CFR § 122.45(b)(1)) and effluent concentrations that can be achieved by means of currently available nitrogen removal technology for all facilities and the design flow for each facility, where effluent limit (lb/day) = Concentration (mg/L) x Design Flow (MGD) x 8.345;
- For POTW facilities with design flow less than 10 MGD, EPA based limits on concentrations that can typically be achieved through optimization, with more aggressive optimization expected for facilities with design flow greater than 5 MGD; and,
- For the four POTW facilities with design flow greater than 10 MGD (which together comprise more than half of the total Massachusetts load to LIS), EPA based limits on concentrations achievable through optimization or upgrades.

EPA's intention in establishing a total nitrogen limit in this and future permits for out-of-basin dischargers is not specifically to achieve greater nitrogen reductions, but rather to cap the out-of-basin contribution in a manner that provides assurance to the downstream state that total nitrogen loading will not increase with population or economic development. That assurance is provided by means of enforceable effluent limits.

Although EPA considered caps for individual dischargers at their current loadings, that approach was rejected because these effluent limits are subject to statutory antibacksliding requirements of CWA § 402(o) which would prevent a limit from being increased if flows increase due to new residential or industrial development. Therefore, a facility currently discharging well below its design flow, could be unable to meet the loading limit if, for example, a new industrial discharger were to tie in, even if that discharger were willing to invest in readily available treatment technology. EPA examined out-of-basin loads across the watershed and developed effluent limits that are achievable through optimization or readily available treatment technologies for all facilities, even if they are operating at their design flow. EPA has determined that this approach will be protective of water quality and will monitor receiving water response over the permit term and adjust as necessary in future permit cycles. EPA believes that this approach reasonably balances the need to hold overall TN loadings constant to avoid exacerbating ongoing nitrogen-driven environmental degradation against the inherent scientific and technical uncertainty associated with receiving water response in a water body as complex as LIS.

The basis for establishing mass-based effluent limits using facility design flow and 5, 8 and 10 mg/L as total nitrogen concentrations that facilities can meet by means of optimization or, for the four largest facilities, readily available treatment technology, meets the legal requirements of the CWA, as described in this General Response, section III, but was derived in order to balance the burden of treatment with the four largest facilities (currently generating approximately 51 to 58 % of the Massachusetts out-of-basin load) required to meet 5 mg/L concentration at design flow,

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<sup>6</sup> *NPDES Permit Writer's Manual*, EPA-833-K-10-001, September 2010, page 2-17, available at: [https://www.epa.gov/sites/production/files/2015-09/documents/pwm\\_2010.pdf](https://www.epa.gov/sites/production/files/2015-09/documents/pwm_2010.pdf)

and the remaining facilities with effluent limits that can be achieved through system optimization. In tiering the facilities, EPA considered the relative magnitude of flows from these facilities and observed that there was a significant divide between the four largest facilities and the remaining facilities (67 MGD for Springfield, 17.5 MGD for Holyoke, 17 MGD for Pittsfield and 15 MGD for Chicopee compared to 8.6 MGD for North Hampton). The four largest facilities contribute 53% of the design flow for the out-of-basin watershed. EPA also observed that three of these facilities are on the mainstem of the Connecticut River and Pittsfield is on the mainstem of the Housatonic. All of these factors, in EPA's technical judgment, warranted the further additional assurance of meeting water quality standards provided by a more stringent numeric cap in loading that may necessitate a facility upgrade, as opposed to limits achievable through optimization only. (EPA also notes that the four larger facilities will be able to spread the cost of any upgrade over a much larger user base).

While both 8 mg/L and 10 mg/L are within the range of total nitrogen concentrations achievable through low cost system modification,<sup>7</sup> EPA chose the next cut off at 5 MGD partly on the assumption POTWs of greater than that size are likely to already possess the technical capability, operator sophistication and administrative capacity needed to achieve more stringent effluent limitations via optimization requirements. (To this point, EPA took notice of the fact that the 5 MGD threshold has some regulatory significance under EPA's regulations implementing the NPDES program, specifically pretreatment, where EPA determined that facilities of that size are significantly large enough to require a pretreatment program). EPA, of course, also took into account the relatively large magnitude of the loads associated with these facilities. Finally, EPA also took note of the fact that these facilities, though not serving communities as large as Springfield, Holyoke, Pittsfield and Chicopee, still have considerable ability to spread costs over user bases of considerable size.

EPA chose the 1 MGD cut off because that corresponds to the definition of major POTW under NPDES regulations. Facilities above 1 MGD account for approximately 80% of the total out-of-basin load. Because the many (41) facilities smaller than 1 MGD collectively account for a relatively small amount of the total load, EPA believes that optimization is a reasonable point of departure for these facilities, given their comparatively small loads and user bases.

Finally, those facilities under 0.1 MGD are required to monitor and report data that may be used in future permitting cycles.

Thus, in arriving at its tiering determination, EPA considered a series of technical and environmental factors within its expertise, and also took into account equitable considerations. EPA acknowledges that the chosen tiers are not the only way to divide the out-of-basin TN allocations, but was not presented with any alternatives that capped the existing load based on design flow through the imposition of enforceable permit limits. For example, EPA considered, and rejected, the option to apply a limit based on 8 mg/L effluent limit for all facilities with design flow greater than 1 MGD (at their respective design flows) because that would result in an increase in the current loading and place a greater burden on facilities that service relatively small communities. The combined design flow for the 29 MA POTW facilities with design flow

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<sup>7</sup> EPA, *Case Studies on Implementing Low-Cost Modifications to Improve Nutrient Reduction at Wastewater Treatment Plants*, EPA-841-R-15-004, August 2015, page 32.

greater than 1 MGD is 196 MGD. Of this combined design flow, 60%, or 117 MGD consists of the design flow for the four largest POTWs. Under the selected permitting approach, the proportion of the permitted load from the four largest facilities will be 60% of the combined permitted load for all 29 MA facilities, consistent with the proportion of design flow. If all POTWs with design flow over 1 MGD had a concentration-based limit of 8 mg/L (or a load based limit based on 8 mg/L and design flow), the proportion of the permitted load coming from the four largest facilities would increase from 60% of the total permitted load to 90%, shifting the burden of treatment significantly from larger to smaller facilities. In addition, the total permitted TN loading from those 29 facilities would increase from 8,100 lb/day under the chosen approach to 8,600 lb/day.

## **II. Statutory, Regulation and Environmental Context for EPA’s Chosen Out-of-Basin Permitting Approach**

Below, EPA explains the applicable statutory and regulatory structure, as well as the rationale for adopting this particular approach in lieu of others advanced on the record.

### **A. National Pollutant Discharge Elimination System Permits Generally**

NPDES permits use two statutory mechanisms to protect water quality: (1) water quality standards, and (2) effluent limitations. *See generally* CWA §§ 301, 303, 304(b); 40 CFR pts. 122, 125, 131. Water quality standards are promulgated by states and approved by EPA. *See* CWA § 303(c)(2)(A); 40 CFR §§ 131.10-12. The CWA and its implementing regulations require permitting authorities to ensure that any permit issued complies with the CWA and the water quality standards of all states affected by the discharge, which in this case are comprised of Massachusetts, Connecticut and New York. *See* CWA §§ 301(b)(1)(C), 401(a)(1)-(2); 40 CFR §§ 122.4(d), .44(d)(1).

Effluent limitations serve as the primary mechanism in NPDES permits for ensuring compliance with a state’s water quality standards by imposing limits on the types and amounts of particular pollutants that a permitted entity may lawfully discharge. *See* CWA §§ 301(b)(1)(C), 401(a)(1)-(2). Effluent limitations for pollutants are based on the control technology available or are based on achieving the water quality standards for the receiving water. CWA § 301(b)(1)(a)-(c). The nutrient limits here are water quality-based effluent limitation, commonly referred to as “WQBELs”.

### **B. Impaired Waters and Total Maximum Daily Load**

The CWA establishes a process by which states identify and manage waters where pollution control technologies alone are not stringent enough to achieve applicable water quality standards. CWA § 303(d). These identified waters, where the applicable water quality standards have not yet been attained, are commonly referred to as “impaired” waters or “nonattainment” waters and are prioritized by the states on a list that is commonly referred to as a “303(d) list.” *Id.* Once a water is identified on a 303(d) list, the state develops a management plan for bringing these waters into compliance with water quality standards. CWA § 303(d)(1)(C)-(D). This process includes setting priorities for establishing TMDLs for individual pollutants in the impaired waters. *Id.*

A TMDL defines the amount of a pollutant that a waterbody can assimilate without exceeding the state's water quality standard for that waterbody. CWA § 303(d)(1)(C). TMDLs are set at a level that incorporates seasonal variations of the waterbody and a margin of safety that takes into account gaps in knowledge. *Id.* The TMDL then allocates a portion of the receiving water's pollutant loading capacity among facilities discharging to the impaired waterbody. 40 CFR §§ 130.2(h), 130.7. These wasteload allocations ("WLAs") for point sources, which are based on the underlying water quality standards, serve as a basis for water quality-based effluent limitations in permits. In addition to wasteload allocations for point sources, TMDLs include load allocations ("LAs") for background and nonpoint sources, a margin of safety, and possibly a reserve allocation (for example, for future growth). CWA § 303(d)(1)(C); *see also* 40 CFR § 130.7; Office of Water, U.S. EPA, Doc. No. EPA-833-K-10-001, *NPDES Permit Writers' Manual* §§ 6.2.1.2, 6.4.1.1, at 6-14, -31 (Sept. 2010) ("*2010 Permit Writers' Manual*").

Although EPA initially approached the development of TMDLs one water segment at a time, EPA has long supported and encouraged states to develop TMDLs on a watershed-wide basis to more comprehensively assess and allocate pollutant loads across hydrologically-linked water segments at the same time. *See* Office of Wetlands, Oceans & Watersheds, U.S. EPA, *Handbook for Developing Watershed TMDLs* 1, 6-8 (draft Dec. 15, 2008) ("*Watershed TMDL Handbook*"); *see also* CWA § 303(d)(1); 40 CFR §§ 130.7, 131.3(h). Watershed TMDLs follow the same general process as a "single-segment TMDL," but the watershed TMDL involves larger-scale considerations and "often provides greater flexibility in developing source allocations." *Watershed TMDL Handbook* at 69. This approach is reflected in the LIS TMDL.

In addition to TMDLs, the furthering of impairment is prohibited by the antidegradation provisions of State water quality standards. One of the principal objectives of the CWA, articulated in CWA § 101(a) is to "maintain the chemical, physical and biological integrity of the Nation's waters." The antidegradation requirements in federal regulations at 40 CFR § 131.12 provide a framework for maintaining and protecting water quality that has already been achieved and require states to adopt provisions in their water quality standards that prevent further degradation of both degraded and waters which are meeting or exceeding the water quality necessary to protect designated and existing uses. Since the receiving water at issue here is in Connecticut, we look to Connecticut antidegradation requirements which state, in paragraph 2 of the Connecticut Water Quality Standards:

Existing and designated uses such as propagation of fish, shellfish and wildlife, recreation, public water supply, and agriculture, industrial use and navigation, and the water quality necessary for their protection is to be maintained and protected.

As the Massachusetts point source dischargers are substantially upstream of the impaired receiving water EPA is applying the antidegradation requirement by capping the aggregate loading of nitrogen to the Long Island Sound from Massachusetts dischargers. This allows EPA to ensure that the nitrogen limits are applied fairly and in a technologically feasible manner while ensuring that antidegradation provisions of Connecticut's water quality standards are being met.

### **C. The Relationship Between NPDES Permitting and TMDLs**

This permit concerns the interrelationship between two key mechanisms prescribed by the CWA for protecting and improving water quality: (1) the facility-specific effluent limits established by

NPDES permits issued pursuant to section 402, and (2) the TMDL WLAs, and the assumptions underlying them, developed by states pursuant to section 303(d) to limit and allocate pollution loads among facilities discharging to impaired water bodies. The statute does not specify how NPDES permits should incorporate or reflect WLAs. EPA's implementing regulations, however, require permitting authorities to ensure that permit effluent limits are "*consistent with the assumptions and requirements of any available [WLA] for the discharge prepared by the State and approved by EPA.*" 40 CFR § 122.44(d)(1)(vii)(B) (emphasis added).

As detailed below, EPA is obligated to regulate discharges that have the reasonable potential to cause or contribute to water quality standards violations through the imposition of WQBELs in NPDES permits, even where a TMDL has not yet been issued or updated. In so regulating, EPA may also impose limitations that are at once consistent as well as more stringent than the *assumptions* of a wasteload allocation in a TMDL based on new information. Finally, a permitting authority may derive a limit based on both a TMDL and the relevant water quality standard.

It has long been settled in the EAB and the First Circuit that EPA has the discretion to regulate discharge through the imposition of a WQBEL where a TMDL has not yet been issued or revised. As the Board explained in *In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 604-06 (EAB 2010):

Regulations implementing the NPDES permitting program specifically contemplate that permit issuers will establish numeric permit limits when there is no TMDL or wasteload allocation. Subsection (vii) requires the permitting authority to "ensure" that effluent limits are consistent with "any *available* wasteload allocation." 40 CFR § 122.44(d)(1)(vii) (emphasis added). By using the phrase "any available," the regulations expressly recognize that a TMDL or wasteload allocation may not be available. This reading of the regulation is compelled by the Agency's interpretation set forth in the preamble to 40 CFR § 122.44(d)(1), which expressly outlines the relationship between subsections (vi) governing the setting of limits based on narrative criteria and (vii), which requires consistency with "any available" waste load allocation or TMDL:

The final point about paragraph (vi) is that, *in the majority of cases where paragraph (vi) applies, waste load allocations and total maximum daily loads will not be available* for the pollutant of concern. Nonetheless, any effluent limit derived under paragraph (vi) must satisfy the requirements of paragraph (vii). Paragraph (vii) requires that all water quality-based effluent limitations comply with "appropriate water quality standards," and be consistent with "available" waste load allocations. *Thus for the purposes of complying with paragraph (vii), where a wasteload allocation is unavailable, effluent limits derived under paragraph (vi) must comply with narrative water quality criteria and other applicable water quality standards.*

54 Fed. Reg. 23,868, 23,878 (June 2, 1989) (emphases added). This formal Agency interpretation set forth in the preamble at the time the regulation was promulgated expresses the Agency's expectation that, while wasteload allocations may not uniformly

be available, effluent limits must be established without waiting for a TMDL or wasteload allocation.

The Board's decision was upheld in *Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 26 (1st Cir. 2012), *cert. denied*, 569 U.S. 972 (2013), where the court similarly rejected the notion that permit issuers must wait until a TMDL or wasteload allocation is developed before setting an effluent limit in a permit and reiterated that scientific uncertainty is not a basis for delay in issuing an NPDES permit. *Accord In re City of Ruidoso Downs*, 17 E.A.D. 697, 733 (EAB 2019), *appeal docketed sub nom. Rio Hondo Land & Cattle Co. v. EPA*, No. 19-9531 (10th Cir. May 23, 2019); *In re City of Taunton*, 17 E.A.D. 105, 144 (EAB 2016) *aff'd*, 895 F.3d 120 (1st Cir. 2018), *cert. denied*, 139 S. Ct. 1240 (Feb. 19, 2019).

EPA, in addition, has the discretion to deviate from a wasteload allocation in a TMDL, if such a departure is warranted by the record. Significantly, WLAs are not permit limits *per se*; rather they still require translation into permit limits (*i.e.*, WQBELs). While section 122.44(d)(1)(vii) prescribes minimum requirements for developing WQBELs, it does not prescribe detailed procedures for their development. Permit limits need not be identical to the wasteload allocation established by the TMDL. *See In re City of Homedale Wastewater Treatment Plant*, 16 E.A.D. 421, 432 (EAB 2014) (upholding as “consistent with the assumptions and requirements of the...TMDL” permitting authority’s decision to include monthly and weekly average effluent limits for phosphorus, rather than daily maximum contained in applicable TMDL). Rather, permit issuers have flexibility to determine appropriate effluent limits for permits within the parameters of the statutory and regulatory scheme. *See* 54 Fed. Reg. 23,868, 23,879 (June 2, 1989) (clarifying in preamble to 40 CFR § 122.44 that, in not imposing detailed procedures for establishing permit limits, EPA intended to “give[] the permitting authority the flexibility to determine the appropriate procedures for developing water quality-based effluent limits”). Accordingly, the Board has rejected the argument that the EPA permit writer, in calculating permit limits for a wastewater treatment plant, erred by using a facility’s current, known design flow in developing effluent limits, rather than higher flow rate referenced in the TMDL. *In re City of Moscow*, 10 E.A.D. 135, 146-48 (EAB 2001). Thus, “TMDLs are by definition maximum limits; permit-specific limits like those at hand, which are more conservative than the TMDL maxima, are not inconsistent with those maxima, or the WLA upon which they are based.” *City of Moscow*, 10 E.A.D. at 146-48. *See also City of Taunton v. EPA*, 895 F.3d 120, 139-40 (1st Cir. 2018) (upholding Agency's decision to establish necessary permit limits to comply with water quality standards based on available information at the time of permit reissuance (citing *Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 26 (1st Cir. 2012), *cert. denied*, 569 U.S. 972 (2013))), *cert. denied*, 139 S. Ct. \_\_\_ (Feb. 19, 2019)).

Additionally, neither the CWA nor its implementing regulations provide a basis for concluding that a permitting authority cannot derive a limit based on *both* a TMDL *and* the relevant water quality standard if there is a record justification to warrant that approach. *In re City of Ruidoso Downs*, 17 E.A.D. 697, 733 (EAB 2019), *appeal docketed sub nom. Rio Hondo Land & Cattle Co. v. EPA*, No. 19-9531 (10th Cir. May 23, 2019); *see also* NPDES Surface Water Toxics Control Program, 54 Fed. Reg. 23,868, 23,879 (June 2, 1989) (incorporating language into the regulations that requires water quality-based effluent limits to be derived from water quality standards because that “is the only reliable method for developing water quality-based effluent

limits that protect aquatic life and human health”). To be sure, Sections 301 and 303 have different purposes; each represents a distinct aspect of the CWA statutory scheme that is implemented under a separate set of regulatory authorities. *Compare* 40 CFR § 122.44 (containing NPDES permitting regulations) *with* 40 CFR § 130.7 (containing CWA section 303(d) and TMDL regulations). *See In re City of Taunton Dep't of Pub. Works*, 17 E.A.D. 105, 142-144 (EAB 2016), *aff'd*, 895 F.3d 120, 136 (1st Cir. 2018), *cert. denied*, 139 S. Ct. \_\_\_\_ (Feb. 19, 2019) (explaining distinction between CWA § 303(d) listing process and the NPDES permitting process, and observing that, “The 303(d) listing process represents a statutory *response* to water pollution” while “NPDES permitting under CWA section 301 applies to individual discharges and represents a more *preventative* component of the regulatory scheme in that, under section 301, no discharge is allowed except in accordance with a permit.”) (emphasis in original). But TMDLs, wasteload allocations developed from TMDLs, and water quality-based effluent limits in permits share a common foundation in that all are required to take into account and assure that relevant water quality standards will be met. This conclusion is reflected in the applicable NPDES regulation at 40 CFR § 122.44(d)(1)(vii)(A)-(B):

(vii) When developing water quality-based effluent limits under this paragraph the permitting authority shall ensure that:

(A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards; *and* [emphasis added]

(B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7.

These two provisions are not to be read in isolation; rather, as indicated by the word “and,” these requirements must be read in conjunction with one another. This is in keeping with other provisions of the NPDES regulations implementing the NPDES program and CWA § 301, including 40 CFR 122.4(a) (“No permit may be issued...[w]hen the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or promulgations promulgated under CWA’); 122.44(d)(4) (requiring NPDES permits to include “any requirements in addition to or more stringent than promulgated effluent limitation guidelines or standards under sections 301...of the CWA necessary to...[c]onform to applicable water quality requirements under section 401(a)(2) of CWA when the discharge affects a State other than the certifying State”) and 122.44(d)(5) (requiring NPDES to “Incorporate any more stringent limitations, treatment standards, or schedule of compliance requirements established under Federal or State Law or regulations in accordance with section 301(b)(1)(C) of the CWA”). *See also* NPDES Surface Water Toxics Control Program, 54 Fed. Reg. 23,868, 23,879 (June 2, 1989) (incorporating language into the regulations that requires water quality-based effluent limits to be derived from water quality standards because that “is the only reliable method for developing water quality-based effluent limits that protect aquatic life and human health”). *See City of Taunton v. EPA*, 895 F.3d 120, 139-40 (1st Cir. 2018) (upholding EPA’s decision to establish necessary permit limits to comply with water quality standards based on available information

(citing *Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 26 (1st Cir. 2012), *cert. denied*, 569 U.S. 972 (2013)).

#### **D. The Nutrient Limits Are Consistent with the Assumptions and Requirements of the LIS TMDL**

It is undisputed that excessive nitrogen loadings are causing significant water quality problems in Long Island Sound, including low dissolved oxygen. In December 2000, the Connecticut Department of Environmental Protection (“CT DEP”), now known as the Connecticut Department of Energy and Environmental Protection (“CT DEEP”), and New York State Department of Environmental Conservation (“NYSDEC”), completed a TMDL for addressing nitrogen-driven eutrophication impacts in Long Island Sound. The TMDL includes a WLA for point sources and a load allocation (“LA”) for non-point sources. The point source WLAs for in-basin sources (Connecticut and New York State) are allocated facility-by-facility and were developed to achieve an aggregate 60% reduction in point source loading from those two states. The point source WLA in the TMDL *assumes* an aggregate 25% reduction from the baseline total nitrogen loading estimated in the TMDL for out-of-basin sources (Massachusetts, New Hampshire and Vermont wastewater facilities discharging to the Connecticut, Housatonic and Thames River watersheds), but does not allocate loads by facility. *See* TMDL--A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound (CT DEP 2000, page 33).

Although the facility’s discharge has not been assigned a specific WLA, it is still subject to the assumptions incorporated into the LIS TMDL under Section 303 of the Act, and implementing regulations, as well as compliance with applicable water quality standards under Section 301 of the Act. The nitrogen load limit in the permit is necessary to meet federal regulations at 40 CFR § 122.44(d)(1)(vii)(A), which as explained require that effluent limits be consistent the assumptions and requirements of any available approved wasteload allocation, and 40 CFR § 122.44(d)(1)(vii)(B), which require compliance with state water quality standards. In its 2001 LIS TMDL approval letter and attached review memo, EPA acknowledged the TMDL assumption that a 25% reduction of the out-of-basin point source load was a reasonable, necessary condition for approving the LIS TMDL. It committed to using its NPDES authorities to implement this reduction. EPA discussed the out-of-basin nitrogen loads as follows:

The TMDL identifies wasteload allocations for out-of-basin nitrogen loads (i.e., tributary loads) that would be achieved through the implementation of Phase IV reduction targets. Specifically, the Phase IV targets include a 25 percent reduction in point source nitrogen loads, based on the clear role that these sources have on water quality in Long Island Sound.

As discussed above, EPA is not approving the out-of-basin nitrogen reductions as formal allocations but rather as reasonable assumptions on which the in-basin reductions are based. In this case, the states’ estimated 25 percent reduction in nitrogen loads from point sources (primarily POTWs) is reasonable because this level of reduction has been demonstrated as feasible through Biological Nutrient Removal (BNR) retrofits of existing facilities. These low-cost retrofits were implemented at numerous Connecticut POTWs during Phase II of the Long Island Sound nitrogen reduction program. The reductions achieved by these retrofits support the predicted 25 percent reduction by out-of-basin

sources. EPA believes that these estimates of future reductions make sense. Moreover, as discussed in the Reasonable Assurance section below, EPA is prepared to use its authorities when issuing NPDES permits to dischargers in Massachusetts and New Hampshire, and in overseeing permit issuance in Vermont, to translate the nitrogen reductions into facility specific requirements in order to achieve the overall 25 percent reduction level. EPA has already begun to include nitrogen monitoring requirements in Massachusetts permits.

Review Memo Section 5.B (page 13, emphasis added).<sup>8</sup> Therefore, EPA's approval of the 2000 TMDL included a commitment on EPA's part to use its NPDES permitting and oversight authorities to reasonably assure that the assumption regarding out-of-basin load reductions identified in the TMDL would occur, consistent with the regulatory requirements. In this and other documents, EPA refers to that commitment as the out-of-basin WLA, consistent with the language in the TMDL.

The annual loading effluent limit is consistent with the assumptions used to derive the WLA for both in-basin and out-of-basin dischargers in the LIS TMDL, because the maximum estimated total out-of-basin point source load is assured to be less than the out-of-basin WLA assumed by the 2000 TMDL. As TN increases may be driven by population increases (the estimated wastewater TN loading is 10 pounds per person per year<sup>9</sup>), TN effluent limits are necessary to assure that the aggregate out-of-basin loading is not exceeded due to population. EPA anticipates that forthcoming out-of-basin permits in Massachusetts will include average annual loading nitrogen limits for facilities with design flow greater than 1 MGD, along with TN optimization requirements in all permits for dischargers greater than 100,000 gpd, and monitoring for all dischargers, in order to assure that TN loadings will be not increase over time to levels that exceed the WLA assumption in the TMDL.

**E. The Nutrient Limits are Imposed Based on a Finding of Reasonable Potential to Cause or Contribute to an Exceedance of Water Quality Standards; Constitute a Translation of the States' Narrative Nutrient Water Quality Standards; and Are Necessary to Ensure Compliance with Water Quality Standards, Including Antidegradation**

Narrative standards have the same force and effect as other state water quality standards; unlike numeric criteria, however, narrative water quality standards are necessarily subject to translation prior to their application. *See American Paper Inst. v. United States EPA*, 996 F.2d 346, 351 (D.C. Cir. 1993). As explained by the D.C. Circuit:

As long as narrative criteria are permissible...and must be enforced through limitations in particular permits, a permit writer will inevitably have some discretion in applying the criteria to a particular case. The general language of narrative criteria can only take the permit writer so far in her task. Of course, that does not mean that the language of a

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<sup>8</sup> TMDL Approval Letter from the Long Island Sound Office of the U.S. EPA to the states of New York and Connecticut, with enclosure entitled: EPA New England and EPA Region 2 TMDL Review for TMDL in Long Island Sound, Connecticut and New York, Final Status, Impairment/Pollutant is Hypoxia (low dissolved oxygen) due to nitrogen, dated April 3, 2001.

<sup>9</sup> Unit loading from residences has been estimated at an average of 0.027 lb/capita/d or 10 lb/capita/year. See EPA Manual – Nitrogen Control, September 1993, EPA/625/R-93/010, Page 10.

narrative criterion does not cabin the permit writer's authority at all; rather, it is an acknowledgement that the writer will have to engage in some kind of interpretation to determine what chemical-specific numeric criteria—and thus what effluent limitations—are most consistent with the state's intent as evinced in its generic standard.

*See American Paper Inst.*, 996 F.2d at 351 (citations omitted). This process of translating a narrative criterion is governed under EPA regulations by 40 CFR § 122.44(d)(1)(vi), which implements Sections 301 and 402 of the Act. Subsection (A) of that provision mandates at the outset a calculation of a protective ambient threshold concentration for the pollutant:

Where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:

(A) Establish effluent limits using a calculated numeric water quality criterion [emphasis added] for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use.

*See also Upper Blackstone Water Pollution Abatement Dist. v. United States EPA*, 690 F.3d at 23. Because both Connecticut and New York employ narrative water quality criteria for the relevant pollutants, EPA relied in the first instance on the TMDL (a sophisticated and resource-intensive modeling and technical effort representing the input of five states and EPA) as a translation of these criteria under 40 CFR § 122.44(d)(1)(vi), and supplemented that reliance with an analysis of subsequent water quality monitoring data and other information related to LIS nutrient-driven impairments.<sup>10</sup>

As the Board and First Circuit have held, EPA has a significant amount of flexibility within the bounds of the CWA in determining whether a particular discharge has a reasonable potential to cause an excursion above a water quality criterion. *In re City of Taunton Dep't of Pub. Works*, 17 E.A.D. 105, 144 (EAB 2016), *aff'd*, 895 F.3d 120, 136 (1st Cir. 2018), *cert. denied*, 139 S. Ct. \_\_\_ (Feb. 19, 2019); *Upper Blackstone Water Pollution Abatement Dist. v. U.S. Env'tl. Prot. Agency*, 14 E.A.D. 577, *aff'd*, 690 F.3d 9 (1st Cir. 2012), *cert. denied*, 133 S. Ct. 2382 (2013); *In re Town of Newmarket*, 16 E.A.D. 18 (EAB 2013); *In re City of Attleboro Wastewater Treatment Plant*, 14 E.A.D. 398 (EAB 2009). The requirement to impose a permit limit is triggered by a finding that the facility may discharge a pollutant at a level that “contributes” to or has the “reasonable potential” to cause a water quality standard violation. *Upper Blackstone*, 14 E.A.D. at 599 & n.29; *see also* 40 CFR § 122.44(d). To establish a “reasonable potential” the permitting

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<sup>10</sup> NY and CT have narrative nutrient criteria, as well as numeric DO criteria, along with antidegradation requirements protecting existing uses. LIS was listed due to low DO. The use impairment includes: decrease in bathing area quality, an increase in unhealthy areas for aquatic marine life, an increase in mortality of sensitive organisms, poor water clarity for scuba divers, a reduction in commercial and sport fisheries values, a reduction in wildlife habitat value, degradation of seagrass beds, impacts on tourism and real estate, and poorer aesthetics. See TMDL at p. 9.

authority must show some level of certainty greater than a mere possibility in the technical judgment of the permitting authority. *Upper Blackstone*, 14 E.A.D. at 599 n.29 (explaining that “[r]easonable potential’ requires some degree of certainty greater than a mere possibility, but it leaves to the permit writer’s scientific and technical judgment how much certainty is necessary”). Additionally, the reasonable potential analysis must be based on “worst-case” effluent conditions. *Id.* at 599. Thus, as explained previously, this analysis requires “a precautionary approach when determining whether the permit must contain a water quality-based effluent limit for a particular pollutant,” rather than “certainty of an existing causal link between a specific discharge and a particular violation of water quality standards” *Id.*

Although nitrogen driven impairments in LIS have been reduced, they have not been eliminated, and remain significant. In EPA’s technical and scientific judgment, the current quantity of nitrogen in LIS exceeds the narrative and numeric nutrient-related criteria applicable to LIS, and existing uses are not being protected, based on analyses of water quality data and information in the administrative record.<sup>11</sup> The out-of-basin loads, whose magnitude is described above, necessarily contribute, or have the reasonable potential to contribute, to these violations. Designated uses for the marine waters of Long Island Sound (Class SA) include “habitat for marine fish, other aquatic life and wildlife.” See RCSA § 22a-426-(f) and (g). Connecticut’s WQS protect those uses from excessive nutrient pollution by means of the following narrative criteria: “The loading of nutrients, principally phosphorus and nitrogen, to any surface water body shall not exceed that which supports maintenance or attainment of designated uses.” Although there have been significant reductions in the size of the hypoxic zone in LIS due largely to in-basin point source TN reductions, LIS continues to be impaired.<sup>12</sup> As noted, it is undisputed that significant amounts of nitrogen from out-of-basin facilities are discharged to the LIS watershed (as much as 6 million pounds per year, based on the sum of the maximum annual discharge from each out-of-basin discharger from 2013 to 2017).

Since the LIS TMDL was approved by EPA in 2001, the study of water quality conditions in LIS and the nitrogen loadings that contribute to hypoxia and other impairments there has continued. Annual monitoring of hypoxia and dissolved oxygen conditions in Long Island continues, as most recently documented in the *2019 Long Island Sound Hypoxia Season Review*<sup>13</sup> which notes that while the area of hypoxia has been reduced, water quality standards have not yet been met.<sup>14</sup>

In 2015, the Long Island Sound Study (LISS)<sup>15</sup> updated its Long Island Sound Comprehensive Conservation and Management Plan (CCMP)<sup>16</sup> which sets watershed targets, implementation

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<sup>11</sup> See e.g. Long Island Sound Report Card 2018, at <https://www.ctenvironment.org/wp-content/uploads/2018/09/ReportCard2018-BestView.pdf>

<sup>12</sup> Long Island Sound Study, *A Healthier Long Island Sound: Nitrogen Pollution*, 2019, page 2.

<sup>13</sup> CTDEEP, Interstate Environmental Commission, EPA, *2019 Long Island Sound Hypoxia Season Review*, available at: [http://www.iec-nynjct.org/sites/default/files/2020-07/FINAL\\_LISound-Hypoxia-2019-Combined-Report\\_april2020.pdf](http://www.iec-nynjct.org/sites/default/files/2020-07/FINAL_LISound-Hypoxia-2019-Combined-Report_april2020.pdf)

<sup>14</sup> *2019 Long Island Sound Hypoxia Season Review* (page 13)

<sup>15</sup> The Long Island Sound Study (LISS) is a bi-state partnership, formed by EPA, New York and Connecticut in 1985, consisting of federal and state agencies, user groups, concerned organizations, and individuals dedicated to restoring and protecting the Long Island Sound. For more information see <https://longislandsoundstudy.net/>

<sup>16</sup> LISS, Long Island Sound Comprehensive Conservation and Management Plan 2015 Returning the Urban Sea to Abundance (CCMP), 2015.

actions to meet those targets, and monitoring strategies. One of the objectives of the CCMP is to improve water quality by further reducing nitrogen pollution from sources that are more distant from the Sound,<sup>17</sup> such as wastewater treatment plants in Massachusetts.

A study published in 2008 used both measurements and mass-balance modeling to evaluate the potential for nitrogen attenuation in the main stem of the Connecticut River in April and August 2005. One of the reaches studied was a 55 km stretch of the Connecticut River in Massachusetts. The study found no nitrogen loss in that reach either in April or August, most likely due to the depth and higher velocities in the main stem of the river compared to the shallower, slower tributaries where previous models and studies had demonstrated varying degrees of nitrogen attenuation.<sup>18</sup>

In addition, subsequent studies refined the understanding of out-of-basin baseline nitrogen loading which suggest lower out-of-basin baseline point source loading to the Connecticut River than the 21,672 lb/day assumed in the 2000 TMDL. In 2013, the United States Geological Survey (USGS) published an estimation of the total nitrogen load to Long Island Sound from Connecticut and contributing areas to the north for October 1998 to September 2009.<sup>19</sup> Available total nitrogen and continuous flow data from 37 water-quality monitoring stations in the LIS watershed, for some or all of these years, were used to compute total annual nitrogen yields and loads. In order to extract the non-point source loadings from the total nitrogen measured, the authors relied on point source estimates from the SPARROW model of nutrient delivery to waters in the Northeastern and Mid-Atlantic states in 2002, including the Connecticut River, that was published by Moore and others in 2011<sup>20</sup>. The SPARROW model estimated that 1,776.7 metric tons per year (MT/yr) (or annual average 10,820 lb/day) of total nitrogen was discharged to the Connecticut River from Massachusetts, New Hampshire and Vermont in 2002<sup>21</sup>. These estimates were based on an approach by Maupin and Ivahnenko, published the same year, which used discharge monitoring data available from EPA's Permit Compliance System (PCS) database for 2002.<sup>22,23</sup> Where no data was available, an estimated typical pollutant concentration (TPC) and flow was used to approximate nitrogen loading from point sources according to their industrial category.<sup>24</sup>

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<sup>17</sup> CCMP, page 19.

<sup>18</sup> Smith, Thor E., et al, *Nitrogen Attenuation in the Connecticut River, Northeastern USA; A Comparison of Mass Balance and N<sub>2</sub> Production Modeling Approaches*, *Biogeochemistry*, Mar., 2008, Vol. 87, No. 3 (Mar., 2008), pp. 311-323

<sup>19</sup> Mullaney, J.R., and Schwarz, G.E., 2013, Estimated Nitrogen Loads from Selected Tributaries in Connecticut Draining to Long Island Sound, 1999–2009: U.S. Geological Survey Scientific Investigations Report 2013–5171, 65

<sup>20</sup> Moore, Richard B., Craig M. Johnston, Richard A. Smith, and Bryan Milstead, 2011. Source and Delivery of Nutrients to Receiving Waters in the Northeastern and Mid-Atlantic Regions of the United States. *Journal of the American Water Resources Association (JAWRA)* 47(5):965-990. DOI: 10.1111/j.1752-1688.2011.00582.x

<sup>21</sup> Extrapolated from Moore, et.al 2011, Table 3 on page 977 which estimated that for 2002 an 33.2 % of the total 4,553 MT/yr Massachusetts nitrogen load was from point sources, 2.5% of the total 3,795 MT/yr Vermont nitrogen load was from point sources and 6.1 percent of the total 2,790 MT/yr New Hampshire nitrogen load was from point sources.

<sup>22</sup> Moore (2011), page 968.

<sup>23</sup>Maupin, Molly A. and Tamara Ivahnenko, 2011. Nutrient Loadings to Streams of the Continental United States From Municipal and Industrial Effluent. *Journal of the American Water Resources Association (JAWRA)* 47(5):950-964.

<sup>24</sup> Maupin (2011), page 954.

The permit conditions at issue here were fashioned to ensure full implementation of CWA §§ 301(b)(1)(C) and 402, as well as consistency with the assumptions of the LIS WLA. A permitting authority has considerable discretion to determine appropriate effluent limits for a permit. “Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits” in order to achieve these statutory mandates of establishing effluent limitations, including narrative permit conditions, to attain and maintain water quality standards. *Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992). Section 402 provides that a permit may be issued upon condition “that such discharge will meet either all applicable requirements under sections 301, 302, 306, 307, 308 and 403 of this Act, or prior to taking of necessary implementing actions relating to all such requirements, such conditions as the Administrator determines are necessary to carry out the provisions of this Act.” 33 U.S.C. §1342(a). “This provision gives EPA considerable flexibility in framing the permit to achieve a desired reduction in pollutant discharges.” *Id.* The D.C. Circuit has described the CWA’s balance when confronted with a difficult situation and the obligation to eliminate water quality impairments: “EPA may issue permits with conditions designed to reduce the level of effluent discharges to acceptable levels. This may well mean opting for a gross reduction in pollutant discharge rather than the fine-tuning suggested by numerical limitations. *But this ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.*” *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1380 (D.C. Cir. 1977) (emphasis added) (finding unlawful a rule that would have exempted certain discharges from permitting requirements based on the difficulty in setting limits).

Finally, antidegradation provisions of State water quality standards require that existing uses be fully maintained and protected, which is an additional basis for the limit. EPA does not believe that increased nitrogen loading into an impaired water body that is suffering the ongoing effects of cultural eutrophication would be consistent with applicable antidegradation requirements. One of the principal objectives of the CWA, articulated in CWA § 101(a) is to “maintain the chemical, physical and biological integrity of the Nation’s waters.” The antidegradation requirements in federal regulations at 40 CFR § 131.12 provide a framework for maintaining and protecting water quality that has already been achieved and require states to adopt provisions in their water quality standards that prevent further degradation of both degraded and waters which are meeting or exceeding the water quality necessary to protect designated and existing uses. Since the receiving water at issue here is in Connecticut, EPA looked to Connecticut antidegradation requirements which state, in paragraph 2 of the Connecticut Water Quality Standards:

Existing and designated uses such as propagation of fish, shellfish and wildlife, recreation, public water supply, and agriculture, industrial use and navigation, and the water quality necessary for their protection is to be maintained and protected.<sup>25</sup>

As the Massachusetts point source dischargers are substantially upstream of the impaired receiving water EPA is applying an effluent limitation consistent with antidegradation requirements by capping the aggregate loading of nitrogen to the Long Island Sound from

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<sup>25</sup> Connecticut DEEP, 2011, Connecticut Water Quality Standards, page 2. Available at: [https://portal.ct.gov/-/media/DEEP/water/water\\_quality\\_standards/wqsfinaladopted22511pdf.pdf](https://portal.ct.gov/-/media/DEEP/water/water_quality_standards/wqsfinaladopted22511pdf.pdf).

Massachusetts dischargers, to prevent further degradation of the receiving waters that would result from increased loading given that nitrogen-driven cultural eutrophication, and the deleterious effects on existing and designated uses that attend this process, is still underway in LIS. This allows EPA to ensure that the nitrogen limits are applied fairly and in a technologically feasible manner while ensuring that antidegradation provisions of Connecticut's water quality standards are being met.

In order to assure compliance with water quality standards, and fully implement and translate the states' narrative nutrient and related criteria, in EPA's judgment, out-of-basin should not be increased, because water quality data indicates that the assimilative capacity for nitrogen has been reached in portions of LIS and cultural eutrophication, the impacts of which include hypoxia, is ongoing. It is reasonable, in EPA's view, to issue permits to out-of-basin dischargers that hold loads constant and in so doing curtail the potential for these out-of-basin loadings to contribute to further impairment and degradation of a water that is already beyond its assimilative capacity for nitrogen. The TN effluent limits and optimization requirements are necessary to assure that the out-of-basin load does not cause or contribute to further violation of water quality criteria in the downstream LIS. Holding these loads level, in conjunction with significant nitrogen pollution reduction efforts being pursued by in-basin dischargers will, under EPA's analysis, be sufficient to make a finding that the out-of-basin permits taken as a whole contain nutrient controls sufficient to ensure that the discharges comply with water quality standards under Section 301 of the Act, based on information in the record currently before EPA. This conclusion will be tested for the term of the permit through monitoring programs in LIS and will be adjusted as necessary in future permit cycles. This review and potential tightening of the conditions in NPDES permits is a basic feature of the CWA.

### **III. Principal Objections to EPA's Chosen Out-of-Basin Permitting Approach**

Overall, commenters objecting to the approach adopted by EPA misapprehend the legal framework governing EPA's derivation of NPDES effluent limitations under CWA § 402, which under federal regulations must not only be consistent with the assumptions and requirements of any available WLA, but also must ensure compliance with applicable water quality standards pursuant to CWA § 301, based on information reasonably available to EPA at the time of permit reissuance.

#### **A. Effluent limits may be more stringent than a TMDL WLA**

Several commenters argue that compliance with the nitrogen reductions assumed by the LIS TMDL preclude the imposition of further nitrogen controls on the facility, or rely on the closely-related proposition that EPA must await the development and approval of new, facility-specific WLAs for the out-of-basin POTWs prior to imposing effluent limitations, even if there is evidence of ongoing water quality impairments in the receiving waters (a fact not disputed on the permit record). These positions, however, are unfounded, as the Environmental Appeals Board and United States Court of Appeals for the First Circuit have repeatedly and unambiguously held that EPA need *not* await development of an EPA-approved, facility-specific WLA, or collection of new water quality data or creation of new models, in order to independently develop and impose a water quality-based effluent limitation stringent enough to satisfy CWA § 301 at the time of permit reissuance. See *City of Taunton v. U.S. Env'tl. Prot. Agency*, 895 F.3d 120 (1st

Cir. 2018), cert. denied, 139 S. Ct. 120 (2019); *Upper Blackstone Water Pollution Abatement Dist. v. U.S. Envtl. Prot. Agency*, 690 F.3d 9 (1st Cir. 2012), cert. denied, 133 S. Ct. 2382 (2013).

Additionally, some commenters appear to misconstrue the basis for the permit limits for the out-of-basin dischargers, improperly characterizing that foundation as the WLA established for POTWs discharging directly into Long Island Sound. By this, they imply that the permit need only comply with the WLA, as opposed to the Act as a whole. This view is incorrect in at least two ways. First, as a factual matter, the out-of-basin dischargers were not assigned a WLA; reductions from these sources were an *assumption* of the LIS WLA. Second, EPA's permit limits were not only developed to be consistent with the LIS WLA, but also derived from water quality standards under CWA § 303, which may lead to the imposition to more stringent effluent limitations necessary to achieve those standards, as EPA is obligated to do under CWA § 301. Thus, in accordance with the Act and EPA's implementing regulations, they have been: (1) written to be "consistent" with the assumptions and requirements of the LIS WLA, which was established based on an assumption that out-of-basin sources of nitrogen would be reduced by 25%, and (2) made more stringent than that assumption in order to comply with CWA § 301, based on information available to EPA at the time of permit reissuance, specifically, evidence of ongoing nitrogen-driven impairments in LIS.

