

**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"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§ 26-53),

**City of Haverhill, Massachusetts**

is authorized to discharge from the facility located at

**City of Haverhill  
Water Pollution Abatement Facility  
40 South Porter Street  
Bradford, MA 01835**

**And**

**Combined Sewer Overflow (CSO) discharges at 13 locations**

to receiving water named

**Merrimack River, Little River  
Merrimack Watershed**

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

The Town of Groveland is a co-permittee for Part B, Unauthorized Discharges; Part C, Operation and Maintenance of the Sewer System, which include conditions regarding the operation and maintenance of the collection system owned and operated by the Town; and Part D, Alternate 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 the 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 Groveland  
Town Hall  
183 Main Street  
Groveland, MA 01834

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 December 7, 2005.

This permit consists of the cover pages, **Part I, Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Reassessment of Technically Based Industrial Discharge Limits), **Attachment C** (Industrial Pretreatment Program Annual Report Requirements), and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this 25th day of September, 2019

/S/SIGNATURE ON FILE

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

/S/SIGNATURE ON FILE

Lealdon Langley, Director  
Division of Watershed Management  
Department of Environmental Protection  
Commonwealth of Massachusetts  
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 046 to the Merrimack 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</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Effluent Flow <sup>5</sup>	18.1 MGD Rolling Average	---	Report MGD	Continuous	Recorder
Effluent Flow <sup>5</sup>	Report MGD	---	---	Continuous	Recorder
BOD <sub>5</sub>	30 mg/L 4,500 lb/day	45 mg/L 6,755 lb/day	Report mg/L Report lb/day	5/week	Composite
BOD <sub>5</sub> Removal <sup>6</sup>	≥ 85 %	---	---	---	---
TSS	30 mg/L 4,529 lb/day	45 mg/L 6,793 lb/day	Report mg/L Report lb/day	5/week	Composite
TSS Removal <sup>6</sup>	≥ 85 %	---	---	---	---
pH Range <sup>7</sup>	6.5 - 8.5 S.U.			1/day	Grab
Total Residual Chlorine <sup>8,9</sup>	355 µg/L	---	614 µg/L	3/day	Grab
<i>Enterococci</i> <sup>8,9</sup>	35 cfu/100 mL	---	276 cfu/100 mL	1/month	Grab
Fecal Coliform <sup>8,9</sup>	88 MPN/100 mL	---	260 MPN/100 mL	5/week	Grab
Total Phosphorus (April 1 – October 31)	Report mg/L	---	Report mg/L	1/month	Composite
Total Nitrogen <sup>11</sup> (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	---	Report mg/L ---	1/week 1/month	Composite Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Total Kjeldahl Nitrogen <sup>11</sup> (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	--- ---	Report mg/L ---	1/week 1/month	Composite Composite
Total Nitrate+Nitrite <sup>11</sup> (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	--- ---	Report mg/L ---	1/week 1/month	Composite Composite
<b>Whole Effluent Toxicity (WET) Testing<sup>12,13</sup></b>					
LC <sub>50</sub>	---	---	≥ 100 %	1/quarter	Composite
Hardness	---	---	Report mg/L	1/quarter	Composite
Total Organic Carbon	---	---	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
Total Zinc	---	---	Report mg/L	1/quarter	Composite
Dissolved Organic Carbon	---	---	Report mg/L	1/quarter	Composite

Ambient Characteristic <sup>14</sup>	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Hardness	---	---	Report mg/L	1/quarter	Grab
Total Organic Carbon	---	---	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
Dissolved Organic Carbon	---	---	Report mg/L	1/quarter	Grab
pH <sup>15</sup>	---	---	Report S.U.	1/quarter	Grab
Temperature <sup>15</sup>	---	---	Report °C	1/quarter	Grab
Total Phosphorus <sup>10</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

## 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. 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 C.F.R. § 136.
2. In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. 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 C.F.R. Part 136 or required under 40 C.F.R. 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” for all non-detects for that reporting period and report the average of all the results.
4. Each composite sample will consist 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. Report annual average, monthly average, and the maximum daily flow in million gallons per day (MGD). The limit is an annual average, which shall be reported as a rolling average. The value 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.