**B. EPA need not await a TMDL update before it can incorporate new information relevant to nitrogen loading and receiving water quality in an NPDES permit, and consideration of new information does not amount to a de facto TMDL update**

Some commenters argued that EPA must await development of a new TMDL prior to considering updated information when developing NPDES permits. This view improperly subordinates the NPDES program to the TMDL program. In fact, they are coordinate programs. TMDLs establish pollutant maxima under Section 303 of the Act, and do not preclude the imposition of a more stringent limit pursuant to an NPDES permit under Section 402. While NPDES permits must be consistent with the assumptions and requirements of any available WLA pursuant to EPA regulations, EPA has an independent obligation to write NPDES permits that ensure compliance with Section 301, using the best information available at the time of permit reissuance, which in this case includes an evaluation of TMDL implementation and current receiving water quality in LIS. While the TMDL represented, as a commenter notes, "the best scientific and legal approach for meeting water quality standards in the LIS" at the time, EPA may supplement its scientific and technical record for the purposes of NPDES permitting, including through refining its knowledge of TMDL inputs and assumptions, such as baseline loads, which are inherently dynamic and vary from permit cycle to cycle, as well as an evaluation of instream monitoring and data that reflect the extent to which the TMDL endpoints are being achieved. Contrary to some commenters' assertions, EPA is not attempting to modify the TMDL through issuance of a permit; EPA, rather, is implementing the TMDL by issuing a permit consistent with the assumptions and requirements of that TMDL as required by the federal regulations, and pursuant to its independent obligations under Section 402 and 301 of the Act. *See* 40 CFR 122.44(d)(1)(vii)(A)-(B).

TMDLs are in a sense fixed in a moment in time, but that attribute of TMDLs does not suspend consideration of new information or preclude new analysis consistent with the TMDL under other regulatory programs, such as the NPDES permit program, if the permit record calls for

such an evaluation. This stands to reason, given that a person is authorized to discharge, if at all, through an NPDES permit, not a TMDL, and the issuance of an NPDES permit that does not assure attainment of water quality standards is prohibited under the Act and regulations implementing the NPDES program. EPA is obligated under the Act to revisit NPDES permit requirements and generate updated record bases for decision at periodic intervals not to exceed five years. TMDLS, on the other hand, are planning documents and not independently enforceable. Rather, they are implemented through the regular issuance of NPDES permits, and at each NPDES permit reissuance, the permit issuer *must* demonstrate that the discharge will not cause or contribute to a water quality standards violation. Reassessing the baseline load, which was based on estimated point source loads from over 30 years ago, is one component of this process. This evaluation is a function of the NPDES permitting process and does not amount to an “update” of the TMDL. EPA is obligated to ensure not only that the NPDES WQBELs are consistent with the assumptions and requirements of any available WLA, but to ensure that the permit complies with the requirements of Section 301. Given the lapse of time between TMDL approval, and derivation of the baseline assumptions underlying the TMDL, this type of inquiry is reasonable, and indeed has been squarely requested of EPA through comments on the record, including but not limited to those from a downstream affected state. (Even commenters objecting to this reassessment recognize that the NPDES permits necessarily incorporate more recent data and information, given the structure of Section 301 and 402; in objecting to a proposed benchmark, the commenter states, “It does not represent the most recent data available to the Agency at the time of permit renewal.”)

### **C. The optimization requirement is not vague and is within EPA’s authority**

Some commenters argued that that a special condition, such as the optimization requirement, is not anticipated by rule, guidance or definition. EPA is authorized to impose narrative conditions in permits to abate the discharge of pollutants when, for example, “The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.” 40 CFR § 122.44(k)(4). Special conditions are defined in EPA’s NPDES Permit Writer’s Manual as those which,

“supplement numeric effluent limitations and require the permittee to undertake activities designed to reduce the overall quantity of pollutants being discharged to waters of the United States, to reduce the potential for discharges of pollutants, or to collect information that could be used in determining future permit requirements.” (*NPDES Permit Writers’ Manual, Chapter 9*, USEPA September 2010 [EPA833-K-10-001]).

As the optimization requirement supplements the TN annual average load limit and is designed to reduce the overall quantity of nitrogen being discharged, it clearly fits within this definition. The requirement is not overly prescriptive, because it is intended to afford the permittee with the latitude to develop the optimization strategy that best meets the configuration and operation of the facility. EPA in imposing the optimization requirement is not dictating specific operational measures at the facility.

EPA disagrees that the optimization is vague. Optimization has been defined, for example, as the process of identifying the most efficient or highest quality outcome, given current constraints, by maximizing positive factors and minimizing negative factors. A permittee applying this or other definition in common usage would not be at risk of arbitrary enforcement.

Rather, this condition gives a person of ordinary intelligence a reasonable opportunity to know what is prohibited and comply with the requirement by considering objective factors, so that they may act accordingly. The operators of the facility, as evidenced their comments, have a deep and nuanced expertise in nutrient removal capabilities and constraints of the plant, and of the factors that impact plant performance.

It is intended that during the first year of the permit, alternative methods of operating the facility to optimize nitrogen removal will be evaluated. At the end of the year the permittee will submit a report to the EPA and MassDEP of its findings. The optimal operational method will be self-implementing by the permittee at the beginning of the second year and does not require EPA or MassDEP approval. It is the intent of EPA and MassDEP that treatment facilities optimize nitrogen removal and, at a minimum, the facilities must not increase their nitrogen discharge loadings.

**D. Voluntary reductions in Total Nitrogen discharge will not assure attainment of water quality standards**

Certain commenters suggest that *voluntary* reductions by the out-of-basin dischargers are sufficient to ensure compliance with applicable water quality standards under Section 301 of the Act. The Region disagrees. One long-standing principle is that permits must “ensure” compliance with water quality requirements. *See* 40 CFR § 122.4(d); *In re City of Marlborough*, 12 E.A.D. 235, 250 (EAB) (2005) (finding that “possible” compliance is not the same as “ensuring” compliance); *In re Gov’t of D.C. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 323,342 (EAB 2002) (finding that “reasonably capable” does not comport with the “ensure” standard). EPA has similarly interpreted the CWA to prohibit it from issuing an NPDES permit “[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of *all affected States*.” 40 CFR § 122.4(d) (emphasis added); *accord Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992) (noting that the regulation dates back from 1973). EPA has promulgated two other regulations with similar requirements. The first requires each NPDES permit to include conditions necessary to “[a]chieve [WQSS] established under section 303 of the CWA, including State narrative criteria for water quality.” 40 CFR § 122.44(d)(1). The second requires each NPDES permit to “[i]ncorporate any more stringent limitations... established under Federal or State law or regulations in accordance with section 301(b)(1)(C).” 40 CFR § 122.44(d)(5). Pollutant controls that may be set aside, for any reason, at the sole election of the discharger—even if those increased loadings will contribute to further violations of water quality standards—cannot be said to “ensure” compliance with these standards. EPA is thus obligated under Section 301 of the Act and implementing regulations to include enforceable limits in the permit.

**E. There is a reasonable level of scientific certainty given the facts in the record to establish an effluent limit**

Some commenters argued that more data and modeling is necessary before determining whether further nitrogen controls from out-basin-dischargers would be necessary and, if so, the precise extent of those reductions. While there will always be an irreducible amount of uncertainty given the varied sources of nitrogen loading into LIS and the size and complexity of that water body, EPA is nevertheless obligated to exercise its scientific expertise and apply its technical judgment based on the information it has at the time of permit reissuance, which under the Act is called for at regular intervals not to exceed five years. *See Upper Blackstone*, 690 F.3d at 22

(“[N]either the CWA nor EPA regulations permit the EPA to delay issuance of a new permit indefinitely until better science can be developed, even where there is some uncertainty in the existing data.”); *Ethyl Corp. v. EPA*, 541 F.2d 1, 28 (D.C.Cir.1976) (en banc) (“[R]ecognizing ... the developing nature of [the field].... [t]he [EPA] Administrator may apply his expertise to draw conclusions from suspected, but not completely substantiated, relationships between facts, from trends among facts, from theoretical projections from imperfect data, from probative preliminary data not yet certifiable as ‘fact,’ and the like.”). But here, once again, what remains certain and undisputed on the record before EPA is the fact that large amounts of nitrogen from out-of-basin dischargers contribute to ongoing nitrogen water quality impairments in LIS. *Miami–Dade County v. EPA*, 529 F.3d 1049, 1065 (11th Cir.2008) (holding that the “EPA is compelled to exercise its judgment in the face of scientific uncertainty unless that uncertainty is so profound that it precludes any reasoned judgment”). In light of this fact and applicable case law construing the Act, EPA is more than entitled under the Act to proceed with the imposition of reasonable permit effluent limits, designed to achieve gross reductions, on the out-of-basin dischargers.

#### **F. There has been sufficient opportunity for review of EPA’s permitting approach**

Finally, the permitting approach underlying this proceeding has been subject to a very significant degree of public process, input and scrutiny. MassDEP and EPA held two public meetings for Massachusetts permittees in the Long Island Sound watershed to explain the approach on June 7, 2019 in Springfield, MA and on June 21, 2019 in Greenfield, MA. Additionally, EPA’s methodology for establishing TN limitations for out-of-basin POTWs in Massachusetts was challenged in the United States Environmental Appeals Board, where review of the permit was denied. EPA’s Response to the Petition was filed on December 11, 2020, and EPA incorporates that filing, inclusive of attachments (e.g., Exhibit S, Response to the Comments), as it relates to TN herein.<sup>26</sup>

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<sup>26</sup>[https://yosemite.epa.gov/OA/EAB\\_WEB\\_Docket.nsf/Filings%20By%20Appeal%20Number/11443A888232A1C88525863B006D4491/\\$File/Springfield%20Response%20to%20Petition\\_Final\\_12\\_11\\_2020.pdf](https://yosemite.epa.gov/OA/EAB_WEB_Docket.nsf/Filings%20By%20Appeal%20Number/11443A888232A1C88525863B006D4491/$File/Springfield%20Response%20to%20Petition_Final_12_11_2020.pdf)

**AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended, 33 U.S.C. §§ 1251 et seq. (the "CWA"),

**Town of Webster, Massachusetts**

is authorized to discharge from the facility located at

**Town of Webster Sewer Department  
38 Hill Street  
P.O. Box 793  
Webster, MA 01570-0793**

to receiving water named

**French River  
French & Quinebaug Watershed**

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

The Town of Dudley is a co-permittee for Part B, Unauthorized Discharges; Part C, Operation and Maintenance, which includes conditions regarding the operation and maintenance of the collection systems owned and operated by the Town; and Part D, Alternative Power Source.

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the terms and conditions of Part B, Part C, and Part D of this permit. The Permittee and co-permittee are severally liable under Part B, Part C and Part D for their own activities and required reporting with respect to the portions of the collection system that they own or operate. They are not liable for violations of Part B, Part C and Part D committed by others relative to the portions of the collection system owned and operated by others. Nor are they responsible for any reporting that is required of other Permittees under Part B, Part C and Part D. The responsible Town department is:

**Town of Dudley  
Sewer Department  
W Main Street  
Dudley, MA 01571**

This permit shall become effective on the first day of the calendar month immediately following 60 days after signature.<sup>1</sup>

This permit expires at midnight, five years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on March 24, 2006.

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<sup>1</sup> Pursuant to 40 Code of Federal Regulations (CFR) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, the permit will become effective upon the date of signature.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013), **Attachment C** (Reassessment of Technically Based Industrial Discharge Limits), **Attachment D** (NPDES Permit Requirement for Industrial Pretreatment Annual Report) and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this        day of

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Ken Moraff, Director  
Water Division  
Environmental Protection Agency  
Region 1  
Boston, MA

DRAFT

## PART I

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent through Outfall Serial Number 001 to the French River. The discharge shall be limited and monitored as specified below; the receiving water and the influent shall be monitored as specified below.

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3,4</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Rolling Average Effluent Flow <sup>5</sup>	6.0 MGD <sup>5</sup>	---	---	Continuous	Recorder
Effluent Flow <sup>5</sup>	Report MGD	---	Report MGD	Continuous	Recorder
BOD <sub>5</sub> (April 1 – September 30)	10 mg/L 500 lb/day	10 mg/L 500 lb/day	Report mg/L	3/week	Composite
BOD <sub>5</sub> (October 1 - March 31)	30 mg/L 1,500 lb/day	45 mg/L 2,250 lb/day	Report mg/L	3/week	Composite
BOD <sub>5</sub> Removal	≥ 85 %	---	---	---	Calculation
TSS (April 1 - September 30)	15 mg/L 750 lb/day	15 mg/L 750 lb/day	Report mg/L	3/week	Composite
TSS (October 1 - March 31)	30 mg/L 1,500 lb/day	45 mg/L 2,250 lb/day	Report mg/L	3/week	Composite
TSS Removal	≥ 85 %	---	---	---	Calculation
pH Range <sup>6</sup>	6.5 - 8.3 S.U.			1/day	Grab
Total Residual Chlorine <sup>7,8</sup>	17.1 µg/L	---	29.5 µg/L	1/day	Grab
<i>Escherichia coli</i> <sup>7,8</sup> (April 1 – October 31)	126 cfu/100 mL	---	409 cfu/100 mL	2/week	Grab
Total Copper	17.8 µg/L	---	25.7 µg/L	1/month	Composite
Total Aluminum <sup>9</sup>	112.9 µg/L	---	Report µg/L	1/month	Composite
Total Lead	5.1 µg/L	---	Report µg/L	1/month	Composite
Dissolved Oxygen (April 1 - October 31)	≥ 6.0 mg/L			1/day	Grab

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3,4</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Ammonia Nitrogen (April 1 – April 30)	7.1 mg/L Report lb/day	10.0 mg/L Report lb/day	15.0 mg/L	2/week	Composite
Ammonia Nitrogen (May 1 – May 31)	5.0 mg/L Report lb/day	5.0 mg/L Report lb/day	8.0 mg/L	2/week	Composite
Ammonia Nitrogen (June 1 – September 30)	2.0 mg/L Report lb/day	2.0 mg/L Report lb/day	3.0 mg/L	2/week	Composite
Total Kjeldahl Nitrogen <sup>10</sup>	Report mg/L	---	Report mg/L	1/month	Composite
Nitrate + Nitrite <sup>10</sup>	Report mg/L	---	Report mg/L	1/month	Composite
Total Nitrogen <sup>10</sup>	Report mg/L Report lb/day	---	Report mg/L	1/month	Calculation
Rolling Average Total Nitrogen <sup>11</sup>	400 lb/day	---	---	1/month	Calculation
Total Phosphorus (April 1 – October 31)	0.14 mg/L	---	Report mg/L	2/week	Composite
Total Phosphorus (November 1 – March 31)	1.0 mg/L	---	Report mg/L	1/week	Composite
Perfluorohexanesulfonic acid (PFHxS) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
<b>Whole Effluent Toxicity (WET) Testing<sup>13,14</sup></b>					
LC <sub>50</sub>	---	---	≥ 100 %	1/quarter	Composite
C-NOEC	---	---	≥ 65 %	1/quarter	Composite
Hardness	---	---	Report mg/L	1/quarter	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/quarter	Composite
Total Aluminum	---	---	Report mg/L	1/quarter	Composite
Total Cadmium	---	---	Report mg/L	1/quarter	Composite
Total Copper	---	---	Report mg/L	1/quarter	Composite
Total Nickel	---	---	Report mg/L	1/quarter	Composite
Total Lead	---	---	Report mg/L	1/quarter	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3,4</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Total Zinc	---	---	Report mg/L	1/quarter	Composite
Total Organic Carbon	---	---	Report mg/L	1/quarter	Composite

Ambient Characteristic <sup>15</sup>	Reporting Requirements			Monitoring Requirements <sup>1,2,3,4</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Hardness	---	---	Report mg/L	1/quarter	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/quarter	Grab
Total Aluminum	---	---	Report mg/L	1/quarter	Grab
Total Cadmium	---	---	Report mg/L	1/quarter	Grab
Total Copper	---	---	Report mg/L	1/quarter	Grab
Total Nickel	---	---	Report mg/L	1/quarter	Grab
Total Lead	---	---	Report mg/L	1/quarter	Grab
Total Zinc	---	---	Report mg/L	1/quarter	Grab
Total Organic Carbon	---	---	Report mg/L	1/quarter	Grab
Dissolved Organic Carbon <sup>16</sup>	---	---	Report mg/L	1/quarter	Grab
pH <sup>17</sup>	---	---	Report S.U.	1/quarter	Grab
Temperature <sup>17</sup>	---	---	Report °C	1/quarter	Grab
Total Phosphorus <sup>18</sup> (April 1 - October 31)	---	---	Report mg/L	1/month	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
BOD <sub>5</sub>	Report mg/L	---	---	2/month	Composite
TSS	Report mg/L	---	---	2/month	Composite
Perfluorohexanesulfonic acid (PFHxS) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA) <sup>12</sup>	---	---	Report ng/L	1/quarter	Composite

Sludge Characteristic	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Perfluorohexanesulfonic acid (PFHxS) <sup>19</sup>	---	---	Report ng/g	1/quarter	Composite <sup>20</sup>
Perfluoroheptanoic acid (PFHpA) <sup>19</sup>	---	---	Report ng/g	1/quarter	Composite <sup>20</sup>
Perfluorononanoic acid (PFNA) <sup>19</sup>	---	---	Report ng/g	1/quarter	Composite <sup>20</sup>
Perfluorooctanesulfonic acid (PFOS) <sup>19</sup>	---	---	Report ng/g	1/quarter	Composite <sup>20</sup>
Perfluorooctanoic acid (PFOA) <sup>19</sup>	---	---	Report ng/g	1/quarter	Composite <sup>20</sup>
Perfluorodecanoic acid (PFDA) <sup>19</sup>	---	---	Report ng/g	1/quarter	Composite <sup>20</sup>

## Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented as an electronic attachment to the applicable discharge monitoring report. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and the State of any additional testing above that required herein, if testing is in accordance with 40 CFR Part 136.
2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is “sufficiently sensitive” when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term “minimum level” refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.
3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of “0” to all non-detects for that reporting period and report the average of all the results.
4. A “grab” sample is an individual sample collected in a period of less than 15 minutes.  
  
A “composite” sample is a composite of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.
5. The limit is a rolling annual average, reported in million gallons per day (MGD), which will be calculated as the arithmetic mean of the monthly

average flow for the reporting month and the monthly average flows of the previous eleven months. Also report monthly average and maximum daily flow in MGD.

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).
7. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. The testing compliance level for TRC is 20 µg/L.

Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine or dechlorination chemicals occurred. Any non-detects shall be reported in the DMR as non-detects (“NODI:B”), not as “0.”

8. The monthly average limit for *Escherichia coli* (*E. coli*) is expressed as a geometric mean. *E. coli* monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required.
9. See Part I.G.1 for aluminum compliance schedule.
10. Total Kjeldahl nitrogen and nitrate + nitrite samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen, as follows.

$$\text{Total Nitrogen (mg/L)} = \text{Total Kjeldahl Nitrogen (mg/L)} + \text{Nitrate} + \text{Nitrite (mg/L)}$$
$$\text{Total Nitrogen (lb/day)} = [(\text{average monthly Total Nitrogen (mg/L)} * \text{total monthly effluent flow (Millions of Gallons (MG))} / \# \text{ of days in the month}] * 8.34$$

11. The rolling annual total nitrogen limit is an annual average mass-based limit (lb/day), which shall be reported as a rolling 12-month average. The value will be calculated as the arithmetic mean of the monthly average total nitrogen for the reporting month and the monthly average total

nitrogen for the previous 11 months. Report both the rolling annual average and the monthly average each month.

See Part I.G.2 for special conditions related to nitrogen.

12. Report in nanograms per liter (ng/L). This reporting requirement for the listed per- and polyfluoroalkyl substances (PFAS) parameters takes effect the first full calendar quarter beginning at least 6 months after EPA notifies the Permittee that a multi-lab validated method for wastewater is available.
13. The Permittee shall conduct acute toxicity tests (LC<sub>50</sub>) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in **Attachment A and B** of this permit. LC<sub>50</sub> and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*. Toxicity test samples shall be collected and tests completed during the same weeks each time of calendar quarters ending March 31<sup>st</sup> and September 30<sup>th</sup>. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.
14. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A and B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
15. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A and B**. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
16. Monitoring and reporting for dissolved organic carbon (DOC) are not requirements of the Whole Effluent Toxicity (WET) tests but are additional requirements. The Permittee may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.
17. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate

DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

18. See Part I.G.3 for special conditions regarding ambient phosphorus monitoring.
19. This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter beginning at least 6 months after EPA notifies the Permittee that a multi-lab validated method for biosolids is available.
20. Sludge sampling shall be as representative as possible based on guidance found at <https://www.epa.gov/sites/production/files/2018-11/documents/potw-sludge-sampling-guidance-document.pdf>.

**Part I.A. continued.**

2. The discharge shall not cause a violation of the water quality standards of the receiving water.
3. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
4. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.
5. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.
6. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.
7. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.
8. The Permittee must provide adequate notice to EPA-Region 1 and the State of the following:
  - a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Part 301 or Part 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 CFR Part 122 Appendix A as amended) discharging process water; and
  - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
  - c. For purposes of this paragraph, adequate notice shall include information on:
    - (1) The quantity and quality of effluent introduced into the POTW; and
    - (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
    - (3) Pollutants introduced into the POTW by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

**B. UNAUTHORIZED DISCHARGES**

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit in accordance with Part II.D.1.e.(1) (24-hour reporting). See Part I.H below for reporting requirements.
2. Starting December 21, 2020, the Permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge, except SSOs that do not impact a surface water or the public, on a publicly available website, and it shall remain on the website for a minimum of 12 months. Such notification shall include the location and description of the discharge; estimated volume; 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.
3. Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at <https://www.mass.gov/how-to/sanitary-sewer-overflowbypassbackup-notification>.

**C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM**

Operation and maintenance (O&M) of the sewer system shall be in compliance with the Standard Conditions of Part II and the following terms and conditions. The Permittee and Co-permittee shall complete the following activities for the collection system which it owns:

**1. Maintenance Staff**

The Permittee and Co-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. Provisions to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

**2. Preventive Maintenance Program**

The Permittee and Co-permittee shall maintain an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. Plans and programs to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

### 3. Infiltration/Inflow

The Permittee and Co-permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

### 4. Collection System Mapping

Within 30 months of the effective date of this permit, the Permittee and Co-permittee shall prepare a map of the sewer collection system it owns. The map shall be on a street map of the community, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by federal, state, or local agencies. Such map(s) shall include, but not be limited to the following:

- a. All sanitary sewer lines and related manholes;
- b. All combined sewer lines, related manholes, and catch basins;
- c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);
- d. All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;
- e. All pump stations and force mains;
- f. The wastewater treatment facility(ies);
- g. All surface waters (labeled);
- h. Other major appurtenances such as inverted siphons and air release valves;
- i. A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- j. The scale and a north arrow; and
- k. The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

### 5. Collection System O&M Plan

The Permittee and Co-permittee shall develop and implement a Collection System O&M Plan.

- a. Within six (6) months of the effective date of the permit, the Permittee and Co-permittee shall submit to EPA and the State
  - (1) A description of the collection system management goals, staffing, information management, and legal authorities;
  - (2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
  - (3) A schedule for the development and implementation of the full Collection System O&M Plan including the elements in paragraphs b.1. through b.8. below.
  
- b. The full Collection System O&M Plan shall be completed, implemented and submitted to EPA and the State within twenty-four (24) months from the effective date of this permit. The Plan shall include:
  - (1) The required submittal from paragraph 5.a. above, updated to reflect current information;
  - (2) A preventive maintenance and monitoring program for the collection system;
  - (3) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
  - (4) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
  - (5) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;
  - (6) A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts;
  - (7) An educational public outreach program for all aspects of I/I control, particularly private inflow; and
  - (8) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

## 6. Annual Reporting Requirement

The Permittee and Co-permittee shall submit a summary report of activities related to the implementation of its Collection System O&M Plan during the previous calendar year. The report shall be submitted to EPA and the State annually by March 31. The first annual report is due the first March 31<sup>st</sup> following submittal of the collection system O&M Plan required by Part I.C.5.b. of this permit. The summary report shall, at a minimum, include:

- a. A description of the staffing levels maintained during the year;
- b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;
- c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
- d. A map with areas identified for investigation/action in the coming year;
- e. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit; and
- f. If the average annual flow in the previous calendar year exceeded 80 percent of the facility's 6.0 MGD design flow (4.8 MGD), or there have been capacity related overflows, the report shall include:
  - (1) Plans for further potential flow increases describing how the Permittee will maintain compliance with the flow limit and all other effluent limitations and conditions; and
  - (2) A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.

## D. ALTERNATE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the Permittee and Co-permittee shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works it owns and operates, as defined in Part II.E.1 of this permit.

## E. INDUSTRIAL USERS AND PRETREATMENT PROGRAM

1. The Permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 90 days of the

effective date of this permit, the Permittee shall prepare and submit a written technical evaluation to EPA analyzing the need to revise local limits. As part of this evaluation, the Permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the Permittee shall complete and submit the attached form (see **Attachment C** – Reassessment of Technically Based Industrial Discharge Limits) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the Permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development Guidance (July 2004).

2. The Permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the Permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR Part 403. At a minimum, the Permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):
  - a. 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 the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.
  - b. Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
  - c. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.
  - d. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
3. The Permittee shall provide EPA and the State with an annual report describing the Permittee's pretreatment program activities for the twelve (12) month period ending 60 days prior to the due date in accordance with 403.12(i). The annual report shall be consistent with the format described in **Attachment D** (NPDES Permit Requirement for Industrial Pretreatment Annual Report) of this permit and shall be submitted no later than **November 30** of each year.
4. The Permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR 403.18(c).

5. The Permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR Part 405 et seq.
6. The Permittee must modify its pretreatment program, if necessary, to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The Permittee must provide EPA, in writing, within 180 days of this permit's effective date proposed changes, if applicable, to the Permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the Permittee must address in its written submission the following areas: (1) Enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The Permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR § 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.
7. Beginning the first full calendar quarter following 6 months after EPA has notified the Permittee that a multi-lab validated method for wastewater is available the Permittee shall commence annual sampling of the following types of industrial discharges into the POTW:
  - Commercial Car Washes
  - Platers/Metal Finishers
  - Paper and Packaging Manufacturers
  - Tanneries and Leather/Fabric/Carpet Treaters
  - Manufacturers of Parts with Polytetrafluoroethylene (PTFE) or teflon type coatings (i.e. bearings)
  - Landfill Leachate
  - Centralized Waste Treaters
  - Contaminated Sites
  - Fire Fighting Training Facilities
  - Airports
  - Any Other Known or Expected Sources of PFAS

Sampling shall be for the following PFAS chemicals:

Industrial User Effluent Characteristic	Maximum Daily	Monitoring Requirements	
		Frequency	Sample Type
Perfluorohexanesulfonic acid (PFHxS)	Report ng/L	1/year	Composite
Perfluoroheptanoic acid (PFHpA)	Report ng/L	1/year	Composite
Perfluorononanoic acid (PFNA)	Report ng/L	1/year	Composite
Perfluorooctanesulfonic acid (PFOS)	Report ng/L	1/year	Composite
Perfluorooctanoic acid (PFOA)	Report ng/L	1/year	Composite
Perfluorodecanoic acid (PFDA)	Report ng/L	1/year	Composite

The Industrial discharges sampled and the sampling results shall be summarized and included in the annual report (see Part I.E.3).

**F. SLUDGE CONDITIONS**

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 CFR Part 503, which prescribe “Standards for the Use or Disposal of Sewage Sludge” pursuant to § 405(d) of the CWA, 33 U.S.C. § 1345(d).
2. If both state and federal requirements apply to the Permittee’s sludge use and/or disposal practices, the Permittee shall comply with the more stringent of the applicable requirements.
3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge use or disposal practices:
  - a. Land application - the use of sewage sludge to condition or fertilize the soil
  - b. Surface disposal - the placement of sewage sludge in a sludge only landfill
  - c. Sewage sludge incineration in a sludge only incinerator
4. The requirements of 40 CFR Part 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 CFR § 503.4. These requirements also do not apply to facilities which do not use or dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g., lagoons, reed beds), or are otherwise excluded under 40 CFR § 503.6.
5. The 40 CFR Part 503 requirements include the following elements:
  - a. General requirements
  - b. Pollutant limitations
  - c. Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
  - d. Management practices
  - e. Record keeping
  - f. Monitoring
  - g. Reporting

Which of the 40 CFR Part 503 requirements apply to the Permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 guidance document, “EPA Region 1 - NPDES Permit Sludge Compliance

Guidance” (November 4, 1999), may be used by the Permittee to assist it in determining the applicable requirements.<sup>2</sup>

6. The sludge shall be monitored for pollutant concentrations (all Part 503 methods) and pathogen reduction and vector attraction reduction (land application and surface disposal) at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year, as follows:

less than 290	1/ year
290 to less than 1,500	1 /quarter
1,500 to less than 15,000	6 /year
15,000 +	1 /month

Sampling of the sewage sludge shall use the procedures detailed in 40 CFR § 503.8.

7. Under 40 CFR § 503.9(r), the Permittee is a “person who prepares sewage sludge” because it “is ... the person who generates sewage sludge during the treatment of domestic sewage in a treatment works ....” If the Permittee contracts with *another* “person who prepares sewage sludge” under 40 CFR § 503.9(r) – i.e., with “a person who derives a material from sewage sludge” – for use or disposal of the sludge, then compliance with Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the Permittee does not engage a “person who prepares sewage sludge,” as defined in 40 CFR § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR § 503.7. If the ultimate use or disposal method is land application, the Permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 CFR § 503 Subpart B.
8. The Permittee shall submit an annual report containing the information specified in the 40 CFR Part 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by **February 19** (*see also* “EPA Region 1 - NPDES Permit Sludge Compliance Guidance”). Reports shall be submitted electronically using EPA’s Electronic Reporting tool (“NeT”) (*see* “Reporting Requirements” section below).

## G. SPECIAL CONDITIONS

### 1. Aluminum Compliance Schedule

- a. The effluent limit for total aluminum shall be subject to a schedule of compliance whereby the limit takes effect three years after the effective date of the permit. For the period starting on the effective date of this permit and ending three (3) years after the effective date, the Permittee shall report only the monthly average aluminum concentration on the monthly DMR. After this initial three (3) year period, the Permittee shall comply with the monthly average total aluminum limit of 112.9 µg/L (“final aluminum effluent limit”). The Permittee shall submit an

<sup>2</sup> This guidance document is available upon request from EPA Region 1 and may also be found at: <http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf>

annual report due by January 15th of each of the first three (3) years of the permit that will detail its progress towards meeting the final aluminum effluent limit.

- b. If during the three-year period after the effective date of the permit, Massachusetts adopts revised aluminum criteria, then the Permittee may request a permit modification, pursuant to 40 CFR § 122.62(a)(3), for a further delay in the effective date of the final aluminum effluent limits. If new criteria are approved by EPA before the effective date of the final aluminum effluent limit, the Permittee may apply for a permit modification, pursuant to 40 CFR § 122.62(a)(3), to revise the time to meet the final aluminum effluent limit and/or for revisions to the permit based on whether there is reasonable potential for the facility's aluminum discharge to cause or contribute to a violation of the newly approved aluminum criteria.

## 2. Total Nitrogen

- a. The Permittee shall continue to optimize the treatment facility operations relative to total nitrogen ("TN") removal through measures such as continued ammonia removal, maximization of solids retention time while maintaining compliance with BOD<sub>5</sub> and TSS limits, and/or other operational changes designed to enhance the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen.
- b. The permittee shall submit an annual report to EPA and the MassDEP, by **February 1** each year, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous calendar year and the previous five (5) calendar years. If, in any year, the treatment facility discharges of TN on an average annual basis have increased, the annual report shall include a detailed explanation of the reasons why TN discharges have increased, including any changes in influent flows/loads and any operational changes. The report shall also include all supporting data.

## 3. Ambient Phosphorus Monitoring

Beginning in April of the first even numbered year that occurs at least six months after permit issuance, and during even numbered years thereafter, the Permittee shall collect samples at two locations:

- a. Once per month from April through October, in the receiving water immediately upstream of the facility. The samples taken upstream of the facility shall be analyzed for total phosphorus.
- b. Once per month in July, August and September only, in the French River reservoir, within 200 feet of the Perryville Dam. The samples taken in the downstream reservoir shall be analyzed for secchi disk transparency, non-rooted

vegetation percent visual coverage, planktonic chlorophyll-*a*, dissolved oxygen, pH, total phosphorus, and any cyanobacteria blooms<sup>3</sup>.

Sampling in both locations shall be conducted on any calendar day that is preceded by at least 72 hours with less than or equal to 0.1 inches of cumulative rainfall. A sampling plan shall be submitted to EPA and the State (in accordance with Part I.H.2 and Part I.H.7, respectively) at least three months prior to the first planned sampling date as part of a Quality Assurance Project Plan for review and State approval. For the years that monitoring is not required, the Permittee shall report NODI code “9” (conditional monitoring not required).

## H. REPORTING REQUIREMENTS

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

### 1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State electronically using NetDMR no later than the 15th day of the month. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA’s Central Data Exchange at <https://cdx.epa.gov/>.

### 2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. *See* Part I.H.7. for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

### 3. Submittal of Industrial User and Pretreatment Related Reports

- a. Prior to 21 December 2025, all reports and information required of the Permittee in the Industrial Users and Pretreatment Program section of this permit shall be submitted to the Pretreatment Coordinator in EPA Region 1 Water Division (WD). Starting on 21 December 2025, these submittals must be done electronically as NetDMR attachments and/or using EPA’s NPDES Electronic Reporting Tool (“NeT”), or another approved EPA system, which will be accessible through EPA’s Central Data Exchange at <https://cdx.epa.gov/>. These requests, reports and notices include:

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<sup>3</sup> *Massachusetts Consolidated Assessment and Listing Methodology (CALM) Guidance Manual for the 2018 Reporting Cycle*, Mass DEP, May 3, 2018.

## b. Annual Pretreatment Reports,

- (1) Pretreatment Reports Reassessment of Technically Based Industrial Discharge Limits Form,
- (2) Revisions to Industrial Discharge Limits,
- (3) Report describing Pretreatment Program activities, and
- (4) Proposed changes to a Pretreatment Program

This information shall be submitted to EPA WD as a hard copy at the following address:

U.S. Environmental Protection Agency  
Water Division  
Regional Pretreatment Coordinator  
5 Post Office Square - Suite 100 (06-03)  
Boston, MA 02109-3912

## 4. Submittal of Biosolids/Sewage Sludge Reports

By February 19 of each year, the Permittee must electronically report their annual Biosolids/Sewage Sludge Report for the previous calendar year using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which is accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

## 5. Submittal of Requests and Reports to EPA Water Division (WD)

- a. The following requests, reports, and information described in this permit shall be submitted to the NPDES Applications Coordinator in EPA Water Division (WD):
  - (1) Transfer of permit notice;
  - (2) Request for changes in sampling location;
  - (3) Report on unacceptable dilution water / request for alternative dilution water for WET testing.
- b. These reports, information, and requests shall be submitted to EPA WD electronically at [R1NPDESReporting@epa.gov](mailto:R1NPDESReporting@epa.gov).

## 6. Submittal of Reports to EPA Enforcement and Compliance Assurance Division (ECAD) in Hard Copy Form

- a. The following notifications and reports shall be signed and dated originals, submitted as hard copy, with a cover letter describing the submission:
  - (1) Prior to 21 December 2025, written notifications required under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows

(SSOs). Starting on 21 December 2025, such notifications must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

- (2) Collection System Operation and Maintenance Plan (from Co-permittee)
- (3) Report on annual activities related to O&M Plan (from Co-permittee)

b. This information shall be submitted to EPA ECAD at the following address:

U.S. Environmental Protection Agency  
Enforcement and Compliance Assurance Division  
Water Compliance Section  
5 Post Office Square, Suite 100 (04-SMR)  
Boston, MA 02109-3912

## 7. State Reporting

Duplicate signed copies of all WET test reports shall be submitted to the Massachusetts Department of Environmental Protection, Division of Watershed Management, at the following address:

Massachusetts Department of Environmental Protection  
Bureau of Water Resources  
Division of Watershed Management  
8 New Bond Street  
Worcester, Massachusetts 01606

## 8. Verbal Reports and Verbal Notifications

- a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part II.B.4.c.(2), Part II.B.5.c.(3), and Part II.D.1.e).
- b. Verbal reports and verbal notifications shall be made to:

EPA ECAD at 617-918-1510  
and  
MassDEP Emergency Response at 888-304-1133

## I. STATE 401 CERTIFICATION CONDITIONS

1. This Permit is in the process of receiving state water quality certification issued by the State under § 401(a) of the CWA and 40 CFR § 124.53. EPA will incorporate appropriate State Water Quality certification requirements (if any) into the Final Permit.

## ATTACHMENT A

### USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

#### I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **Daphnid (Ceriodaphnia dubia) definitive 48 hour test.**
- **Fathead Minnow (Pimephales promelas) definitive 48 hour test.**

Acute toxicity test data shall be reported as outlined in Section VIII.

#### II. METHODS

The permittee shall use 40 CFR Part 136 methods. Methods and guidance may be found at:

[http://water.epa.gov/scitech/methods/cwa/wet/disk2\\_index.cfm](http://water.epa.gov/scitech/methods/cwa/wet/disk2_index.cfm)

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

#### III. SAMPLE COLLECTION

A discharge sample shall be collected. Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for chemical and physical analyses required. The remaining sample shall be measured for total residual chlorine and dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1.0 mg/L chlorine. If dechlorination is necessary, a thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) must also be run in the WET test.

All samples held overnight shall be refrigerated at 1- 6°C.

#### IV. DILUTION WATER

A grab sample of dilution water used for acute toxicity testing shall be collected from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. In the case where an alternate dilution water has been agreed upon an additional receiving water control (0% effluent) must also be tested.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate standard dilution water of known quality with a hardness, pH, conductivity, alkalinity, organic carbon, and total suspended solids similar to that of the receiving water may be substituted **AFTER RECEIVING WRITTEN APPROVAL FROM THE PERMIT ISSUING AGENCY(S)**. Written requests for use of an alternate dilution water should be mailed with supporting documentation to the following address:

Director  
Office of Ecosystem Protection (CAA)  
U.S. Environmental Protection Agency-New England  
5 Post Office Sq., Suite 100 (OEP06-5)  
Boston, MA 02109-3912

and

Manager  
Water Technical Unit (SEW)  
U.S. Environmental Protection Agency  
5 Post Office Sq., Suite 100 (OES04-4)  
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

*See the most current annual DMR instructions which can be found on the EPA Region 1 website at <http://www.epa.gov/region1/enforcement/water/dmr.html> for further important details on alternate dilution water substitution requests.*

It may prove beneficial to have the proposed dilution water source screened for suitability prior to toxicity testing. EPA strongly urges that screening be done prior to set up of a full definitive toxicity test any time there is question about the dilution water's ability to support acceptable performance as outlined in the 'test acceptability' section of the protocol.

#### V. TEST CONDITIONS

The following tables summarize the accepted daphnid and fathead minnow toxicity test conditions and test acceptability criteria:

**EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS<sup>1</sup>**

1.	Test type	Static, non-renewal
2.	Temperature (°C)	20 ± 1°C or 25 ± 1°C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hour light, 8 hour dark
5.	Test chamber size	Minimum 30 ml
6.	Test solution volume	Minimum 15 ml
7.	Age of test organisms	1-24 hours (neonates)
8.	No. of daphnids per test chamber	5
9.	No. of replicate test chambers per treatment	4
10.	Total no. daphnids per test concentration	20
11.	Feeding regime	As per manual, lightly feed YCT and <u>Selenastrum</u> to newly released organisms while holding prior to initiating test
12.	Aeration	None
13.	Dilution water <sup>2</sup>	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q <sup>R</sup> or equivalent deionized water and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	≥ 0.5, must bracket the permitted RWC
15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution

series.

- |                            |   |
|----------------------------|---|
| 16. Effect measured        | Mortality-no movement of body or appendages on gentle prodding  |
| 17. Test acceptability     | 90% or greater survival of test organisms in dilution water control solution  |
| 18. Sampling requirements  | For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must first be used within 36 hours of collection. |
| 19. Sample volume required | Minimum 1 liter   |

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Footnotes:

1. Adapted from EPA-821-R-02-012.
2. Standard prepared dilution water must have hardness requirements to generally reflect the characteristics of the receiving water.

**EPA NEW ENGLAND TEST CONDITIONS FOR THE FATHEAD MINNOW  
(PIMEPHALES PROMELAS) 48 HOUR ACUTE TEST<sup>1</sup>**

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1. Test Type	Static, non-renewal
2. Temperature (°C)	20 ± 1 ° C or 25 ± 1°C
3. Light quality	Ambient laboratory illumination
4. Photoperiod	16 hr light, 8 hr dark
5. Size of test vessels	250 mL minimum
6. Volume of test solution	Minimum 200 mL/replicate
7. Age of fish	1-14 days old and age within 24 hrs of each other
8. No. of fish per chamber	10
9. No. of replicate test vessels per treatment	4
10. Total no. organisms per concentration	40
11. Feeding regime	As per manual, lightly feed test age larvae using concentrated brine shrimp nauplii while holding prior to initiating test
12. Aeration	None, unless dissolved oxygen (D.O.) concentration falls below 4.0 mg/L, at which time gentle single bubble aeration should be started at a rate of less than 100 bubbles/min. (Routine D.O. check is recommended.)
13. dilution water <sup>2</sup>	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q <sup>R</sup> or equivalent deionized and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14. Dilution series	≥ 0.5, must bracket the permitted RWC

- |                            |  |
|----------------------------|--|
| 15. Number of dilutions    | 5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series. |
| 16. Effect measured        | Mortality-no movement on gentle prodding   |
| 17. Test acceptability     | 90% or greater survival of test organisms in dilution water control solution   |
| 18. Sampling requirements  | For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples are used within 36 hours of collection.  |
| 19. Sample volume required | Minimum 2 liters   |

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Footnotes:

1. Adapted from EPA-821-R-02-012
2. Standard dilution water must have hardness requirements to generally reflect characteristics of the receiving water.

## VI. CHEMICAL ANALYSIS

At the beginning of a static acute toxicity test, pH, conductivity, total residual chlorine, oxygen, hardness, alkalinity and temperature must be measured in the highest effluent concentration and the dilution water. Dissolved oxygen, pH and temperature are also measured at 24 and 48 hour intervals in all dilutions. The following chemical analyses shall be performed on the 100 percent effluent sample and the upstream water sample for each sampling event.

<u>Parameter</u>	Effluent	Receiving Water	ML (mg/l)
Hardness <sup>1</sup>	x	x	0.5
Total Residual Chlorine (TRC) <sup>2, 3</sup>	x		0.02
Alkalinity	x	x	2.0
pH	x	x	--
Specific Conductance	x	x	--
Total Solids	x		--
Total Dissolved Solids	x		--
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02
Other as permit requires			

### Notes:

- Hardness may be determined by:
  - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
    - Method 2340B (hardness by calculation)
    - Method 2340C (titration)
- Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
  - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
    - Method 4500-CL E Low Level Amperometric Titration
    - Method 4500-CL G DPD Colorimetric Method
- Required to be performed on the sample used for WET testing prior to its use for toxicity testing.

## **VII. TOXICITY TEST DATA ANALYSIS**

### LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See the flow chart in Figure 6 on p. 73 of EPA-821-R-02-012 for appropriate method to use on a given data set.

### No Observed Acute Effect Level (NOAEL)

See the flow chart in Figure 13 on p. 87 of EPA-821-R-02-012.

## **VIII. TOXICITY TEST REPORTING**

A report of the results will include the following:

- Description of sample collection procedures, site description
- Names of individuals collecting and transporting samples, times and dates of sample collection and analysis on chain-of-custody
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests; light and temperature regime; other information on test conditions if different than procedures recommended. Reference toxicant test data should be included.
- All chemical/physical data generated. (Include minimum detection levels and minimum quantification levels.)
- Raw data and bench sheets.
- Provide a description of dechlorination procedures (as applicable).
- Any other observations or test conditions affecting test outcome.

**ATTACHMENT B**  
**FRESHWATER CHRONIC**  
**TOXICITY TEST PROCEDURE AND PROTOCOL**  
**USEPA Region 1**

**I. GENERAL REQUIREMENTS**

The permittee shall be responsible for the conduct of acceptable chronic toxicity tests using three fresh samples collected during each test period. The following tests shall be performed as prescribed in Part 1 of the NPDES discharge permit in accordance with the appropriate test protocols described below. (Note: the permittee and testing laboratory should review the applicable permit to determine whether testing of one or both species is required).

- **Daphnid (Ceriodaphnia dubia) Survival and Reproduction Test.**
- **Fathead Minnow (Pimephales promelas) Larval Growth and Survival Test.**

Chronic toxicity data shall be reported as outlined in Section VIII.

**II. METHODS**

Methods to follow are those recommended by EPA in: Short Term Methods For Estimating The Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002. United States Environmental Protection Agency. Office of Water, Washington, D.C., EPA 821-R-02-013. The methods are available on-line at <http://www.epa.gov/waterscience/WET/> . Exceptions and clarification are stated herein.

**III. SAMPLE COLLECTION AND USE**

A total of three fresh samples of effluent and receiving water are required for initiation and subsequent renewals of a freshwater, chronic, toxicity test. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. Fresh samples are recommended for use on test days 1, 3, and 5. However, provided a total of three samples are used for testing over the test period, an alternate sampling schedule is acceptable. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any hold time extension. All test samples collected may be used for 24, 48 and 72 hour renewals after initial use. All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6° C.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol.

Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate prior to sample use for toxicity testing.

If any of the renewal samples are of sufficient potency to cause lethality to 50 percent or more of the test organisms in any of the test treatments for either species or, if the test fails to meet its permit limits, then chemical analysis for total metals (originally required for the initial sample only in Section VI) will be required on the renewal sample(s) as well.

#### IV. DILUTION WATER

Samples of receiving water must be collected from a location in the receiving water body immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2, Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of an alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable an ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first is the case where repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use be made by the permittee and toxicity testing laboratory. The second is in the case where two of the most recent documented incidents of unacceptable site dilution water toxicity requires ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use **and** written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW must be mailed with supporting documentation to the following addresses:

Director  
Office of Ecosystem Protection (CAA)  
U.S. Environmental Protection Agency, Region 1  
Five Post Office Square, Suite 100  
Mail Code OEP06-5  
Boston, MA 02109-3912

and

Manager  
Water Technical Unit (SEW)  
U.S. Environmental Protection Agency  
Five Post Office Square, Suite 100  
Mail Code OES04-4  
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

*See the most current annual DMR instructions which can be found on the EPA Region 1 website at <http://www.epa.gov/region1/enforcementandassistance/dmr.html> for further important details on alternate dilution water substitution requests.*

## **V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA**

Method specific test conditions and TAC are to be followed and adhered to as specified in the method guidance document, EPA 821-R-02-013. If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

### **V.1. Use of Reference Toxicity Testing**

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

If reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

#### V.1.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e.  $\geq 3$  standard deviations for IC25 values and  $\geq$  two concentration intervals for NOECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

V.2. For the *C. dubia* test, the determination of TAC and formal statistical analyses must be performed using only the first three broods produced.

V.3. Test treatments must include 5 effluent concentrations and a dilution water control. An additional test treatment, at the permitted effluent concentration (% effluent), is required if it is not included in the dilution series.

## VI. CHEMICAL ANALYSIS

As part of each toxicity test's daily renewal procedure, pH, specific conductance, dissolved oxygen (DO) and temperature must be measured at the beginning and end of each 24-hour period in each test treatment and the control(s).

The additional analysis that must be performed under this protocol is as specified and noted in the table below.

<u>Parameter</u>	Effluent	Receiving Water	ML (mg/l)
Hardness <sup>1, 4</sup>	x	x	0.5
Total Residual Chlorine (TRC) <sup>2, 3, 4</sup>	x		0.02
Alkalinity <sup>4</sup>	x	x	2.0
pH <sup>4</sup>	x	x	--
Specific Conductance <sup>4</sup>	x	x	--
Total Solids <sup>6</sup>	x		--
Total Dissolved Solids <sup>6</sup>	x		--
Ammonia <sup>4</sup>	x	x	0.1
Total Organic Carbon <sup>6</sup>	x	x	0.5
Total Metals <sup>5</sup>			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02

Other as permit requires

#### Notes:

1. Hardness may be determined by:

- APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
    - Method 2340B (hardness by calculation)
    - Method 2340C (titration)
2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
    - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
      - Method 4500-CL E Low Level Amperometric Titration
      - Method 4500-CL G DPD Colorimetric Method
    - USEPA 1983. Manual of Methods Analysis of Water and Wastes
      - Method 330.5
  3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing
  4. Analysis is to be performed on samples and/or receiving water, as designated in the table above, from all three sampling events.
  5. Analysis is to be performed on the initial sample(s) only unless the situation arises as stated in Section III, paragraph 4
  6. Analysis to be performed on initial samples only

## **VII. TOXICITY TEST DATA ANALYSIS AND REVIEW**

### **A. Test Review**

#### **1. Concentration / Response Relationship**

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported. The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-013.

Guidance for this review can be found at

<http://water.epa.gov/scitech/methods/cwa/> . In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

#### **2. Test Variability (Test Sensitivity)**

This review step is separate from the determination of whether a test meets or does not meet TAC. Within test variability is to be examined for the purpose of evaluating test sensitivity. This evaluation is to be performed for the sub-lethal hypothesis testing endpoints reproduction and growth as required by the permit. The test report is to include documentation of this evaluation to support that the endpoint values reported resulted from a toxicity test of adequate sensitivity. This evaluation must be performed as required in Section 10.2.8 of EPA-821-R-02-013.

To determine the adequacy of test sensitivity, USEPA requires the calculation of test percent minimum significant difference (PMSD) values. In cases where NOEC determinations are made based on a non-parametric technique, calculation of a test PMSD value, for the sole purpose of assessing test sensitivity, shall be calculated using a comparable parametric statistical analysis technique. The calculated test PMSD is then compared to the upper and lower PMSD bounds shown for freshwater tests in Section 10.2.8.3, p. 52, Table 6 of EPA-821-R-02-013. The comparison will yield one of the following determinations.

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.
- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-R-00-003, June 2002, Section 6.4.2. The following link: [Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program](#) can be used to locate the USEPA website containing this document. If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater than the PMSD lower bound, then the treatment is considered statistically significant.
- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

## B. Statistical Analysis

### 1. General - Recommended Statistical Analysis Method

Refer to general data analysis flowchart, EPA 821-R-02-013, page 43

For discussion on Hypothesis Testing, refer to EPA 821-R-02-013, Section 9.6

For discussion on Point Estimation Techniques, refer to EPA 821-R-02-013, Section 9.7

### 2. *Pimephales promelas*

Refer to survival hypothesis testing analysis flowchart, EPA 821-R-02-013, page 79

Refer to survival point estimate techniques flowchart, EPA 821-R-02-013, page 80

Refer to growth data statistical analysis flowchart, EPA 821-R-02-013, page 92

### 3. *Ceriodaphnia dubia*

Refer to survival data testing flowchart, EPA 821-R-02-013, page 168

Refer to reproduction data testing flowchart, EPA 821-R-02-013, page 173

## VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Test summary sheets (2007 DMR Attachment F) which includes:
  - Facility name
  - NPDES permit number
  - Outfall number
  - Sample type
  - Sampling method
  - Effluent TRC concentration
  - Dilution water used
  - Receiving water name and sampling location
  - Test type and species
  - Test start date
  - Effluent concentrations tested (%) and permit limit concentration
  - Applicable reference toxicity test date and whether acceptable or not
  - Age, age range and source of test organisms used for testing
  - Results of TAC review for all applicable controls
  - Test sensitivity evaluation results (test PMSD for growth and reproduction)
  - Permit limit and toxicity test results
  - Summary of test sensitivity and concentration response evaluation

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s)
- Reference toxicity test control charts
- All sample chemical/physical data generated, including minimum limits (MLs) and analytical methods used
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis
- A discussion of any deviations from test conditions
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint

## ATTACHMENT C

### EPA - New England

#### Reassessment of Technically Based Industrial Discharge Limits

Under 40 CFR §122.21(j)(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)(1).

Below is a form designed by the U.S. Environmental Protection Agency (EPA - New England) to assist POTWs with approved IPPs in 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 direction 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 (1) 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 II., 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.

**(Item VI. continued)**

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 NPDES permit. For example, with a dilution ratio of 25:1 at a hardness of 25 mg/l - Calcium Carbonate (copper's chronic WQS equals 6.54 ug/l) the chronic NPDES permit limit for copper would equal 156.25 ug/l.

**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 EPA - New England.



**ITEM II.**

EXISTING TBLs			
POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)	POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)

**ITEM III.**

Note how your existing TBLs, 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 TBLs were calculated?  
If yes, explain.

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Has your POTW violated any of its NPDES permit limits and/or toxicity test requirements?

If  yes,  no, explain.

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**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 (lb/day)	Criteria
	Maximum (lb/day)	Average (lb/day)		
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)		Columns (2A) (2B)	
	Effluent Data Analyses		Water Quality Criteria (Gold Book)	
	Maximum (ug/l)	Average (ug/l)	From TBLLs Today (ug/l)	(ug/l)
Arsenic				
*Cadmium				
*Chromium				
*Copper				
Cyanide				
*Lead				
Mercury				
*Nickel				
Silver				
*Zinc				
Other (List)				

\*Hardness Dependent (mg/l - CaCO<sub>3</sub>)



**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 planing on managing its biosolids differently, list in Column (2B) what your new biosolids criteria would be and method of disposal.

Pollutant	Column (1)	Biosolids	Columns	
	Data Analyses		(2A)	(2B)
	Average		Biosolids Criteria	From TBLLs
	(mg/kg)		New	
			(mg/kg)	(mg/kg)
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Molybdenum				
Selenium				
Other (List)				

## ATTACHMENT D

### NPDES PERMIT REQUIREMENT FOR INDUSTRIAL PRETREATMENT ANNUAL REPORT

The information described below shall be included in the pretreatment program annual reports:

1. An updated list of all industrial users by category, as set forth in 40 C.F.R. 403.8(f)(2)(i), indicating compliance or noncompliance with the following:
  - baseline monitoring reporting requirements for newly promulgated industries
  - compliance status reporting requirements for newly promulgated industries
  - periodic (semi-annual) monitoring reporting requirements,
  - categorical standards, and
  - local limits;
2. A summary of compliance and enforcement activities during the preceding year, including the number of:
  - significant industrial users inspected by POTW (include inspection dates for each industrial user),
  - significant industrial users sampled by POTW (include sampling dates for each industrial user),
  - compliance schedules issued (include list of subject users),
  - written notices of violations issued (include list of subject users),
  - administrative orders issued (include list of subject users),
  - criminal or civil suits filed (include list of subject users) and,
  - penalties obtained (include list of subject users and penalty amounts);
3. A list of significantly violating industries required to be published in a local newspaper in accordance with 40 C.F.R. 403.8(f)(2)(vii);
4. A narrative description of program effectiveness including present and proposed changes to the program, such as funding, staffing, ordinances, regulations, rules and/or statutory authority;
5. A summary of all pollutant analytical results for influent, effluent, sludge and any toxicity or bioassay data from the wastewater treatment facility. The summary shall include a comparison of influent sampling results versus threshold inhibitory concentrations for the Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraph below or any similar sampling program described in this Permit.

At a minimum, annual sampling and analysis of the influent and effluent of the Wastewater Treatment Plant shall be conducted for the following pollutants:

- |                    |                   |
|--------------------|-------------------|
| a.) Total Cadmium  | f.) Total Nickel  |
| b.) Total Chromium | g.) Total Silver  |
| c.) Total Copper   | h.) Total Zinc    |
| d.) Total Lead     | i.) Total Cyanide |
| e.) Total Mercury  | j.) Total Arsenic |

The sampling program shall consist of one 24-hour flow-proportioned composite and at least one grab sample that is representative of the flows received by the POTW. The composite shall consist of hourly flow-proportioned grab samples taken over a 24-hour period if the sample is collected manually or shall consist of a minimum of 48 samples collected at 30 minute intervals if an automated sampler is used. Cyanide shall be taken as a grab sample during the same period as the composite sample. Sampling and preservation shall be consistent with 40 CFR Part 136.

6. A detailed description of all interference and pass-through that occurred during the past year;
7. A thorough description of all investigations into interference and pass-through during the past year;
8. A description of monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying parameters and frequencies;
9. A description of actions being taken to reduce the incidence of significant violations by significant industrial users; and,
10. The date of the latest adoption of local limits and an indication as to whether or not the permittee is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.

NPDES PART II STANDARD CONDITIONS  
(April 26, 2018)<sup>1</sup>

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<sup>1</sup>Updated July 17, 2018 to fix typographical errors.

NPDES PART II STANDARD CONDITIONS  
(April 26, 2018)

A. GENERAL REQUIREMENTS

1. Duty to Comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA or Act) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

- a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
- b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L.114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

- (a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than \$2,500 nor more than \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation or by imprisonment of not more than 2 years, or both.
- (b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both.
- (c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than \$250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing

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endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

- (d) *False Statement.* 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, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further 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 non-compliance 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.
- (2) *Civil Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
- (3) *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:
- (a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
- (b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

### 2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. 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

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condition.

3. 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.

4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from responsibilities, liabilities or penalties to which the Permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

5. Property Rights

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

6. Confidentiality of Information

a. In accordance with 40 C.F.R. Part 2, any information submitted to EPA 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, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 C.F.R. Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

- (1) The name and address of any permit applicant or Permittee;
- (2) Permit applications, permits, and effluent data.

c. Information required by NPDES application forms provided by the Director under 40 C.F.R. § 122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

7. 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.)

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity

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covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

### 9. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

## B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

### 1. 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. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

### 2. 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.

### 3. Duty to Mitigate

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

### 4. Bypass

#### a. Definitions

- (1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.
- (2) *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. *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 (c) and (d) of this Section.

#### c. Notice

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- (1) *Anticipated bypass.* If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass. As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.
- (2) *Unanticipated bypass.* The Permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (24-hour notice). As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or required to do so by law.

### d. *Prohibition of bypass.*

- (1) 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;
  - (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 back-up 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 preventative maintenance; and
  - (c) The Permittee submitted notices as required under paragraph 4.c of this Section.
- (2) 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 4.d of this Section.

### 5. Upset

- a. *Definition.* *Upset* means an exceptional incident in which there is an 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

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- improper operation.
- b. *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 B.5.c. 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.
  - c. *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:
    - (1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
    - (2) The permitted facility was at the time being properly operated; and
    - (3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
    - (4) The Permittee complied with any remedial measures required under B.3. above.
  - d. *Burden of proof.* In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

C. MONITORING REQUIREMENTS

1. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for 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 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
- c. Records of monitoring information shall include:
  - (1) The date, exact place, and time of sampling or measurements;
  - (2) The individual(s) who performed the sampling or measurements;
  - (3) The date(s) analyses were performed;
  - (4) The individual(s) who performed the analyses;
  - (5) The analytical techniques or methods used; and
  - (6) The results of such analyses.
- d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.
- e. The Clean Water Act provides that any person who falsifies, tampers with, or

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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, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The Permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- a. 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;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

- a. *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. Notice is required only when:
  - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or
  - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).
  - (3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. *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 permit requirements.

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- c. *Transfers.* This permit is not transferable to any person except after 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 the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.
- d. *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.
  - (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.
  - (2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
  - (3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
- e. *Twenty-four hour reporting.*
  - (1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report 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. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

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reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section.

- (2) The following shall be included as information which must be reported within 24 hours under this paragraph.
    - (a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
    - (b) Any upset which exceeds any effluent limitation in the permit.
    - (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).
  - (3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.
- f. *Compliance Schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.
- h. *Other information.* Where the Permittee becomes aware that it failed to submit any

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relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

- i. *Identification of the initial recipient for NPDES electronic reporting data.* The owner, operator, or the duly authorized representative of an NPDES-regulated entity is required to electronically submit the required NPDES information (as specified in Appendix A to 40 C.F.R. Part 127) to the appropriate initial recipient, as determined by EPA, and as defined in 40 C.F.R. § 127.2(b). EPA will identify and publish the list of initial recipients on its Web site and in the FEDERAL REGISTER, by state and by NPDES data group (see 40 C.F.R. § 127.2(c) of this Chapter). EPA will update and maintain this listing.

2. Signatory Requirement

- a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §122.22.
- b. The CWA 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 non-compliance 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.

3. Availability of Reports.

Except for data determined to be confidential under paragraph A.6. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Director. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

For more definitions related to sludge use and disposal requirements, see EPA Region 1's NPDES Permit Sludge Compliance Guidance document (4 November 1999, modified to add regulatory definitions, April 2018).

*Administrator* means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

*Applicable standards and limitations* means all, State, interstate, and federal standards and limitations to which a "discharge," a "sewage sludge use or disposal practice," or a related activity is subject under the CWA, including "effluent limitations," water quality standards, standards of performance, toxic effluent standards or prohibitions, "best management practices," pretreatment standards, and "standards for sewage sludge use or disposal" under Sections 301, 302, 303, 304, 306, 307, 308, 403 and 405 of the CWA.

*Application* means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in

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“approved States,” including any approved modifications or revisions.

*Approved program* or *approved State* means a State or interstate program which has been approved or authorized by EPA under Part 123.

*Average monthly discharge limitation* means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.

*Average weekly discharge limitation* means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.

*Best Management Practices (“BMPs”)* means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

*Bypass* see B.4.a.1 above.

*C-NOEC* or “*Chronic (Long-term Exposure Test) – No Observed Effect Concentration*” means the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.

*Class I sludge management facility* is any publicly owned treatment works (POTW), as defined in 40 C.F.R. § 501.2, required to have an approved pretreatment program under 40 C.F.R. § 403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 C.F.R. § 403.10 (e)) and any treatment works treating domestic sewage, as defined in 40 C.F.R. § 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.

*Contiguous zone* means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

*Continuous discharge* means a “discharge” which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or similar activities.

*CWA* means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483 and Public Law 97-117, 33 U.S.C. 1251 *et seq.*

*CWA and regulations* means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. In the case of an approved State program, it includes State program requirements.

*Daily Discharge* means the “discharge of a pollutant” measured during a calendar day or any

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other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

*Direct Discharge* means the “discharge of a pollutant.”

*Director* means the Regional Administrator or an authorized representative. In the case of a permit also issued under Massachusetts’ authority, it also refers to the Director of the Division of Watershed Management, Department of Environmental Protection, Commonwealth of Massachusetts.

*Discharge*

- (a) When used without qualification, *discharge* means the “discharge of a pollutant.”
- (b) As used in the definitions for “interference” and “pass through,” *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

*Discharge Monitoring Report (“DMR”)* means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by Permittees. DMRs must be used by “approved States” as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA’s.

*Discharge of a pollutant* means:

- (a) Any addition of any “pollutant” or combination of pollutants to “waters of the United States” from any “point source,” or
- (b) Any addition of any pollutant or combination of pollutants to the waters of the “contiguous zone” or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any “indirect discharger.”

*Effluent limitation* means any restriction imposed by the Director on quantities, discharge rates, and concentrations of “pollutants” which are “discharged” from “point sources” into “waters of the United States,” the waters of the “contiguous zone,” or the ocean.

*Effluent limitation guidelines* means a regulation published by the Administrator under section 304(b) of CWA to adopt or revise “effluent limitations.”

*Environmental Protection Agency (“EPA”)* means the United States Environmental Protection

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Agency.

*Grab Sample* means an individual sample collected in a period of less than 15 minutes.

*Hazardous substance* means any substance designated under 40 C.F.R. Part 116 pursuant to Section 311 of CWA.

*Incineration* is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

*Indirect discharger* means a nondomestic discharger introducing “pollutants” to a “publicly owned treatment works.”

*Interference* means a discharge (see definition above) which, alone or in conjunction with a discharge or discharges from other sources, both:

- (a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- (b) Therefore is a cause of a violation of any requirement of the POTW’s NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

*Landfill* means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile.

*Land application* is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

*Land application unit* means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for agricultural purposes or for treatment and disposal.

*LC<sub>50</sub>* means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC<sub>50</sub> = 100% is defined as a sample of undiluted effluent.

*Maximum daily discharge limitation* means the highest allowable “daily discharge.”

*Municipal solid waste landfill (MSWLF) unit* means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be

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publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

### *Municipality*

- (a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.
- (b) As related to sludge use and disposal, *municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

*National Pollutant Discharge Elimination System* means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an “approved program.”

*New Discharger* means any building, structure, facility, or installation:

- (a) From which there is or may be a “discharge of pollutants;”
- (b) That did not commence the “discharge of pollutants” at a particular “site” prior to August 13, 1979;
- (c) Which is not a “new source;” and
- (d) Which has never received a finally effective NPDES permit for discharges at that “site.”

This definition includes an “indirect discharger” which commences discharging into “waters of the United States” after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a “site” for which it does not have a permit; and any offshore or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a “site” under EPA’s permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Director in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Director shall consider the factors specified in 40 C.F.R. §§ 125.122 (a) (1) through (10).

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An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a “new discharger” only for the duration of its discharge in an area of biological concern.

*New source* means any building, structure, facility, or installation from which there is or may be a “discharge of pollutants,” the construction of which commenced:

- (a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or
- (b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

*NPDES* means “National Pollutant Discharge Elimination System.”

*Owner or operator* means the owner or operator of any “facility or activity” subject to regulation under the NPDES programs.

*Pass through* means a Discharge (see definition above) which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW’s NPDES permit (including an increase in the magnitude or duration of a violation).

*Pathogenic organisms* are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

*Permit* means an authorization, license, or equivalent control document issued by EPA or an “approved State” to implement the requirements of Parts 122, 123, and 124. “Permit” includes an NPDES “general permit” (40 C.F.R § 122.28). “Permit” does not include any permit which has not yet been the subject of final agency action, such as a “draft permit” or “proposed permit.”

*Person* means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

*Person who prepares sewage sludge* is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

*pH* means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

*Point Source* means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 C.F.R. § 122.3).

*Pollutant* means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials

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(except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

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

*Primary industry category* means any industry category listed in the NRDC settlement agreement (*Natural Resources Defense Council et al. v. Train*, 8 E.R.C. 2120 (D.D.C. 1976), *modified* 12 E.R.C. 1833 (D.D.C. 1979)); also listed in Appendix A of 40 C.F.R. Part 122.

*Privately owned treatment works* means any device or system which is (a) used to treat wastes from any facility whose operator is not the operator of the treatment works and (b) not a “POTW.”

*Process wastewater* means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

*Publicly owned treatment works (POTW)* means a treatment works as defined by Section 212 of the Act, which is owned by a State or municipality (as defined by Section 504(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

*Regional Administrator* means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

*Secondary industry category* means any industry which is not a “primary industry category.”

*Septage* means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

*Sewage Sludge* means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

*Sewage sludge incinerator* is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

*Sewage sludge unit* is land on which only sewage sludge is placed for final disposal. This does

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not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 C.F.R. § 122.2.

*Sewage sludge use or disposal practice* means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

*Significant materials* includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substance designated under Section 101(14) of CERCLA; any chemical the facility is required to report pursuant to Section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

*Significant spills* includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 C.F.R. §§ 110.10 and 117.21) or Section 102 of CERCLA (see 40 C.F.R. § 302.4).

*Sludge-only facility* means any “treatment works treating domestic sewage” whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to section 405(d) of the CWA, and is required to obtain a permit under 40 C.F.R. § 122.1(b)(2).

*State* means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an Indian Tribe as defined in the regulations which meets the requirements of 40 C.F.R. § 123.31.

*Store or storage of sewage sludge* is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

*Storm water* means storm water runoff, snow melt runoff, and surface runoff and drainage.

*Storm water discharge associated with industrial activity* means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

*Surface disposal site* is an area of land that contains one or more active sewage sludge units.

*Toxic pollutant* means any pollutant listed as toxic under Section 307(a)(1) or, in the case of “sludge use or disposal practices,” any pollutant identified in regulations implementing Section 405(d) of the CWA.

*Treatment works treating domestic sewage* means a POTW or any other sewage sludge or waste water treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, “domestic sewage” includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Director may designate any person subject to the standards for sewage sludge use and

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disposal in 40 C.F.R. Part 503 as a “treatment works treating domestic sewage,” where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

*Upset* see B.5.a. above.

*Vector attraction* is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

*Waste pile or pile* means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

*Waters of the United States or waters of the U.S.* means:

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (b) All interstate waters, including interstate “wetlands;”
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
  - (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;
  - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland.

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Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

*Wetlands* means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

*Whole Effluent Toxicity (WET)* means the aggregate toxic effect of an effluent measured directly by a toxicity test.

*Zone of Initial Dilution (ZID)* means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards.

### 2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl <sub>2</sub>	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M <sup>3</sup> /day	Cubic meters per day
DO	Dissolved oxygen

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kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH <sub>3</sub> -N	Ammonia nitrogen as nitrogen
NO <sub>3</sub> -N	Nitrate as nitrogen
NO <sub>2</sub> -N	Nitrite as nitrogen
NO <sub>3</sub> -NO <sub>2</sub>	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	“Whole effluent toxicity”
ZID	Zone of Initial Dilution

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND - REGION 1  
5 POST OFFICE SQUARE, SUITE 100  
BOSTON, MASSACHUSETTS 02109-3912**

**FACT SHEET**

**DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO  
THE CLEAN WATER ACT (CWA)**

**NPDES PERMIT NUMBER:** MA0100439

**PUBLIC NOTICE START AND END DATES:** June 30, 2021 – July 29, 2021

**NAME AND MAILING ADDRESS OF APPLICANT:**

Town of Webster  
P.O. Box 793  
Webster, MA 01570

**NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:**

Webster Wastewater Treatment Facility  
38 Hill St.  
Webster, MA 01570

**RECEIVING WATER AND CLASSIFICATION:**

French River (MA 42-06)  
French & Quinebaug Watershed  
Class B – Warm Water Fishery

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## 1.0 Proposed Action

The above-named applicant (the Permittee) has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge from the Webster Wastewater Treatment Facility (the Facility) into the French River.

The permit currently in effect was issued on March 24, 2006 with an effective date of June 1, 2006 and expired on May 30, 2011 (the 2006 Permit). The Permittee filed an application for permit reissuance with EPA dated November 22, 2010, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on May 25, 2011, the Facility's 2006 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA and the State conducted a site visit on July 16, 2018.

## 2.0 Statutory and Regulatory Authority

Congress enacted the Federal Water Pollution Control Act, codified at 33 U.S.C. § 1251-1387 and commonly known as the Clean Water Act (CWA), “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specific permitting sections of the CWA, one of which is § 402. *See* CWA §§ 301(a), 402(a). Section 402(a) established one of the CWA’s principal permitting programs, the NPDES Permit Program. Under this section, EPA may “issue a permit for the discharge of any pollutant or combination of pollutants” in accordance with certain conditions. CWA § 402(a). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA’s NPDES permit program are generally found in 40 CFR §§ 122, 124, 125, and 136.

“Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits” in order to achieve the statutory mandates of Section 301 and 402. *Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992). *See also* 40 CFR §§ 122.4(d), 122.44(d)(1), and 122.44(d)(5). CWA §§ 301 and 306 provide for two types of effluent limitations to be included in NPDES permits: “technology-based” effluent limitations (TBELs) and “water quality-based” effluent limitations (WQBELs). *See* CWA §§ 301, and 304(d); 40 CFR Parts 122, 125, 131.

### 2.1 Technology-Based Requirements

Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted. *See* CWA § 301(b). As a class, publicly owned treatment works (POTWs) must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 301(b)(1)(B). The performance level for POTWs is referred to as “secondary treatment.” Secondary treatment is comprised of technology-based requirements expressed in terms of biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS) and pH. *See* 40 CFR Part 133.

Under CWA § 301(b)(1), POTWs must have achieved effluent limits based upon secondary treatment technology by July 1, 1977. Since all statutory deadlines for meeting various treatment technology-based effluent limitations established pursuant to the CWA have expired, when technology-based effluent limits are included in a permit, compliance with those limitations is from the date the issued permit becomes effective. *See* 40 CFR § 125.3(a)(1).

## 2.2 Water Quality Based Requirements

The CWA and federal regulations also require that permit effluent limits based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water. *See* CWA § 301(b)(1)(C) and 40 CFR §§ 122.44(d)(1), 122.44(d)(5).

### 2.2.1 Water Quality Standards

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the State. *See* CWA § 303 and 40 CFR § 131.10-12. Generally, WQSs consist of three parts: 1) the designated use or uses assigned for a water body or a segment of a water body; 2) numeric or narrative water quality criteria sufficient to protect the assigned designated use(s); and 3) antidegradation requirements to ensure that once a use is attained it will not be degraded and to protect high quality and National resource waters. *See* CWA § 303(c)(2)(A) and 40 CFR § 131.12. The applicable State WQSs can be found in 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00)

As a matter of state law, state WQSs specify different water body classifications, each of which is associated with certain designated uses and numeric and narrative water quality criteria. When using chemical-specific numeric criteria to develop permit limitations, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and, therefore, are typically applicable to average monthly limits.

When permit effluent limitation(s) are necessary to ensure that the receiving water meets narrative water quality criteria, the permitting authority must establish effluent limits in one of the following three ways: 1) based on a “calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use,” 2) based on a “case-by-case basis” using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, 3) in certain circumstances, based on use of an indicator parameter. *See* 40 CFR § 122.44(d)(1)(vi)(A-C).

### **2.2.2 Antidegradation**

Federal regulations found at 40 CFR § 131.12 require states to develop and adopt a statewide antidegradation policy that maintains and protects existing in-stream water uses and the level of water quality necessary to protect these existing uses. In addition, the antidegradation policy ensures maintenance of high quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water, unless the State finds that allowing degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

Massachusetts' statewide antidegradation policy, entitled "Antidegradation Provisions" is found in the State's WQSs at 314 CMR 4.04. Massachusetts guidance for the implementation of this policy is in an associated document entitled "Implementation Procedure for the Anti-Degradation Provisions of the State Water Quality Standards," dated October 21, 2009. According to the policy, no lowering of water quality is allowed, except in accordance with the antidegradation policy, and all existing in-stream uses, and the level of water quality necessary to protect the existing uses of a receiving water body must be maintained and protected.

This permit is being reissued with effluent limitations sufficiently stringent to satisfy the State's antidegradation requirements, including the protection of the existing uses of the receiving water.

### **2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads.**

The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. To meet this goal, the CWA requires states to develop information on the quality of their water resources and report this information to EPA, the U.S. Congress, and the public. To this end, EPA released guidance on November 19, 2001, for the preparation of an integrated "List of Waters" that could combine reporting elements of both § 305(b) and § 303(d) of the CWA. The integrated list format allows states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories: 1) unimpaired and not threatened for all designated uses; 2) unimpaired waters for some uses and not assessed for others; 3) insufficient information to make assessments for any uses; 4) impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) impaired or threatened for one or more uses and requiring a TMDL.

A TMDL is a planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL essentially provides a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from point sources and non-point sources, determines the maximum load of the pollutant that the water body can tolerate while still attaining WQSs for the designated uses, and allocates that load among to the various sources, including point source discharges, subject to NPDES permits. *See* 40 CFR § 130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation (WLA) for a NPDES permitted discharge, the effluent limitation in the permit must be "consistent with the assumptions and requirements of any available WLA". 40 CFR § 122.44(d)(1)(vii)(B).

## 2.2.4 Reasonable Potential

Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs that are necessary to achieve water quality standards established under § 303 of the CWA. *See also* 33 U.S.C. § 1311(b)(1)(C). In addition, limitations “must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality.” 40 CFR § 122.44(d)(1)(i). To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. *See* 40 CFR § 122.44(d)(1)(ii).

If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQs, the permit must contain WQBELs for that pollutant. *See* 40 CFR § 122.44(d)(1)(i).

## 2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQs, the State waives, or is deemed to have waived, its right to certify. *See* 33 U.S.C. § 1341(a)(1). Regulations governing state certification are set forth in 40 CFR § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

If the State believes that conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307, or applicable requirements of State law, the State should include such conditions in its certification and, in each case, cite the CWA or State law provisions upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. EPA includes properly supported State certification conditions in the NPDES permit. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through EPA’s permit appeal procedures of 40 CFR Part 124.

In addition, the State should provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law. Since the State’s certification is provided prior to final permit issuance, any failure by the State to provide this statement waives the State’s right to certify or object to any less stringent condition.

It should be noted that under CWA § 401, EPA's duty to defer to considerations of State law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by State law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." 40 CFR § 124.55(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." *Id.* EPA regulations pertaining to permit limitations based upon WQSs and State requirements are contained in 40 CFR §§ 122.4(d) and 122.44(d).

### 2.3 Effluent Flow Requirements

Sewage treatment plant discharge is encompassed within the definition of "pollutant" and is subject to regulation under the CWA. The CWA defines "pollutant" to mean, *inter alia*, "municipal...waste" and "sewage...discharged into water." 33 U.S.C. § 1362(6).

Generally, EPA uses effluent flow both to determine whether an NPDES permit needs certain effluent limitations and to calculate the limitations themselves. EPA practice is to use effluent flow as a reasonable and important worst-case condition in EPA's reasonable potential and WQBEL calculations to ensure compliance with WQSs under § 301(b)(1)(C). Should the effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations may not be sufficiently protective (i.e. might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at the lower discharge flow may have reasonable potential at a higher flow due to the decreased dilution. In order to ensure that the assumptions underlying EPA's reasonable potential analyses and permit effluent limitation derivations remain sound for the duration of the permit, EPA may ensure the validity of its "worst-case" wastewater effluent flow assumptions through imposition of permit conditions for effluent flow.<sup>1</sup> In this regard, the effluent flow limitation is a component of WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit is also necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

The limitation on wastewater effluent flow is within EPA's authority to condition a permit to carry out the objectives of the Act. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.4(a) and (d), 122.43 and 122.44(d). A condition on the discharge designed to ensure the WQBEL and reasonable potential calculations account for "worst case" conditions is encompassed by the references to "condition" and "limitations" in CWA §§ 402 and 301 and implementing regulations, as they are designed to assure compliance with applicable water quality regulations, including antidegradation. Regulating the quantity of pollutants in the discharge through a restriction on the quantity of wastewater effluent is consistent with the overall structure and purposes of the CWA.

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<sup>1</sup> EPA's regulations regarding "reasonable potential" require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," *id* 40 CFR §122.44(d)(1)(ii). Both the effluent flow and receiving water flow may be considered when assessing reasonable potential. *In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 599 (EAB 2010). EPA guidance directs that this "reasonable potential: analysis be based on "worst-case" conditions. *See In re Washington Aquaduct Water Supply Sys.* 11 E.A.D. 565, 584 (EAB 2004)

In addition, as provided in Part II.B.1 of this permit and 40 CFR § 122.41(e), the Permittee is required to properly operate and maintain all facilities and systems of treatment and control. Operating the facilities wastewater treatment systems as designed includes operating within the facility's design wastewater effluent flow.

EPA has also included the effluent flow limit in the permit to minimize or prevent infiltration and inflow (I/I) that may result in unauthorized discharges and compromise proper operation and maintenance of the facility. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes or deteriorated joints. Inflow is extraneous flow added to the collection system that enters the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow, reducing the capacity available for treatment and the operating efficiency of the treatment works and to properly operate and maintain the treatment works.

Furthermore, the extraneous flow due to significant I/I greatly increases the potential for sanitary sewer overflows (SSOs) in separate systems. Consequently, the effluent flow limit is a permit condition that relates to the permittee's duty to mitigate (*i.e.*, minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment) and to properly operate and maintain the treatment works. *See* 40 CFR §§ 122.41(d), (e).

## **2.4 Monitoring and Reporting Requirements**

### **2.4.1 Monitoring Requirements**

Sections 308(a) and 402(a)(2) of the CWA and the implementing regulations at 40 CFR Parts 122, 124, 125, and 136 authorize EPA to include monitoring and reporting requirements in NPDES permits.

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 CFR §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. EPA and/or the State may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to CWA § 304(a)(1), State water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 CFR Part 122.

NPDES permits require that the approved analytical procedures found in 40 CFR Part 136 be used for sampling and analysis unless other procedures are explicitly specified. Permits also

include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*.<sup>2</sup> This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 CFR § 122.21(e)(3) (completeness), 40 CFR § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 CFR § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

- The method minimum level<sup>3</sup> (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or
- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or
- The method has the lowest ML of the analytical methods approved under 40 CFR Part 126 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

#### 2.4.2 Reporting Requirements

The Draft Permit requires the Permittee to report monitoring results obtained during each calendar month to EPA and the State electronically using NetDMR. The Permittee must submit a Discharge Monitoring Report (DMR) for each calendar month no later than the 15<sup>th</sup> day of the month following the completed reporting period.

NetDMR is a national web-based tool enabling regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has eliminated the need for participants to mail in paper forms to EPA under 40 CFR §§ 122.41 and 403.12. NetDMR is accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>. Further information about NetDMR can be found on EPA's NetDMR support portal webpage.<sup>4</sup>

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the State unless otherwise specified in the Draft Permit. In most cases,

<sup>2</sup> Fed. Reg. 49,001 (Aug 19, 2014).

<sup>3</sup> The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL). Minimum levels may be obtained in several ways: They may be published in a method; they may be sample concentrations equivalent to the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a lab, by a factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." See Fed. Reg. 49,001 (Aug. 19, 2014).

<sup>4</sup> <https://netdmr.zendesk.com/hc/en-us/articles/209616266-EPA-Region-1-NetDMR-Information>

reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR. Certain exceptions are provided in the permit, such as for providing written notifications required under the Part II Standard Conditions.

## **2.5 Standard Conditions**

The standard conditions, included as Part II of the Draft Permit, are based on applicable regulations found in the Code of Federal Regulations. *See generally* 40 CFR Part 122.

## **2.6 Anti-backsliding**

The CWA's anti-backsliding requirements prohibit a permit from being renewed, reissued or modified to include with less stringent limitations or conditions than those contained in a previous permit except in compliance with one of the specified exceptions to those requirements. *See* CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(l). Anti-backsliding provisions apply to effluent limits based on technology, water quality and/or state certification requirements.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2006 Permit unless specific conditions exist to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

## **3.0 Description of Facility and Discharge**

### **3.1 Location and Type of Facility**

The location of the treatment plant and the outfall 001 to the French River are shown in Figure 1. The longitude and latitude of the outfall is 42° 4' 14" N, 71° 53' 21".

The Webster Wastewater Treatment Facility (WWTF) is an advanced wastewater treatment facility that is engaged in the collection and treatment of municipal wastewater. Currently, the Facility serves approximately 14,500 residents in the Town of Webster and 6,000 residents in the Town of Dudley, with the collection system primarily focused in the town center.

The Facility has a design flow of 6.0 MGD, the annual average daily flow reported in the 2010 application was 2.86 MGD and the average for the last 5 years has been 3.02 MGD. The system is a separate system with no combined sewers. Wastewater is comprised of mostly domestic sewage with some commercial sewage, one industrial user, and some septage.

There is one industrial user that discharges to the POTW: (1) Shield Packaging, consisting of process and non-process wastewater which contributes an average of 545 gallons per day. Pollutants introduced into POTWs by a non-domestic source shall not pass through the POTW or interfere with the operation or performance of the treatment works.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the permittee from July 2015 through June 2020 is provided in Appendix A of this Fact Sheet.

Additionally, EPA is retaining one co-permittee on the Draft Permit. The Town of Dudley, Massachusetts owns and operates a sanitary wastewater collection system that discharges flows to the WWTF for treatment. This municipality is co-permittee for certain activities pertaining to proper operation and maintenance of its respective collection systems (*See* Part I.C. and I.D of the Draft Permit). Adding them to the Draft Permit ensures that they comply with requirements to operate and maintain the collection systems so as to avoid discharges of sewage from the collection systems. The co-permittee did not apply for permit coverage; with a letter sent November 3, 2015, EPA waived application requirements for the co-permittee. The legal basis for including municipal satellite collection systems as co-permittees is described in *In re Charles River Pollution Control District*, 16 E.A.D. 623 (EAB 2015)<sup>5</sup>.

### 3.1.1 Treatment Process Description

The Webster WWTF completed extensive upgrades in 2011 and the facility now provides tertiary treatment of the wastewater. The Webster WWTF is an activated sludge treatment plant. Influent enters the Facility through the headworks where large debris is screened out by two (2) mechanical bar screens. Sand and grit are settled out in two (2) aerated grit chambers. The influent is then split into aeration tanks where three (3) of the six (6) are run in step aeration mode. Lime is added to the aeration tanks for alkalinity control. Aluminum sulfate is added to the aeration tanks' effluent for phosphorus removal. Flows are split into final settling clarifiers where up to three (3) of three (3) units are in operation. The flow then enters a tertiary treatment system, Actiflo, used primarily for phosphorus removal. Aluminum sulfate is added to the influent. Polymer and occasionally micro sand are added in the treatment unit. Wastewater then enters a chlorine contact tank. During the warm season, per the NPDES permit, chlorine is added to the influent and sulfur dioxide is added prior to discharge. Final treatment is a series of steps the water flows over adding dissolved oxygen to the treated water before discharging into the French River. Solids from the treatment process are either returned to the aeration tanks to form a mixed liquor or further treated for discharge as waste activated sludge. A flow diagram of the Treatment Facility is shown in Figure 2.

Waste sludge is pumped from the final settling clarifiers, dewatered with one (1) of two (2) gravity belt thickeners and stored in a sludge holding tank. Any gas generated by the sludge in the holding tank passes through a biofilter to remove odors. The dried sludge is transported under contract with a private hauler for incineration. The average mass of sludge shipped for incineration as reported in the 2010 application was 409 dry metric tons.

### 3.1.2 Collection System Description

The Webster WWTF is served by a separate sewer system. A separate sanitary sewer conveys domestic, industrial and commercial sewage, but not stormwater. It is part of a "two pipe system" consisting of separate sanitary sewers and storm sewers. The two systems have no interconnections; the sanitary sewer leads to the wastewater treatment plant and the storm sewers discharge to a local water body.

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<sup>5</sup> The decision is available at:

[https://yosemite.epa.gov/oa/EAB\\_Web\\_Docket.nsf/Published%20and%20Unpublished%20Decisions/F89699D1A0710BCF85257DE200717A93/\\$File/Charles%20River%20Decision%20Vol%2016.pdf](https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Published%20and%20Unpublished%20Decisions/F89699D1A0710BCF85257DE200717A93/$File/Charles%20River%20Decision%20Vol%2016.pdf)

## 4.0 Description of Receiving Water and Dilution

### 4.1 Receiving Water

The Webster WWTF discharges through Outfall 001 into the French River, a tributary of the Quinebaug, within Segment MA42-06. This segment is 1.0 miles in length and travels from the WWTF to the state line at Dudley, MA and Thompson, CT. The French River then flows into the Quinebaug River. The Quinebaug River then joins with the Shetucket River to form the Thames River, which flows to the Long Island Sound.

The French River is classified as a Class B warm water fishery in the Massachusetts WQSs, 314 Code of Massachusetts Regulations (“CMR”) 4.05(4)(a). The MA WQS at 314 CMR 4.05(3)(b) state that Class B “waters are designated as habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. They shall be a source of public water supply (i.e., where designated and with appropriate treatment). They shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. They shall also have consistently good aesthetic value.”

This segment of the French River is listed in the final *Massachusetts Year 2016 Integrated List of Waters* (“303(d) List”) as a Category 5 “Waters Requiring a TMDL.”<sup>6</sup> The TMDL is required due to impairments for nutrients, benthic macroinvertebrates, and sediment screening value exceedances. To date no TMDL has been developed for this segment for any of the listed impairments.

In 1981, MassDEP, then the Massachusetts Department of Environmental Quality Engineering (DEQE), published *The French and Quinebaug River Basin Water Quality Management Plan*, which included a wasteload allocation (WLA) for the Webster WWTF on page 42, Table IV-1. Given the limited assimilative capacity of the receiving waters, limits more stringent than secondary treatment requirements were required for the parameters in Table 1.