The following information shall be reported and submitted as an attachment to the monthly DMRs for each day there was a bypass of secondary treatment:

- date and time of initiation
- total influent flow at time of initiation
- date and time of termination
- total influent flow at time of termination
- total duration of flow
- total volume of flow

A bypass of secondary treatment also is subject to the requirements of Part II.B.4. and Part II.D.1.e. of this permit. Bypass flows shall be measured using a meter.

The Permittee shall not add septage to the wastestream at the treatment plant during activation of the secondary treatment bypass.

6. The percent removal requirement for BOD<sub>5</sub> and TSS apply only during dry weather, meaning any calendar day on which there is less than 0.1 inches of rain and no snowmelt.
7. 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.).
8. 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. For the purposes of this permit, TRC analysis must be completed using a test method in 40 C.F.R. § 136 that achieves a minimum level no greater than 20 µg/L.

The Permittee may simulate the chlorine contact time in the outfall pipe prior to discharge into the Merrimack River by holding effluent samples in a dark environment before measuring TRC, enterococci and fecal coliform. The holding time shall be calculated based on effluent flow to determine the amount of time required for wastewater to pass between the point of collection and the outfall, but at no time shall the holding time exceed 45 minutes.

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.

9. *Enterococci* and Fecal coliform monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required. The monthly average limit for Fecal Coliform is expressed as a geometric mean. For samples tested using the Most Probable Number (MPN) method, the units may be expressed as MPN. The units may also be expressed as colony forming units (cfu) when using the Membrane Filtration method.
10. See Part I.H.2. for ambient phosphorus monitoring requirements.
11. Total Nitrogen shall be calculated as the sum of Total Kjeldahl Nitrogen and Total Nitrate + Nitrite.
12. 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** of this permit. LC<sub>50</sub> is defined in Part II.E. of this permit. The Permittee shall test the fathead minnow (*Pimephales promelas*). Toxicity test samples shall be collected, and tests completed, during the same weeks in January, April, July and October. The complete report for each toxicity test shall be submitted as an attachment to the second monthly DMR submittal immediately following the completion of the test.
13. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A**, 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**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.
14. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A**, 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**. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.
15. 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.



**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 § 301 or § 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 C.F.R. §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.
9. 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 and thirteen combined sewer overflow outfalls (CSOs) listed in Part I.F.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 and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this permit (24-hour reporting).
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 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 of the collection system owned and operated respectively by the City of Haverhill and the Town of Groveland, Massachusetts (“co-permittee”) shall be in compliance with the activities and required reporting with respect to the portions of the collection system that each owns or operates. The Permittee and co-permittee shall only be responsible for violations relative to the portions of the collection system that they own and operate.

The Permittee and co-permittee are required to complete the following activities for the respective portions of the collection system which they operate:

**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 (see page 1 of this permit for the effective date). 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 to the extent feasible. If certain information is determined to be infeasible to obtain, a justification must be provided along with the map. If EPA disagrees with the assessment, it may require the map to be updated accordingly.

Any existing mapping shall be updated to contain the elements required by this permit, as described above.

### 5. Collection System O&M Plan

The Permittee and co-permittee shall develop and implement a Collection System O&M Plan. Any existing Collection System O&M Plans shall be updated to contain the required elements described below.

- a. Within six (6) months of the effective date of the permit, the 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. Sump pumps and roof down spouts shall be evaluated and removed where practicable. If removing certain sump pumps and roof downspouts is determined to be impracticable, a justification must be provided along with the submittal of the O&M Plan. If EPA disagrees with the assessment, it may require the O&M Plan to be updated accordingly;
  - (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 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 18.1 MGD design flow (14.5 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 the 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 B** – 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 C.F.R. § 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 the 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 C** (Industrial Pretreatment Program Annual Report Requirements) of this permit and shall be submitted no later than **March 1** 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 C.F.R. 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 C.F.R. § 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 C.F.R. § 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.