**Table 1 – Limits in 1981 MA DEQE Wasteload Allocation for Webster WWTF**

Flow (MGD)	BOD <sub>5</sub> (mg/L)	TSS (mg/L)	Ammonia Nitrogen <sup>2</sup> (mg/L)	Total Phosphorus <sup>2</sup> (mg/L)	Dissolved Oxygen (mg/L)
6.0	10.0	15.0	2.0	1.0 <sup>3</sup>	6.0

<sup>1</sup> 1981 WLA for the Webster WWTF was under litigation at the time of publication. WLA were based on low flow augmentation at Hodges Village Reservoir to supply 22 cubic feet per second (CFS) to the USGS gage in Webster

<sup>2</sup> WLA apply the limits only April 1-October 15.

<sup>3</sup> 1981 WLA for the Webster WWTF stated that phosphorus removal requirements were to be re-evaluated after construction.

<sup>6</sup> *Massachusetts Year 2016 Integrated List of Waters*, MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts, December 2019.

## 4.2 Ambient Data

A summary of the ambient data collected in the receiving water in the vicinity of the outfall that is referenced in this Fact Sheet can be found in Appendix A of this Fact Sheet.

## 4.3 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQS under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water<sup>7</sup>. The critical flow in rivers and streams is some measure of the low flow of that river or stream. State WQSs require that for rivers and streams, the lowest condition is the lowest mean flow for seven consecutive days, recorded once in 10 years, or 7-day 10-year low flow (7Q10). *See* 314 CMR 4.03(3)(a).

MassDEP calculated the 7Q10<sup>8</sup> for the French River based on data from the United States Geological Survey (USGS) low-flow frequency statistics for the nearest USGS gaging to the Facility along the French River (Station Number 01125100 at N Grosvernordale, CT<sup>9</sup>) using SWToolbox 1.0.4 with the last 18 climate years of streamflow data (4/1/2001 - 3/31/2019). MassDEP determined the estimated drainage area for the Facility was 91.5 mi<sup>2</sup> using the USGS StreamStats for Massachusetts watershed delineation tool.<sup>10</sup> The dilution factor (DF) was calculated using the design flow ( $Q_d$ ) and the critical flow in the receiving water upstream of the discharge ( $Q_s$ ) as follows:

$$DF = (Q_s + Q_d)/Q_d$$

Where:

$$Q_s = \text{upstream 7Q10 in million gallons per day (3.31 MGD)}$$
$$Q_d = \text{Discharge flow in MGD (6.0 MGD)}$$

Therefore:

$$DF = (3.31 \text{ MGD} + 6.0 \text{ MGD}) / 6.0 \text{ MGD} = 1.55$$

## 5.0 Proposed Effluent Limitations and Conditions

The proposed effluent limitations and conditions derived under the CWA and State WQSs are described below. These proposed effluent limitations and conditions, the basis of which are discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit.

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<sup>7</sup> EPA Permit Writer's Manual, Section 6.2.4

<sup>8</sup> See Appendix E, Webster WWTF 7Q10 Summary

<sup>9</sup> USGS StreamStats National Data Collection Station Report for Station 01125100;  
<http://streamstatsags.cr.usgs.gov/gagepages/html/01125100.htm>

<sup>10</sup> USGS StreamStats for Massachusetts Interactive Map: <http://water.usgs.gov/osw/streamstats.massachusetts.html>

## 5.1 Effluent Limitations and Monitoring Requirements

In addition to the State and Federal regulations described in Section 2, data submitted by the permittee in its permit application, in monthly discharge monitoring reports (DMRs) and in WET test reports from September 2015 to August 2020 (the “review period”) were used to identify the pollutants of concern and to evaluate the discharge during the effluent limitations development process (See **Appendix A**). The reasonable potential analysis is included in Appendix B and results are discussed in the sections below.

### 5.1.1 Effluent Flow

The effluent flow limit in the 2006 Permit is 6.0 MGD, as a rolling annual average flow, based on the Facility’s design flow. The DMR data during the review period shows that there have been no violations of the flow limit.

The Draft Permit continues the 6.0 MGD flow limit from the 2006 Permit. The Draft Permit requires that flow be measured continuously and that the rolling annual average flow, as well as the average monthly and maximum daily flow for each month be reported. The rolling annual average flow is calculated as the average of the flow for the reporting month and 11 previous months.

### 5.1.2 Biochemical Oxygen Demand (BOD<sub>5</sub>) and Carbonaceous Biochemical Oxygen Demand (CBOD<sub>5</sub>)

#### 5.1.2.1 CBOD<sub>5</sub> And BOD<sub>5</sub> Concentration Limits

The values for the summer CBOD<sub>5</sub> limits in the 2006 Permit (average monthly limit of 10 mg/L and average weekly limit is 10 mg/L, effective April 1 through September 30) were based on the Massachusetts 1981 wasteload allocation (WLA)<sup>11</sup> described in Section 4.1 of this Fact Sheet. The winter BOD<sub>5</sub> limits in the 2006 Permit (effective October 1 through March 31) were based on the secondary treatment standards in 40 CFR § 133.102; the average monthly concentration limit is 30 mg/L and the average weekly concentration limit is 45 mg/L. The DMR data during the review period shows that there have been no violations of CBOD<sub>5</sub> or BOD<sub>5</sub> concentration limits.

Under 40 CFR § 133.102(a)(4), the permitting authority is allowed to substitute the technology based BOD<sub>5</sub> effluent limits in 40 CFR 133.102(a)(1),(2) and (3), with the technology based CBOD<sub>5</sub> effluent limit in 40 CFR 133.102(a)(4)(i),(ii) and (iii). As CBOD<sub>5</sub> is a subset of BOD<sub>5</sub>, which includes both carbonaceous and nitrogenous oxygen demand, a limit of 10 mg/L CBOD<sub>5</sub> would allow more than 10 mg/L of BOD<sub>5</sub>. However, since the WLA requires a water quality-based effluent limit of 10 mg/L BOD<sub>5</sub>, the average monthly and average weekly summer limits proposed in the Draft Permit should also be 10 mg/L BOD<sub>5</sub>, consistent with the WLA.

The monitoring frequency remains three times (3x) per week year-round.

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<sup>11</sup> Massachusetts Department of Environmental Quality Engineering, *The French and Quinebaug River Basin Water Quality Management Plan*, 1981, page 42.

### 5.1.2.2 CBOD<sub>5</sub> and BOD<sub>5</sub> Mass Limits

The summer mass-based CBOD<sub>5</sub> limits in the 2006 Permit of 500 lb/day (average monthly) and 500 lb/day (average weekly) were based on the concentration limits referenced above. The winter mass-based BOD<sub>5</sub> limits of 1,500 lb/day (average monthly) and 2,250 lb/day (average weekly) were based on EPA's secondary treatment standards and the design flow of the Facility after the 1995 expansion.

The DMR data from the review period shows that there have been no violations of CBOD<sub>5</sub> or BOD<sub>5</sub> mass limits. However, going forward, the limits (both warm and cold weather) will be BOD<sub>5</sub> limits, for the same reason described in the concentration section above.

#### BOD<sub>5</sub> Mass Loading Calculations:

Calculations of maximum allowable loads for average monthly and average weekly BOD<sub>5</sub> are based on the following equation:

$$L = C_d * Q_d * 8.34$$

Where:

L = Maximum allowable load in lb/day

C<sub>d</sub> = Maximum allowable effluent concentration for reporting period in mg/L  
(reporting periods are average monthly and average weekly)

Q<sub>d</sub> = Annual average design flow of Facility in MGD

8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day

#### BOD<sub>5</sub> Summer Limits:

Average Monthly: 10 mg/L \* 6.0 MGD \* 8.34 = 500 lb/day

Average Weekly: 10 mg/L \* 6.0 MGD \* 8.34 = 500 lb/day

#### BOD<sub>5</sub> Winter Limits:

Average Monthly: 30 mg/L \* 6.0 MGD \* 8.34 = 1,502 lb/day

Average Weekly: 45 mg/L \* 6.0 MGD \* 8.34 = 2,253 lb/day

In accordance with anti-backsliding requirements at CWA §§ 402(o) and 303(d)(4), the Draft Permit proposes the same numerical mass limits as in the 2006 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. However, the summer limit is changed from CBOD<sub>5</sub> mass to BOD<sub>5</sub> mass. The monitoring frequency remains three times (3x) per week.

### 5.1.3 Total Suspended Solids (TSS)

#### 5.1.3.1 TSS Concentration Limits

The summer TSS limits in the 2006 Permit (effective April 1 through September 30) were established in the Massachusetts 1981 wasteload allocation (WLA)<sup>12</sup> discussed in section 4.1 of this Fact Sheet; the average monthly limit is 15 mg/L and the average weekly limit is 15 mg/L. The winter TSS limits in the 2006 Permit (effective October 1 through March 31) were based on the secondary treatment standards in 40 CFR § 133.102; the winter average monthly limit is 30 mg/L and the winter average weekly limit is 45 mg/L. The DMR data during the review period shows that there have been no violations of TSS concentration limits.

The Draft Permit proposes the same TSS concentration limits as in the 2006 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains three times (3x) per week.

#### 5.1.3.2 TSS Mass Limits

The summer mass-based TSS limits in the 2006 Permit of 750 lb/day (average monthly) and 750 lb/day (average weekly) were based on the 1981 concentration based WLAs and the design flow of the Facility after an expansion in 1995. The winter mass-based limits of 1,500 lb/day (average monthly) and 2,250 lb/day (average weekly) were based on EPA's secondary treatment standards and the design flow of the Facility after the 1995 expansion.

The DMR data during the review period shows that there have been no violations of TSS mass limits.

Calculations of maximum allowable loads for average monthly and average weekly TSS are based on the following equation:

$$L = C_d * Q_d * 8.34$$

Where:

L = Maximum allowable load in lb/day

C<sub>d</sub> = Maximum allowable effluent concentration for reporting period in mg/L  
(reporting periods are average monthly and average weekly)

Q<sub>d</sub> = Annual average design flow of Facility in MGD

8.34 = Factor to convert effluent conc. in mg/L and design flow in MGD to lb/day

Summer Limits:

Average Monthly: 15 mg/L \* 6.0 MGD \* 8.34 = 750 lb/day

Average Weekly: 15 mg/L \* 6.0 MGD \* 8.34 = 750 lb/day

Winter Limits:

Average Monthly: 30 mg/L \* 6.0 MGD \* 8.34 = 1,502 lb/day

Average Weekly: 45 mg/L \* 6.0 MGD \* 8.34 = 2,253 lb/day

<sup>12</sup> Massachusetts Department of Environmental Quality Engineering, *Small River Basin Water Quality Management Plan*, 1981, page 35.

In accordance with anti-backsliding requirements at CWA §§ 402(o) and 303(d)(4), the Draft Permit proposes the same TSS mass limits as in the 2006 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains three times (3x) per week.

#### **5.1.4 Eighty-Five Percent (85%) BOD<sub>5</sub> and TSS Removal Requirement**

In accordance with the provisions of 40 CFR § 133.102(a)(3) and (b)(3), the 2006 Permit requires that the 30-day average percent removal for BOD<sub>5</sub> and TSS be not less than 85%. The DMR data during the review period shows that the median BOD<sub>5</sub> and TSS removal percentages are 99% and 98%, respectively. There were no violations of the 85% removal requirement for BOD<sub>5</sub> or TSS during that period.

The requirement to achieve 85% BOD<sub>5</sub> and TSS removal has been carried forward into the Draft Permit.

#### **5.1.5 pH**

Consistent with the requirements of Massachusetts WQS at 314 CMR 4.05(3)(b)(3), the 2006 Permit requires that the pH of the effluent is not less than 6.5 or greater than 8.3 standard units at any time. The monitoring frequency is once per day. The DMR data during the review period show that there have been 1 violation of the pH limitations.

The pH requirements in the 2006 Permit are carried forward into the Draft Permit as there has been no change in the WQSs with regards to pH. The limitations are based on CWA 301(b)(1)(C) and 40 CFR § 122.44(d).

#### **5.1.6 Bacteria**

The 2006 Permit includes seasonal effluent limitations for bacteria using fecal coliform bacteria as the indicator bacteria with a monthly limit of 200 colony forming units (cfu)/100 mL and a daily maximum limit of 400 cfu/100 mL. These limits were based on the applicable WQS at the time the permit was issued. There were no violations of the fecal coliform limits in the monitoring period.

Consistent with Massachusetts' new bacteria criteria at 314 CMR 4.05 (3)(b) 4.b, which were approved by EPA on September 19, 2007, the seasonal bacteria limits proposed in the Draft Permit are 126 colonies *Escherichia coli* (*E. coli*) /100 mL as a geometric mean and 409 colonies *E. coli*/100 mL maximum daily value (this is the 90% distribution of the geometric mean of 126 colonies/100 mL<sup>13</sup>), from April 1 – October 31. The bacteria monitoring frequency is twice (2x) per week. Due to the change in the Massachusetts bacteria criteria, there are no effluent limits or monitoring requirements for fecal coliform in the Draft Permit.

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<sup>13</sup> MassDEP, "Draft 6/25/2007 Guidance on Implementation of Proposed Primary Contact Recreation Bacteria in Massachusetts Surface Water Quality Standards, 314 CMR 4.00," 2007, p. 11, Table 2.

### 5.1.7 Dissolved Oxygen

The 2006 Permit includes a dissolved oxygen minimum limit of 6.0 mg/L. The 1981 WLA requires a minimum dissolved oxygen limit of 6.0 mg/L with daily monitoring.

The DMR data during the review period show that there have been no violations of the DO limitations.

The Draft Permit carries forward the dissolved oxygen limit of 6.0 mg/L to be consistent with the WLA.

### 5.1.8 Total Residual Chlorine

The Permittee uses chlorine disinfection seasonally (April 1 – October 31). The 2006 Permit includes summer (April 1 – October 31) effluent limitations for total residual chlorine (TRC) of 29.7 µg/L (average monthly) and 51.3 µg/L (maximum daily). The DMR data during the review period show that there has been one (1) violation of the TRC limitations.

The TRC permit limits are based on the instream chlorine criteria defined in *National Recommended Water Quality Criteria: 2002*, EPA 822R-02-047 (November 2002), as adopted by the MassDEP into the state water quality standards at 314 CMR 4.05(5)(e). These freshwater instream criteria for chlorine are 11 µg/L (chronic) and 19 µg/L (acute). Because the upstream chlorine is assumed to be zero in this case, the water quality-based chlorine limits are calculated as the criteria times the dilution factor, as follows:

Chronic criterion \* dilution factor = Chronic limit  
11 µg/L \* 1.55 = 17.1 µg/L (average monthly)

Acute criterion \* dilution factor = Acute limit  
19 µg/L \* 1.55 = 29.5 µg/L (maximum daily)

The Draft Permit continues the seasonal limits with a monthly average TRC limit of 17.1 µg/L and a maximum daily TRC limit of 29.5 µg/L, because the instream dilution is less than the dilution in the 2006 Permit. Consequently, the TRC effluent limits are more stringent in the Draft Permit. However, since almost all of the reported TRC values on the WWTF's DMR were zero (0), they should have no problem meeting the limit, and a compliance schedule is not necessary.

### 5.1.9 Ammonia

The 2006 Permit includes the following effluent ammonia limits:

April 1 – April 30: 10 mg/L monthly average, 10 mg/L weekly average, 15 mg/L daily max  
May 1 – May 31: 5.0 mg/L monthly average, 5.0 mg/L weekly average, 8.0 mg/L daily max  
June 1 – Sep 30: 2.0 mg/L monthly average, 2.0 mg/L weekly average, 3.0 mg/L daily max  
Oct 1 – March 31: Report

Effluent data and ambient data, taken upstream of the outfall in the French River, are presented in Appendix A. The effluent data during the review period shows there was one (1) violation of the June - September ammonia limits.

The ammonia criteria in EPA's *National Recommended Water Quality Criteria*, 2002 (EPA 822-R-02-047) document are included by reference in the Massachusetts WQS (*See* 314 CMR 4.05(5)(e)). The freshwater acute criterion is dependent on pH and the freshwater chronic criterion is dependent on pH, temperature and whether early life stages of fish are present in the receiving water.

In determining whether the discharge has the reasonable potential to cause or contribute to excursions above the instream water quality criteria for ammonia, EPA used the mass balance equation presented in Appendix B for both warm and cold weather conditions to project the ammonia concentration downstream of the discharge. If there is reasonable potential, this mass balance equation is also used to determine the limit that is required in the permit.

EPA notes that since the 2006 Permit already contained limits for ammonia, the same mass balance equation is used to determine if a more stringent limit would be required to continue to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration ( $C_d$ ) allowable to meet WQS based on current conditions.

To determine the applicable ammonia criteria, EPA assumes a river temperature of 16° C in April, 20° C in May<sup>14</sup>, 25° C in June through September, and a temperature of 5° C for October to March. EPA used the ambient pH monitoring shown in Appendix A, which indicates that the median pH is 7.3 S.U. Additionally, the French River in the vicinity of the Webster WWTF discharge is within Essential Fish Habitat (EFH) for Atlantic salmon (*Salmo salar*), so EPA has assumed that salmonids could be present in the receiving waters.

Based on the information and assumptions described above, Appendix B presents the applicable ammonia criteria, the details of the mass balance equation, the reasonable potential determination, and, if necessary, the limits required in the Draft Permit. As shown, there is only the need for a more stringent chronic limit in April (*i.e.*, 7.1 mg/L). All other existing limits are being carried forward for the reasons specified in Appendix B. Effluent and ambient monitoring for ammonia will also continue to be required in the quarterly WET tests. Finally, EPA determined that the monthly monitoring requirement from October 1 – March 31 is no longer necessary and has been removed in the Draft Permit.

### 5.1.10 Nutrients

Nutrients are compounds containing nitrogen and phosphorus. Although nitrogen and phosphorus are essential for plant growth, high concentrations of these nutrients can cause eutrophication, a condition in which aquatic plant and algal growth is excessive. Plant and algae respiration and decomposition reduces dissolved oxygen in the water, creating poor habitat for

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<sup>14</sup> USGS StreamStats National Data Collection Station Report for Station 01125100:  
[https://waterdata.usgs.gov/ct/nwis/uv?site\\_no=01125100](https://waterdata.usgs.gov/ct/nwis/uv?site_no=01125100)

fish and other aquatic animals. Recent studies provide evidence that both phosphorus and nitrogen can play a role in the eutrophication of certain ecosystems.

#### 5.1.10.1 Total Nitrogen

The Webster WWTF discharges to the French River, which drains to Quinebaug River, then the Thames River, and eventually to the Long Island Sound (LIS). The 2006 Permit required monthly monitoring for total Kjeldahl nitrogen, nitrate and nitrite, the sum of which provides the total nitrogen (TN) concentration. Using the TN concentration data and average monthly flow data, the calculated 12-month rolling average total nitrogen loading from the Webster facility ranged from 260 lb/day to 369 lb/day and averaged 310 lb/day during the review period. As explained below, since 2019 EPA has adopted a systemic, state-by-state approach to control nitrogen pollution discharging from “out-of-basin” point sources in Massachusetts, New Hampshire and Vermont into tributaries of LIS, a severely impaired water body shared by New York and Connecticut. EPA’s methodology for establishing TN limitations for out-of-basin POTWs in Massachusetts and New Hampshire has been challenged in the United States Environmental Appeals Board, where the case is now pending. EPA’s Response to the Petition was filed on December 11, 2020, and EPA incorporates that filing herein, inclusive of attachments (e.g., Exhibit S, Response to the Comments, as it relates to TN<sup>15</sup>).

In 2000, New York and Connecticut finalized a Total Maximum Daily Load (TMDL)<sup>16</sup> that addressed dissolved oxygen impairments in Long Island Sound due to excessive nitrogen loading. It was approved by EPA in 2001. While the TMDL included waste load allocations (WLAs) for point sources in Connecticut and New York, out-of-basin facilities were not assigned WLAs. However, the Connecticut and New York WLAs included in the TMDL were based on an assumption that out-of-basin point source loads of total nitrogen would be reduced in aggregate by 25% from the baseline through enforceable permit requirements imposed by permitting authorities in the out-of-basin states to protect downstream waters.

EPA implemented optimization requirements in many out-of-basin permits issued in the LIS watershed from 2007 through early 2019 in accordance with an agreement forged in 2012 among the five LIS watershed states, known as the “Enhanced Implementation Plan” (EIP)<sup>17</sup>. However, concerns raised in recent public comments by the downstream state (Connecticut) and citizens highlighted the need for clearly enforceable, numeric, loading-based effluent limits to ensure that the annual aggregate nitrogen loading from out-of-basin point sources are consistent with the assumptions of the TMDL WLA of 19,657 lb/day and to ensure that current aggregate loadings do not increase. This is in accordance with the State of Connecticut’s antidegradation policy, which requires existing uses to be fully maintained and protected. These uses are already being compromised given the continued, severe nitrogen-driven impairments in LIS. After further

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<sup>15</sup>[https://yosemite.epa.gov/OA/EAB\\_WEB\\_Docket.nsf/Filings%20By%20Appeal%20Number/11443A888232A1C88525863B006D4491/\\$File/Springfield%20Response%20to%20Petition\\_Final\\_12\\_11\\_2020.pdf](https://yosemite.epa.gov/OA/EAB_WEB_Docket.nsf/Filings%20By%20Appeal%20Number/11443A888232A1C88525863B006D4491/$File/Springfield%20Response%20to%20Petition_Final_12_11_2020.pdf).

<sup>16</sup> Connecticut Department of Environmental Protection and New York State Department of Environmental Conservation, *A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound* (LIS TMDL), December 2000.

<sup>17</sup> Long Island Sound Study Steering Committee, NY, CT, MA, NH, VT, *Enhanced Implementation Plan for the Long Island Sound Total Maximum Daily Load*, 2012. Available at: <https://neiwpc.org/our-programs/pollution-control/lis-tmdl/>.

review of federal and state requirements, EPA agreed with the concerns raised by the downstream affected state and the public and noted that optimization requirements, by themselves, do not prevent further increases in nitrogen due to population growth (and consequent flow increases) or new industrial dischargers.

### Scientific, Statutory and Regulatory Implementation Considerations

As discussed in Section 2 of this Fact Sheet, statutory and regulatory requirements regarding the development of water quality-based effluent limits include: (1) consideration of applicable water quality requirements of downstream states, including provisions to prevent further degradation of receiving waters that are already impaired, pursuant to a state's antidegradation policy, and provisions to implement other applicable water quality standards, including translation of narrative water quality criteria, and (2) provisions to ensure consistency with the assumptions of any available WLAs.

LIS covers about 1,300 square miles and borders Connecticut and New York. It drains a densely populated watershed area of over 16,000 square miles, including portions of Maine, Vermont, New Hampshire and Massachusetts. About 613 square miles of LIS fall within Connecticut. Connecticut classifies LIS as Class SA and Class SB and designates these waters as, inter alia, suitable for recreation and aquatic life habitat. R.C.S.A. § 22a-426-4(f), (j).

Connecticut regulations establish DO, biological condition, and nutrient criteria for each water class. For Class SA and SB waters, DO must not be less than 3 mg/L and may be less than 4.8 mg/L for only limited periods of time. R.C.S.A. § 22a-426-9(a)(1). Regarding biologic condition, "Surface waters... shall be free from...constituents...which...can reasonably be expected to...impair the biological integrity of aquatic or marine ecosystems..." Id. at § 22a-426-4(a)(5). "The loading of...nitrogen...to any surface water body shall not exceed that which supports maintenance or attainment of designated uses." Id. at § 22a-426-9; see also § 22a-426-4(a)(11) (authorizing "imposition of discharge limitations or other reasonable controls... for point...sources of ...nitrogen...which have the potential to contribute to the impairment of any surface water, to ensure maintenance and attainment of existing and designated uses, restore impaired waters, and prevent excessive anthropogenic inputs of nutrients or impairment of downstream waters.")

Connecticut regulations mandate protection of "existing" and "designated" uses. R.C.S.A. § 22a-426-8(a)(1). "Tier 1" antidegradation review provides:

The Commissioner shall determine whether the discharge or activity is consistent with the maintenance, restoration, and protection of existing and designated uses assigned to the receiving water body by considering all relevant available data and the best professional judgment of department staff. All narrative and numeric water quality standards, criteria and associated policies contained in the Connecticut Water Quality Standards shall form the basis for such evaluation considering the discharge or activity both independently and in the context of other discharges and activities in the affected water body and considering any impairment listed pursuant to 33 USC 1313(d) or any Total Maximum Daily Load (TMDL) established for the water body.

R.C.S.A. § 22a-426-8(f) (emphasis added). The standards further provide, “The procedures for review outlined in this policy apply to any discharge or activity that is affecting or may affect [emphasis added] water quality in Connecticut, including but not limited to any existing, new or increased activity or discharge requiring a permit, water quality certificate or authorization pursuant to chapters 439, 440, 445 or 446i to 446k, inclusive of the Connecticut General Statutes.”

Although nitrogen driven impairments in LIS have been reduced in recent years, they have not been eliminated, and they remain significant. In EPA’s technical and scientific judgment, the current quantity of nitrogen in LIS exceeds the narrative and numeric nutrient-related criteria applicable to LIS, and designated aquatic life uses are not being protected, based on analyses of water quality data and information in the administrative record.<sup>18</sup> While there have been significant reductions in the size of the hypoxic zone in LIS due largely to in-basin point source TN reductions, LIS continues to be impaired<sup>19</sup>. It is undisputed that significant amounts of nitrogen from out-of-basin facilities are discharged to the LIS watershed (as much as 6 million pounds per year, based on the sum of the maximum annual discharge from each out-of-basin discharger from 2013 to 2017). The out-of-basin loads in the aggregate necessarily contribute, or have the reasonable potential to contribute, to these violations.

Since the LIS TMDL was approved by EPA in 2001, the study of water quality conditions in LIS and the nitrogen loadings that contribute to hypoxia and other impairments there has continued. Annual monitoring of hypoxia and dissolved oxygen conditions in Long Island Sound continues, as most recently documented in the *2019 Long Island Sound Hypoxia Season Review*<sup>20</sup> which notes that while the area of hypoxia has been reduced, water quality standards have not yet been met.

In 2015, the Long Island Sound Study (LISS)<sup>21</sup> updated its Long Island Sound Comprehensive Conservation and Management Plan (CCMP)<sup>22</sup> which sets watershed targets, implementation actions to meet those targets, and monitoring strategies. One of the objectives of the CCMP is to improve water quality by further reducing nitrogen pollution from sources that are more distant from the Sound,<sup>23</sup> such as wastewater treatment plants in Massachusetts.

A study published in 2008 used both measurements and mass-balance modeling to evaluate the potential for nitrogen attenuation in the main stem of the Connecticut River in April and August 2005. One of the reaches studied was a 55 km stretch of the Connecticut River in Massachusetts.

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<sup>18</sup> See e.g. Long Island Sound Report Card 2018, at <https://www.ctenvironment.org/wp-content/uploads/2018/09/ReportCard2018-BestView.pdf>

<sup>19</sup> Long Island Sound Study, *A Healthier Long Island Sound: Nitrogen Pollution*, 2019, page 2.

<sup>20</sup> CTDEEP, Interstate Environmental Commission, EPA, *2019 Long Island Sound Hypoxia Season Review*, available at: [http://www.iec-nynjct.org/sites/default/files/2020-07/FINAL\\_LISound-Hypoxia-2019-Combined-Report\\_april2020.pdf](http://www.iec-nynjct.org/sites/default/files/2020-07/FINAL_LISound-Hypoxia-2019-Combined-Report_april2020.pdf)

<sup>21</sup> The Long Island Sound Study (LISS) is a bi-state partnership, formed by EPA, New York and Connecticut in 1985, consisting of federal and state agencies, user groups, concerned organizations, and individuals dedicated to restoring and protecting the Long Island Sound. For more information see <https://longislandsoundstudy.net/>

<sup>22</sup> LISS, *Long Island Sound Comprehensive Conservation and Management Plan 2015 Returning the Urban Sea to Abundance* (CCMP), 2015.

<sup>23</sup> CCMP, page 19.

The study found no nitrogen loss in that reach either in April or August, most likely due to the depth and higher velocities in the main stem of the river compared to the shallower, slower tributaries where previous models and studies had demonstrated varying degrees of nitrogen attenuation.<sup>24</sup>

In addition, subsequent studies refined the understanding of out-of-basin baseline nitrogen loading which suggest lower out-of-basin baseline point source loading to the Connecticut River than the 21,672 lb/day assumed in the 2000 TMDL. In 2013, the United States Geological Survey (USGS) published an estimation of the total nitrogen load to Long Island Sound from Connecticut and contributing areas to the north for October 1998 to September 2009.<sup>25</sup> Available total nitrogen and continuous flow data from 37 water-quality monitoring stations in the LIS watershed, for some or all of these years, were used to compute total annual nitrogen yields and loads. In order to extract the non-point source loadings from the total nitrogen measured, the authors relied on point source estimates from the SPARROW model of nutrient delivery to waters in the Northeastern and Mid-Atlantic states in 2002, including the Connecticut River, that was published by Moore and others in 2011.<sup>26</sup> The SPARROW model estimated that 1,776.7 metric tons per year (MT/yr) (or annual average 10,820 lb/day) of total nitrogen was discharged to the Connecticut River from Massachusetts, New Hampshire and Vermont in 2002.<sup>27</sup> These estimates were based on an approach by Maupin and Ivahnenko, published the same year, which used discharge monitoring data available from EPA's Permit Compliance System (PCS) database for 2002<sup>28,29</sup>. Where no data was available, an estimated typical pollutant concentration (TPC) and flow was used to approximate nitrogen loading from point sources according to their industrial category.<sup>30</sup>

Finally, Long Island Sound continues to be listed as impaired on Connecticut's latest EPA-approved list of impaired waters and is experiencing ongoing effects of eutrophication, including low DO, although the system has experienced improvements since the TMDL was approved. In light of the foregoing, EPA is establishing water quality-based effluent limitations for total nitrogen on three grounds: (1) to ensure compliance with the State of Connecticut's antidegradation provisions, a downstream affected state under 401(a)(2) of the Act and 40 CFR § 122.4(d); (2) to translate and fully implement the state's narrative water quality criterion for

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<sup>24</sup> Smith, Thor E., et al, *Nitrogen Attenuation in the Connecticut River, Northeastern USA: A Comparison of Mass Balance and N<sub>2</sub> Production Modeling Approaches*, *Biogeochemistry*, Mar., 2008, Vol. 87, No. 3 (Mar., 2008), pp. 311-323

<sup>25</sup> Mullaney, J.R., and Schwarz, G.E., 2013, Estimated Nitrogen Loads from Selected Tributaries in Connecticut Draining to Long Island Sound, 1999–2009: U.S. Geological Survey Scientific Investigations Report 2013–5171, 65

<sup>26</sup> Moore, Richard B., Craig M. Johnston, Richard A. Smith, and Bryan Milstead, 2011. Source and Delivery of Nutrients to Receiving Waters in the Northeastern and Mid-Atlantic Regions of the United States. *Journal of the American Water Resources Association (JAWRA)* 47(5):965-990. DOI: 10.1111/j.1752-1688.2011.00582.x

<sup>27</sup> Extrapolated from Moore, et.al 2011, Table 3 on page 977 which estimated that for 2002 an 33.2 % of the total 4,553 MT/yr Massachusetts nitrogen load was from point sources, 2.5% of the total 3,795 MT/yr Vermont nitrogen load was from point sources and 6.1 percent of the total 2,790 MT/yr New Hampshire nitrogen load was from point sources.

<sup>28</sup> Moore (2011), page 968.

<sup>29</sup>Maupin, Molly A. and Tamara Ivahnenko, 2011. Nutrient Loadings to Streams of the Continental United States From Municipal and Industrial Effluent. *Journal of the American Water Resources Association (JAWRA)* 47(5):950-964.

<sup>30</sup> Maupin (2011), page 954.

nutrients, pursuant to 40 CFR § 122.44(d)(1)(vi)(A); and (3) to ensure consistency with the assumptions and requirements of the available WLA, pursuant to 40 CFR § 122.44(d)(1)(vii)(B). Compliance with Antidegradation Requirements of Downstream Affected State

One of the principal objectives of the CWA, articulated in CWA § 101(a) is to “maintain the chemical, physical and biological integrity of the Nation’s waters.” The antidegradation requirements in federal regulations at 40 CFR § 131.12 provide a framework for maintaining and protecting water quality that has already been achieved and require states to adopt provisions in their water quality standards that prevent further degradation of both degraded waters and waters which are meeting or exceeding the water quality necessary to protect designated and existing uses. As noted above, antidegradation provisions of Connecticut’s water quality standards require that existing uses be fully maintained and protected. They expressly required consideration of any applicable TMDL, as well as narrative and numeric water quality criteria. EPA therefore undertakes Tier 1 review in light of the LIS TMDL, which has still not resulted in attainment of water quality standards in LIS, as well as Connecticut’s numeric water quality criteria for dissolved oxygen, which are routinely violated, and its narrative water quality criteria nutrients, which is likewise not being met. Authorizing a significantly increased nitrogen loading into an impaired water body that is suffering the ongoing effects of cultural eutrophication would further compromise receiving water conditions and uses and be inconsistent with applicable antidegradation requirements. In arriving at this conclusion, EPA also notes that Connecticut’s antidegradation procedures are precautionary in nature and apply to discharges that “may affect” water quality.

To ensure that the out-of-basin point-source load does not violate Connecticut’s antidegradation standards, the new total nitrogen loading limits (for dischargers with design flows greater than 1 MGD) along with the requirement to minimize nitrogen discharge by facility optimization (for all dischargers with design flow greater than 0.1 MGD) are intended to ensure that nitrogen loads are held at current loadings. As can be seen from the summary in Table 2, 93% of this load is from POTWs with design flow > 1 MGD. The impact of the new TN effluent limits will be to cap that load at approximately the same average loading. Table 2 summarizes the five-year average out-of-basin loads generated by Massachusetts non-stormwater point sources, based on data provided in Appendix A. While the sum of effluent limited loads for POTWs with design flow greater than 1 MGD is somewhat higher than the average loads observed in recent years, actual effluent limited loads can be expected be lower than the limits in order to avoid permit violations. EPA will continue to track out-of-basin loads as new data becomes available and will re-evaluate permit requirements for nitrogen for all out-of-basin dischargers in future permit actions.

**Table 2 - Summary of Massachusetts Out-of-Basin Non-Stormwater Point Source Loads**

	Sum of Average Loads 2013-2017 (lb/day)	Sum of Average Load 2014-2018 (lb/day)	Sum of Average Load 2015-2019 (lb/day)	Sum of Average Load 2016-2020 (lb/day)	Sum of Effluent Limited Loads (lb/day)
POTWs with design Flow $\geq$ 1 MGD	10,023 (93.3%)	9,865 (92.5%)	9,924 (92.8%)	9,715 (93.1%)	10,907
POTWs with design Flow $\geq$ 0.1 and $<$ 1 MGD	691 (6.4%)	776 (7.3%)	740 (6.9%)	691 (6.6%)	
POTWs with design Flow $<$ 0.1 MGD and Industrial Sources.	24 (0.3%)	24 (0.2%)	35 (0.3%)	22 (0.2%)	
<b>TOTAL</b>	<b>10,737</b>	<b>10,665</b>	<b>10,699</b>		

Translation of Narrative Nutrient Criteria

Using the TMDL as the “calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use” under the regulatory provision used to translate narrative water quality criteria into numeric effluent limitations, 40 CFR § 122.44(d)(1)(vi)(A), EPA has determined that an effluent limitation is necessary to ensure compliance with the narrative water quality criterion for nutrients. In order to assure compliance with water quality standards, and fully implement and translate the states’ narrative nutrient and related criteria, out-of-basin loads in EPA’s judgment should not be increased, because water quality data indicates that the assimilative capacity for nitrogen has been reached in portions of LIS and cultural eutrophication, the impacts of which include hypoxia, is ongoing. It is reasonable, in EPA’s view, to issue permits to out-of-basin dischargers that hold loads constant and in so doing curtail the potential for these out-of-basin loadings to contribute to further impairment and degradation of a water that is already beyond its assimilative capacity for nitrogen. The TN effluent limits and optimization requirements are necessary to assure that the out-of-basin load does not cause or contribute to further violation of water quality criteria in the downstream LIS. Holding these loads level, in conjunction with significant nitrogen pollution reduction efforts being pursued by in-basin dischargers will, under EPA’s analysis, be sufficient to make a finding that the out-of-basin permits taken as a whole contain nutrient controls sufficient to ensure that the discharges comply with water quality standards under Section 301 of the Act, based on information in the record currently before EPA. EPA acknowledges the complexity of the system and the receiving water response, and EPA recognizes that work that is currently ongoing with regards to additional water quality modeling, point source load reductions and WWTP upgrades

in other states, particularly New York and Connecticut. In order to ensure that water quality standards are met, EPA has determined that, at most, TN should be no greater than that resulting from nitrogen currently being discharged from all sources. Holding the load from out-of-basin sources, along with reductions resulting from the nitrogen optimization special condition, combined with other ongoing work to further reduce in-basin loadings, are in EPA's judgment together sufficient to assure that the discharge is in compliance with standards.

#### Consistency with Assumptions of Available WLA

Finally, EPA is imposing an enforceable total nitrogen limitation to ensure consistency with the assumptions and requirements of the applicable WLA, which calls for out-of-basin loads to be capped at 25% of the baseline in fact at the time of TMDL approval. A WQBEL for a discharge must ensure compliance with WQS and be "consistent with the assumptions and requirements" of an available WLA. 40 CFR § 122.44(d)(1)(vii)(B). Capping the aggregate out-of-basin load at current levels will ensure that this requirement is met.

In sum, the permit conditions at issue here have been fashioned to ensure full implementation of CWA §§ 301(b)(1)(C), 401(a)(2) and 402, as well as consistency with the assumptions of the LIS WLA. A permitting authority has wide discretion to determine appropriate effluent limits for a permit. "Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve these statutory mandates of establishing effluent limitations, including narrative permit conditions, to attain and maintain water quality standards. *Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992). Section 402 provides that a permit may be issued upon condition "that such discharge will meet either all applicable requirements under sections 301, 302, 306, 307, 308 and 403 of this Act, or prior to taking of necessary implementing actions relating to all such requirements, such conditions as the Administrator determines are necessary to carry out the provisions of this Act." 33 U.S.C. §1342(a). "This provision gives EPA considerable flexibility in framing the permit to achieve a desired reduction in pollutant discharges." *Id.* An increased discharge of nitrogen beyond current loads into nitrogen-degraded waters experiencing the effects of cultural eutrophication (*e.g.*, DO impairments) under the circumstances here would not be consistent with the Act. Holding the load from these facilities will maintain and protect existing uses. This allows EPA to ensure that the nitrogen limits are applied fairly and in a technologically feasible manner while ensuring that antidegradation provisions of Connecticut's water quality standards are being met.

EPA's decision to cap the out-of-basin TN loads in the aggregate was consistent with a gross approach to pollutant control, which is appropriate here given the need to ensure reasonable further progress toward restoration of uses in LIS based on reductions that have already occurred and whose impact is still being realized. It is also appropriate in light of the fact that more sophisticated models to precisely define the exact level of pollutant controls needed are not available. EPA has explained that when permitting for nutrients, time is of the essence, because of the tendency of nutrients to recycle in the ecosystem and exacerbate existing impairments, as outlined in EPA's Nutrient Technical Guidance Manual. Rather than wait for the development of that information, a daunting task because of the size and complexity of LIS and vast areal extent of loading, EPA determined that it would be reasonable to move forward. This decision is also reasonable because the permits for Webster WWTP and many other contributing sources are

long expired. The D.C. Circuit has described the CWA's balance when confronted with a difficult situation and the obligation to eliminate water quality impairments: "EPA may issue permits with conditions designed to reduce the level of effluent discharges to acceptable levels. This may well mean opting for a gross reduction in pollutant discharge rather than the fine-tuning suggested by numerical limitations. *But this ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.*" *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1380 (D.C. Cir. 1977) (emphasis added) (finding unlawful a rule that would have exempted certain discharges from permitting requirements based on the difficulty in setting limits).

### Derivation of Effluent Limits

As mentioned above, the TMDL did not assign each out-of-basin POTW a specific WLA but instead specifies an aggregate reduction target. Therefore, the task of allocating nitrogen loads among these facilities in a manner that ensures compliance with water quality standards, as required under Section 301 of the Act, falls to EPA. That EPA would implement any necessary reductions through the issuance and oversight of NPDES permits was expressly assumed by the TMDL. EPA notes that as much as 6 million pounds of nitrogen per year from out-of-basin facilities are discharged to the LIS watershed and that ongoing nitrogen-driven water quality impairments exist in LIS.

In developing allocations for Massachusetts and New Hampshire dischargers, EPA began with two facts: first, that significant amounts of nitrogen from out-of-basin facilities are discharged to the LIS watershed (as much as 6 million pounds per year, based on the sum of the sum of the maximum annual discharge from each out-of-basin discharger from 2013 to 2017) and, second, that ongoing nitrogen water quality impairments exist in LIS.

When confronting the difficult environmental regulatory problem of controlling or accounting for dozens of discharges into a complex water body like Long Island Sound, EPA was presented with a variety of potential permitting approaches. Long Island Sound is a nitrogen-impaired water body spanning 1,268 square miles that implicates the sometimes-divergent interests of five states, dozens of municipalities and numerous non-governmental organizations (NGOs), along with interested members of the public. In developing its overarching permitting approach, as well as each individual permit, EPA carefully considered, but ultimately rejected, several possible alternatives, on two principal grounds: (1) that they were not sufficiently protective to assure that all the applicable requirements of the Act would be met (*i.e.*, they lacked enforceable TN effluent limitations to *ensure* as a matter of law that nitrogen loads would be maintained at protective levels), or (2) that they would entail unwarranted uncertainty and delay (*i.e.*, they called for the development of new or revised TMDLs or for development of extensive new data collection or modelling in an attempt refine or pinpoint necessary targets and loads, even though the permits at issue have long-since expired and water quality impairments are ongoing). Rather than approach this complex permitting task on an *ad hoc* basis, EPA instead fashioned a systemic permitting approach designed to comprehensively regulate nitrogen loading from out-of-basin nitrogen sources on a gross, basin-level scale. EPA addressed the existing TN loading to ensure achievement of the following overarching objectives:

- the overall out-of-basin TN load does not increase in accordance with antidegradation requirements, given that the LIS is already nitrogen impaired, through the imposition of enforceable effluent limits that are annual average mass-based, consistent with the assumptions of the TMDL;
- no individual facility is left with an effluent limit that is not achievable using readily available treatment technology at the facility's design flow; and
- smaller facilities can achieve their limits through optimization.

EPA's derivation of effluent limitations to implement these objectives, based on its best professional judgment and information reasonably available to the permit writer at the time of permit issuance, consists of three essential parts:

- First, EPA *identified* the existing aggregate load from all contributing facilities in a given state.
- Second, because Long Island Sound is already nitrogen impaired and failing to achieve applicable water quality standards,<sup>31</sup> EPA *capped* that load to avoid contributing to further impairments and fully protect existing uses.
- Third, EPA *allocated* the load according to a water quality-related consideration rationally related to achieving water quality standards in Long Island Sound and carrying out the objectives of the Act.

In the case of Massachusetts and New Hampshire, that consideration was facility *size*, with loads distributed based on the design flow of the POTW treatment plants. In deriving design-flow-based effluent limitations, EPA utilized the following methodology:

- EPA estimated the current maximum out-of-basin annual point source load using data for the five years prior to the year of the Draft Permit, consistent with Region 1's ordinary practice of using the most recent five years of data in the derivation of effluent limits for permits, which is in accordance with the recommendation in EPA guidance to use three to five years and, by use of the longer timeframe, is intended to more fully capture a representative data set<sup>32</sup> (see estimate of recent effluent loadings in Appendix C);

It prioritized effluent limits for major POTW facilities with design flow greater than 1 MGD, consistent with the definition of major facility in 40 CFR § 122.2;<sup>33</sup>

- It developed mass-based rolling annual average TN effluent limits based on design flow (consistent with 40 CFR § 122.45(b)(1)) and effluent concentrations that can be achieved by means of currently available nitrogen removal technology for all facilities and the design

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<sup>31</sup> CTDEEP, Interstate Environmental Commission, EPA, *2019 Long Island Sound Hypoxia Season Review*, available at: [http://www.iec-nynjct.org/sites/default/files/2020-07/FINAL\\_LISound-Hypoxia-2019-Combined-Report\\_april2020.pdf](http://www.iec-nynjct.org/sites/default/files/2020-07/FINAL_LISound-Hypoxia-2019-Combined-Report_april2020.pdf)

<sup>32</sup> *NPDES Permit Writer's Manual*, EPA-833-K-10-001, September 2010, page 5-30, available at: [https://www.epa.gov/sites/production/files/2015-09/documents/pwm\\_2010.pdf](https://www.epa.gov/sites/production/files/2015-09/documents/pwm_2010.pdf).

<sup>33</sup> *NPDES Permit Writer's Manual*, EPA-833-K-10-001, September 2010, page 2-17, available at: [https://www.epa.gov/sites/production/files/2015-09/documents/pwm\\_2010.pdf](https://www.epa.gov/sites/production/files/2015-09/documents/pwm_2010.pdf).

flow for each facility, where effluent limit (lb/day) = Concentration (mg/L) x Design Flow (MGD) x 8.34;

- EPA based limits on concentrations that can typically be achieved through optimization for POTW facilities with design flow less than 10 MGD, with more aggressive optimization expected for facilities with design flow greater than 5 MGD; and,
- For the four POTW facilities with design flow greater than 10 MGD (which together comprise more than half of the total Massachusetts load to LIS), EPA based limits on concentrations achievable through optimization or upgrades.

Although EPA considered caps for individual dischargers at their current loadings, that approach was rejected because these effluent limits are subject to statutory anti-backsliding requirements of CWA § 402(o) which would prevent a limit from being increased if flows increase due to new residential or industrial development. Therefore, a facility currently discharging well below its design flow, could be put in a position of having a load limit that is below the limit of technology at its design flow. For example, if a new industrial discharger was to tie in, even if that discharger was willing to invest in readily available treatment technology, the load would preclude the facility from operating at its design flow.

Instead, EPA examined out-of-basin loads across the watershed and developed effluent limits that are achievable through optimization or readily available treatment technologies for all facilities, even if they are operating at their design flow. EPA has determined that this approach will be protective of water quality and will carefully monitor receiving water response over the permit term and adjust as necessary. EPA recognizes that Connecticut and New York have very substantially reduced their nitrogen loadings into LIS and water quality conditions have improved, although LIS is not yet fully achieving water quality standards. Additional work is being undertaken in New York and Connecticut to further reduce nitrogen loadings into LIS. It will take time to allow the impact of these reductions to be fully realized and for designated uses to be fully restored. EPA believes that this approach reasonably balances the need to hold overall TN loadings constant to avoid exacerbating ongoing nitrogen-driven environmental degradation against the inherent scientific and technical uncertainty associated with receiving water response in a water body as complex as LIS. More stringent limitations on the out-of-basin dischargers are therefore not necessitated at this time.

Based on the approach described above, Table 3 summarizes the TN requirements implemented for this and other permits in the LIS watershed in Massachusetts since 2019. EPA is also working with the States of New Hampshire and Vermont to ensure that comparable requirements are included in NPDES permits issued in those states.

**Table 3 - Annual Average Total Nitrogen Limits for Massachusetts WWTP Dischargers to the Long Island Sound Watershed**

Facility Design Flow, $Q_D$ (MGD)	Number of Facilities	Annual Average TN Limit (lb/day)
$Q_D > 10$	4	$Q_D$ (MGD) * 5 mg/L * 8.34 + optimize
$5 < Q_D \leq 10$	5	$Q_D$ (MGD) * 8 mg/L * 8.34 + optimize
$1 \leq Q_D \leq 5$	20	$Q_D$ (MGD) * 10 mg/L * 8.34 + optimize
$0.1 \leq Q_D < 1$	17	Optimize
$Q_D < 0.1$	8	TN monitoring only

The basis for establishing mass-based effluent limits using facility design flow and 5, 8 and 10 mg/L as total nitrogen concentrations that facilities can meet by means of optimization or, for the four largest facilities, readily available treatment technology, meets the legal requirements of the CWA but was derived in order to balance the burden of treatment with the four largest facilities (currently generating more than half of the Massachusetts out-of-basin load) required to meet 5 mg/L concentration at design flow, and the remaining facilities with effluent limits that can be achieved through system optimization. In tiering the facilities, EPA considered the relative magnitude of flows from these facilities and observed that there was a significant divide between the four largest facilities and the remaining facilities (67 MGD for Springfield, 17.5 MGD for Holyoke, 17 MGD for Pittsfield and 15 MGD for Chicopee compared to the next largest at 8.6 MGD for North Hampton). The four largest facilities contribute 53% of the design flow for the out-of-basin watershed. EPA also observed that three of these facilities are on the main stem of the Connecticut River and Pittsfield is on the mainstem of the Housatonic, so there is little or no attenuation of nitrogen. All these factors, in EPA's technical judgment, warranted the further additional assurance of meeting water quality standards provided by a more stringent numeric cap in loading that may necessitate a facility upgrade, as opposed to limits achievable through optimization only. EPA also notes that the four larger facilities will be able to spread the cost of any upgrade over a much larger user base.

EPA established the next tier at 5 MGD partly on the assumption that POTWs of greater than that size are likely to already possess the technical capability, operator sophistication and administrative capacity needed to achieve more stringent effluent limitations via optimization requirements. To this point, EPA took notice of the fact that the 5 MGD threshold has some regulatory significance under EPA's regulations implementing the NPDES program, specifically pretreatment, where EPA determined that facilities of that size are significantly large enough to require a pretreatment program. EPA, of course, also took into account the relatively large magnitude of the loads associated with these facilities. Finally, EPA also took note of the fact that these facilities, though not serving communities as large as Springfield, Holyoke, Pittsfield and Chicopee, still have considerable ability to spread costs over user bases of considerable size. EPA chose the 1 MGD tier because that corresponds to the definition of major POTW under NPDES regulations. Facilities above 1 MGD account for approximately 80% of the total out-of-basin load. Because the many facilities smaller than 1 MGD collectively account for a relatively

small amount of the total load, EPA believes that optimization is reasonable for these facilities, given their comparatively small loads and user bases.

Finally, those facilities under 0.1 MGD are required to monitor and report data that may be used in future permitting cycles.

Thus, in arriving at its tiering determination, EPA considered a series of technical and environmental factors within its expertise, and also took into account equitable considerations. EPA acknowledges that the chosen tiers are not the only way to divide the out-of-basin TN allocations, but was not presented with any alternatives that capped the existing load based on design flow through the imposition of enforceable permit limits. For example, EPA considered, and rejected, the option to apply a limit based on 8 mg/L effluent limit for all facilities with design flow greater than 1 MGD (at their respective design flows) because that would result in an increase in the current loading and place a greater burden on facilities that service relatively small communities. The combined design flow for the 29 MA POTW facilities with design flow greater than 1 MGD is 196 MGD. Of this combined design flow, 60%, or 117 MGD consists of the design flow for the four largest POTWs. Under the selected permitting approach, the proportion of the permitted load from the four largest facilities will be 60% of the combined permitted load for all 29 MA facilities, consistent with the proportion of design flow. If all POTWs with design flow over 1 MGD had a concentration-based limit of 8 mg/L (or a load based limit based on 8 mg/L and design flow), the proportion of the permitted load coming from the four largest facilities would increase from 60% of the total permitted load to 90%, shifting the burden of treatment significantly from larger to smaller facilities. In addition, the total permitted TN loading from those 29 facilities would increase from 8,100 lb/day under the chosen approach to 8,600 lb/day.

In addition to the effluent limits described above, EPA is also requiring all POTWs with a design flow of 0.1 MGD or greater to optimize for nitrogen removal to ensure that the aggregate 25% reduction is maintained or increased. The optimization condition in the Draft Permit requires the Permittee to evaluate alternative methods of operating their treatment plant to optimize the removal of nitrogen, and to describe previous and ongoing optimization efforts. Specifically, the Draft Permit requires an evaluation of alternative methods of operating the existing wastewater treatment facility to control total nitrogen levels, including, but not limited to, operational changes designed to enhance nitrification (seasonal and year-round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management. This evaluation is required to be completed and submitted to EPA and MassDEP within one year of the effective date of the permit, along with a description of past and ongoing optimization efforts. The permit also requires implementation of optimization methods to ensure that the facility is operated in such a way that discharges of total nitrogen are minimized. The permit requires annual reports to be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies and track trends relative to previous years.

In addition to the rolling annual average total nitrogen effluent limit and optimization requirements, the Draft Permit includes weekly monitoring and average monthly reporting requirements for total nitrogen (TN), total Kjeldahl nitrogen (TKN), and total nitrite/nitrate nitrogen (NO<sub>2</sub>/NO<sub>3</sub>).

Since the design flow for the Webster facility (6.0 MGD) is in the range of  $5.0 \text{ MGD} < Q_D \leq 10.0 \text{ MGD}$ , the mass limit is calculated based on 8 mg/L.

$$6.0 \text{ MGD} * 8 \text{ mg/L} * 8.34 = 400 \text{ lb/day}$$

The effluent limit is a rolling annual average based on the average of the current monthly average and the monthly average of the previous 11 months.

In the monitoring period for this permit, the Facility never exceeded the proposed 12-month rolling average limit of 400 lb/day and had a maximum 12-month rolling average of 369 lb/day. Since the Facility is already in compliance with the proposed limit, a compliance schedule is not included in the Draft Permit.

### **Future Nitrogen Limits**

The new nitrogen annual loading limit in this Draft Permit is intended to meet the requirements of the 2001 LIS TMDL, which was developed to address hypoxic conditions in the bottom waters of LIS. In December 2015, EPA signed a letter detailing a post-TMDL EPA nitrogen reduction strategy for waters in the LIS watershed. The strategy recognizes that more work may need to be done to reduce nitrogen levels, further improve DO conditions, and attain other related water quality standards in LIS, particularly in coastal embayments and the estuarine portions of rivers that flow into the Sound. EPA is working to establish nitrogen thresholds for Western LIS and several coastal embayments, including the mouth of the Connecticut River. Documents regarding the EPA Nitrogen Reduction Strategy are available for public review on EPA's Long Island Sound website (<http://longislandsoundstudy.net/issues-actions/water-quality/nitrogen-strategy/>). Upon completion of establishing thresholds and assessing the water quality conditions of the estuarine waters of the Connecticut River, allocations of total nitrogen loadings may be lowered if further reductions are necessary. If further reductions are needed for the Webster discharge, a lower water quality-based effluent limit will be added in a future permit action. If so, EPA anticipates exploring possible trading approaches for nitrogen loading in the Massachusetts portion of the Connecticut River watershed.

#### **5.1.10.2 Phosphorus**

While phosphorus is an essential nutrient for the growth of aquatic plants, it can stimulate rapid plant growth in freshwater ecosystems when it is present in high quantities.

The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by: 1) increasing oxygen demand within the water body to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter;<sup>34</sup> 2) causing an unpleasant appearance and odor; 3)

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<sup>34</sup> "Algae" includes phytoplankton (microscopic algae measured by levels of chlorophyll a), macroalgae (commonly referred to as seaweed), and other plants stimulated by nutrient over-enrichment. Excessive algal growth contributes to low levels of dissolved oxygen through increased plant respiration and decomposition of dead plant matter. Notably, during the day, algae provide oxygen to the water as a by-product of photosynthesis. At night, however,

interfering with navigation and recreation, for instance, by fouling engines and propellers, making waters unappealing to swimmers, and interfering with fishing lures and equipment; 4) reducing water clarity; 5) reducing the quality and availability of suitable habitat for aquatic life; and 6) producing toxic cyanobacteria during certain algal blooms. Cultural (or accelerated) eutrophication is the term used to describe dense and excessive plant growth in a water body that results from nutrients entering the system as a result of human activities. Discharges from municipal and industrial wastewater treatment plants, agriculture runoff, and stormwater are examples of human-derived (*i.e.*, anthropogenic) sources of nutrients in surface waters. See generally, *Nutrient Criteria Technical Guidance Manual – Rivers and Streams*, EPA July 2000 [EPA-822-B-00-002], Chapters 1 and 3.

The MA WQS under 314 CMR 4.05(5)(c) requires that, unless naturally occurring, surface waters must be free from nutrients that cause or contribute to impairment of the existing or designated uses, and the concentration of phosphorus may not exceed site specific criteria developed in a TMDL. Nutrients are also prohibited in concentrations that would cause or contribute to cultural eutrophication. Cultural eutrophication also results in violations of other nutrient-related water quality standards such as low dissolved oxygen, decreased water clarity, objectionable odors, and surface scum. The MA WQS at 314 CMR 4.05(3)(b)(1) requires that dissolved oxygen not be less than 6.0 mg/L in cold water fisheries or 5.0 mg/L in warm water fisheries. Further, the MA WQS at 4.05(3)(b)(5), (6) and (8) state that waters must be free from “floating, suspended, and settleable solids,” free from “color and turbidity in concentrations or combinations that are aesthetically objectionable...”, and have no taste and odor “in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this Class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.” To prevent cultural eutrophication, the MA WQS at 4.05(5)(c) states that “Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non POTWs, to remove such nutrients to ensure protection of existing and designated uses.” Also see Part 2.2.2 of this Fact Sheet above regarding antidegradation and existing uses which may be impacted by nutrient over-enrichment.

When permitting nutrient discharges, EPA analyzes available information from a reasonably conservative standpoint, as it regards one key function of a nutrient limit as preventative. This protective approach is appropriate because, once begun, the cycle of eutrophication can be difficult to reverse due to the tendency of nutrients to be retained in the sediments. For this reason, time is of the essence when permitting for nutrients, so EPA acts on the best information reasonably available when developing the draft permit, and does not generally delay permit issuance pending collection of new data or development of new models. This approach is also consistent with the requirement for NPDES permits to be revisited and reissued at regular intervals, with permit terms not to exceed five years.

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when photosynthesis ceases but plant respiration continues, dissolved oxygen levels decline. Additionally, as these algae die, they are decomposed by bacteria that consume yet more oxygen. When dissolved oxygen levels are low, aquatic organisms become stressed and die, and overall aquatic health is degraded.

When translating narrative phosphorus criteria into numeric values (and establishing WQBELs, if necessary), EPA looks to a wide range of materials, including nationally recommended criteria and other relevant materials, such as EPA nutrient technical guidance and information published under Section 304(a) of the CWA, peer-reviewed scientific literature and site-specific surveys and data to determine instream targets that are protective of water quality. See 40 CFR § 122.44(d)(1)(vi)(A), (B).

EPA has produced several guidance documents, described below, that recommend a range of total ambient phosphorus concentrations that are sufficiently stringent to control cultural eutrophication and other adverse nutrient-related impacts, with 0.1 mg/L representing the upper end of this range. These guidance documents recommend protective in-stream phosphorus concentrations based on two different analytical approaches. An effects-based approach provides a threshold value above which adverse effects (*i.e.*, water quality impairments) are likely to occur. This approach applies empirical observations of a causal variable (*i.e.*, phosphorus) and a response variable (*i.e.*, chlorophyll-a as a measure of algal biomass) associated with designated use impairments. Alternatively, reference-based values are statistically derived from a comparison within a population of rivers in the same ecoregion class. They are a quantitative set of river characteristics (physical, chemical and biological) that represent conditions in waters in that ecoregion that are minimally impacted by human activities (*i.e.*, reference conditions), and thus by definition representative of water without cultural eutrophication. Dischargers in Massachusetts and New Hampshire are located within either Ecoregion VII, Nutrient-Poor, Largely Glaciated Upper Midwest and Northeast or Ecoregion XIV, Eastern Coastal Plains. The recommended total phosphorus criteria for these ecoregions are 10 µg/L and 31.25 µg/L, respectively. While reference conditions reflect in-stream phosphorus concentrations that are sufficiently low to meet the requirements necessary to support designated uses, they may also represent levels of water quality beyond what is necessary to support such uses.

EPA follows an effects-based approach. EPA's 1986 *Quality Criteria for Water* (the "Gold Book") recommends maximum threshold concentrations that are designed to prevent or control adverse nutrient-related impacts from occurring. Specifically, the Gold Book recommends in-stream phosphorus concentrations of no greater than 0.05 mg/L in any stream entering a lake or reservoir, 0.1 mg/L for any stream not discharging directly to lakes or impoundments, and 0.025 mg/L within a lake or reservoir. For this segment of the French River, the 0.1 mg/L would apply downstream of the discharge.

The Gold Book recommended value of 0.1 mg/L is coterminous with the range of published, peer-review values presented in a more recent EPA technical guidance manual, *Nutrient Criteria Technical Guidance Manual – Rivers and Streams*, EPA July 2000 [EPA-822-B-00-002], Chapter 7 Table 4 (a simplified version of this table is shown as Table 4 below), which contains recommended threshold ambient concentrations (all more stringent than 0.1 mg/L) drawn from the scientific literature that are sufficiently stringent to control periphyton and plankton (two types of aquatic plant growth associated with eutrophication). This guidance indicates that in-stream phosphorus concentrations between 0.01 mg/L and 0.09 mg/L will be sufficient to control periphyton growth and concentrations between 0.035 mg/L and 0.070 mg/L will be sufficient to control plankton.

Table 4. Recommended Nutrient Levels to Prevent Eutrophic Impairment

<b>PERIPHYTON Maximum</b>			
<b>TP (µg/L)</b>	<b>Chlorophyll a (µg/L)</b>	<b>Impairment Risk</b>	<b>Source</b>
38-90	100-200	nuisance growth	Dodds et al. 1997
75	200	eutrophy	Dodds et al. 1998
20	150	nuisance growth	Clark Fork River Tri-State Council, MT
20		<i>Cladophora</i> nuisance growth	Chetelat et al. 1999
10-20		<i>Cladophora</i> nuisance growth	Stevenson unpubl. Data
<b>PLANKTON Mean</b>			
<b>TP (µg/L)</b>	<b>Chlorophyll a (µg/L)</b>	<b>Impairment Risk</b>	<b>Source</b>
42	8	eutrophy	Van Nieuwenhuysse and Jones 1996
70	15	chlorophyll action level	OAR 2000
35	8	eutrophy	OECD 1992 (for lakes)

The published, peer-reviewed phosphorus targets are thus 0.1 mg/L or below, irrespective of the methodological approach employed. In addition to opting for the less stringent of the available approaches (*i.e.*, effects-based in favor of reference-based), EPA has chosen to apply the upper end of the range of all available published nutrient thresholds. However, as the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophic response to phosphorus inputs; in some waters more stringent phosphorus reductions may be needed, while in some others a higher total phosphorus threshold could be assimilated without inducing a eutrophic response. EPA is not aware of any site-specific factors relevant to the receiving water that would result in it being unusually more or less susceptible to phosphorus loading.

EPA notes that since the 2006 Permit already contained a limit for phosphorus, the same mass balance equation is used to determine if a more stringent limit would be required to continue to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration ( $C_d$ ) allowable to meet WQS based on current conditions.

Based on the phosphorus criterion described above, the warm-weather ambient data presented in Appendix A (0.019 mg/L, from MassDEP monitoring station W-0602), the upstream 7Q10 flow, and the design flow of the Facility, Appendix B presents the details of the mass balance equation and the limit proposed in the Draft Permit. As shown, it was determined that the downstream concentration is 0.136 mg/L which exceeds the instream target of 0.100 mg/L. Therefore, a more stringent limit of 0.14 mg/L is necessary to continue to meet WQS, as shown in Appendix B. EAP notes that the maximum discharge from the facility was 0.14 mg/L during the review period. Therefore, EPA anticipates the facility will be able to comply with the new limit and a compliance schedule is not included in the Draft Permit.

The Draft Permit also includes a new ambient monitoring requirement, both upstream of the facility and within the French River reservoir, to ensure that current ambient phosphorus data are available to use in the reassessment of the total phosphorus effluent limit in the next permitting

cycle in order to ensure the protection of downstream uses in the impoundment. The testing in the reservoir shall test for secchi disk transparency, non-rooted vegetation percent visual coverage, planktonic chlorophyll-*a*, dissolved oxygen, pH, total phosphorus, and any cyanobacteria blooms<sup>35</sup>.

Pursuant to sections 303 and 101(a) of the CWA, the federal regulation at 40 CFR § 131.10(b) requires that “In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.” In this case, the impoundment is considered a downstream water and the ambient data described above will allow EPA and MassDEP to assess the impairment status of the impoundment and protect designated uses in the impoundment through the establishment of a more stringent phosphorus limit, if the data indicates that is necessary.

Monitoring and reporting orthophosphorus is no longer a requirement in the Draft Permit. EPA’s intention in requiring winter orthophosphorus monitoring was to verify the assumption that the vast majority of the phosphorus discharges would be in the dissolved phase. However, given that both dissolved and particulate phosphorus contribute to water quality impairments, EPA has determined that total phosphorus is the appropriate focus and cannot find reason to continue monitoring orthophosphorus in the wintertime. Therefore, EPA has removed the orthophosphorus monitoring requirement that was in the 2006 Permit.

### **5.1.11 Metals**

#### **5.1.11.1 Applicable Metals Criteria**

State water quality criteria for cadmium, copper, lead, nickel and zinc are established in terms of dissolved metals. However, many inorganic components of domestic wastewater, including metals, are in particulate form, and differences in the chemical composition between the effluent and the receiving water affects the partitioning of metals between the particulate and dissolved fractions as the effluent mixes with the receiving water, often resulting in a transition from the particulate to dissolved form (*The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (USEPA 1996 [EPA-823-B96-007])). Consequently, quantifying only the dissolved fraction of metals in the effluent prior to discharge may not accurately reflect the biologically-available portion of metals in the receiving water. Regulations at 40 CFR § 122.45(c) require, with limited exceptions, that effluent limits for metals in NPDES permits be expressed as total recoverable metals.

The criteria for cadmium, copper, lead, nickel, and zinc are hardness-dependent using the equations in EPA’s National Recommended Water Quality Criteria: 2002, which are incorporated into the Massachusetts WQS by reference. The estimated hardness of the French River downstream of the treatment plant is calculated using the critical low flow (7Q10), the design flow of the treatment plant, and the median hardness for both the receiving water

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<sup>35</sup> *Massachusetts Consolidated Assessment and Listing Methodology (CALM) Guidance Manual for the 2018 Reporting Cycle*, Mass DEP, May 3, 2018.

upstream of the discharge and the treatment plant effluent. Effluent and receiving water data are presented in Appendix A. Using the mass balance equation discussed in Appendix B, the resulting downstream hardness is 127.7 mg/L and the corresponding criteria are also presented in Appendix B.

Massachusetts aluminum criteria are not hardness-dependent and are expressed as total recoverable aluminum.

#### **5.1.11.2 Reasonable Potential Analysis and Limit Derivation**

To determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for each metal, EPA uses the mass balance equation presented in Appendix B to project the concentration downstream of the discharge and, if applicable, to determine the limit required in the permit.

For any metal with an existing limit in the 2006 Permit, the same mass balance equation is used to determine if a more stringent limit would be required to continue to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration ( $C_d$ ) allowable to meet WQS based on current conditions.

Based on the information described above, the results of this analysis for each metal are presented in Appendix B. As shown, there is no reasonable potential for cadmium, nickel and zinc, so the Draft Permit does not propose limits for these metals. However, as shown in Appendix B, the Draft Permit must include limits for aluminum, copper and lead. The chronic (average monthly) lead limit and acute (daily maximum) and chronic (average monthly) copper limits are carried forward from the 2006 Permit. The chronic (monthly average) aluminum limit of 112.9  $\mu\text{g/L}$  is newly established to meet WQS based on recent data.

#### Aluminum Compliance Schedule:

The final aluminum effluent limit is based on current Massachusetts, EPA approved, aluminum criteria to protect freshwater aquatic life. However, EPA is aware of ongoing efforts by MassDEP to soon revise the Massachusetts aluminum criteria based, at least in part, on new EPA aluminum criteria recommendations which were finalized in 2018. MassDEP proposed the revisions to its aluminum criteria in 2019, but the revisions have not yet been finalized. MassDEP expects the revisions to be finalized in 2021. For three years after the effective date of the permit, MassDEP will inform EPA at reasonable intervals of its progress on the development and promulgation of new aluminum criteria.

EPA's aluminum criteria recommendations indicate that the new aluminum criteria recommendations may be higher than the current recommendations. Because MassDEP has indicated to EPA that its planned revisions to its aluminum criteria will be based on EPA's recommended criteria, EPA reasonably expects its new criteria may also be higher. EPA has therefore determined that it is appropriate to include a schedule of compliance, pursuant to 40 CFR § 122.47, in the draft permit which provides the permittee with a 3-year period to achieve compliance with the final aluminum effluent limit. Additionally, the permittee may apply for a permit modification to allow additional time for compliance if Massachusetts has adopted new

aluminum criteria but has not yet submitted the criteria to EPA for review or EPA has not yet acted on the new criteria. If new aluminum criteria are adopted by Massachusetts and approved by EPA, and before the final aluminum effluent limit goes into effect, the permittee may apply for a permit modification to amend the permit based on the new criteria. If warranted by the new criteria and a reasonable potential analysis, EPA may relax or remove the effluent limit to the extent consistent with anti-degradation requirements. Such a relaxation or removal would not trigger anti-backsliding requirements as those requirements do not apply to effluent limits which have yet to take effect pursuant to a schedule of compliance. *See American Iron and Steel Institute v. EPA*, 115 F.3d 979, 993 n.6 (D.C. Cir. 1997) (“EPA interprets § 402 to allow later relaxation of [an effluent limit] so long as the limit has yet become effective.”)

#### 5.1.12 Whole Effluent Toxicity

CWA §§ 402(a)(2) and 308(a) provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Whole effluent toxicity (WET) testing is conducted to ensure that the additivity, antagonism, synergism, and persistence of the pollutants in the discharge do not cause toxicity, even when the pollutants are present at low concentrations in the effluent. The inclusion of WET requirements in the Draft Permit will assure that the Facility does not discharge combinations of pollutants into the receiving water in amounts that would be toxic to aquatic life or human health.

In addition, under CWA § 301(b)(1)(C), discharges are subject to effluent limitations based on WQSs. Under CWA §§ 301, 303 and 402, EPA and the States may establish toxicity-based limitations to implement the narrative water quality criteria calling for “no toxics in toxic amounts”. *See also* 40 CFR § 122.44(d)(1). The Massachusetts WQSs at 314 CMR 4.05(5)(e) state, “All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.”

National studies conducted by EPA have demonstrated that domestic sources, as well as industrial sources, contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Some of these constituents may cause synergistic effects, even if they are present in low concentrations. Because of the source variability and contribution of toxic constituents in domestic and industrial sources, reasonable potential may exist for this discharge to cause or contribute to an exceedance of the “no toxics in toxic amounts” narrative water quality standard.

In accordance with current EPA guidance and State policy<sup>36</sup>, whole effluent chronic effects are regulated by limiting the highest measured continuous concentration of an effluent that causes no observed chronic effect on a representative standard test organism, known as the chronic No Observed Effect Concentration (C-NOEC). Whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the LC<sub>50</sub>. This policy recommends that permits for discharges having a dilution factor less than 10 require acute and chronic toxicity testing four times per year for two species. Additionally, for discharges with

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<sup>36</sup> *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters*. February 23, 1990.

dilution factors less than 10, the C-NOEC effluent limit should be greater than or equal to the receiving water concentration and the LC<sub>50</sub> limit should be greater than or equal to 100%. The chronic and acute WET limits in the 2006 Permit are C-NOEC greater than or equal to 37% and LC<sub>50</sub> greater than or equal to 100%, respectively, using the daphnid (*Ceriodaphnia dubia*) as the test species based on a previous EPA approval to use only one species. The Facility has consistently met these limits (See Appendix A).

Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the dilution factor of 1.55, and in accordance with EPA national and regional policy and 40 CFR § 122.44(d), the Draft Permit continues the LC<sub>50</sub> effluent limit of greater than or equal to 100% and proposes a more stringent C-NOEC effluent limit of greater than or equal to 65% including the same test organism and the testing frequency as the 2006 Permit. Toxicity testing must be performed in accordance with the updated EPA Region 1 WET test procedures and protocols specified in Attachments A, *Freshwater Acute Toxicity Test Procedure and Protocol* (February 2011) and Attachment B, *Freshwater Chronic Toxicity Test Procedure and Protocol* (March 2013) of the Draft Permit.

In addition, EPA's 2018 *National Recommended Water Quality Criteria* for aluminum are calculated based on water chemistry parameters that include dissolved organic carbon (DOC), hardness and pH. Since aluminum monitoring is required as part of each WET test, an accompanying new testing and reporting requirement for DOC, in conjunction with each WET test, is warranted in order to assess potential impacts of aluminum in the receiving water.

### 5.1.1 Per- and polyfluoroalkyl substances (PFAS)

As explained at <https://www.epa.gov/pfas>, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS 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.<sup>37</sup> EPA is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

#### Background Information for Massachusetts

On October 20, 2020, MassDEP published final regulations establishing a drinking water standard, or a Maximum Contaminant Level (MCL) of 20 parts per trillion (ppt) for the sum of the following six PFAS. See 310 CMR 22.00.

- Perfluorohexanesulfonic acid (PFHxS)
- Perfluoroheptanoic acid (PFHpA)

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<sup>37</sup> EPA, *EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan*, EPA 823R18004, February 2019. Available at: [https://www.epa.gov/sites/production/files/2019-02/documents/pfas\\_action\\_plan\\_021319\\_508compliant\\_1.pdf](https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf)

- Perfluorononanoic acid (PFNA)
- Perfluorooctanesulfonic acid (PFOS)
- Perfluorooctanoic acid (PFOA)
- Perfluorodecanoic acid (PFDA)

Although the Massachusetts water quality standards do not include numeric criteria for PFAS, the Massachusetts narrative criterion for toxic substances at 314 CMR 4.05(5)(e) states:

All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

The narrative criterion is further elaborated at 314 CMR 4.05(5)(e)2 which states:

Human Health Risk Levels. Where EPA has not set human health risk levels for a toxic pollutant, the human health-based regulation of the toxic pollutant shall be in accordance with guidance issued by the Department of Environmental Protection's Office of Research and Standards. The Department's goal is to prevent all adverse health effects which may result from the ingestion, inhalation or dermal absorption of toxins attributable to waters during their reasonable use as designated in 314 CMR 4.00.

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the Draft Permit requires that the facility conduct quarterly influent, effluent and sludge sampling for PFAS chemicals and annual sampling of certain industrial users, the first full calendar quarter beginning six months after EPA has notified the Permittee that appropriate, multi-lab validated test methods are made available by EPA 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 a facility- specific basis. EPA 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 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 and sludge is not currently available, the PFAS sampling requirement in the Draft Permit includes a compliance schedule which delays the effective date of this requirement until the first full calendar quarter beginning 6 months after EPA has notified the Permittee that a multi-lab validated method for wastewater and biosolids is made available to the public on EPA’s CWA methods program websites. For wastewater see <https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical> and <https://www.epa.gov/cwa-methods>. For biosolids, see <https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-biosolids>. EPA expects these methods will be available by the end of 2021. 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.

## 5.2 Industrial Pretreatment Program

The Permittee is required to administer a pretreatment program under 40 CFR part 403. *See also* CWA § 307; 40 CFR 122.44(j). The permittee's pretreatment program received EPA approval on December 9, 1998 and, as a result, appropriate pretreatment program requirements were incorporated into the previous permit, which were consistent with that approval and federal pretreatment regulations in effect when the permit was issued.

The Federal Pretreatment Regulations in 40 CFR part 403 were amended in October 1988, in July 1990, and again in October 2005. Those amendments established new requirements for implementation of pretreatment programs. Upon reissuance of this NPDES permit, the permittee is obligated to modify its pretreatment program to be consistent with current Federal Regulations. The activities that the permittee must address include, but are not limited to, the following: 1) develop and enforce EPA-approved specific effluent limits (technically-based local limits); 2) revise the local sewer-use ordinance or regulation, as appropriate, to be consistent with Federal Regulations; 3) develop an enforcement response plan; 4) implement a slug control evaluation program; 5) track significant noncompliance for industrial users; and 6) establish a definition of and track significant industrial users.

These requirements are necessary to ensure continued compliance with the POTW's NPDES permit and its sludge use or disposal practices.

In addition to the requirements described above, the Draft Permit requires the permittee to submit to EPA in writing, within 180 days of the permit's effective date, a description of proposed changes to permittee's pretreatment program deemed necessary to assure conformity with current federal pretreatment regulations. These requirements are included in the Draft Permit to ensure that the pretreatment program is consistent and up-to-date with all pretreatment requirements in effect. Lastly, the permittee must continue to submit, annually by November 30,

a pretreatment report detailing the activities of the program for the twelve-month period ending 60 days prior to the due date.

### **5.3 Sludge Conditions**

Section 405(d) of the Clean Water Act requires that EPA develop technical standards regarding the use and disposal of sewage sludge. On February 19, 1993, EPA promulgated technical standards. These standards are required to be implemented through permits. The conditions in the permit satisfy this requirement.

### **5.4 Infiltration/Inflow (I/I)**

Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes, or deteriorated joints. Inflow is extraneous flow entering the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow, reducing the capacity and the efficiency of the treatment works and may cause bypasses to secondary treatment. It greatly increases the potential for sanitary sewer overflows (SSOs) in separate systems, and combined sewer overflows (CSOs) in combined systems.

The Draft Permit includes a requirement for the permittee to control infiltration and inflow (I/I) within the sewer collections system it owns and operates. The Permittee shall develop an I/I removal program commensurate with the severity of I/I in the collection system. This program may be scaled down in sections of the collection system that have minimal I/I.

### **5.5 Operation and Maintenance of the Sewer System**

The standard permit conditions for 'Proper Operation and Maintenance', found at 40 CFR § 122.41(e), require the proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions. The requirements at 40 CFR § 122.41(d) impose a 'duty to mitigate,' which requires the permittee to "take all reasonable steps to minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment. EPA maintains that an I/I removal program is an integral component of ensuring permit compliance with the requirements of the permit under the provisions at 40 CFR § 122.41(d) and (e).

General requirements for proper operation and maintenance, and mitigation have been included in Part II of the permit. Specific permit conditions have also been included in Part I.C. and I.D. of the Draft Permit. These requirements include mapping of the wastewater collection system, preparing and implementing a collection system operation and maintenance plan, reporting of unauthorized discharges including SSOs, maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration to separate sewer collection systems (combined systems are not subject to I/I requirements) to the extent necessary to prevent SSOs and I/I related effluent violations at the Wastewater Treatment Facility, and maintaining alternate power where necessary. These requirements are included to minimize the occurrence of permit

violations that have a reasonable likelihood of adversely affecting human health or the environment.

Several of the requirements in the Draft Permit are not included in the 2006 Permit, including collection system mapping, and preparation of a collection system operation and maintenance plan. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the collection system and has included schedules in the Draft Permit for completing these requirements.

Because the municipality of Dudley owns and operates a collection system that discharges to the WWTF, this municipality has been included as co-permittees for the specific permit requirements discussed in the paragraph above. The historical background and legal framework underlying this co-permittee approach is set forth in Appendix D to this Fact Sheet, EPA Region 1 NPDES Permitting Approach for Publicly Owned Treatment Works that Include Municipal Satellite Sewage Collection Systems.

## **5.6 Standard Conditions**

The standard conditions of the permit are based on 40 CFR §122, Subparts A, C, and D and 40 CFR § 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

## **6.0 Federal Permitting Requirements**

### **6.1 Endangered Species Act**

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority and imposes requirements on Federal agencies regarding endangered or threatened species of fish, wildlife, or plants (listed species) and any habitat of such species that has been designated as critical under the ESA (a “critical habitat”).

Section 7(a)(2) of the ESA requires every federal agency, in consultation with and with the assistance of the Secretary of Interior, to ensure that any action it authorizes, funds or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) administers Section 7 consultations for marine and anadromous species.

The Federal action being considered in this case is EPA’s proposed NPDES permit for the Webster WWTF’s discharges of pollutants. The Draft Permit is intended to replace the 2006 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species and initiates consultation with the Services when required under § 7(a)(2) of the ESA.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in the expected action area of the outfall to determine if EPA’s proposed NPDES permit could potentially impact any such listed species in this section of the French River.

Regarding protected species under the jurisdiction of NOAA Fisheries, a number of anadromous and marine species and life stages are present in Massachusetts coastal waters. Various life stages of the following fish, sea turtles and whales have been documented in these near shore waters, either seasonally or year-round: adult and subadult life stages of Atlantic sturgeon (*Acipenser oxyrinchus*); adult shortnose sturgeon (*Acipenser brevirostrom*); sea turtles, including adult and juvenile life stages of leatherback sea turtles (*Dermochelys coriacea*), loggerhead sea turtles (*Caretta caretta*), Kemp's ridley sea turtles (*Lepidochelys kempii*) and green sea turtles (*Chelonia mydas*), along with adult and juvenile life stages of North Atlantic right whales (*Eubalaena glacialis*) and fin whales (*Balaenoptera physalus*). In addition, this coastal area has been designated as critical habitat for North Atlantic right whale feeding.

In this case, the Facility's outfall does not discharge to coastal waters or to river segments where protected sturgeon are present. Therefore, there are no known federally listed threatened or endangered species or their critical habitat under the jurisdiction of NOAA Fisheries within the vicinity of the Webster WWTF's discharge.<sup>38</sup> Because the action area of the discharge is not expected to overlap with these threatened or endangered species or critical habitat, consultation with NOAA Fisheries under Section 7 of the ESA is not required for this federal action.

For protected species under the jurisdiction of the USFWS, one ESA listed species, the northern long-eared bat (*Myotis septentrionalis*) was identified as potentially occurring in the action area of the Webster WWTF's discharge.<sup>39</sup> According to the USFWS, the threatened northern long-eared bat is found in the following habitats based on seasons, "winter – mines and caves; summer – wide variety of forested habitats." This species is not considered aquatic. However, because the Facility's projected action area in the French River and the town of Webster overlaps with the general statewide range of the northern long-eared bat, EPA prepared an Effects Determination Letter for the Webster WWTF NPDES Permit reissuance and submitted it to USFWS. Based on the information submitted by EPA, the USFWS notified EPA by letter (dated June 25, 2021) that the permit reissuance is consistent with activities analyzed in the USFWS January 5, 2016, Programmatic Biological Opinion (PBO)<sup>40</sup>. The PBO outlines activities that are excepted from "take" prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.). The USFWS consistency letter concluded EPA's consultation responsibilities for the Webster WWTF NPDES permitting action under ESA Section 7(a)(2) with respect to the northern long-eared bat. No further ESA section 7 consultation is required with USFWS.

At the beginning of the public comment period, EPA notified USFWS and NOAA Fisheries Protected Resources Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

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<sup>38</sup> See §7 resources for NOAA Fisheries at <https://www.fisheries.noaa.gov/resource/map/greater-atlantic-region-esa-section-7-mapper>.

<sup>39</sup> See §7 resources for USFWS at <https://ecos.fws.gov/ipac/>.

<sup>40</sup> USFWS Event Code: 05E1NE00-2021-E-11912, June 25, 2021.

No additional ESA consultation is required as a result of this permitting action. However, initiation of consultation is required and shall be requested by the EPA or by USFWS/NOAA Fisheries where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the analysis; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this analysis; or (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, initiation of consultation would be required.

## 6.2 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (*see* 16 U.S.C. § 1801 *et seq.*, 1998), EPA is required to consult with the NOAA Fisheries if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat." 16 U.S.C. § 1855(b).

The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." 16 U.S.C. § 1802(10). "Adverse impact" means any impact that reduces the quality and/or quantity of EFH. *See* 50 CFR § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), or site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Webster WWTF, which discharges through Outfall 001 to the French River in Webster, Massachusetts. The portion of the river receiving the discharge is river segment MA42-06.

Based on available EFH information, including the NOAA Fisheries EFH Mapper,<sup>41</sup> EPA has determined that the French River and the associated Quinebaug River Basin are not covered by the EFH designation for riverine systems at latitude 42° 4' 14" N, longitude 71° 53' 21". Therefore, consultation with NOAA Fisheries Habitat and Ecosystem Services Division under the Magnuson-Stevens Fishery Conservation and Management Act is not required.

At the beginning of the public comment period, EPA notified NOAA Fisheries Habitat and Ecosystem Services Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

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<sup>41</sup> NOAA EFH Mapper available at <http://www.habitat.noaa.gov/protection/efh/efhmapper/>

## 7.0 Public Comments, Hearing Requests and Permit Appeals

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:

Doug MacLean  
EPA Region 1  
5 Post Office Square, Suite 100 (06-4)  
Boston, MA 02109-3912  
Telephone: (617) 918-1608  
Email: [maclean.douglas@epa.gov](mailto:maclean.douglas@epa.gov)

Prior to the close of the public comment period, any person, may submit a written request to EPA for a public hearing to consider the Draft Permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the criteria stated in 40 CFR § 124.12 are satisfied. In reaching a final decision on the Draft Permit, EPA will respond to all significant comments in a Response to Comments document attached to the Final Permit and make these responses available to the public at EPA's Boston office and on EPA's website.

Following the close of the comment period, and after any public hearings, if such hearings are held, EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who submitted written comments or requested notice. Within 30 days after EPA serves notice of the issuance of the Final Permit decision, an appeal of the federal NPDES permit may be commenced by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 CFR § 124.19.

## 8.0 Administrative Record

Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this workforce telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at the EPA Boston office. However, any documents relating to this draft can be requested from the individual listed above.

The administrative record on which this Draft Permit is based may be accessed at EPA's Boston office by appointment, Monday through Friday, excluding holidays from Doug MacLean, EPA Region1, 5 Post Office Square, Suite-100 (06-4), Boston, MA 02109-3912 or via email to [maclean.douglas@epa.gov](mailto:maclean.douglas@epa.gov).