**F. COMBINED SEWER OVERFLOWS (CSOs)**

1. Effluent Limitations

During wet weather (including snowmelt), the Permittee is authorized to discharge storm water/wastewater from the CSO outfalls listed below:

Outfall #	CSO Outfall Name	Latitude	Longitude	Receiving Water
Upper Siphon System				
024	Upper Siphon-Varnum Street	42.76683934	71.09305991	Merrimack River
Middle Siphon System				
021H	Winter Street and Hale Street	42.777451933	71.088324285	Little River
038	High Street Diversion	42.777229680	71.088322017	Little River
021B	Emerson Street	42.774568391	71.082998651	Little River
021F	Center Barrel - Locke Street	42.775143535	71.084998584	Little River
021A	Middle Siphon - Essex Street	42.773064312	71.078315989	Little River
Lower Siphon System				
019	Main Street North	42.774516793	71.076343479	Merrimack River
040	Bethany Avenue	42.774511831	71.074242947	Merrimack River
041	Chestnut Street	42.768424503	71.065258650	Merrimack River
013	Lower Siphon - Buttonwood Ave.	42.770229811	71.064186948	Merrimack River
Bradford System				
032	Bradford Avenue	42.770121267	71.085433959	Merrimack River
034	Middlesex Street	42.772581435	71.078322954	Merrimack River
039	South Webster	42.768424503	71.065258650	Merrimack River

2. The effluent discharged from these CSOs is subject to the following limitations:
  - a. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT) to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgment (BPJ) determination that BPT, BCT, and BAT for combined sewer overflow (CSO) control includes the implementation of Nine Minimum Controls (NMC) specified below. These Nine Minimum Controls and the Nine Minimum Controls Minimum Implementation Levels which are detailed further in Part I.F.3. are requirements of this permit.
    - (1) Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows;
    - (2) Maximum use of the collection system for storage;
    - (3) Review and modification of the pretreatment program to assure CSO impacts are minimized;
    - (4) Maximization of flow to the POTW for treatment;
    - (5) Prohibition of dry weather overflows from CSOs;
    - (6) Control of solid and floatable materials in CSOs;
    - (7) Pollution prevention programs that focus on contaminant reduction activities;
    - (8) Public notification to ensure that the public receives adequate notification of CSO occurrences and impacts;
    - (9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.
  - b. The discharges shall not cause or contribute to violations of federal or state Water Quality Standards.
3. Nine Minimum Controls Minimum Implementation Levels
  - a. The Permittee must implement the nine minimum controls in accordance with the documentation provided to EPA and MassDEP or as subsequently modified to enhance the effectiveness of the controls. This implementation must include the controls identified in Part I.F.3.b-g of this permit plus other controls the Permittee can reasonably undertake as set forth in the documentation.
  - b. Each CSO structure/regulator, pumping station and/or tidegate shall be routinely inspected, at a minimum of once per month, to ensure that they are in good working



condition and adjusted to minimize combined sewer discharges (NMC # 1, 2 and 4). The following inspection results shall be recorded: the date and time of inspection, the general condition of the facility, and whether the facility is operating satisfactorily. If maintenance is necessary, the Permittee shall record: the description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The Permittee shall maintain all records of inspections for at least three years.

- c. **Annually, no later than March 31<sup>st</sup>**, the Permittee shall submit a certification to MassDEP and EPA which states that the previous calendar year's monthly inspections were conducted, results recorded, and records maintained. MassDEP and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the Permittee. Discharges to the combined system of septage, holding tank wastes, or other material which may cause a visible oil sheen or containing floatable material are prohibited during wet weather when CSO discharges may be active (NMC # 3, 6, and 7).
- d. Dry weather overflows (DWOs) are prohibited (NMC # 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and MassDEP orally within 24 hours of the time the Permittee becomes aware of the circumstances and a written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. See also Paragraph D.1.e. of Part II of this permit.
- e. The Permittee shall quantify and record all discharges from combined sewer outfalls (NMC # 9). Quantification shall be through direct measurement. The following information must be recorded for each combined sewer outfall for each discharge event, as set forth in Part I.F.4.:
  - Duration (hours) of discharge;
  - Volume (gallons) of discharge;
  - National Weather Service precipitation data from the nearest gage where precipitation is available at daily (24-hour) intervals and the nearest gage where precipitation is available at one-hour intervals. Cumulative precipitation per discharge event shall be calculated.

The Permittee shall maintain all records of discharges for at least six years after the effective date of this permit.

- f. The Permittee shall install and maintain identification signs for all combined sewer outfall structures (NMC # 8). The signs must be located at or near the combined sewer outfall structures and easily readable by the public from the land and water. These signs shall be a minimum of 12 x 18 inches in size, with white lettering against a green background, and shall contain the following information:

CITY OF HAVERHILL  
WET WEATHER  
SEWAGE DISCHARGE  
OUTFALL (discharge serial number)

Where easements over property not owned by the Permittee must be obtained to meet this requirement, the Permittee shall identify the appropriate landowners and obtain the necessary easements, to the extent practicable.