June 2021

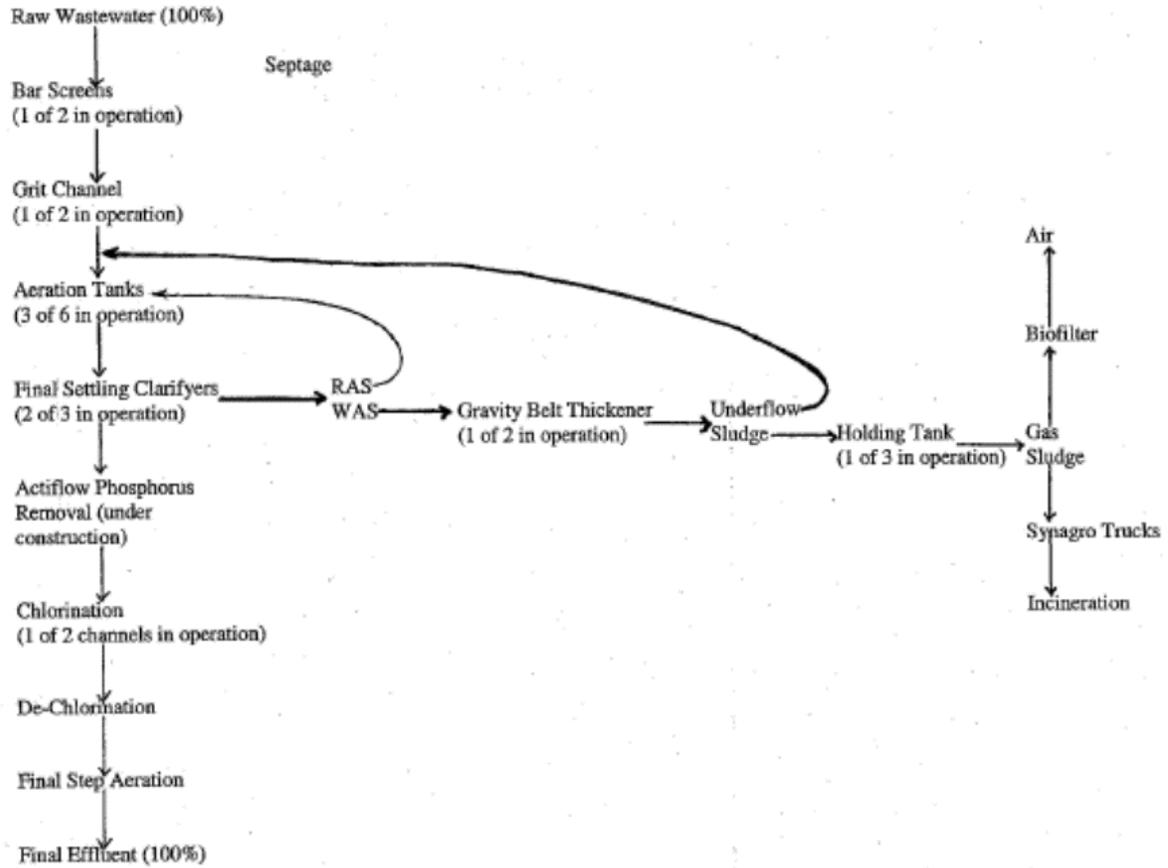
\_\_\_\_\_  
Date

\_\_\_\_\_  
Ken Moraff, Director  
Water Division  
U.S. Environmental Protection Agency

**Figure 1: Location of the Webster WWTF**



Figure 2: Flow diagram



## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Flow	Flow	Flow	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Annual Rolling Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Daily Max	Weekly Ave
Units	MGD	MGD	MGD	lb/d	mg/L	mg/L	mg/L	lb/d
Effluent Limit	6	Report	Report	500	10	10	Report	500
Minimum	2.733	1.683	2.82	32	0	2	2	32
Maximum	3.547	5.337	10.8	111.86	4	6	8	100
Median	2.925	2.923	4.833	52.5	2	3	3	57
No. of Violations	0	N/A	N/A	0	0	0	N/A	0
9/30/2015	2.966	2.124	4.13	54.2	3	5	5	60
10/31/2015	2.976	2.374	2.82					
11/30/2015	2.968	2.482	3.478					
12/31/2015	2.898	2.784	3.6					
1/31/2016	2.899	3.208	3.54					
2/29/2016	2.996	3.841	5.89					
3/31/2016	2.981	3.721	4.834					
4/30/2016	2.904	3.938	8.69	95.24	3	5	6	95
5/31/2016	2.905	2.869	5.82	81.3	3	6	8	91
6/30/2016	2.861	2.314	6.13	78.58	4	6	7	84
7/31/2016	2.827	2.12	5.24	57.65	3	4	5	61
8/31/2016	2.834	2.229	6.05	39.9	2	2	3	40
9/30/2016	2.838	2.179	4.35	36.82	2	2	2	37
10/31/2016	2.849	2.506	3.46					
11/30/2016	2.875	2.794	3.2					
12/31/2016	2.872	2.748	3.223					
1/31/2017	2.87	3.184	3.728					
2/28/2017	2.798	2.981	4.167					
3/31/2017	2.733	2.94	4.133					
4/30/2017	2.778	4.471	7.451	111.86	3	2.5	5	93.22
5/31/2017	2.823	3.416	9.49	56.66	2	2	2	60
6/30/2017	2.86	2.748	3.464	45.84	2	2	2	47
7/31/2017	2.925	2.908	4.87	50.8	2	2	3	55
8/31/2017	2.925	2.224	5.26	39.48	2	2	3	41
9/30/2017	2.903	1.918	3.85	32	2	2	2	34
10/31/2017	2.882	2.254	6.308					
11/30/2017	2.894	2.938	4.097					
12/31/2017	2.892	2.727	3.119					
1/31/2018	2.892	3.184	5.324					

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Flow	Flow	Flow	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Annual Rolling Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Daily Max	Weekly Ave
Units	MGD	MGD	MGD	lb/d	mg/L	mg/L	mg/L	lb/d
Effluent Limit	6	Report	Report	500	10	10	Report	500
2/28/2018	2.991	4.169	5.437					
3/31/2018	3.134	4.646	10.8					
4/30/2018	3.09	3.95	5.678	91.37	3	2	5	59
5/31/2018	3.051	2.949	6.41	55.91	2	3	4	61
6/30/2018	2.994	2.06	4.63	34.87	2	2	2	38
7/31/2018	2.917	1.988	4.434	33.94	2	2	3	34
8/31/2018	2.935	2.433	3.91	55.84	3	3	5	62
9/30/2018	3.02	2.939	6.037	47.81	2	3	2	42
10/31/2018	3.145	3.751	8.23					
11/30/2018	3.334	5.337	6.681					
12/31/2018	3.473	4.265	5.603					
1/31/2019	3.547	4.109	5.885					
2/28/2019	3.501	3.588	3.973					
3/31/2019	3.411	3.56	4.832					
4/30/2019	3.438	4.274	6.92	99.91	3	3	7	75
5/31/2019	3.497	3.656	8.34	65.28	2	5	3	100
6/30/2019	3.517	2.302	4.7019	38.6	2	3	2	46
7/31/2019	3.518	2.005	5.7163	37.91	2	2	4	32
8/31/2019	3.486	2.048	4.5369	36.73	< 2	3	3	37
9/30/2019	3.424	2.192	5.8675	67.37	4	4	6	75
10/31/2019	3.293	2.175	5.1506					
11/30/2019	3.069	2.647	3.106					
12/31/2019	3.038	3.898	6.072					
1/31/2020	2.978	3.389	4.52					
2/29/2020	2.949	3.267	3.877					
3/31/2020	2.921	3.2	4.252					
4/30/2020	2.924	4.306	8.8531	73.58	2	2	2	74
5/31/2020	2.905	3.431	5.082	62.34	2	3	3	69
6/30/2020	2.888	2.094	4.7288	36.61	2	2	3	37
7/31/2020	2.865	1.734	3.3575	33.21	2	3	4	33
8/31/2020	2.835	1.683	3.7075	34.08	2	4	4	39

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	BOD5	BOD5	BOD5	BOD5	BOD5	BOD5	TSS	TSS
	Monthly Ave	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave Min	Weekly Ave	Monthly Ave	Monthly Ave
Units	lb/d	mg/L	mg/L	mg/L	%	lb/d	lb/d	lb/d
Effluent Limit	1500	30	45	Report	85	2250	1500	750
Minimum	45	2	2	3	96.9	36	64	57
Maximum	205	6	16	16	99.4	544	240	261
Median	101	4	4.7	7	98.5	120	159	77.5
No. of Violations	0	0	0	N/A	0	0	0	0
9/30/2015					98.9			75
10/31/2015	66	3	4.7	7	99.1	89	66	
11/30/2015	79	4	4.7	6	98.9	92	106	
12/31/2015	130	6	5.3	7	98	127	180	
1/31/2016	174	6	16	16	97.8	458	173	
2/29/2016	167	5	6.7	10	97.7	198	178	
3/31/2016	148	5	6.7	8	97.6	258	240	
4/30/2016					97.8			172
5/31/2016					98.4			103
6/30/2016					98.5			70
7/31/2016					98			57
8/31/2016					99			67
9/30/2016					99.2			78
10/31/2016	45	2	3	3	99.3	58	85	
11/30/2016	98	4	4	5	97.8	94	183	
12/31/2016	87	4	4.7	6	98.2	112	181	
1/31/2017	130	5	5.3	9	98.1	149	180	
2/28/2017	116	5	10	10	98.1	230	168	
3/31/2017	132	6	9.7	16	96.9	221	213	
4/30/2017					97.6			261
5/31/2017					98.9			95
6/30/2017					99			78
7/31/2017					99.1			92
8/31/2017					98.9			60
9/30/2017					99.2			70
10/31/2017	63	3	2	10	99.1	36	100	
11/30/2017	104	4	6	10	98.4	238	177	
12/31/2017	67	3	4.7	6	99.2	107	149	
1/31/2018	125	5	6.7	8	98.3	159	180	

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	BOD5	BOD5	BOD5	BOD5	BOD5	BOD5	TSS	TSS
	Monthly Ave	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave Min	Weekly Ave	Monthly Ave	Monthly Ave
Units	lb/d	mg/L	mg/L	mg/L	%	lb/d	lb/d	lb/d
Effluent Limit	1500	30	45	Report	85	2250	1500	750
2/28/2018	205	5	12	12	97.1	544	218	
3/31/2018	191	5	5.3	13	97.6	181	210	
4/30/2018					98.6			139
5/31/2018					98.5			135
6/30/2018					99.4			71
7/31/2018					99.3			66
8/31/2018					99			118
9/30/2018					99			120
10/31/2018	82	3	4.3	7	98.3	111	116	
11/30/2018	169	4	4.7	7	97.2	237	212	
12/31/2018	188	5	6.7	12	97.3	254	137	
1/31/2019	88	3	6	5	98.4	274	158	
2/28/2019	77	3	2.3	4	98.5	81	130	
3/31/2019	110	4	4	9	97.9	113	160	
4/30/2019					98.6			139
5/31/2019					99.2			94
6/30/2019					99.1			77
7/31/2019					99			72
8/31/2019					99.2			71
9/30/2019					98.4			59
10/31/2019	51	3	4.3	5	99.2	69	64	
11/30/2019	62	3	3	5	98.7	63	99	
12/31/2019	113	4	3.3	7	97.3	143	119	
1/31/2020	80	3	3	4	98.1	89	115	
2/29/2020	69	3	3.5	5	98.2	98	122	
3/31/2020	67	3	3	4	98.5	61	129	
4/30/2020					98.2			124
5/31/2020					98.5			110
6/30/2020					99.1			76
7/31/2020					99.2			61
8/31/2020					99			59

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TSS	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave Min	Weekly Ave	Weekly Ave
Units	mg/L	mg/L	mg/L	mg/L	mg/L	%	lb/d	lb/d
Effluent Limit	15	30	15	45	Report	85	2250	750
Minimum	2	3	3	4	4	94.6	48	54
Maximum	7	9	6.83	16	29	99	414	255
Median	2	5.5	4	7	7	98	208	82.5
No. of Violations	0	0	0	0	N/A	0	0	0
9/30/2015	2		4		8	98.8		61
10/31/2015		3		7	6	98.9	78	
11/30/2015		5		6	8	98.8	130	
12/31/2015		8		9	12	97.8	205	
1/31/2016		6		10	9	97.7	262	
2/29/2016		6		7	10	97.5	245	
3/31/2016		7		11	13	96.7	414	
4/30/2016	2		5		10	96.4		177
5/31/2016	2		4		10	98.1		112
6/30/2016	2		3		6	98.9		63
7/31/2016	2		3		6	98.6		62
8/31/2016	2		3		7	98.5		57
9/30/2016	3		5		5	98.7		85
10/31/2016		4		5	6	98.8	83	
11/30/2016		8		8	13	96.3	193	
12/31/2016		8		10	10	97	213	
1/31/2017		7		9	10	97	240	
2/28/2017		7		8	10	97	211	
3/31/2017		9		16	29	95.9	363	
4/30/2017	7		6.83		10	94.6		255
5/31/2017	2		3		4	98.1		96
6/30/2017	2		3		6	98.3		83
7/31/2017	2		4		6	98.3		94
8/31/2017	2		3		5	98.6		63
9/30/2017	3		4		7	98.6		72
10/31/2017		5		6	10	98.4	71	
11/30/2017		7		9	14	97.6	354	
12/31/2017		7		10	12	97.9	229	
1/31/2018		7		9	13	96.5	229	

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TSS	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave Min	Weekly Ave	Weekly Ave
Units	mg/L	mg/L	mg/L	mg/L	mg/L	%	lb/d	lb/d
Effluent Limit	15	30	15	45	Report	85	2250	750
2/28/2018		6		8	9	95.6	324	
3/31/2018		6		7	8	97.1	244	
4/30/2018	2		4		5	98.2		136
5/31/2018	3		6		8	96.9		153
6/30/2018	2		4		6	98.9		76
7/31/2018	2		4		6	98.9		63
8/31/2018	4		5		10	98.1		110
9/30/2018	3		6		9	97.6		125
10/31/2018		4		4	6	98	126	
11/30/2018		5		5	8	96.7	237	
12/31/2018		4		5	6	97.8	253	
1/31/2019		5		5	12	97.1	171	
2/28/2019		4		5	6	97.1	187	
3/31/2019		6		8	9	96.2	231	
4/30/2019	2		4		7	98.2		162
5/31/2019	2		3		6	98.7		115
6/30/2019	2		4		5	98.8		75
7/31/2019	2		5		7	98		76
8/31/2019	2		4		6	98.6		70
9/30/2019	2		3		6	98.5		63
10/31/2019		4		4	6	99	48	
11/30/2019		4		5	6	97.9	135	
12/31/2019		4		5	6	98.1	148	
1/31/2020		4		4	8	97.8	137	
2/29/2020		5		6	6	96.5	138	
3/31/2020		5		7	7	96.6	201	
4/30/2020	2		4		4	97.2		140
5/31/2020	2		3		8	97.7		98
6/30/2020	2		4		8	98.2		82
7/31/2020	2		4		6	98.2		64
8/31/2020	3		4		7	98.4		54

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	pH	pH	Fecal Coliform	Fecal Coliform	TRC	TRC	TRC	TRC
	Daily Max	Daily Min	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	SU	SU	#/100mL	#/100mL	ug/L	ug/L	ug/L	ug/L
Effluent Limit	8.3	6.5	200	400	29.7	51.3	Report	Report
Minimum	6.6	6.4	0	0	0	0	0	0
Maximum	7.4	6.9	38	380	1	120	0	120
Median	7	6.65	10	10	0	0	0	0
No. of Violations	0	1	0	0	0	1	N/A	N/A
9/30/2015			12	40	0	0	0	0
10/31/2015			15	100	0	0	0	0
11/30/2015								
12/31/2015								
1/31/2016								
2/29/2016								
3/31/2016								
4/30/2016			10	10	0	0	0	0
5/31/2016			10	10	0	0	0	0
6/30/2016			10	10	0	0	0	0
7/31/2016			10	10	0	0	0	0
8/31/2016			10	10	0	0	0	2
9/30/2016			11	20	0	0	0	0
10/31/2016			12	20	1	120	0	120
11/30/2016								
12/31/2016								
1/31/2017								
2/28/2017								
3/31/2017								
4/30/2017			10	10	0	0	0	0
5/31/2017			10	10	0	0	0	0
6/30/2017			7	10	0	0	0	0
7/31/2017			10	10	0	0	0	0
8/31/2017			10	10	0	0	0	0
9/30/2017			10	10	0	0	0	0
10/31/2017			11	30	0	0	0	0
11/30/2017								
12/31/2017								
1/31/2018								

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	pH	pH	Fecal Coliform	Fecal Coliform	TRC	TRC	TRC	TRC
	Daily Max	Daily Min	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	SU	SU	#/100mL	#/100mL	ug/L	ug/L	ug/L	ug/L
Effluent Limit	8.3	6.5	200	400	29.7	51.3	Report	Report
2/28/2018								
3/31/2018								
4/30/2018			9	40	0	0	0	0
5/31/2018			9	20	0	0	0	0
6/30/2018			13	60	0	0	0	0
7/31/2018			8	10	0	0	0	0
8/31/2018	6.8	6.5	38	380	0	0	0	0
9/30/2018	6.9	6.5	9	30	0	0	0	0
10/31/2018	6.9	6.6	10	10	0	0	0	0
11/30/2018								
12/31/2018	6.9	6.4						
1/31/2019	7	6.6						
2/28/2019	6.6	6.9						
3/31/2019	7.1	6.6						
4/30/2019	7	6.6	10	10	0	0	0	0
5/31/2019	7	6.6	11	30	0	0	0	0
6/30/2019	7	6.6	10	10	0	0	0	0
7/31/2019	6.9	6.7	10	10	0	0	0	0
8/31/2019	7	6.7	< 10	< 10	0	0	0	0
9/30/2019	7.2	6.7	< 10	< 10	0	0	0	0
10/31/2019	7	6.7	< 10	< 10	0	0	0	0
11/30/2019	7.4	6.8						
12/31/2019	7	6.6						
1/31/2020	7	6.5						
2/29/2020	7.1	6.8						
3/31/2020	7.2	6.7						
4/30/2020	7.1	6.7	< 10	< 10	0	0	0	0
5/31/2020	7.4	6.8	< 10	< 10	0	0	0	0
6/30/2020	7	6.7	< 14	270	0	0	0	0
7/31/2020	7	6.7	11	20	0	0	0	0
8/31/2020	7	6.5	< 10	< 10	0	0	0	0

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	DO	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia
	Daily Min	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Weekly Ave
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	6	10	2	5	Report	10	2	5
Minimum	6.6	0.16	0.1	0.12	0.09	0.2	0.1	0.2
Maximum	10.6	1.95	0.5	1.24	2.95	4.4	1	2.9
Median	8.5	0.89	0.155	0.21	0.16	0.885	0.2	0.3
No. of Violations	0	0	0	0	N/A	0	0	0
9/30/2015	8.3		0.2				0.2	
10/31/2015	8.6				0.12			
11/30/2015					0.11			
12/31/2015					0.22			
1/31/2016					0.26			
2/29/2016					0.11			
3/31/2016					0.22			
4/30/2016	9.6	0.16				0.4		
5/31/2016	9			0.12				0.3
6/30/2016	8.5		0.1				0.1	
7/31/2016	8		0.14				0.2	
8/31/2016	8.1		0.11				0.1	
9/30/2016	7.8		0.16				0.2	
10/31/2016	8.9				0.17			
11/30/2016					0.1			
12/31/2016					0.27			
1/31/2017					0.15			
2/28/2017					0.25			
3/31/2017					0.14			
4/30/2017	10.6	0.89				0.885		
5/31/2017	9.6			0.27				0.27
6/30/2017	8.4		0.13				0.1	
7/31/2017	8.6		0.15				0.2	
8/31/2017	8.2		0.13				0.2	
9/30/2017	8.4		0.2				0.2	
10/31/2017	8.3				0.26			
11/30/2017					0.11			
12/31/2017					0.22			
1/31/2018					0.73			

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	DO	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia
	Daily Min	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Weekly Ave
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	6	10	2	5	Report	10	2	5
2/28/2018					1.74			
3/31/2018					2.95			
4/30/2018	9.9	0.81				0.2		
5/31/2018	9.4			0.21				0.3
6/30/2018	8.5		0.17				0.2	
7/31/2018	6.6		0.15				0.2	
8/31/2018	8.1		0.29				0.5	
9/30/2018	8.1		0.5				0.2	
10/31/2018	8.9				0.15			
11/30/2018					0.09			
12/31/2018					2.7			
1/31/2019					2.08			
2/28/2019					0.09			
3/31/2019					0.2			
4/30/2019	9.4	1.95				4.4		
5/31/2019	9.4			1.24				0.2
6/30/2019	8.5		0.22				1	
7/31/2019	7.9		0.14				0.2	
8/31/2019	8.3		0.14				0.2	
9/30/2019	8.5		0.14				0.2	
10/31/2019	8.7				0.09			
11/30/2019					0.1			
12/31/2019					0.4			
1/31/2020					0.09			
2/29/2020					0.1			
3/31/2020					0.14			
4/30/2020	9.8	1.3				2.5		
5/31/2020	9.1			0.15				2.9
6/30/2020	8.5		0.16				0.2	
7/31/2020	8.2		0.21				0.3	
8/31/2020	8.1		0.17				0.2	

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Ammonia	Ammonia	Ammonia	Ammonia	TKN	TKN	Nitrate	Nitrate
	Daily Max	Daily Max	Daily Max	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	15	3	8	Report	Report	Report	Report	Report
Minimum	0.73	0.15	0.22	0.05	0	0	2.5	2.5
Maximum	5.48	3.1	2.86	3.74	5.3	5.3	30	30
Median	3.22	0.24	0.43	0.17	1.2	1.2	12	12
No. of Violations	0	1	0	N/A	N/A	N/A	N/A	N/A
9/30/2015		0.4			0	0	30	30
10/31/2015				0.12	5.3	5.3	21	21
11/30/2015				0.11	0	0	18	18
12/31/2015				0.22	0	0	19	19
1/31/2016				0.26	1.6	1.6	14	14
2/29/2016				0.17	0	0	9.8	9.8
3/31/2016				0.22	1.7	1.7	8.6	8.6
4/30/2016	0.73				1.2	1.2	10	10
5/31/2016			0.43		0	0	9.4	9.4
6/30/2016		0.15			0	0	12	12
7/31/2016		0.2			0	0	21	21
8/31/2016		0.15			0	0	13	13
9/30/2016		0.21			0	0	16	16
10/31/2016				0.17	0	0	16	16
11/30/2016				0.1	1.1	1.1	13	13
12/31/2016				0.27	1.4	1.4	13	13
1/31/2017				0.15	1.9	1.9	10	10
2/28/2017				0.36	0.7	0.7	9.8	9.8
3/31/2017				0.14	1	1	10.3	10.3
4/30/2017	1.27				1.5	1.5	5.39	5.93
5/31/2017			1.45		0.4	0.4	7.8	7.8
6/30/2017		0.22			2.2	2.2	10.4	10.4
7/31/2017		0.24			1	1	11.6	11.6
8/31/2017		0.2			1	1	10.6	10.6
9/30/2017		0.3			1.4	1.4	14.1	14.1
10/31/2017				0.26	1	1	15.5	15.5
11/30/2017				0.11	1	1	13.3	13.3
12/31/2017				0.22	2	2	12.3	12.3
1/31/2018				0.73	1.9	1.9	9	9

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Ammonia	Ammonia	Ammonia	Ammonia	TKN	TKN	Nitrate	Nitrate
	Daily Max	Daily Max	Daily Max	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	15	3	8	Report	Report	Report	Report	Report
2/28/2018				3.74	1.2	1.2	8.4	8.4
3/31/2018				2.95	4.7	4.7	6	6
4/30/2018	3.22				2.7	2.7	11.8	11.8
5/31/2018			0.36		1	1	12.5	12.5
6/30/2018		0.29			1.7	1.7	14.3	14.3
7/31/2018		0.18			1	1	14.9	14.9
8/31/2018		0.47			1	1	16.7	16.7
9/30/2018		3.1			2	2	20.4	20.4
10/31/2018				0.05	1	1	10.4	10.4
11/30/2018				0.09	0.5	0.5	9.6	9.6
12/31/2018				2.7	2.1	2.1	6.6	6.6
1/31/2019				2.08	2.7	2.7	5.7	5.7
2/28/2019				0.16	1.2	1.2	7.2	7.2
3/31/2019				0.2	1.7	1.7	6.9	6.9
4/30/2019	4.39				4.9	4.9	2.5	2.5
5/31/2019			2.86		0.8	0.8	4.6	4.6
6/30/2019		0.63			1.1	0.1	8.5	8.5
7/31/2019		0.24			2	2	12.9	12.9
8/31/2019		0.19			2.1	2.1	12.3	12.3
9/30/2019		0.4			2	2	15.4	15.4
10/31/2019				0.09	< 2	< 2	14.9	14.9
11/30/2019				0.1	2	2	11.6	11.6
12/31/2019				0.4	2	2	12	12
1/31/2020				0.09	1	1	8.1	8.1
2/29/2020				0.13	2	2	12.5	12.5
3/31/2020				0.14	2	2	12.2	12.2
4/30/2020	5.48				1	1	6.6	6.6
5/31/2020			0.22		1.2	1.2	6.2	6.2
6/30/2020		0.23			2	2	14.5	14.5
7/31/2020		0.31			4	4	19.8	19.8
8/31/2020		0.27			4	4	22.1	22.1

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Nitrite	Nitrite	TP	TP	TP	Copper	Copper	Lead
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	0.2	1	Report	17.8	25.7	5.1
Minimum	0	0	0.06	0.046	0.07	0	0	0
Maximum	0.5	0.3	0.14	0.72	2	13.2	14.6	1
Median	0.0115	0.015	0.09	0.38	0.26	8.2	8.4	0
No. of Violations	N/A	N/A	0	0	N/A	0	0	0
9/30/2015	0.03	0.03	0.11		0.15	9.5	9.5	0
10/31/2015	0	0				8.7	8.7	0
11/30/2015	0.02	0.02		0.41	0.51	11	11	0
12/31/2015	0.3	0.3		0.48	0.63	8.6	8.6	0
1/31/2016	0.03	0.03		0.34	0.41	10	10	0
2/29/2016	0.03	0.03		0.29	0.39	4.9	6.5	0
3/31/2016	0.5	0.05		0.72	2	9	9	0
4/30/2016	0	0	0.09		0.25	4.6	4.6	0
5/31/2016	0	0	0.14		0.34	4.4	4.4	0
6/30/2016	0	0	0.12		0.24	9.1	9.1	0
7/31/2016	0.02	0.02	0.09		0.14	10	10	0
8/31/2016	0	0	0.07		0.28	8.9	9.4	0
9/30/2016	0	0	0.08		0.18	10	10	0
10/31/2016	0	0				8.2	8.2	0
11/30/2016	0.01	0.01		0.3	0.37	8.2	8.2	0
12/31/2016	0.02	0.02		0.35	0.48	8.8	8.8	0
1/31/2017	0.01	0.01		0.35	0.46	8	8	0
2/28/2017	0.09	0.09		0.49	0.67	8	12	0
3/31/2017	0.02	0.02		0.38	0.6	7.2	7.2	0
4/30/2017	0.04	0.04	0.11		0.29	3.9	3.9	1
5/31/2017	0.02	0.02	0.06		0.09	2.9	2.9	1
6/30/2017	0.01	0.01	0.06		0.07	5.2	5.2	1
7/31/2017	0	0	0.1		0.16	5.5	5.5	1
8/31/2017	0.01	0.01	0.1		0.14	6.3	7.4	1
9/30/2017	0	0	0.14		0.2	10	10	1
10/31/2017	0	0				9.6	9.6	0
11/30/2017	0.03	0.03		0.45	0.81	9.8	9.8	0
12/31/2017	0.01	0.01		0.34	0.46	8.3	8.3	0
1/31/2018	0.06	0.06		0.32	0.52	7.7	7.7	0

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Nitrite	Nitrite	TP	TP	TP	Copper	Copper	Lead
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	0.2	1	Report	17.8	25.7	5.1
2/28/2018	0.03	0.03		0.27	0.34	7.7	9.9	0
3/31/2018	0.03	0.03		0.23	0.28	7.4	7.4	0
4/30/2018	0	0	0.11		0.15	4.7	4.7	0
5/31/2018	0	0	0.13		0.13	7	7	0
6/30/2018	0.02	0.02	0.11		0.13	6.8	6.8	0
7/31/2018	0	0	0.07		0.12	8.5	8.5	0
8/31/2018	0	0	0.09		0.13	10	13	0
9/30/2018	0	0	0.06		0.08	8.1	8.1	0
10/31/2018	0	0	0.1		0.1	12.3	12.3	0
11/30/2018	0	0		0.28	0.28	9.2	9.2	0
12/31/2018	0.08	0.08		0.46	0.62	6.6	6.6	0
1/31/2019	0.08	0.08		0.046	0.6	5.9	5.9	0
2/28/2019	0.03	0.03		0.6	0.74	7.2	9.5	0
3/31/2019	0.03	0.03		0.52	0.65	7.4	7.4	0
4/30/2019	0.013	0.13	0.08		0.08	0	0	0
5/31/2019	0.04	0.04	0.06		0.07	5.3	5.3	0
6/30/2019	0.11	0.11	0.11		0.16	0	0	0
7/31/2019	0.01	0.01	0.06		0.11	12	12	0
8/31/2019	0	0	0.07		0.1	9.9	10.4	< 1
9/30/2019	0.01	0.01	0.08		0.11	11.2	11.2	0
10/31/2019	< .01	< .01	0.06		0.1	9.6	9.6	< .001
11/30/2019	0.02	0.02		0.59	0.8	8.7	8.7	0
12/31/2019	0.07	0.07		0.37	0.51	9.1	9.1	0
1/31/2020	0.02	0.02		0.38	0.45	5.5	5.5	0
2/29/2020	0.02	0.02		0.47	0.51	9.8	10.7	0
3/31/2020	0	0		0.48	0.68	8.2	8.2	0
4/30/2020	0	0	0.08		0.11	3.5	3.5	0
5/31/2020	0.02	0.02	0.12		0.17	3.5	3.5	0
6/30/2020	0	0	0.13		0.26	7.4	7.4	0
7/31/2020	0.01	0.01	0.09		0.17	9.9	9.9	0
8/31/2020	0.03	0.03	0.06		0.07	13.2	14.6	0

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Lead	Phosphate, dissolved/orthophosphate (as P)	LC50 Acute Ceriodaphnia	C-NOEC Chronic Ceriodaphnia			
	Daily Max	Monthly Ave	Monthly Ave	Daily Max	Daily Max	Daily Min	Daily Min
Units	ug/L	lb/d	mg/L	lb/d	mg/L	%	%
Effluent Limit	Report	Report	Report	Report	Report	100	37
Minimum	0	5	0.12	6	0.17	100	100
Maximum	1	16	0.57	22	0.78	100	100
Median	0	7	0.28	9	0.33	100	100
No. of Violations	N/A	N/A	N/A	N/A	N/A	0	0
9/30/2015	0						
10/31/2015	0						
11/30/2015	0	8	0.37	9	0.46		
12/31/2015	0	7	0.31	10	0.48		
1/31/2016	0	5	0.17	6	0.21		
2/29/2016	0	5	0.17	7	0.2	100	100
3/31/2016	0	6	0.21	9	0.33		
4/30/2016	0						
5/31/2016	0						
6/30/2016	0						
7/31/2016	0						
8/31/2016	0					100	100
9/30/2016	0						
10/31/2016	0						
11/30/2016	0	5	0.2	6	0.24		
12/31/2016	0	5	0.2	6	0.28		
1/31/2017	0	7	0.26	8	0.33		
2/28/2017	0	7	0.29	8	0.33	100	100
3/31/2017	0	5	0.23	7	0.31		
4/30/2017	1						
5/31/2017	1						
6/30/2017	1						
7/31/2017	1						
8/31/2017	1					100	100
9/30/2017	1						
10/31/2017	0						
11/30/2017	0	7	0.28	8	0.35		
12/31/2017	0	6	0.27	6	0.31		
1/31/2018	0	5	0.21	7	0.28		

## Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Lead	Phosphate, dissolved/ort hophosphate (as P)	Phosphate, dissolved/ort hophosphate (as P)	Phosphate, dissolved/ort hophosphate (as P)	Phosphate, dissolved/ort hophosphate (as P)	LC50 Acute Ceriodaphnia	C-NOEC Chronic Ceriodaphnia
	Daily Max	Monthly Ave	Monthly Ave	Daily Max	Daily Max	Daily Min	Daily Min
Units	ug/L	lb/d	mg/L	lb/d	mg/L	%	%
Effluent Limit	Report	Report	Report	Report	Report	100	37
2/28/2018	0	6	0.15	7	0.18	100	100
3/31/2018	0	5	0.12	9	0.17		
4/30/2018	0						
5/31/2018	0						
6/30/2018	0						
7/31/2018	0						
8/31/2018	0					100	100
9/30/2018	0						
10/31/2018	0						
11/30/2018	0	10	0.24	11	0.25		
12/31/2018	0	13	0.35	15	0.46		
1/31/2019	0	16	0.49	22	0.67		
2/28/2019	0	13	0.56	19	0.69	100	100
3/31/2019	0	12	0.43	16	0.6		
4/30/2019	0						
5/31/2019	0						
6/30/2019	0						
7/31/2019	0						
8/31/2019	< 1					100	100
9/30/2019	0						
10/31/2019	< .001						
11/30/2019	0	13	0.57	16	0.78		
12/31/2019	0	10	0.34	14	0.48		
1/31/2020	0	10	0.35	11	0.41		
2/29/2020	0	11	0.43	13	0.46	100	100
3/31/2020	0	11	0.45	14	0.6		
4/30/2020	0						
5/31/2020	0						
6/30/2020	0						
7/31/2020	0						
8/31/2020	0					100	100

## Receiving Water - Monitoring Location - Effluent

Parameter	Ammonia	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc	Hardness	pH
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	SU
	Report	Report	Report	Report	Report	Report	Report	Report	Report
<b>Minimum</b>	0.0511	0.12	Non-Detect	0.0054	Non-Detect	Non-Detect	0.0279	156	7.1
<b>Maximum</b>	1.55	0.425	Non-Detect	0.0146	0.001	0.0091	0.064	207	7.7
<b>Median</b>	0.168	0.1865	Non-Detect	0.00915	Non-Detect	0.0013	0.0392	180	7.45
Feb-16	0.094	0.29	<.0005	0.0054	<.001	<.001	0.046	180	7.5
Aug-16	0.12	0.16	<.001	0.0092	<.001	0.0014	0.064	180	7.4
Feb-17	0.35	0.12	<.001	0.0061	0.001	<.001	0.061	200	7.5
Aug-17	<.05	0.254	<.001	0.0059	<.001	0.0015	0.0279	207	7.1
Feb-18	1.55	0.425	<.001	0.0099	<.001	0.0091	0.039	156	7.6
Aug-18	0.304	0.152	<.001	0.0075	<.001	0.0017		201	7.4
Feb-19	0.134	0.182	<.005	0.0091	<.005	<.005	0.063	160	7.4
Aug-19	0.168	0.191	<.001	0.0102	<.001	0.0012	0.0302	178	7.6
Feb-20	0.0511	0.149	<.001	0.0096	<.001	<.001	0.035	180	7.7
Aug-20	0.18	0.318	<.001	0.0146	<.001	0.0036	0.0392	200	7.2

## Receiving Water - Monitoring Location - Ambient

Parameter	Ammonia	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc	Hardness	pH
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	SU
	Ambient	Ambient	Ambient	Ambient	Ambient	Ambient	Ambient	Ambient	Ambient
Minimum	Non-Detect	0.0106	Non-detect	Non-Detect	Non-Detect	Non-Detect	0.0052	24	6.6
Maximum	0.131	0.086	Non-detect	0.0028	0.001	Non-Detect	0.036	55	7.5
Median	0.09	0.04	Non-detect	0.0018	Non-Detect	Non-Detect	0.01155	33	7.3
Feb-16	0.067	0.048	<.0005	0.0014	0.001	<.001	0.016	32	6.6
Aug-16	0.064	0.036	<.001	0.0026	<.001	<.001	0.032	48	7.4
Feb-17	<.05	0.044	<.001	0.0011	<.001	<.001	0.036	34	7.1
Aug-17	0.104	0.0194	<.001	0.0011	<.001	<.001	0.0052	37	7.4
Feb-18	0.083	0.086	<.001	0.0028	<.001	<.001	0.0176	30	6.9
Aug-18	0.131	0.0269	<.001	0.0018	<.001	<.001	0.0127	36	7.2
Feb-19	0.0946	0.0523	<.001	0.0018	<.001	<.001	0.0089	24	7.2
Aug-19	0.109	0.0268	<.001	0.0028	<.001	<.001	0.0098	31	7.4
Feb-20	0.0956	0.0582	<.001	<.002	<.001	<.001	0.0075	29	7.4
Aug-20	0.111	0.0106	<.001	0.0026	<.001	<.001	0.0104	55	7.5

<b>Date</b>	<b>Ambient P, Station W- 0602 (mg/L)</b>
<b>Min</b>	<b>0.009</b>
<b>Max</b>	<b>0.034</b>
<b>Median</b>	<b>0.019</b>
4/24/13	0.014
9/26/12	0.012
7/25/12	0.026
5/29/12	0.026
10/26/11	0.017
8/31/11	0.027
6/22/11	0.026
4/27/11	0.013
10/6/10	0.019
7/21/10	0.018
10/28/09	0.016
8/26/09	0.027
6/24/09	0.024
4/29/09	0.018
11/19/08	0.017
9/24/08	0.016
7/23/08	0.031
5/21/08	0.016
10/17/07	0.009
8/29/07	0.013
6/19/07	0.026
4/18/07	0.014
9/27/06	0.017
7/19/06	0.032
5/17/06	0.027
10/26/05	0.034
8/24/05	0.03
6/22/05	0.032
4/27/05	0.024

A reasonable potential analysis is completed using a single set of critical conditions for flow and pollutant concentration that will ensure the protection of water quality standards. To determine the critical condition of the effluent, EPA projects an upper bound of the effluent concentration based on the observed monitoring data and a selected probability basis. EPA generally applies the quantitative approach found in Appendix E of EPA’s *Technical Support Document for Water Quality-based Toxics Control (TSD)*<sup>1</sup> to determine the upper bound of the effluent data. This methodology accounts for effluent variability based on the size of the dataset and the occurrence of non-detects (i.e., samples results in which a parameter is not detected above laboratory detection limits). For datasets of 10 or more samples, EPA uses the upper bound effluent concentration at the 95<sup>th</sup> percentile of the dataset. For datasets of less than 10 samples, EPA uses the maximum value of the dataset.

EPA uses the calculated upper bound of the effluent data, along with a concentration representative of the parameter in the receiving water, the critical effluent flow, and the critical upstream flow to project the downstream concentration after complete mixing using the following simple mass-balance equation:-

$$C_s Q_s + C_e Q_e = C_d Q_d$$

Where:

- C<sub>s</sub> = upstream concentration (median value of available ambient data)
- Q<sub>s</sub> = upstream flow (7Q10 flow upstream of the outfall)
- C<sub>e</sub> = effluent concentration (95<sup>th</sup> percentile or maximum of effluent concentration)
- Q<sub>e</sub> = effluent flow of the facility (design flow)
- C<sub>d</sub> = downstream concentration
- Q<sub>d</sub> = downstream flow (Q<sub>s</sub> + Q<sub>e</sub>)

Solving for the downstream concentration results in:

$$C_d = \frac{C_s Q_s + C_e Q_e}{Q_d}$$

When both the downstream concentration (C<sub>d</sub>) and the effluent concentration (C<sub>e</sub>) exceed the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above the water quality standard. *See* 40 CFR § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must

**Appendix B – Reasonable Potential and Limits Calculations**

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contain WQBELs for the parameter. *See* 40 CFR § 122.44(d)(1)(iii). Limits are calculated by using the criterion as the downstream concentration ( $C_d$ ) and rearranging the mass balance equation to solve for the effluent concentration ( $C_e$ ). The table below presents the reasonable potential calculations and, if applicable, the calculation of the limits required in the permit. Refer to the pollutant-specific section of the Fact Sheet for a detailed discussion of these calculations, any assumptions that were made and the resulting permit requirements.

Pollutant	$Q_s$	$C_s$ <sup>1</sup>	$Q_e$	$C_e$ <sup>2</sup>		$Q_d$	$C_d$		Criteria		Reasonable Potential		Limits			
	cfs	mg/L	cfs	Acute (mg/L)	Chronic (mg/L)	cfs	Acute (mg/L)	Chronic (mg/L)	Acute (mg/L)	Chronic (mg/L)	$C_e$ & $C_d$ > Acute Criteria	$C_e$ & $C_d$ > Chronic Criteria	Acute (mg/L)	Chronic (mg/L)		
Ammonia (April)	5.12	0.083	9.29	15	10	14.41	9.7	6.5	17.5	3.6	Y	Y	15	7.1		
Ammonia (May)		0.109		8	5		5.2	3.3	17.5	3.6	Y	Y	8	5		
Ammonia (June-Sept)		0.109		3	2		2.0	1.3	17.5	2.6	Y	Y	3	2		
Ammonia (Cold)		0.083		1.3	1.3		0.9	0.9	17.5	8.2	N	N	N/A	N/A		
Phosphorus		0.019		N/A	0.2		N/A	0.136	N/A	0.10	N/A	Y	N/A	0.14		
		$\mu\text{g/L}$		$\mu\text{g/L}$	$\mu\text{g/L}$		$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$			$\mu\text{g/L}$	$\mu\text{g/L}$
Aluminum		40.0		402.0	402.0		273.3	273.3	750	87	N	Y	N/A	112.9		
Cadmium		0.0		0.0	0.0		0.0	0.0	2.7	0.3	N	N	N/A	N/A		
Copper		1.8		13.7	13.7		9.5	9.5	17.6	11.5	Y	Y	25.7	17.8		
Lead		0.0		0.0	5.1		0.0	3.3	111.5	4.3	N	Y	N/A	5.1		
Nickel		0.0		6.7	6.7		4.3	4.3	577.1	64.2	N	N	N/A	N/A		
Zinc		11.6		64.0	64.0		45.4	45.4	147.4	147.4	N	N	N/A	N/A		

<sup>1</sup>Median concentration for the receiving water just upstream of the facility’s discharge taken from the WET testing data during the review period (see Appendix A).

<sup>2</sup>Values represent the 95<sup>th</sup> percentile (for  $n \geq 10$ ) or maximum (for  $n < 10$ ) concentrations from the DMR data and/or WET testing data during the review period (see Appendix A). If the pollutant already has a WQBEL (for either acute or chronic conditions), the value represents the existing limit.