The Permittee shall place signs in English and Spanish or add a universal wet weather sewage discharge symbol to existing signs.

g. Public Notification Plan

- (1) Within 12 months of the effective date of the permit, the Permittee shall submit to EPA and MassDEP a Public Notification Plan describing the measures that will be taken to meet NMC#8 in Part I.F.2 of this permit (NMC #8). The public notification plan shall include the means for disseminating information to the public, including communicating the initial and supplemental notifications required in Part I.F.3.g.(2) and (3) of this permit, as well as procedures for communicating with public health departments, including downstream communities, whose waters may be affected by discharges from the Permittee's CSOs.
- (2) Initial notification of a probable CSO activation shall be provided to the public as soon as practicable, but no later than, four (4) hours after becoming aware by monitoring, modeling or other means that a CSO discharge has occurred. Notification may be made through electronic means, including posting to the Permittee's website. The initial notification shall include the following information:
  - Date and time of probable CSO discharge
  - CSO number and location
- (3) Supplemental notification shall be provided to the public as soon as practicable, but no later than, twenty-four (24) hours after becoming aware of the termination of any CSO discharge(s). Notification may be made through electronic means, including posting to the Permittee's website. The supplemental notification shall include the following information:
  - CSO number and location
  - Confirmation of CSO discharge
  - Date, start time and stop time of the CSO discharge
- (4) Annual notification - **Annually, by March 31<sup>st</sup>**, the Permittee shall post information on the locations of CSOs, a summary of CSO activations and volumes, status and progress of CSO abatement work, and contacts for additional information on CSOs and water quality on a website. This information shall be disseminated through the

means identified in the Public Notification Plan that is submitted in accordance with Part I.F.3.g.(1) of this permit.

The Public Notification Plan shall be implemented no later than 12 months following the effective date of the permit. The initial, supplemental, and annual public notification requirements shall become effective 12 months following the effective date of the permit.

4. Nine Minimum Controls Reporting Requirement

**Annually, no later than March 31<sup>st</sup>**, the Permittee shall submit a report summarizing activities during the previous calendar year relating to compliance with the nine minimum controls. The annual report shall include the CSO outfall monitoring data required by Part I.F.5. of this permit.

5. Combined Sewer Overflow Outfall Monitoring

For each combined sewer overflow outfall listed in Part I.F.1 of this permit, the Permittee must monitor the following:

Parameters	Reporting Requirements	Monitoring Requirements	
	Total Monthly	Measurement Frequency	Sample Type
Total Flow	Report Gallons	Daily, when discharging	Continuous
Total Flow Duration (Duration of flow through CSO)	Report Hours	Daily, when discharging	Continuous
Number of CSO Discharge Events	Report Monthly Count	Daily, when discharging	Count

- a. For Total Flow, measure the total flow discharged from each CSO outfall during the month. For Total Flow Duration, report the total duration (hours) of discharges for each CSO outfall during the month.
- b. For those months when a CSO discharge does not occur, the Permittee must indicate “no discharge” for the outfall for which data was not collected.
- c. This information shall be submitted with the annual report required by Part I.F.4. of this permit.

**G. 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 C.F.R. § 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 C.F.R. § 503.6.
5. The 40 C.F.R. § 503 requirements include the following elements:
  - General requirements
  - Pollutant limitations
  - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
  - Management practices
  - Record keeping
  - Monitoring
  - Reporting

Which of the 40 C.F.R. § 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

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<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>

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 C.F.R. § 503.8.

7. Under 40 C.F.R. § 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 C.F.R. § 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 § 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 C.F.R. § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in § 503 are met. 40 C.F.R. § 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 C.F.R. § 503 Subpart B.
8. The Permittee shall submit an annual report containing the information specified in the 40 C.F.R. § 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).

## H. SPECIAL CONDITIONS

1. The Permittee shall notify the Massachusetts Division of Marine Fisheries within 4 hours of any emergency condition, plant upset, bypass, CSO discharges, SSO discharges or other system failure which has the potential to violate bacteria permit limits. Within 24 hours a notification of a permit excursion or plant failure shall be sent to the following address and telephone number:

Division of Marine Fisheries  
Shellfish Management Program  
30 Emerson Avenue  
Gloucester, MA 01930  
(978)282-0308

2. The Permittee shall develop and implement a sampling and analysis plan for collecting monthly total phosphorus samples from the Merrimack River at a representative location upstream of the facility. Samples shall be collected once per month, from April through October, during dry weather. Dry weather is defined as any calendar day on which there is

less than 0.1 inch of rainfall that is preceded by at least 72 hours without rainfall. The sampling plan shall be submitted to EPA and DEP as part of a Quality Assurance Project at least three months prior to the first planned sampling date.

## I. 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 no later than the 15th day of the month electronically using NetDMR. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to 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.I.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 2020, 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 Region 1 EPA Water Division (EPA WD). Starting on 21 December 2020, 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:

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

b. 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 WD

a. The following requests, reports, and information described in this permit shall be submitted to the NPDES Applications Coordinator in EPA WD:

- (1) Transfer of permit notice;
- (2) Request for changes in sampling location;
- (3) Request for reduction in testing frequency;
- (4) Request for change in WET testing requirement; and
- (5) 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 (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 2020, 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 2020, 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 Assistance Division (ECAD)  
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's Emergency Response at 888-304-1133**

**J. STATE PERMIT CONDITIONS**

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are 1) a Federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*; and 2) an identical State surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and 314 CMR 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this State surface water discharge permit.
2. This authorization also incorporates the State water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, § 27 and 314



CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this State surface water discharge permit as special conditions pursuant to 314 CMR 3.11.

3. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as a NPDES Permit issued by the EPA. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit shall remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.

**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-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

### 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 TBLs 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 planing 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.

**REASSESSMENT OF TECHNICALLY BASED LOCAL LIMITS  
(TBLLs)**

POTW Name & Address : \_\_\_\_\_

NPDES                                      PERMIT                                      # :  
\_\_\_\_\_

Date EPA approved current TBLLs : \_\_\_\_\_

Date      EPA      approved      current      Sewer      Use      Ordinance :  
\_\_\_\_\_

**ITEM I.**

In Column (1) list the conditions that existed when your current TBLLs were calculated. In Column (2), list current conditions or expected conditions at your POTW.		
	<b>Column (1) EXISTING TBLLs</b>	<b>Column (2) PRESENT CONDITIONS</b>
POTW Flow (MGD)		
Dilution Ratio or 7Q10 (from NPDES Permit)		
SIU Flow (MGD)		
Safety Factor		N/A
Biosolids Disposal Method(s)		

**ITEM II.**

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

**ITEM III.**

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

**ITEM IV.**

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

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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 Maximum (ug/l)	Average (ug/l)	Water Quality Criteria (Gold Book) From TBLLs Today (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)	Biosolids	Columns	
	Data Analyses		(2A)	(2B)
	Average		Biosolids Criteria	Biosolids Criteria
	(mg/kg)		From TBLLs	New
			(mg/kg)	(mg/kg)
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Molybdenum				
Selenium				
Other (List)				

## **Attachment C**

### **Industrial Pretreatment Program Annual Report Requirements**

The Permittee shall provide to the Approval Authority with an annual report that briefly describes the POTW's program activities, including activities of all participating agencies, if more than one jurisdiction is involved in the local program. The report required by this section shall be submitted no later than one year after approval of the POTW's Pretreatment Program, and at least annually thereafter, and must include, at a minimum, the applicable required data in appendix A to 40 CFR Part 127. The report required by this section must also include a summary of changes to the POTW's pretreatment program that have not been previously reported to the Approval Authority and any other relevant information requested by the Approval Authority. As of December 21, 2020 all annual reports submitted in compliance with this section must be submitted electronically by the POTW Pretreatment Program to the Approval Authority or initial recipient, as defined in 40 CFR 127.2(b), in compliance with this section and 40 CFR Part 3 (including, in all cases, Subpart D to Part 3), 40 CFR 122.22, and 40 CFR Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, the Approval Authority may also require POTW Pretreatment Programs to electronically submit annual reports under this section if specified by a particular permit or if required to do so by state law.