**APPENDIX C**

**NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed**

**Summary of Massachusetts Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data**

Permit #	Name	Type	2016-2020 Avg Flow (MGD)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2019 Average Load (lb/day)	2020 Average Load (lb/day)	2016-2020 Avg Load (lb/day)
<b>Total Massachusetts Out-of-Basin Load</b>			<b>143</b>	<b>9,767</b>	<b>10,557</b>	<b>10,631</b>	<b>11,369</b>	<b>10,142</b>	<b>10,493</b>
<b>Total Massachusetts Connecticut River Load</b>			<b>96</b>	<b>7,695</b>	<b>8,390</b>	<b>8,341</b>	<b>9,125</b>	<b>8,123</b>	<b>8,334</b>
MA0101613	SPRINGFIELD REGIONAL WTP	POTW	37.25	1,643	1,953	1,684	2,593	2,012	<b>1,977</b>
MA0101630	HOLYOKE WPCF	POTW	7.65	687	747	593	589	462	<b>616</b>
MA0101508	CHICOPEE WPC	POTW	7.78	1,854	1,872	1,895	1,957	1,929	<b>1,901</b>
MA0101818	NORTHAMPTON WWTP	POTW	3.74	355	393	453	482	493	<b>435</b>
MA0100218	AMHERST WWTP	POTW	3.68	335	342	377	375	265	<b>339</b>
MA0101800	WESTFIELD WWTP	POTW	2.69	221	189	211	235	337	<b>239</b>
MA0101168	PALMER WPCF	POTW	1.54	84	100	125	136	72	<b>103</b>
MA0100994	GARDNER WWTF	POTW	3.08	377	455	404	429	357	<b>405</b>
MA0100455	SOUTH HADLEY WWTF	POTW	2.50	288	364	315	325	397	<b>338</b>
MA0101478	EASTHAMPTON WWTP	POTW	2.88	262	329	639	399	234	<b>373</b>
MA0101214	GREENFIELD WPCF	POTW	3.02	460	386	482	444	514	<b>457</b>
MA0100340	TEMPLETON WWTF	POTW	0.29	18	21	35	15	29	<b>24</b>
MA0101052	ERVING WWTP #2	POTW	1.66	38	33	25	31	38	<b>33</b>
MA0100137	MONTAGUE WWTF	POTW	0.82	55	215	78	67	41	<b>91</b>
MA0100005	ATHOL WWTF	POTW	0.87	40	39	44	43	35	<b>40</b>
MA0101567	WARREN WWTP	POTW	0.22	124	38	55	44	32	<b>58</b>
MA0101257	ORANGE WWTP	POTW	0.98	58	91	91	67	78	<b>77</b>
MA0100862	WINCHENDON WPCF	POTW	0.52	29	48	40	35	40	<b>38</b>
MA0100919	SPENCER WWTP	POTW	0.41	31	29	71	102	88	<b>64</b>
MA0101516	ERVING WWTP #1	POTW	0.13	3.7	10	7.5	5	14	<b>8</b>
MA0100889	WARE WWTP	POTW	0.57	87	72	78	98	94	<b>86</b>
MA0102148	BELCHERTOWN WRF	POTW	0.37	11	11	5.6	8	5	<b>8</b>
MAG580004	SOUTH DEERFIELD WWTP	POTW	0.37	18	18	27	15	23	<b>20</b>
MA0101061	NORTH BROOKFIELD WWTP	POTW	0.35	40	47	50	138	56	<b>66</b>
MA0100099	HADLEY WWTP	POTW	0.38	65	109	67	69	65	<b>75</b>

**APPENDIX C**

**NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed**

**Summary of Massachusetts Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data**

<b>Permit #</b>	<b>Name</b>	<b>Type</b>	<b>2016-2020 Avg Flow (MGD)</b>	<b>2016 Average Load (lb/day)</b>	<b>2017 Average Load (lb/day)</b>	<b>2018 Average Load (lb/day)</b>	<b>2019 Average Load (lb/day)</b>	<b>2020 Average Load (lb/day)</b>	<b>2016-2020 Avg Load (lb/day)</b>
MA0101290	HATFIELD WWTF	POTW	0.16	28	28	27	29	26	<b>28</b>
MAG580005	SUNDERLAND WWTF	POTW	0.17	13	10	9.3	5	6	<b>9</b>
MA0032573	NORTHFIELD MT HERMON SCHOOL WWTP	POTW	0.067	15	10	10	8	8	<b>10</b>
MA0103152	BARRE WWTF	POTW	0.18	50	50	49	43	38	<b>46</b>
MA0100200	NORTHFIELD WWTF	POTW	0.087	6.5	10	14	12	10	<b>10</b>
MAG580002	SHELBURNE WWTF	POTW	0.17	17	17	21	15	21	<b>18</b>
MAG580001	OLD DEERFIELD WWTP	POTW	0.072	13	12	12	14	10	<b>12</b>
MA0100102	HARDWICK WPCF	POTW	0.11	13	4.3	17	7	4	<b>9</b>
MA0101265	HUNTINGTON WWTP	POTW	0.059	5.6	4.3	5.2	2	3	<b>4</b>
MAG580003	CHARLEMONT WWTF	POTW	0.017	4.8	4.8	4.8	3	5	<b>5</b>
MA0102431	HARDWICK WWTP	POTW	0.014	11	6.9	2.3	2	2	<b>5</b>
MA0100161	ROYALSTON WWTP	POTW	0.00877	0.43	0.49	0.60	1	1	<b>1</b>
MA0100188	MONROE WWTF	POTW	0.012	1.2	2.3	1.7	1	2	<b>2</b>
MA0102776	ERVING WWTP #3	POTW	0.0054	6.9	8.0	7.5	2	7	<b>6</b>
MA0110043	MCLAUGHLIN STATE TROUT HATCHERY	IND	6.71	43	41	37	38	33	<b>38</b>
MA0110035	MCLAUGHLIN/SUNDERLAND STATE FISH HATCHERY	IND	1.95	19	20	25	18	19	<b>20</b>
MA0110051	MCLAUGHLIN/BITZER STATE TROUT HATCHERY	IND	1.45	12	8.2	8.2	8	10	<b>9</b>
MA0000469	SEAMAN PAPER OF MASSACHUSETTS	IND	0.81	53	62	46	56	47	<b>53</b>
MA0003697	BARNHARDT MANUFACTURING	IND	0.28	49	54	96	61	33	<b>59</b>
MA0040207	CHANG FARMS INC	IND	0.21	34	20	20	22	9	<b>21</b>
MA0110264	AUSTRALIS AQUACULTURE, LLC	IND	0.14	116	107	74	74	117	<b>97</b>
MA0001350	LS STARRETT PRECISION TOOLS	IND	0.011	0.08	0.07	0.04	0	0	<b>0</b>
MA0000272	PAN AM RAILWAYS YARD	IND	0.016	0.12	0.47	0.18	0	0	<b>0</b>
<b>Total Massachusetts Housatonic Load</b>			<b>17</b>	<b>1,509</b>	<b>1,612</b>	<b>1,707</b>	<b>1,668</b>	<b>1,485</b>	<b>1,596</b>
MA0101681	PITTSFIELD WWTF	POTW	10.69	1,145	1,245	1,319	1,241	1,171	<b>1,224</b>
MA0101524	GREAT BARRINGTON WWTF	POTW	0.98	100	99	124	133	88	<b>109</b>
MA0000671	CRANE WWTP	POTW	3.01	108	116	107	147	114	<b>118</b>
MA0100153	LEE WWTF	POTW	0.65	14	15	35	27	17	<b>22</b>

**APPENDIX C**

**NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed**

**Summary of Massachusetts Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data**

Permit #	Name	Type	2016-2020 Avg Flow (MGD)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2019 Average Load (lb/day)	2020 Average Load (lb/day)	2016-2020 Avg Load (lb/day)
MA0100935	LENOX CENTER WWTF	POTW	0.64	59	71	78	69	48	<b>65</b>
MA0101087	STOCKBRIDGE WWTP	POTW	0.18	16	13	10	18	22	<b>16</b>
MA0103110	WEST STOCKBRIDGE WWWTF	POTW	0.013	4.3	5.0	3.7	4	3	<b>4</b>
MA0001716	MEADWESTVACO CUSTOM PAPERS LAUREL MILL	IND	0.30	5.7	7.2	7.8	4	5	<b>6</b>
MA0001848	ONYX SPECIALTY PAPERS INC - WILLOW MILL	IND	0.83	44	33	22	27	17	<b>29</b>
MA0005011	PAPERLOGIC TURNERS FALLS MILL(6)	IND	0.00	12	6.5	Term	Term	Term	<b>Term</b>
<b>Total Massachusetts Thames River Load</b>			<b>6</b>	<b>564</b>	<b>556</b>	<b>583</b>	<b>576</b>	<b>534</b>	<b>563</b>
MA0100439	WEBSTER WWTF	POTW	2.98	328	292	344	325	341	<b>326</b>
MA0100901	SOUTHBRIDGE WWTF	POTW	1.85	154	151	130	145	122	<b>140</b>
MA0100421	STURBRIDGE WPCF	POTW	0.48	18	19	20	22	23	<b>20</b>
MA0100170	OXFORD ROCHDALE WWTP	POTW	0.27	0.23	0.57	0.49	3	4	<b>2</b>
MA0101141	CHARLTON WWTF	POTW	0.22	41	68	70	55	32	<b>53</b>
MA0101796	LEICESTER WATER SUPPLY WWTF	POTW	0.18	22	26	19	26	12	<b>21</b>

**APPENDIX C**

**NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed**

**Summary of New Hampshire Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data**

Permit #	Name	Type	2016-2020 Avg Flow (MGD)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2019 Average Load (lb/day)	2020 Average Load (lb/day)	2016-2020 Avg Load (lb/day)
<b>Total New Hampshire Out-of-Basin Load</b>			<b>15.9</b>	<b>1,370</b>	<b>1,555</b>	<b>1,154</b>	<b>1,066</b>	<b>956</b>	<b>1,220</b>
NH0000621	BERLIN STATE FISH HATCHERY	IND	4.13	13	15	8.7	2	9	10
NH0100790	KEENE WWTF	POTW	2.66	<u>394</u>	<u>452</u>	<u>40</u>	<b>21</b>	<b>17</b>	185
NH0101257	CLAREMONT WWTF	POTW	1.51	<u>161</u>	163	146	<b>158</b>	<b>178</b>	161
NH0100366	LEBANON WWTF	POTW	1.46	132	127	152	<b>138</b>	<b>113</b>	132
NH0100099	HANOVER WWTF	POTW	1.26	313	350	361	<b>308</b>	<b>233</b>	313
NH0100153	LITTLETON WWTP	POTW	0.64	24	31	45	<b>27</b>	<b>35</b>	32
NH0100200	NEWPORT WWTF	POTW	0.54	<u>80</u>	<u>80</u>	<u>79</u>	<b>75</b>	<b>67</b>	76
NH0100145	LANCASTER WWTF	POTW	0.71	45	72	63	<b>65</b>	<b>59</b>	61
NH0100765	CHARLESTOWN WWTP	POTW	0.27	12	19	22	<b>18</b>	<b>18</b>	18
NH0000744	NH DES (TWIN MTN STATE FISH HATCHERY)	IND	0.74	6.2	5.5	5.1	<b>4</b>	<b>5</b>	5
NH0100544	SUNAPEE WWTF	POTW	0.38	<u>32</u>	50	33	<b>32</b>	<b>22</b>	34
NHG580315	COLEBROOK WWTP	POTW	0.26	21	31	31	<b>30</b>	<b>43</b>	31
NHG580226	GROVETON WWTP	POTW	0.11	10	12	14	<b>16</b>	<b>9</b>	12
NHG580978	WOODSVILLE WWTF	POTW	0.23	19	19	13	<b>16</b>	<b>16</b>	17
NH0101392	BETHLEHEM VILLAGE WWTP (1)	POTW	0.20	25	29	25	<b>24</b>	<b>25</b>	26
NHG580421	LISBON WWTF	POTW	0.11	19	17	17	<b>18</b>	<b>14</b>	17
NH0100382	HINSDALE WWTP	POTW	0.19	11	20	16	<b>15</b>	<b>13</b>	15
NHG580404	WINCHESTER WWTP	POTW	0.12	3.9	13	8.3	<b>9</b>	<b>6</b>	8
NH0101052	TROY WWTF	POTW	0.07	12	13	25	<b>26</b>	<b>17</b>	19
NH0100510	WHITEFIELD WWTF	POTW	0.12	15	18	24	<b>47</b>	<b>38</b>	28
NH0101150	WEST SWANZEY WWTP	POTW	0.07	7.8	7.8	15	<b>8</b>	<b>11</b>	10
NH0101168	MERIDEN VILLAGE WATER DISTRICT	POTW	0.03	1.4	2.9	1.3	<b>1</b>	<b>1</b>	1
NHG581206	NORTHUMBERLAND VILLAGE WPCF	POTW	0.04	3.5	2.6	3.1	<b>3</b>	<b>2</b>	3
NHG580536	STRATFORD VILLAGE SYSTEM	POTW	0.01	3.9	2.5	2.8	<b>2</b>	<b>2</b>	3
NHG580391	CHESHIRE COUNTY MAPLEWOOD NURSING HOME	POTW	0.01	1.3	1.5	1.3	<b>1</b>	<b>1</b>	1
NHG581214	STRATFORD-MILL HOUSE	POTW	0.01	2.2	1.8	2.3	<b>4</b>	<b>2</b>	2
NHG581249	LANCASTER GRANGE WWTP	POTW	0.00	0.45	0.49	0.44	<b>0</b>	<b>1</b>	0

**APPENDIX C**

**NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed**

**Summary of Vermont Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data**

Permit #	Name	2016-2020 Avg Flow (MGD)	2016 load (lb/day)	2017 load (lb/day)	2018 load (lb/day)	2019 load (lb/day)	2020 load (lb/day)	2016-2020 Avg Load (lb/day)
	<b>Total Vermont Out-of-Basin Load</b>	<b>7.9</b>	<b>1,203</b>	<b>1,273</b>	<b>1,419</b>	<b>1,044</b>	<b>1,129</b>	<b>1,213</b>
VT0100064	BRATTLEBORO WWTF	1.21	446	501	421	297.0	287.1	390.5
VT0100374	SPRINGFIELD WWTF	1.00	133	120	130	77.1	98.9	112.0
VT0000248	FIBERMARK	1.21	89	106	92	96.8	87.7	94.3
VT0100579	ST JOHNSBURY	0.81	70	76	146	145.6	108.7	109.2
VT0100013	BELLOWS FALLS WWTF	0.42	136	102	179	108.7	146.4	134.4
VT0101010	HARTFORD WWTF	0.66	30	34	89	26.8	26.6	41.2
VT0100919	WINDSOR WWTF	0.27	66	65	71	50.0	87.4	68.0
VT0100595	LYNDON WWTP	0.15	16	24	21	24.3	15.2	20.1
VT0100731	READSBORO WPC	0.03	2.8	3.8	4.0	2.9	4.3	3.5
VT0100145	LUDLOW WWTF	0.39	35	41	42	56.5	63.9	47.7
VT0100757	WOODSTOCK WWTP	0.22	24	26	22	19.5	20.2	22.2
VT0100285	RANDOLPH	0.16	21	20	28	4.7	71.2	29.2
VT0100978	HARTFORD - QUECHEE	0.23	12	12	10	11.2	9.6	11.2
VT0101141	SHERBURNE WPCF	0.08	7.7	10	16	8.4	9.4	10.2
VT0000108	PUTNEY PAPER COMPANY MILL & LAGOONS	0.11	20	22	17	20.3	1.0	16.1
VT0000019	WEIDMANN ELECTRICAL TECHNOLOGY INC	0.16	1.4	1.2	1.7	1.9	1.7	1.6
VT0100081	CHESTER MTP	0.15	4.5	5.6	7.6	9.3	15.0	8.4
VT0100625	CANAAN MTP	0.10	16	19	17	12.0	16.0	15.9
VT0100862	CAVENDISH WWTF	0.06	9	11	15	10.4	8.4	10.9
VT0100706	WILMINGTON WWTP	0.08	10.0	4.7	17.2	11.0	10.4	10.6
VT0100803	BRADFORD WPCP	0.08	7.7	9.4	8.5	9.0	4.6	7.9
VT0100048	BETHEL	0.06	2.4	6.5	3.5	7.9	7.5	5.6
VT0100277	PUTNEY	0.05	11	16	21	7.3	5.4	12.0
VT0101061	LUNENBURG FIRE DISTRICT #2	0.05	5.6	3.2	7.8	3.7	2.5	4.6
VT0100854	ROYALTON WWTF	0.03	4.7	7.7	5.0	4.1	3.9	5.1
VT0100633	DANVILLE WPCF	0.03	7.6	4.4	4.3	4.4	4.0	4.9

**APPENDIX C**

**NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed**

**Summary of Vermont Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data**

Permit #	Name	2016-2020 Avg Flow (MGD)	2016 load (lb/day)	2017 load (lb/day)	2018 load (lb/day)	2019 load (lb/day)	2020 load (lb/day)	2016-2020 Avg Load (lb/day)
VT0100943	CHELSEA WWTF	0.02	4.8	8.9	9.9	4.2	3.3	6.2
VT0100749	S. WOODSTOCK WWTF	0.02	0.7	1.2	2.1	2.2	1.8	1.6
VT0101044	WHITINGHAM(JACKSONVILLE)	0.02	3.4	2.8	3.1	3.1	2.9	3.1
VT0100846	BRIDGEWATER WWTF	0.01	1.0	1.1	1.1	0.9	1.0	1.0
VT0100447	WINDSOR-WESTON HEIGHTS	0.01	1.2	0.88	1.0	0.5	0.3	0.8
VT0100765	WOODSTOCK - TAFTSVILLE	0.00	0.22	0.60	0.87	0.8	0.9	0.7
VT0101109	WHITINGHAM	0.01	1.5	1.2	3.0	0.8	0.7	1.4
VT0100951	RYEGATE FIRE DEPARTMENT .#2	0.00	1.9	2.1	0.76	0.5	0.8	1.2

NOTES:

- 1) italics = estimated load based on average conc & flow from other years, or if no data for any years, assumed concentration of 19.6 mg/L.
- 2) The loads represent annual totals, based on annual daily average flow and daily average nitrogen concentration.
- 3) Term = Permit was terminated in that year
- 4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.

## Appendix D

### **EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS**

This regional interpretative statement provides notice to the public of EPA Region 1's interpretation of the Clean Water Act ("CWA" or "Act") and implementing regulations, and advises the public of relevant policy considerations, regarding the applicability of the National Pollutant Discharge Elimination System ("NPDES") program to publicly owned treatment works ("POTWs") that include municipal satellite sewage collection systems ("regionally integrated POTWs"). When issuing NPDES permits to these types of sanitary sewer systems, it is EPA Region 1's practice to include and regulate the owners/operators of the municipal satellite collection systems through a co-permitting structure. This interpretative statement is intended to explain, generally, the basis for this practice. EPA Region 1's decision in any particular case will be made by applying the law and regulations on the basis of specific facts when permits are issued.

EPA has set out a national policy goal for the nation's sanitary sewer systems to adhere to strict design and operational standards:

"Proper [operation and maintenance] of the nation's sewers is integral to ensuring that wastewater is collected, transported, and treated at POTWs; and to reducing the volume and frequency of ...[sanitary sewer overflow] discharges. Municipal owners and operators of sewer systems and wastewater treatment facilities need to manage their assets effectively and implement new controls, where necessary, as this infrastructure continues to age. Innovative responses from all levels of government and consumers are needed to close the gap."<sup>1</sup>

Because ownership/operation of a regionally integrated POTW is divided among multiple parties, the owner/operator of the treatment plant many times lacks the means to implement comprehensive, system-wide operation and maintenance ("O & M") procedures. Failure to properly implement O & M measures in a POTW can cause, among other things, excessive extraneous flow (*i.e.*, inflow and infiltration) to enter, strain and occasionally overload treatment system capacity. This failure not only impedes EPA's national policy goal concerning preservation of the nation's wastewater infrastructure assets, but also frustrates achievement of the water quality- and technology-based requirements of CWA § 301 to the extent it results in sanitary sewer overflows and degraded treatment plant performance, with adverse impacts on human health and the environment.

In light of these policy objectives and legal requirements, it is EPA Region 1's permitting practice to subject all portions of the POTW to NPDES requirements in order to ensure that the treatment system as a whole is properly operated and maintained and that human health and water quality impacts resulting from excessive extraneous flow are minimized. The approach of addressing O&M concerns in a regionally integrated treatment works by adding municipal

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<sup>1</sup> See *Report to Congress: Impacts and Control of CSOs and SSOs* (EPA 833-R-04-001) (2004), at p. 10-2. See also "1989 National CSO Control Strategy," 54 Fed. Reg. 37371 (September 8, 1989).

satellite collection systems as co-permittees is consistent with the definition of “publicly owned treatment works,” which by definition includes sewage collection systems. Under this approach, the POTW in its entirety is subject to NPDES regulation as a point source discharger under the Act. This entails imposition of permitting requirements applicable to the POTW treatment plant along with a more limited set of conditions applicable to the connected municipal satellite collection systems.

The factual and legal basis for the Region’s position is set forth in greater detail in *Attachment A*.

## Attachment A

### **ANALYSIS SUPPORTING EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS**

- Exhibit A* List of regional centralized POTW treatment plants and municipal satellite collection systems subject to the co-permittee policy
- Exhibit B* Analysis of extraneous flow trends for representative systems
- Exhibit C* List of municipal satellite collection systems that have had SSOs
- Exhibit D* Form of Regional Administrator's waiver of permit application requirements for municipal satellite collection systems

#### Introduction

On May 28, 2010, the U.S. EPA Environmental Appeals Board (“Board”) issued a decision remanding to the Region certain NPDES permit provisions that included and regulated satellite collection systems as co-permittees. *See In re Upper Blackstone Water Pollution Abatement District*, NPDES Appeal Nos. 08-11 to 08-18 & 09-06, 14 E.A.D. \_\_\_ (*Order Denying Review in Part and Remanding in Part*, EAB, May 28, 2010).<sup>2</sup> While the Board “did not pass judgment” on the Region’s position that its NPDES jurisdiction encompassed the entire POTW and not only the treatment plant, it held that “where the Region has abandoned its historical practice of limiting the permit only to the legal entity owning and operating the wastewater treatment plant, the Region had not sufficiently articulated in the record of this proceeding the statutory, regulatory, and factual bases for expanding the scope of NPDES authority beyond the treatment plant owner/operator to separately owned/operated collection systems that do not discharge directly to waters of the United States, but instead that discharge to the treatment plant.” *Id.*, slip op. at 2, 18. In the event the Region decided to include and regulate municipal satellite collection systems as co-permittees in a future permit, the Board posed several questions for the Region to address in the analysis supporting its decision:

- (1) Is the scope of NPDES authority limited to owners/operators of the treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that comprise the wider POTW?

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<sup>2</sup> The decision is available on the Board’s website via the following link:  
[http://yosemite.epa.gov/oa/EAB\\_Web\\_Docket.nsf/30b93f139d3788908525706c005185b4/34e841c87f346d94852577360068976f!OpenDocument](http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/30b93f139d3788908525706c005185b4/34e841c87f346d94852577360068976f!OpenDocument).

- (2) If the latter, how far up the collection system does NPDES jurisdiction reach, *i.e.*, where does the “collection system” end and the “user” begin?
- (3) Do municipal satellite collection systems “discharge [ ] a pollutant” within the meaning of the statute and regulations?
- (4) Are municipal satellite collection systems “indirect dischargers” and thus excluded from NPDES permitting requirements?
- (5) Is the Region’s rationale for regulating municipal satellite collection systems as co-permittees consistent with the references to “municipality” in the regulatory definition of POTW, and the definition’s statement that “[t]he term also means the municipality...which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works”?
- (6) Is the Region’s rationale consistent with the permit application and signatory requirements under NPDES regulations?

See *Blackstone, slip op.* at 18, 20, n. 17.

This regional interpretative statement is, in part, a response to the Board’s decision. It details the legal and policy bases for regulating as co-permittees publicly owned treatment works (“POTWs”) that include municipal satellite collection systems. Region 1’s analysis is divided into five sections. First, the Region provides context for the co-permitting approach by briefly describing the health and environmental impacts associated with poorly maintained sanitary sewer systems. Second, the Region outlines its evolving permitting practice regarding regionally integrated POTWs, particularly its attempts to ensure that such entity’s municipal satellite collection systems are properly maintained and operated. Third, the Region explains the legal authority to include municipal satellite collection systems as co-permittees when permitting regionally integrated POTWs. In this section, the Region answers the questions posed by the Board in the order presented above. Fourth, the Region sets forth the basis for the specific conditions to which the municipal satellite collection systems are subject as co-permittees. Finally, the Region discusses other considerations informing its decision to employ a co-permittee structure when permitting regionally integrated POTWs.

## I. Background

A sanitary sewer system (SSS) is a wastewater collection system owned by a state or municipality that is designed to collect and convey only sanitary wastewater (domestic sewage from homes as well as industrial and commercial wastewater).<sup>3</sup> The purpose of these systems is

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<sup>3</sup> A combined sewer, on the other hand, is a type of sewer system that collects and conveys sanitary sewage and stormwater runoff in a single-pipe system to a POTW treatment plant. *See generally* Report to Congress: Impacts and Control of CSOs and SSOs (EPA 833-R-04-001) (2004), from which EPA Region 1 has drawn this background material.

to transport wastewater uninterrupted from its source to a treatment facility. Developed areas that are served by sanitary sewers often also have a separate storm sewer system (*e.g.*, storm drains) that collects and conveys runoff, street wash waters and drainage and discharges them directly to a receiving water (*i.e.*, without treatment at a POTW). While sanitary sewers are not designed to collect large amounts of runoff from precipitation events or provide widespread drainage, they typically are built with some allowance for higher flows that occur during periods of high groundwater and storm events. They are thus able to handle minor and controllable amounts of extraneous flow (*i.e.*, inflow and infiltration, or I/I) that enter the system. Inflow generally refers to water other than wastewater—typically precipitation like rain or snowmelt—that enters a sewer system through a direct connection to the sewer. Infiltration generally refers to other water that enters a sewer system from the ground, for example through defects in the sewer.

Municipal sanitary sewer collection systems can consist of a widespread network of pipes and associated components (*e.g.*, pump stations). These systems provide wastewater collection service to the community in which they are located. In some situations, the municipality that owns the collector sewers may not provide treatment of wastewater, but only conveys its wastewater to a collection system that is owned and operated by a different municipal entity (such as a regional sewer district). This is known as a satellite community. A “satellite” community is a sewage collection system owner/operator that does not have ownership of the treatment facility and a specific or identified point of discharge but rather the responsibility to collect and convey the community’s wastewater to a POTW treatment plant for treatment. *See* 75 Fed. Reg. 30395, 30400 (June 1, 2010).

Municipal sanitary sewer collection systems play a critical role in protecting human health and the environment. Proper operation and maintenance of sanitary sewer collection systems is integral to ensuring that wastewater is collected, transported, and treated at POTW treatment plants. Through effective operation and maintenance, collection system operators can maintain the capacity of the collection system; reduce the occurrence of temporary problem situations such as blockages; protect the structural integrity and capacity of the system; anticipate potential problems and take preventive measures; and indirectly improve treatment plant performance by minimizing deterioration due to I/I-related hydraulic overloading.

Despite their critical role in the nation’s infrastructure, many collection systems exhibit poor performance and are subjected to flows that exceed system capacity. Untreated or partially treated overflows from a sanitary sewer system are termed “sanitary sewer overflows” (SSOs). SSOs include releases from sanitary sewers that reach waters of the United States as well as those that back up into buildings and flow out of manholes into city streets.

There are many underlying reasons for the poor performance of collection systems. Much of the nation’s sanitary sewer infrastructure is old, and aging infrastructure has deteriorated with time. Communities also sometimes fail to provide capacity to accommodate increased sewage delivery and treatment demand from increasing populations. Furthermore, institutional arrangements relating to the operation of sewers can pose barriers to coordinated action, because many

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municipal sanitary sewer collection systems are not entirely owned or operated by a single municipal entity.

The performance and efficiency of municipal collection systems influence the performance of sewage treatment plants. When the structural integrity of a sanitary sewer collection system deteriorates, large quantities of infiltration (including rainfall-induced infiltration) and inflow can enter the collection system, causing it to overflow. These extraneous flows are among the most serious and widespread operational challenges confronting treatment works.<sup>4</sup>

Infiltration can be long-term seepage of water into a sewer system from the water table. In some systems, however, the flow characteristics of infiltration can resemble those of inflow, *i.e.*, there is a rapid increase in flow during and immediately after a rainfall event, due, for example, to rapidly rising groundwater. This phenomenon is sometimes referred to as rainfall-induced infiltration.

Sanitary sewer systems can also overflow during periods of normal dry weather flows. Many sewer system failures are attributable to natural aging processes or poor operation and maintenance. Examples include years of wear and tear on system equipment such as pumps, lift stations, check valves, and other moveable parts that can lead to mechanical or electrical failure; freeze/thaw cycles, groundwater flow, and subsurface seismic activity that can result in pipe movement, warping, brittleness, misalignment, and breakage; and deterioration of pipes and joints due to root intrusion or other blockages.

Inflow and infiltration impacts are often regional in nature. Satellite collection systems in the communities farthest from the POTW treatment plant can cause sanitary sewer overflows (“SSOs”) in communities between them and the treatment plant by using up capacity in the interceptors. This can cause SSOs in the interceptors themselves or in the municipal sanitary sewers that lead to them. The implication of this is that corrective solutions often must also be regional in scope to be effective.

The health and environmental risks attributed to SSOs vary depending on a number of factors including location and season (potential for public exposure), frequency, volume, the amount and type of pollutants present in the discharge, and the uses, conditions, and characteristics of the receiving waters. The most immediate health risks associated with SSOs to waters and other areas with a potential for human contact are associated with exposure to bacteria, viruses, and other pathogens.

Human health impacts occur when people become ill due to contact with water or ingestion of water or shellfish that have been contaminated by SSO discharges. In addition, sanitary sewer systems can back up into buildings, including private residences. These discharges provide a

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<sup>4</sup> In a 1989 Water Pollution Control Federation survey, 1,003 POTWs identified facility performance problems. Infiltration and inflow was the most frequently cited problem, with 85 percent of the facilities reporting I/I as a problem. I/I was cited as a major problem by 41 percent of the facilities (32 percent as a periodic problem). [BP: Is there anything more recent?]

direct pathway for human contact with untreated wastewater. Exposure to land-based SSOs typically occurs through the skin via direct contact. The resulting diseases are often similar to those associated with exposure through drinking water and swimming (*e.g.*, gastroenteritis), but may also include illness caused by inhaling microbial pathogens. In addition to pathogens, raw sewage may contain metals, synthetic chemicals, nutrients, pesticides, and oils, which also can be detrimental to the health of humans and wildlife.

## II. EPA Region 1 Past Practice of Permitting POTWs that Include Municipal Satellite Collection Systems

EPA Region 1's practice in permitting regionally integrated POTWs has developed in tandem with its increasing focus on addressing I/I in sewer collection systems, in response to the concerns outlined above. Up to the early 1990s, POTW permits issued by Region 1 generally did not include specific requirements for collection systems. When I/I and the related issue of SSOs became a focus of concern both nationally and within the region in the mid-1990s, Region 1 began adding general requirements to POTW permits that required the permittees to "eliminate excessive infiltration and inflow" and provide an annual "summary report" of activities to reduce I/I. As the Region gathered more information and gained more experience in assessing these reports and activities, it began to include more detailed requirements and reporting provisions in these permits.

MassDEP also engaged in a parallel effort to address I/I, culminating in 2001 with the issuance of MassDEP Policy No. BRP01-1, "Interim Infiltration and Inflow Policy." Among other provisions, this policy established a set of standard NPDES permit conditions for POTWs that included development of an I/I control plan (including funding sources, identification and prioritization of problem areas, and public education programs) and detailed annual reporting requirements (including mapping, reporting of expenditures and I/I flow calculations). Since September 2001, these requirements have been the basis for the standard operation and maintenance conditions related to I/I.

Regional treatment plants presented special issues as I/I requirements became more specific, as it is generally the member communities, rather than the regional sewer district, that own the collection systems that are the primary source of I/I. Before the focus on I/I, POTW permits did not contain specific requirements related to the collection system component of POTWs. Therefore, when issuing NPDES permits to authorize discharges from regionally integrated treatment POTWs, EPA Region 1 had generally only included the legal entity owning and/or operating the regionally centralized wastewater treatment plant. As the permit conditions were focused on the treatment plant itself, this was sufficient to ensure that EPA had authority to enforce the permit requirements.

In implementing the I/I conditions, Region 1 initially sought to maintain the same structure, placing the responsibility on the regional sewer district to require I/I activities by the contributing systems and to collect the necessary information from those systems for submittal to EPA. MassDEP's 2001 Interim I/I Policy reflected this approach, containing a condition for regional systems:

((FOR REGIONAL FACILITIES ONLY)) The permittee shall require, through appropriate agreements, that all member communities develop and implement infiltration and inflow control plans sufficient to ensure that high flows do not cause or contribute to a violation of the permittees effluent limitations, or cause overflows from the permittees collection system.

As existing NPDES permittees, the POTW treatment plants were an obvious locus of regulation. The Region assumed the plants would be in a position to leverage preexisting legal and/or contractual relationships with the satellite collection systems they serve to perform a coordinating function, and that utilizing this existing structure would be more efficient than establishing a new system of direct reporting to EPA by the collection system owners. The Region also believed that the owner/operator of the POTW treatment plant would have an incentive to reduce flow from contributing satellite systems because doing so would improve treatment plant performance and reduce operation costs. While relying on this cooperative approach, however, EPA Region 1 also asserted that it had the authority to require that POTW collection systems be included as NPDES permittees and that it would do so if it proved necessary. Indeed, in 2001 Region 1 acceded to Massachusetts Water Resources Authority's ("MWRA") request that the contributing systems to the MWRA Clinton wastewater treatment plant ("WWTP") be included as co-permittees, based on evidence provided by MWRA that its specific relationship with those communities would not permit it to run an effective I/I reduction program for these collection systems. EPA Region 1 also put satellite collection systems on notice that they would be directly regulated through legally enforceable permit requirements if I/I reductions were not pursued or achieved.

In time, the Region realized that its failure to assert direct jurisdiction over municipal satellite dischargers was becoming untenable in the face of mounting evidence that cooperative (or in some cases non-existent) efforts on the part of the POTW treatment plant and associated satellites were failing to comprehensively address the problem of extraneous flow entering the POTW. The ability and/or willingness of regional sewer districts to attain meaningful I/I efforts in their member communities varied widely. The indirect structure of the requirements also tended to make it difficult for EPA to enforce the implementation of meaningful I/I reduction programs.

It became evident to EPA Region 1 that a POTW's ability to comply with CWA requirements depended on successful operation and maintenance of not only the treatment plant but also the collection system. For example, the absence of effective I/I reduction and operation/maintenance programs was impeding the Region's ability to prevent or mitigate the human health and water quality impacts associated with SSOs. *See Exhibit B* (Municipal satellite collection systems with SSOs). Additionally, these excess flows stressed POTW treatment plants from a hydraulic capacity and performance standpoint, adversely impacting effluent quality. *See Exhibit C* (Analysis of extraneous flow trends for representative systems). Addressing these issues in regional systems was essential, as these include most of the largest systems in terms of flow, population served and area covered, and serve the largest population centers.

The Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator represents a necessary and logical progression in its continuing effort to effectively address the serious problem of I/I in sewer collection systems.<sup>5</sup> In light of its past permitting experience and the need to effectively address the problem of extraneous flow on a system-wide basis, Region 1 decided that it was necessary to refashion permits issued to regionally integrated POTWs to encompass all owners/operators of the treatment works (*i.e.*, the regional centralized POTW treatment plant and the municipal satellite collection systems).<sup>6</sup> Specifically, Region 1 determined that the satellite systems should be subject as co-permittees to a limited set of O&M-related conditions on permits issued for discharges from regionally integrated treatment works. These conditions pertain only to the portions of the POTW collection system that the satellites own. This ensures maintenance and pollution control programs are implemented with respect to all portions of the POTW. Accordingly, since 2005, Region 1 has generally included municipal satellite collection systems as co-permittees for limited purposes, in addition to the owner/operator of the treatment plant as the main permittee subject to the full array of NPDES requirements, including secondary treatment and water-quality based effluent limitations. The Region has identified 25 permits issued by the Region to POTWs in New Hampshire and Massachusetts that include municipal satellite collection systems as co-permittees. *See Exhibit A.* The 25 permits include a total of 55 satellite collection systems as co-permittees.

### III. Legal Authority

The Region's prior and now superseded practice of limiting the permit only to the legal entity owning and/or operating the wastewater treatment plant had never been announced as a regional policy or interpretation. Similarly, the Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator has also never been expressly announced as a uniform, region-wide policy or interpretation. Upon consideration of the Board's decision, described above, EPA Region 1 has decided to supply a clearer, more detailed explanation regarding its use of a co-permittee structure when issuing NPDES permits to regionally integrated POTWs. In this section, the Region addresses the questions posed by the Board in the *Upper Blackstone* decision referenced above.

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<sup>5</sup> Although EPA Region 1 has in the past issued NPDES permits only to the legal entities owning and operating the wastewater treatment plant (*i.e.*, only a portion of the "treatment works"), the Region's reframing of permits to include municipal satellite collection systems does not represent a break or reversal from its historical legal position. EPA Region 1 has never taken the legal position that the satellite collection systems are beyond the reach of the CWA and the NPDES permitting program. Rather, the Region as a matter of discretion had merely never determined it necessary to exercise its statutory authority to directly reach these facilities in order to carry out its NPDES permitting obligations under the Act.

<sup>6</sup> EPA has "considerable flexibility in framing the permit to achieve a desired reduction in pollutant discharges." *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1380 (D.C.Cir.1977). ("[T]his ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.")

*(1) Is the scope of NPDES authority limited to owners/operators of the treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that comprise the wider POTW?*

The scope of NPDES authority extends beyond the owners/operators of the treatment plant to include to owners/operators of portions of the wider POTW, for the reasons discussed below.

The CWA prohibits the “discharge of any pollutant by any person” from any point source to waters of the United States, except, *inter alia*, in compliance with an NPDES permit issued by EPA or an authorized state pursuant to Section 402 of the CWA. CWA § 301, 402(a)(1); 40 C.F.R. § 122.1(b). Where there is a discharge of pollutants, NPDES regulations require the “operator” of the discharging “facility or activity” to obtain a permit in circumstances where the operator is different from the owner. *Id.* § 122.21(b). “Owner or operator” is defined as “the owner or operator of any ‘facility or activity’ subject to regulation under the NPDES program,” and a “facility or activity” is “any NPDES ‘point source’ or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.” *Id.* § 122.2.

“Publicly owned treatment works” are facilities subject to the NPDES program. Statutorily, POTWs as a class must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 402(a)(1) (“[t]he Administrator may...issue a permit for the discharge of any pollutant...upon condition that such discharge will meet (A) all applicable requirements under [section 301]..”); § 301(b)(1)(B) (“In order to carry out the objective of this chapter there shall be achieved...for publicly owned treatment works in existence on July 1, 1977...effluent limitations based upon secondary treatment[.]”); *see also* 40 C.F.R. pt 133. In addition to secondary treatment requirements, POTWs are also subject to water quality-based effluent limits if necessary to achieve applicable state water quality standards. *See* CWA § 301(b)(1)(C). *See also* 40 C.F.R. § 122.44(a)(1) (“...each NPDES permit shall include...[t]echnology-based effluent limitations based on: effluent limitations and standards published under section 301 of the Act”) and (d)(1) (same for water quality standards and state requirements). NPDES regulations similarly identify the “POTW” as the entity subject to regulation. *See* 40 C.F.R. § 122.21(a), (requiring “new and existing POTWs” to submit information required in 122.21(j),” which in turn requires “all POTWs,” among others, to provide permit application information).

A municipal satellite collection system is part of a POTW under applicable law. The CWA and its implementing regulations broadly define “POTW” to include not only wastewater treatment plants but also the sewer systems and associated equipment that collect wastewater and convey it to the plants. Under NPDES regulations at 40 C.F.R. §§ 122.2 and 403.3(q), the term “Publicly Owned Treatment Works” or “POTW” means “a treatment works as defined by section 212 of the Act, which is owned by a State or municipality (as defined by section 502(4) of the Act).” Under section 212 of the Act,

“(2)(A) The term ‘treatment works’ means any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid

nature to implement section 1281 of this title, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, outfall sewers, *sewage collection systems* [emphasis added], pumping, power, and other equipment, and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any works, including site acquisition of the land that will be an integral part of the treatment process (including land used for the storage of treated wastewater in land treatment systems prior to land application) or is used for ultimate disposal of residues resulting from such treatment.

(B) In addition to the definition contained in subparagraph (A) of this paragraph, ‘treatment works’ means any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of municipal waste, including storm water runoff, or industrial waste, including waste in combined storm water and *sanitary sewer systems* [emphasis added]. Any application for construction grants which includes wholly or in part such methods or systems shall, in accordance with guidelines published by the Administrator pursuant to subparagraph (C) of this paragraph, contain adequate data and analysis demonstrating such proposal to be, over the life of such works, the most cost efficient alternative to comply with sections 1311 or 1312 of this title, or the requirements of section 1281 of this title.”

Under the NPDES program regulations, this definition has been interpreted as follows:

“The term *Publicly Owned Treatment Works* or *POTW* [emphasis in original]...includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.”

See 40 C.F.R. § 122.2, cross-referencing 403.3(q).

The statutory and regulatory definitions plainly encompass both the POTW treatment plant and municipal satellite collection systems. Municipal satellite collection systems are part of a POTW by definition (*i.e.*, they are “sewage collection systems” under section 212(A) and “sanitary sewer systems” under section 212(B)). They are also conveyances that send wastewater to a POTW treatment plant for treatment under 40 C.F.R. 403.3(q)). The preamble to the rule that created the regulatory definition of POTW supports the reading that the treatment plant comprises only a portion of the POTW. See 44 Fed. Reg. 62260, 62261 (Oct. 29, 1979).<sup>7</sup>

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<sup>7</sup> “A new provision...defining the term ‘POTW Treatment Plant’ has been added to avoid an ambiguity that now exists whenever a reference is made to a POTW (publicly owned treatment works). ...[T]he existing regulation defines a POTW to include both the treatment plant and the sewer pipes and other conveyances leading to it. As a result, it is unclear whether a particular reference is to the pipes, the treatment plant, or both. The term “POTW

Consistent with EPA Region 1's interpretation, courts have similarly taken a broad reading of the terms treatment works and POTW.<sup>8</sup>

(2) *If the latter, how far up the collection system does NPDES jurisdiction reach, i.e., where does the "collection system" end and the "user" begin?*

NPDES jurisdiction extends beyond the treatment plant to the outer boundary of the municipally-owned sewage collection systems, which are defined as sewers whose purpose is to be a common carrier of wastewater for others to a POTW treatment plant for treatment, as explained below.

As discussed in response to Question 1 above, the term "treatment works" is defined to include "sewage collection systems." CWA § 212. In order to define the extent of the sewage collection system for purposes of co-permittee regulation—*i.e.*, to identify the boundary between the portions of the collection system that are subject to NPDES requirements and those that are not—Region 1 is relying on EPA's regulatory interpretation of the term "sewage collection system." In relevant part, EPA regulations define "sewage collection system" at 40 C.F.R. § 35.905 as:

"... each, and all, of the common lateral sewers, within a publicly owned treatment system, which are primarily installed to receive waste waters directly from facilities which convey waste water from individual structures or from private property and which include service connection "Y" fittings designed for connection with those facilities. The facilities which convey waste water from individual structures, from private property to the public lateral sewer, or its equivalent, are specifically excluded from the definition...."

Put otherwise, a municipal satellite collection system is subject to NPDES jurisdiction under the Region's approach insofar as its purpose is to be a common carrier of wastewater for others to a POTW treatment plant for treatment. The use of this primary purpose test (*i.e.*, common sewer installed as a recipient and carrier waste water from others) allows Region 1 to draw a principled, predictable and readily ascertainable boundary between the POTW's collection system and user. This test would exclude, for example, branch drainpipes that collect and transport wastewater from fixtures in a commercial building or public school to the common lateral sewer. This type

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treatment plant" will be used to designate that portion of the municipal system which is actually designed to provide treatment to the wastes received by the municipal system."

<sup>8</sup> See, e.g., *United States v. Borowski*, 977 F.2d 27, 30 n.5 (1st Cir. 1992) ("We read this language [POTW definition] to refer to such sewers, pipes and other conveyances that are publicly owned. Here, for example, the City of Burlington's sewer is included in the definition because it conveys waste water to the Massachusetts Water Resource Authority's treatment works."); *Shanty Town Assoc. v. Envtl. Prot. Agency*, 843 F.2d 782, 785 (4th Cir. 1988) ("As defined in the statute, a 'treatment work' need not be a building or facility, but can be any device, system, or other method for treating, recycling, reclaiming, preventing, or reducing liquid municipal sewage and industrial waste, including storm water runoff.") (citation omitted); *Comm. for Consideration Jones Fall Sewage System v. Train*, 375 F. Supp. 1148, 1150-51 (D. Md. 1974) (holding that NPDES wastewater discharge permit coverage for a wastewater treatment plant also encompasses the associated sanitary sewer system and pump stations under § 1292 definition of "treatment work").

of infrastructure would not be considered part of the collection system, because it is not designed to be a common recipient and carrier of wastewaters from other users. Rather, it is designed to transport its users' wastewater to such a common collection system at a point further down the sanitary sewer system.

EPA's reliance on the definition of "sewage collection system" from outside the NPDES regulations for interpretative guidance is reasonable as the construction grants regulations at 40 C.F.R. Part 35, subpart E pertain to grants for POTWs, the entity that is the subject of this NPDES policy. Additionally, the term "sewage collection systems" expressly appears in the definition of treatment works under section 212 of the Act as noted above. Finally, this approach is also consistent with EPA's interpretation in other contexts, such as the SSO listening session notice, published in the Federal Register on June 1, 2010, which describes wastewater collection systems as those that "collect domestic sewage and other wastewater from homes and other buildings and convey it to wastewater sewage treatment plants for proper treatment and disposal." See "Municipal Sanitary Sewer Collection Systems, Municipal Satellite Collection Systems, Sanitary Sewer Overflows, and Peak Wet Weather Discharges From Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems," 75 Fed. Reg. 30395.<sup>9</sup>

*(3) Do municipal satellite collection systems "discharge [ ] a pollutant" within the meaning of the statute and regulations?*

Yes, because they are a part of the POTW, municipal satellite collection systems discharge pollutants to waters of the United States through one or more outfalls (point sources).

The "discharge of a pollutant," triggers the need for a facility to obtain an NPDES permit. A POTW "discharges [ ] pollutant[s]" if it adds pollutants from a point source to waters of the U.S. (See 40 C.F.R. § 122.2, section (a) of the definition of "discharge of a pollutant.") As explained above, municipal satellite collection systems are part of the POTW. The entire POTW is the entity that discharges pollutants to waters of the U.S. through point source outfalls typically located at the treatment plant but also occasionally through other outfalls within the overall system. The fact that a collection system may be located in the upstream portions of the POTW and not necessarily near the ultimate discharge point at the treatment plant is not material to the question of whether it "discharges" a pollutant and consequently may be subject to conditions of an NPDES permit issued for discharges from the POTW.<sup>10</sup>

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<sup>9</sup> That EPA has in the past looked for guidance from Part 35 when construing the NPDES permitting program, for instance, in the context of storm water permitting, provides further support to the Region that its practice in this regard is sound. See, e.g., "National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges," 55 Fed. Reg. 47990, 47955 (looking to the definition of "storm sewer" at 40 C.F.R. § 35.2005(b)(47) when defining "storm water" under the NDPEs program).

<sup>10</sup> This position differs from that taken by the Region in the *Upper Blackstone* litigation. There, the Region argued that the treatment plant was the sole discharging entity for regulatory purposes. The Region has revised this view upon further consideration of the statute, regulations and case law and determined that the POTW as a whole is the discharging entity.

“Discharge of a pollutant” at 40 C.F.R. § 122.2 is also defined to include “... discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person *which do not lead to a treatment works.*”(emphasis added). Some municipal collection systems have argued that this sentence means that only municipal discharges that do not lead to a “treatment plant” fall within the scope of “discharge of a pollutant.” They further argue that because discharges through satellite collection systems do lead to a treatment plant, such systems do not “discharge [] pollutant[s]” and therefore are not subject to the NPDES permit requirements. This argument is flawed in that it incorrectly equates “treatment works,” the term used in the definition above, with “treatment plant.” To interpret “treatment works” as it appears in the regulatory definition of “discharge of a pollutant” as consisting of only the POTW treatment plant would be inconsistent with the definition of “treatment works” at 40 C.F.R. § 403.3(q), which expressly includes the collection system. *See also* § 403.3(r) (defining “POTW Treatment Plant” as “*that portion* [emphasis added] of the POTW which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste”).

*(4) Are municipal satellite collection systems “indirect dischargers” and thus excluded from NPDES permitting requirements?*

No, municipal satellite collection systems are part of the POTW, not “indirect dischargers” to the POTW.

Section 307(b) of the Act requires EPA to establish regulatory pretreatment requirements to prevent the “introduction of pollutants into treatment works” that interfere, pass through or are otherwise incompatible with such works. Section 307 is implemented through the General Pretreatment Regulations for Existing and New Sources of Pollution (40 C.F.R. Part 403) and categorical pretreatment standards (40 C.F.R. Parts 405-471). Section 403.3(i) defines “indirect discharger” as “any non-domestic” source that introduces pollutants into a POTW and is regulated under pretreatment standards pursuant to CWA § 307(b)-(d). The source of an indirect discharge is termed an “industrial user.” *Id.* at § 403.3(j). Under regulations governing the NPDES permitting program, the term “indirect discharger” is defined as “a non-domestic discharger introducing ‘pollutants’ to a ‘publicly owned treatment works.’” 40 C.F.R. § 122.2. Indirect dischargers are excluded from NPDES permit requirements by the indirect discharger rule at 40 C.F.R. § 122.3(c), which provides, “The following discharges do not require an NPDES permit: . . . The introduction of sewage, industrial wastes or other pollutants into publicly owned treatment works by indirect dischargers.”

Municipal satellite collection satellite systems are not indirect dischargers as that term is defined under part 122 or 403 regulations. Unlike indirect dischargers, municipal satellite collection systems are not “introducing pollutants” to POTWs under 40 C.F.R. § 122.2; they are, instead, part of the POTW by definition. Similarly, they are not a non-domestic *source* that introduces pollutants into a POTW within the meaning of § 403.3(j), but as part of the POTW collect and convey municipal sewage from industrial, commercial and domestic users of the POTW.

The Region’s determination that municipal satellite collection systems are not indirect dischargers is, additionally, consistent with the regulatory history of the term indirect discharger.

The 1979 revision of the part 122 regulations defined “indirect discharger” as “a non-municipal, non-domestic discharger introducing pollutants to a publicly owned treatment works, which introduction does not constitute a ‘discharge of pollutants’...” See National Pollutant Discharge Elimination System, 44 Fed. Reg. 32854, 32901 (June 7, 1979). The term “non-municipal” was removed in the Consolidated Permit Regulations, 45 Fed. Reg. 33290, 33421 (May 19, 1980) (defining “indirect discharger” as “a nondomestic discharger...”). Although the change was not explained in detail, the substantive intent behind this provision remained the same. EPA characterized the revision as “minor wording changes.” 45 Fed. Reg. at 33346 (Table VII: “Relationship of June 7[, 1979] Part 122 to Today’s Regulations”). The central point again is that under any past or present regulatory incarnation, municipal satellite collection systems, as POTWs, are not within the definition of “indirect discharger,” which is limited to dischargers that introduce pollutants to POTWs.

The position that municipal satellite collection systems are part of, rather than discharge to, the POTW also is consistent with EPA guidance. EPA’s 1994 Multijurisdictional Pretreatment Programs Guidance Manual, (EPA 833-B94-005) (June 1994), at p. 19, asserts that EPA has the authority to require municipal satellite collection systems to develop pretreatment programs by virtue of their being part of the POTW.

*(5) How is the Region’s rationale consistent with the references to “municipality” in the regulatory definition of POTW found at 40 C.F.R. § 403.3(q), and the definition’s statement that “[t]he term also means the municipality...which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works?”*

There is no inconsistency between the Region’s view that municipally-owned satellite collection systems are part of a POTW, and the references to municipality in 40 C.F.R. § 403.3(q), including the final sentence of the regulatory definition of POTW in the pretreatment regulations.

The Region’s co-permitting rationale is consistent with the first part of the pretreatment program’s regulatory definition of POTW, because the Region is only asserting NPDES jurisdiction over satellite collection systems that are owned by a “State or municipality (as defined by section 502(4) of the Act).” The term “municipality” as defined in CWA § 502(4) “means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes...” Thus, in order to qualify under this definition, a wastewater collection system need only be “owned by a State or municipality.” There is no requirement that the constituent components of a regionally integrated POTW, *i.e.*, the collection system and regional centralized POTW treatment plant, be owned by the same State or municipal entity.

Furthermore, there is no inconsistency between the Region’s view that a satellite collection system is part of a POTW, and the final sentence of the regulatory definition of POTW in the pretreatment regulations. As noted above, the sentence provides that “POTW” may “also” mean a municipality which has jurisdiction over indirect discharges to and discharges from the treatment works. This is not a limitation because of the use of the word “also” (contrast this with the “only if” language in the preceding sentence of the regulatory definition).

*(6) How does the Region's rationale comport with the permit application and signatory requirements under NPDES regulations?*

EPA's authority to require municipal satellite collection systems to separately comply with the permit application requirements, or to provide waivers from these requirements where appropriate, is consistent with NPDES regulations, which provide that all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed, and municipal satellite collection systems are part of the POTW.

EPA has the authority to require municipal satellite collection systems to submit permit applications. These entities are operators of parts of the POTW. NPDES regulations characterize the operator "of the POTW" (which by definition includes the sewage collection system) as opposed to the operator "of the POTW treatment plant" as an appropriate applicant. *Id.* § 122.21(a), (requiring applicants for "new and existing POTWs" to submit information required in 122.21(j)," which in turn requires "all POTWs," among others, to provide permit application information). This reading of the regulation is in keeping with the statutory text, which subjects the POTW writ large to the secondary treatment and water quality-based requirements. *See* CWA § 301(b)(1)(B), (C). In fact, the NPDES permit application for POTWs solicits information concerning portions of the POTW beyond the treatment plant itself, including the collection system used by the treatment works. *See* 40 C.F.R. 122.21(j)(1).

Notwithstanding that EPA could require applications for all the municipal satellite collection systems, requiring such applications may result in duplicative or immaterial information. The Regional Administrator ("RA") may waive any requirement of this paragraph if he or she has access to substantially identical information. 40 C.F.R. § 122.21(j). *See generally*, 64 Fed. Reg. 42440 (August 4, 1999). The RA may also waive any application requirement that is not of material concern for a specific permit. Region 1 believes that it will typically receive information sufficient for NPDES permitting purposes from the POTW treatment plant operator's application.

In most cases, EPA Region 1 believes that having a single permit application from the POTW treatment plant operator will be more efficient in carrying out the regulation's intent than multiple applications from the satellite systems. (The treatment plant operator would of course be required to coordinate as necessary with the constituent components of the POTW to ensure that the information provided to EPA is accurate and complete). EPA Region 1 therefore intends to issue waivers to exempt municipal satellite collection systems from permit application and signatory requirements in accordance with 40 C.F.R. § 122.21(j). To the extent the Region requires additional information, it intends to use its information collection authority under CWA § 308.

#### IV. Basis for the Specific Conditions to which the Municipal Satellite Collection Systems are Subject as Co-permittees

The legal authority for extending NPDES conditions to all portions of the municipally-owned treatment works to ensure proper operation and maintenance and to reduce the quantity of extraneous flow into the POTW is Section 402(a) of the CWA. This section of the Act authorizes EPA to issue a permit for the “discharge of pollutants” and to prescribe permit conditions as necessary to carry out the provisions of the CWA, including Section 301 of the Act. Among other things, Section 301 requires POTWs to meet performance-based requirements based on secondary treatment technology, as well as any more stringent requirements of State law or regulation, including water quality standards. *See* CWA § 301(b)(1)(B),(C).

The co-permittee requirements are required to assure continued achievement of secondary treatment requirements and water quality standards in accordance with sections 301 and 402 of the Act and to prevent unauthorized discharges of sewage from collection systems. With respect to secondary treatment, the inclusion of the satellite systems as co-permittees is necessary because high levels of I/I dilute the strength of influent wastewater and increase the hydraulic load on treatment plants, which can reduce treatment efficiency (*e.g.*, result in violations of technology-based percent removal limitations for BOD and TSS due to less concentrated influent, or violation of other technology effluent limitations due to reduction in treatment efficiency), lead to bypassing a portion of the treatment process, or in extreme situations make biological treatment facilities inoperable (*e.g.*, wash out the biological organisms that treat the waste).

As to water quality standards, the addition of the satellite systems as co-permittees is necessary to ensure collection system operation and maintenance, which will reduce extraneous flow entering the system and free up available capacity. This will facilitate compliance with water quality-based effluent limitations—made more difficult by reductions in treatment efficiency and also reduce water quality standard violations that result from the occurrence of SSOs. *See Exhibits B* (Municipal satellite collection systems with SSOs) and *C* (Analysis of extraneous flow trends for representative systems). SSOs that reach waters of the U.S. are discharges in violation of section 301(a) of the CWA to the extent not authorized by an NPDES permit.

Subjecting portions of an NPDES-regulated entity upstream of the ultimate discharge point is consistent with EPA’s interpretation of the CWA in other contexts. For example, it is well established that EPA has the ability to apply discharge limitations and monitoring requirements to internal process discharges, rather than to outfalls, on the grounds that compliance with permit limitations “may well involve controls applied at points other than the ultimate point of discharge.” *See Decision of the General Counsel No. 27 (In re Inland Steel Company)*, August 4, 1975 (“Limitations upon internal process discharges are proper, if such discharges would ultimately be discharged into waters of the United States, and if such limitations are necessary to carry out the principal regulatory provisions of the Act.”). In the case of regionally integrated POTWs, placing conditions on satellite collection systems—though located farther up the system than the point of discharge—is a logical implication of the regulations and serves to effectuate the statute.

Without imposing conditions on the satellite communities, standard permit conditions applicable to all NPDES permits by regulation cannot be given full effect. To illustrate, there is no dispute

that the operator of the POTW treatment plant and outfall is discharging pollutants within the meaning of the CWA and, accordingly, is subject to the NPDES permit program. NPDES permitting regulations require standard conditions that “apply to all NPDES permits,” pursuant to 40 C.F.R. § 122.41, including a duty to mitigate and to 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 the permit.” *Id.* at § 122.41(d), (e). EPA regulations also require additional conditions applicable to specified categories of NPDES permit, including “Publicly owned treatment works.” *See id.* at § 122.42(b). A municipal satellite collection system, as demonstrated above, falls within the regulatory definition of a POTW. In light of EPA’s authority to require appropriate operation and maintenance of collection systems necessary to achieve compliance with an NPDES permit, and because the operator of the POTW treatment plant may not own or operate a significant portion of the wider treatment works (*i.e.*, the collection systems that send flow to the POTW treatment plant), it is appropriate, and in some cases necessary, to extend pertinent, mandated standard conditions to all portions of the POTW, which is subject to regulation in its entirety. The alternative of allowing state and local jurisdictional boundaries to place significant portions of the POTW beyond the reach of the NPDES permitting program would not only be inconsistent with the broad statutory and regulatory definition of the term POTW but would impede Region 1 from carrying out the objectives of the CWA. It would also, illogically, preclude the Region from imposing on POTWs standard conditions EPA has by regulation mandated for those entities.

#### Other Considerations Informing EPA Region 1’s Decision to Use a Co-permittee Permitting Structure for Regionally Integrated POTWs

In addition to consulting the relevant statutes, regulations, and preambles, Region 1 also considered other EPA guidance in coming to its determination to employ a co-permittee structure for regionally integrated POTWs. EPA’s 1994 Multijurisdictional Pretreatment Programs Guidance Manual, p. 19, asserts that EPA has the authority to include municipal satellite collection systems as co-permittees by virtue of their being part of the POTW:

If the contributing jurisdiction owns or operates the collection system within its boundaries, then it is a co-owner or operator of the POTW. As such, it can be included on the POTW’s NPDES permit and be required to develop a pretreatment program. Contributing jurisdictions should be made co-permittees where circumstances or experience indicate that it is necessary to ensure adequate pretreatment program implementation.

The same logic that led EPA to conclude it had authority to require municipal satellite collection systems to develop a pretreatment program pursuant to an NPDES permit supports EPA Region 1’s decision to impose permit conditions on such facilities to undertake proper O & M and to reduce inflow and infiltration.

EPA Region 1 also took notice of federal listening session materials on the June 2010 proposed SSO rule and associated model permits and fact sheet. The position articulated by EPA in these

model documents—specifically the application of standard NPDES conditions to municipal satellite collection systems—generally conform to Region 1’s co-permitting approach.

Finally, in addition to federal requirements, EPA Region 1 considered the co-permittee approach in light of state regulations and policy pertaining to wastewater treatment works. The Region found its approach to be consistent with such requirements. Under Massachusetts law, “Any person operating treatment works shall maintain the facilities in a manner that will ensure proper operation of the facilities or any part thereof,” where “treatment works” is defined as “any and all devices, processes and properties, real or personal, used in the collection, pumping, transmission, storage, treatment, disposal, recycling, reclamation or reuse of waterborne pollutants, but not including any works receiving a hazardous waste from off the site of the works for the purpose of treatment, storage or disposal, or industrial wastewater holding tanks regulated under 314 CMR 18.00” *See* 314 CMR 12.00 (“Operation and Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Dischargers”). MassDEP has also prioritized this area, issuing detailed operation and maintenance guidelines entitled “Optimizing Operation, Maintenance and Rehabilitation of Sanitary Sewer Collection Systems.”

**Exhibit A**

<b>Name</b>	<b>Issue Date</b>
Massachusetts Water Resources Authority – Clinton (NPDES Permit No. MA0100404)	September 27, 2000
City of Brockton (NPDES Permit No. MA0101010)	May 11, 2005
City of Marlborough (NPDES Permit No. MA0100480)	May 26, 2005
Westborough Wastewater Treatment Plant (NPDES Permit No. MA0100412)	May 20, 2005
Lowell Regional Wastewater Utilities (NPDES Permit No. MA0100633)	September 1, 2005
Town of Webster Sewer Department (NPDES Permit No. MA0100439)	March 24, 2006
Town of South Hadley, Board of Selectmen (NPDES Permit No. MA0100455)	June 12, 2006
City of Leominster (NPDES Permit No. MA0100617)	September 28, 2006
Hoosac Water Quality District (NPDES Permit No. MA0100510)	September 28, 2006
Board of Public Works, North Attleborough (NPDES Permit No. MA0101036)	January 4, 2007
Town of Sunapee (NPDES Permit No. 0100544)	February 21, 2007
Lynn Water and Sewer Commission (NPDES Permit No. MA0100552)	March 3, 2007
City of Concord (NPDES Permit No. NH0100331)	June 29, 2007
City of Keene (NPDES Permit No. NH0100790)	August 24, 2007
Town of Hampton (NPDES No. NH0100625)	August 28, 2007
Town of Merrimack, NH (NPDES No. NH0100161)	September 25, 2007
City of Haverhill (NPDES Permit No. MA0101621)	December 5, 2007
Greater Lawrence Sanitary District (NPDES Permit No. MA0100447)	August 11, 2005

City of Pittsfield, Department of Public Works (NPDES No. MA0101681)	August 22, 2008
City of Manchester (NPDES No. NH0100447)	September 25, 2008
City of New Bedford (NPDES Permit No. MA0100781)	September 28, 2008
Winnepesaukee River Basin Program Wastewater Treatment Plant (NPDES Permit No. NH0100960)	June 19, 2009
City of Westfield (NPDES Permit No. MA0101800)	September 30, 2009
Hull Permanent Sewer Commission (NPDES Permit No. MA0101231)	September 1, 2009
Gardner Department of Public Works (NPDES Permit No. MA0100994)	September 30, 2009

## Exhibit B

### **I/I Flow Analysis for Sample Regional Publicly Owned Treatment Works**

#### I. Representative POTWS

The **South Essex Sewer District (SESD)** is a regional POTW with a treatment plant in Salem, Massachusetts. The SESD serves a total population of 174,931 in six communities: Beverly, Danvers, Marblehead, Middleton, Peabody and Salem. The **Charles River Pollution Control District (CRPCD)** is a regional POTW with a treatment plant in Medway, Massachusetts. The CRPCD serves a total population of approximately 28,000 in four communities: Bellingham, Franklin, Medway and Millis. Both of these facilities have been operating since 2001 under permits that place requirements on the treatment plant to implement I/I reduction programs with the satellite collection systems, in contrast to Region 1's current practice of including the satellite collection systems as co-permittees.

#### II. Comparison of flows to standards for nonexcessive infiltration and I/I

Flow data from the facilities' discharge monitoring reports (DMRs) are shown in comparison to the EPA standard for nonexcessive infiltration/inflow (I/I) of 275 gpcd wet weather flow and the EPA standard for nonexcessive infiltration of 120 gallons per capita per day (gpcd) dry weather flow; the standards are multiplied by population served for comparison with total flow from the facility. See *I/I Analysis and Project Certification*, EPA Ecol. Pub. 97-03 (1985); 40 CFR 35.2005(b)(28) and (29).

Figures 1 and 2 show the Daily Maximum Flows (the highest flow recorded in a particular month) for the CRPCD and SESD, respectively, along with monthly precipitation data from nearby weather stations. Both facilities experience wet weather flows far exceeding the standard for nonexcessive I/I, particularly in wet months, indicating that these facilities are receiving high levels of inflow and wet weather infiltration.

Figure 1. CRPCD Daily Maximum Flow Compared to Nonexcessive I/I Standard

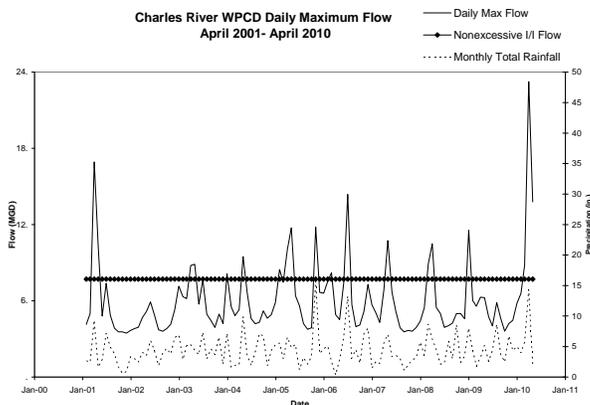
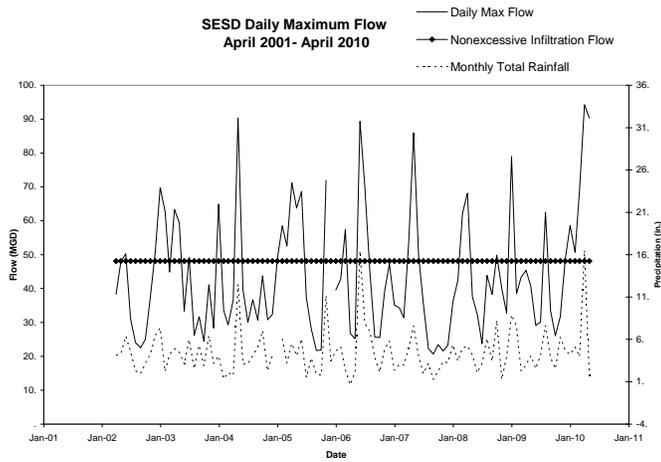


Figure 2. SESD Daily Maximum Flow Compared to Nonexcessive I/I Standard



Figures 3 and 4 shows the Average Monthly Flows for the CRPCD and SESD, which exceed the nonexcessive infiltration standard for all but the driest months. This indicates that these systems experience high levels of groundwater infiltration into the system even during dry weather.

Figure 3. CRPCD Monthly Average Flow Compared to Nonexcessive Infiltration Standard

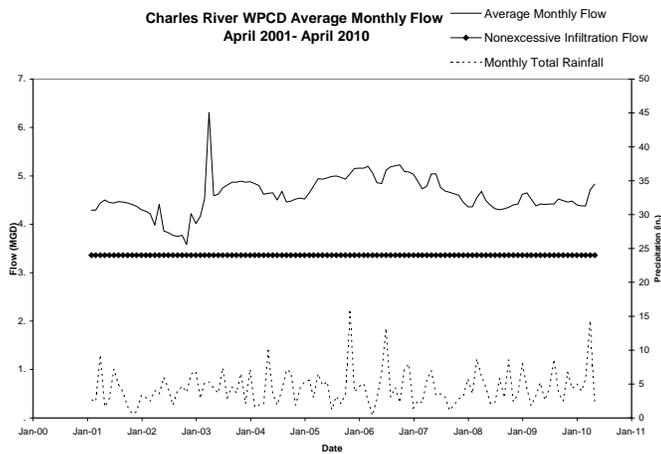
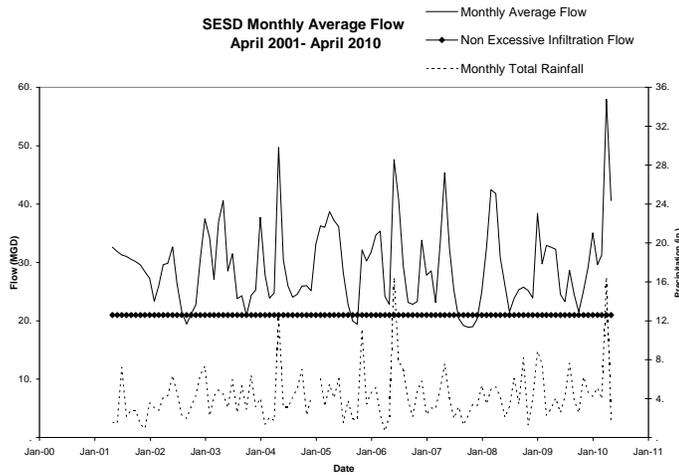


Figure 4. SESD Monthly Average Flow Compared to Nonexcessive Infiltration Standard



## II. Flow Trends

Figures 5 and 6 show the trend in Maximum Daily Flows over the period during which these regional facilities have been responsible for implementing cooperative I/I reduction programs with the satellite collection systems. The Maximum Daily Flow reflects the highest wet weather flow for each month. The trend over this time period has been of increasing Maximum Daily Flow, indicating that I/I has not been reduced in either system despite the permit requirements.

Figure 5. CRPCD Daily Maximum Flow Trend

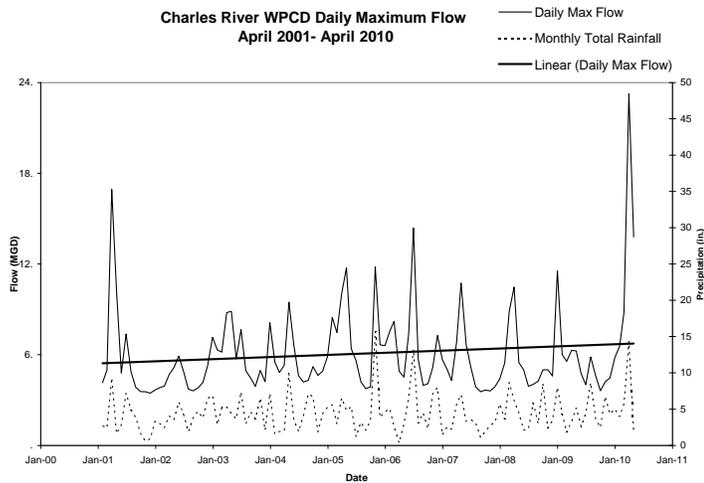
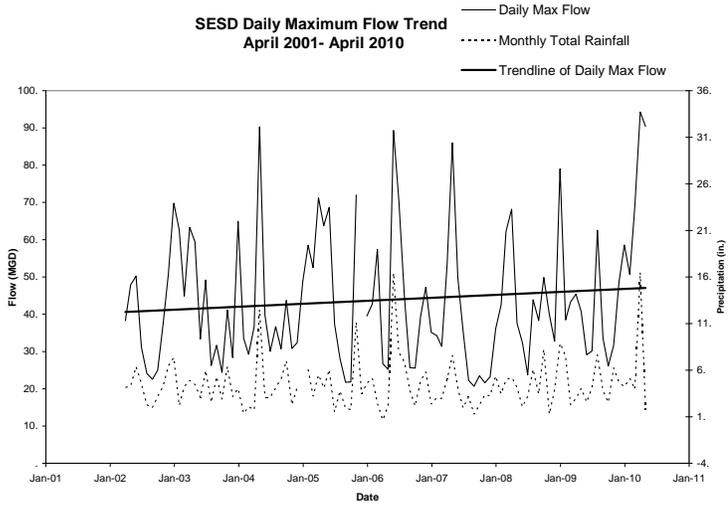


Figure 6. SESD Daily Maximum Flow Trend



### III. Violations Associated with Wet Weather Flows

Both the CRPCD and SESD have experienced permit violations that appear to be related to I/I, based on their occurrence during wet weather months when excessive I/I standards are exceeded. Figure 7 shows violations of CRPCD's effluent limits for CBOD (concentration) and TSS (concentration and percent removal). Twelve of the sixteen violations occurred during months when daily maximum flows exceeded the EPA standard.

Figure 7. CRPCD CBOD and TSS Effluent Limit Violations

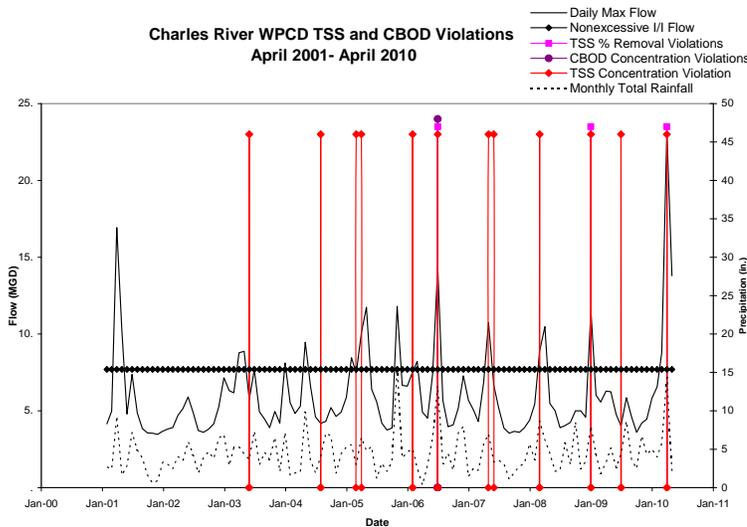
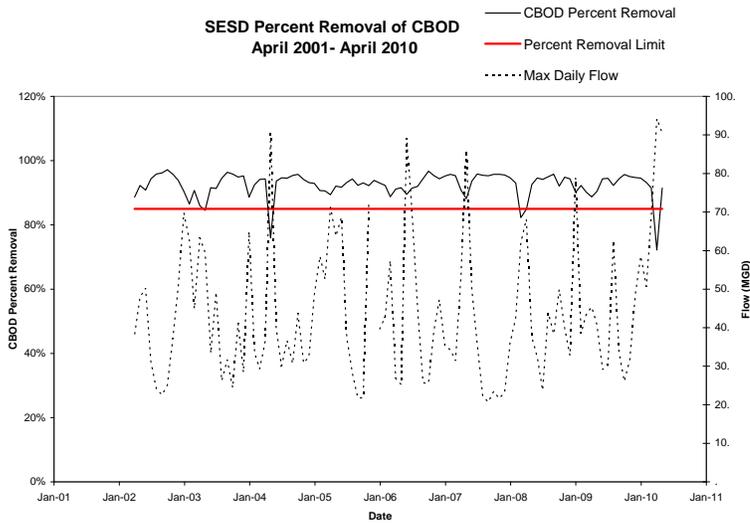


Figure 8 shows SESD's results for removal of CBOD, in percentage, as compared to maximum daily flow. SESD had three permit violations where CBOD removal fell below 85%, all during months with high Maximum Daily Flows.

Figure 8. SESD CBOD Percent Removal



In addition, both of these regional POTWs have experienced SSOs within the municipal satellite collection systems. In the SESD system, Beverly, Danvers, Marblehead and Peabody have reported SSOs between 2006 and 2008, based on data provided by MassDEP. In the CRPCD system, both Franklin and Bellingham have reported SSOs between 2006 and 2009.

**Exhibit C**

List of municipal satellite collection systems that have had SSOs

## **Exhibit D**

Form of Regional Administrator's waiver of permit application requirements for  
municipal satellite collection systems



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
REGION 1  
1 CONGRESS STREET, SUITE 1100  
BOSTON, MASSACHUSETTS 02114-2023

**Re: Waiver of Permit Application and Signatory Requirements for [Municipal Satellite Sewage Collection System]**

Dear \_\_\_\_\_:

Under NPDES regulations, all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed. Where the Region has “access to substantially identical information,” the Regional Administrator may waive permit application requirements for new and existing POTWs. *Id.* Pursuant to my authority under this regulation, I am waiving NPDES permit application and signatory requirements applicable to the above-named municipal satellite collection systems.

Although EPA has the authority to require municipal satellite collection systems to submit individual permit applications, in this case I find that requiring a single permit application executed by the regional POTW treatment plant owner/operator will deliver “substantially identical information,” and will be more efficient, than requiring separate applications from each municipal satellite collection system owner/operator. Municipal satellite collection system owners/operators are expected to consult and coordinate with the regional POTW treatment plant operators to ensure that any information provided to EPA about their respective entities is accurate and complete. In the event that EPA requires additional information, it may use its information collection authority under CWA § 308. 33 U.S.C. § 1318.

This notice reflects my determination based on the specific facts and circumstances in this case. It is not intended to bind the agency in future determinations where a separate permit for municipal satellites would not be duplicative or immaterial.

If you have any questions or would like to discuss this decision, please contact Doug MacLean at [maclean.douglas@epa.gov](mailto:maclean.douglas@epa.gov) or 617-918-1608.

Sincerely,

Regional Administrator



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker  
Governor

Karyn E. Polito  
Lieutenant Governor

Kathleen A. Theoharides  
Secretary

Martin Suuberg  
Commissioner

**TO:** File

**FROM:** Xiaodan Ruan, MassDEP

**SUBJECT:** Webster WWTP NPDES Permit (MA0100439) 7Q10 Flow Analysis

**DATE:** August 12, 2020

### **7Q10 and 30Q10 Streamflow Analyses:**

The 7Q10 and 30Q10 flows of the French River at the Webster WWTP were extrapolated by using the data (flow and drainage area) from downstream U.S. Geological Survey gage station 01125100, French River at North Grosvenordale, CT (“USGS 01125100”)<sup>1,2</sup> and the drainage area at the point of discharge. The 7Q10 and 30Q10 were calculated using the following data:

- Analysis from SWToolbox 1.0.4 of the last 18 years of streamflow data (4/1/2001 - 3/31/2019) at USGS 01125100
- Drainage area of the French River at USGS 01125100 based on information from USGS, 101 mi<sup>2</sup>
- Drainage area of the French River at the Webster WWTP based on StreamStats v4.3.0, 91.5 mi<sup>2</sup>

### **Harmonic Mean Streamflow Analysis:**

The Harmonic Mean flow for the French River at the Webster WWTP was also extrapolated by using the data (flow and drainage area) from downstream gage USGS 01125100 and the drainage area at the point of discharge. The Harmonic Mean was calculated based on the following data:

- Analysis from SWToolbox 1.0.4 of the last 18 years of streamflow data (4/1/2001 - 3/31/2019) at USGS 01125100 (EPA Region 1’s protocol is to use 70 years of data if available, to calculate Harmonic Mean. This gage did not begin collecting data until October 2000; therefore only 18 years of data were available.)
- Drainage area of the French River at USGS 01125100 based on information from USGS, 101 mi<sup>2</sup>

<sup>1</sup> There was another USGS gage station 01125000 that is about 1 mile upstream of the facility. However, USGS does not have an adequate volume of approved current data from this station to calculate the 7Q10 (See the “note” on the NWIS webpage for this station [https://waterdata.usgs.gov/nwis/dv?referred\\_module=sw&site\\_no=01125000](https://waterdata.usgs.gov/nwis/dv?referred_module=sw&site_no=01125000)).

<sup>2</sup> The USGS 01125100 is located 5 miles downstream of the facility. EPA Region 1 prefers using a 30-year data window to capture variations in climate adequately. This gage did not begin collecting data until October 2000. Therefore, 19 years of data were available at this station. The EPA handbook “Low Flow Statistics Tools (October 2018, EPA-833-B-18-001, page 4-1)”: [https://www.epa.gov/sites/production/files/2018-11/documents/low\\_flow\\_stats\\_tools\\_handbook.pdf](https://www.epa.gov/sites/production/files/2018-11/documents/low_flow_stats_tools_handbook.pdf) recommends to capture at least 15-20 years of data, and 19 years is within this range.

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

TTY# MassRelay Service 1-800-439-2370

MassDEP Website: [www.mass.gov/dep](http://www.mass.gov/dep)

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- Drainage area of the French River at the Webster WWTP based on StreamStats v4.3.0, 91.5 mi<sup>2</sup>

Table 1 shows the 7Q10 and 30Q10 calculations for the Webster WWTP. Table 2 shows the Harmonic Mean calculation for the Webster WWTP. Figure 1 shows the locations of Webster WWTP and USGS 01125100. It also partially shows the French River and the neighboring watersheds.

**Table 1: 7Q10 and 30Q10 Calculations for Webster WWTP**

	<b>7Q10 Flow (cfs)</b>	<b>30Q10 Flow (cfs)</b>	<b>Comments</b>
<b>A. Flow at USGS 01125100</b>	5.65	7.67	Period of record: 4/1/2001 - 3/31/2019 calculated from SWToolbox 1.0.4
<b>Flow at Webster WWTP</b>	<b>5.12</b>	<b>6.94</b>	<b>Flow at Webster WWTP = (A/101 mi<sup>2</sup>)*91.5mi<sup>2</sup></b>

**Table 2: Harmonic Mean Calculation for Webster WWTP**

	<b>Harmonic Mean Flow (cfs)</b>	<b>Comments</b>
<b>B. Flow at USGS 01125100</b>	53.2	Period of record: 4/1/2001 - 3/31/2019 calculated from SWToolbox 1.0.4
<b>Flow at Webster WWTP</b>	<b>48.2</b>	<b>Flow at Webster WWTP = (B//101 mi<sup>2</sup>)*91.5mi<sup>2</sup></b>

**Dilution Factor**

The dilution factor was calculated as follows:

$$7Q10 \text{ Dilution Factor} = (Q_s + Q_d) / Q_d$$

Where:

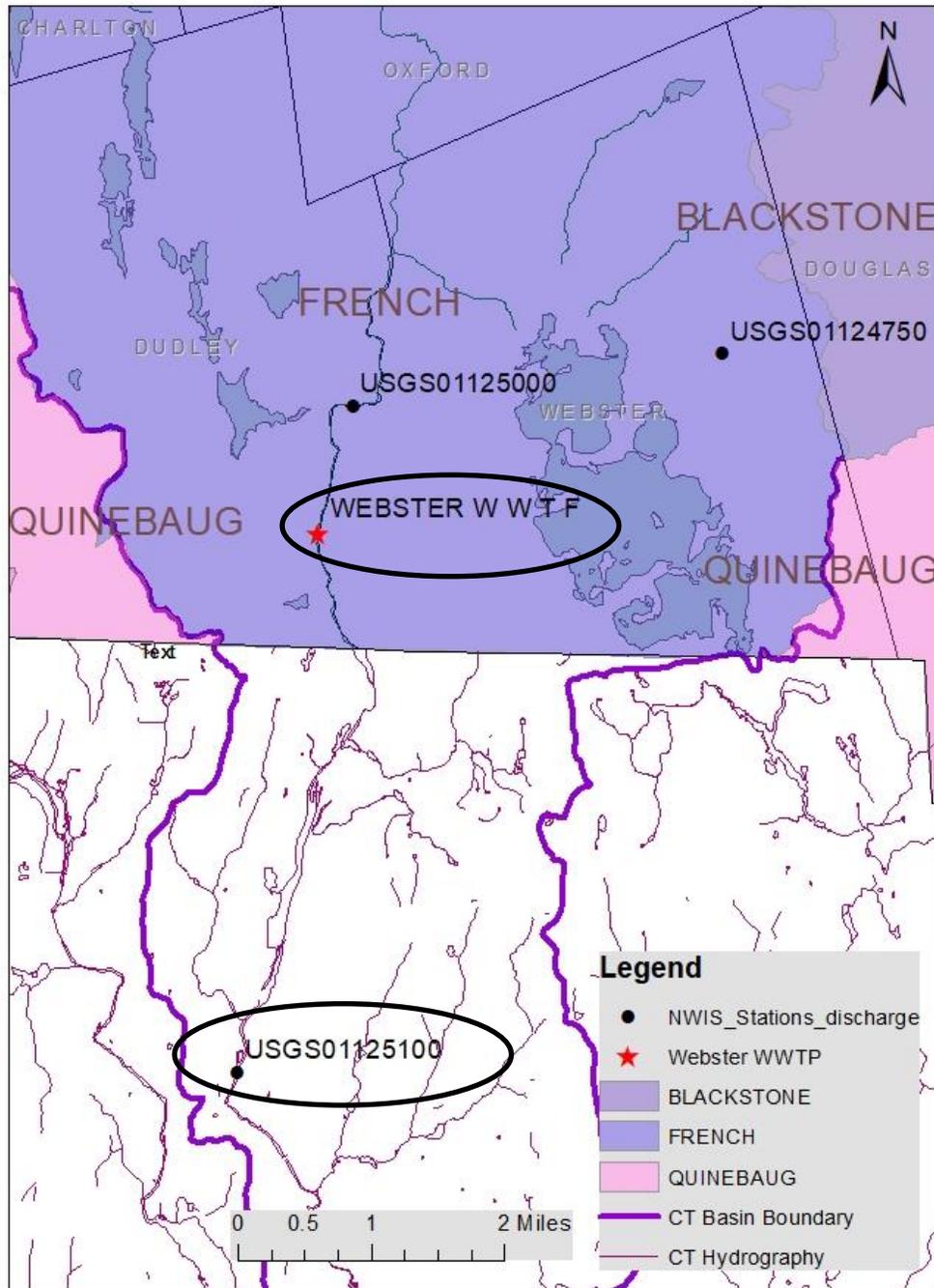
$$Q_s = 7Q10 \text{ flow of French River at the Webster WWTP} = 5.12 \text{ cfs}$$

$$Q_d = \text{Design flow of the Webster WWTP} = 6 \text{ MGD} = 9.28 \text{ cfs}$$

$$7Q10 \text{ Dilution Factor} = (5.12 \text{ cfs} + 9.28 \text{ cfs}) / 9.28 \text{ cfs} = \mathbf{1.55}$$

Note that a majority of the Webster WWTP discharge (Qd) is derived from water sources (groundwater/surface water withdrawals) from within the Webster WWTP watershed.

Figure 1. Webster WWTP and USGS 01125100



UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY – REGION 1 (EPA)  
WATER DIVISION  
5 POST OFFICE SQUARE  
BOSTON, MASSACHUSETTS 02109

MASSACHUSETTS DEPARTMENT OF  
ENVIRONMENTAL PROTECTION (MASSDEP)  
COMMONWEALTH OF MASSACHUSETTS  
1 WINTER STREET  
BOSTON, MASSACHUSETTS 02108

EPA PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE UNITED STATES UNDER SECTION 402 OF THE CLEAN WATER ACT (CWA), AS AMENDED, AND MASSDEP PUBLIC NOTICE OF EPA REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE CWA.

PUBLIC NOTICE PERIOD: **June 30, 2021 – July 29, 2021**

PERMIT NUMBER: **MA0100439**

PUBLIC NOTICE NUMBER: **MA-21-21**

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Webster  
350 Main St.  
P.O. Box 793  
Webster, MA 01570

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Town of Webster Sewer Department  
38 Hill St  
P.O. Box 793  
Webster, MA 01570-0793

RECEIVING WATER AND CLASSIFICATION:

French River (Class B)

PREPARATION OF THE DRAFT PERMIT AND EPA REQUEST FOR CWA § 401 CERTIFICATION:

EPA is issuing for public notice and comment the Draft NPDES Permit for the Winchendon WPCF, which discharges treated municipal wastewater. Waste thickened sludge is trucked to the Cranston, RI Wastewater Treatment Facility for incineration. The effluent limits and permit conditions have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at 314 CMR 4.00. MassDEP cooperated with EPA in the development of the Draft NPDES Permit. MassDEP retains independent authority under State law to publish for public notice and issue a separate Surface Water Discharge Permit for the discharge, not the subject of this notice, under the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53.

In addition, EPA has requested that MassDEP grant or deny certification of this Draft Permit pursuant to Section 401 of the CWA and implementing regulations. Under federal regulations governing the NPDES program at 40 Code of Federal Regulations (CFR) § 124.53(e), state certification shall contain conditions that are necessary to assure compliance with the applicable provisions of CWA sections 208(e), 301, 302, 303, 306, and 307 and with appropriate requirements of State law, including any conditions more stringent

than those in the Draft Permit that MassDEP finds necessary to meet these requirements. Furthermore, MassDEP may provide a statement of the extent to which each condition of the Draft Permit can be made less stringent without violating the requirements of State law.

#### INFORMATION ABOUT THE DRAFT PERMIT:

The Draft Permit and explanatory Fact Sheet may be obtained at no cost at <https://www.epa.gov/npdes-permits/massachusetts-draft-individual-npdes-permits> or by contacting:

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Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this workforce telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at the EPA Boston office. However, any electronically available documents that are part of the administrative record can be requested from the EPA contact above.

#### PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARINGS:

All persons, including applicants, who believe any condition of this Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by July 29, 2021, which is the close of the public comment period. Comments, including those pertaining to EPA's request for CWA § 401 certification, should be submitted to the EPA contact at the address or email listed above. Upon the close of the public comment period, EPA will make all comments available to MassDEP. All commenters who want MassDEP to consider their comments in the state decision-making processes (i.e., the separate state permit and the CWA § 401 certification) must submit such comments to MassDEP during the state comment period for the state Draft Permit and CWA § 401 certification. For information on submitting such comments to MassDEP, please follow the instructions found in the state public notice at: <https://www.mass.gov/service-details/massdep-public-hearings-comment-opportunities>.

Any person, prior to the close of the EPA public comment period, may submit a request in writing to EPA for a public hearing on the Draft Permit under 40 CFR § 124.10. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice if the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on this Draft Permit, the Regional Administrator will respond to all significant comments and make the responses available to the public.

Due to the COVID-19 National Emergency, if comments are submitted in hard copy form, please also email a copy to the EPA contact above.

#### FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and notify the applicant and each person who has submitted written comments or requested notice.

KEN MORAFF, DIRECTOR  
WATER DIVISION  
UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY – REGION 1

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DIVISION OF WATERSHED MGMT  
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