The permitted shall submit to Approval Authority and the state permitting authority a report that contains the following information requested by EPA:

1. An updated list of the POTW's Industrial Users by category as set forth in 40 C.F.R. 403.8(f)(2)(i), to include:
  - a. Names and addresses, or a list of deletions and additions keyed to a previously submitted list. The POTW shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical Pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The POTW shall also list the Industrial Users that are subject only to local Requirements. The list must also identify Industrial Users subject to categorical Pretreatment Standards that are subject to reduced reporting requirements under paragraph (e)(3), and identify which Industrial Users are Non-Significant Categorical Industrial Users.
  - b. Permit status. Whether each SIU has an unexpired control mechanism and an explanation as to why any SIUs are operating without a current, unexpired control mechanism (e.g. permit);
  - c. Baseline monitoring reporting requirements for newly promulgated industries
  - d. In addition, a brief description of the industry and general activities;
2. A summary of compliance and enforcement activities during the preceding year, including the number of:

- a. significant industrial users inspected by POTW (include inspection dates for each industrial user),
  - b. significant industrial users sampled by POTW (include sampling dates for each industrial user),
  - c. compliance schedules issued (include list of subject users),
  - d. written notices of violations issued (include list of subject users),
  - e. administrative orders issued (include list of subject users),
  - f. criminal or civil suits filed (include list of subject users) and,
  - g. penalties obtained (include list of subject users and penalty amounts);
3. 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;
  4. The Permittee shall prepare annually a list of industrial users, which during the preceding twelve (12) months have significantly violated Pretreatment Standards or requirements 40 C.F.R. 403.8(f)(2)(vii). This list is to be published annually in a newspaper of general circulation in the Permittee's service area.
  5. A summary of all monitoring activities performed within the previous twelve (12) months. The following information shall be reported:

Total number of SIUs inspected; and  
Total number of SIUs sampled.

- a. For all industrial users that were in Significant Non-Compliance during the previous twelve (12) months, provide the name of the violating industrial user; indicate the nature of the violations, the type and number of actions taken (administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. Indicate if the company returned to compliance and the date compliance was attained. Determination of Significant Non-Compliance shall be performed.
6. A summary of all enforcement actions not covered by the paragraph above conducted in accordance with the approved Enforcement Response Plan.
  7. A description of actions being taken to reduce the incidence of significant violations by significant industrial users.
  8. A detailed description of all interference and pass-through that occurred during the past year.
  9. A thorough description of all investigations into interference and pass-through during the past year.

10. 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;
11. The Permittee shall analyze the treatment facility influent and effluent at least Annually for the presence of the toxic pollutants listed in 40 CFR Part 122 Appendix D (NPDES Application Testing Requirements) Table III as follows:
  - Antimony
  - Arsenic
  - Beryllium
  - Cadmium
  - Chromium
  - Copper
  - Lead
  - Mercury
  - Nickel
  - Selenium
  - Silver
  - Thallium
  - Zinc
  - Cyanide
  - Phenols

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. All analytical procedures and method detection limits must be specified when reporting the results of such analyses.

12. The Permittee shall analyze the treatment facility sludge (biosolids) prior to disposal, for the presence of toxic pollutants listed above in 40 CFR Part 122 Appendix D (NPDES Application Testing Requirements) Table III at least once per year. If the Permittee does not dispose of biosolids during the calendar year, the Permittee shall certify to that in the Pretreatment Annual Report and the monitoring requirements in this paragraph shall be suspended for that calendar year.
  - a. The Permittee shall use sample collection and analysis procedures as approved for use under 40 CFR Part 503 or specified in the EPA Region 8 General Permit for biosolids.
13. The summary shall include an evaluation 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 paragraphs above or any similar sampling program described in this Permit.
14. Identification of the specific locations, if any, designated by the Permittee for receipt (discharge) of trucked or hauled waste, if modified;
15. Information as required by the Approval Authority or state permitting authority on the discharge to the POTW from the following activities:
  - (A) Ground water clean-up from underground storage tanks;
  - (B) Trucked or hauled waste; and,
  - (C) Groundwater clean-up from RCRA or Superfund sites.
16. A description of all changes made during the previous calendar year to the Permittee's pretreatment program that were not submitted as substantial or non-substantial modifications to EPA.
17. The date of the latest adoption of local limits and an indication as to whether or not the Town is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.
18. Any other information that may be deemed necessary by the Approval Authority.

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  
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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

NPDES PART II STANDARD CONDITIONS  
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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

NPDES PART II STANDARD CONDITIONS  
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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

## NPDES PART II STANDARD CONDITIONS

(April 26, 2018)

- (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. MA0101621  
HAVERHILL WATER POLLUTION ABATEMENT FACILITY  
HAVERHILL, MASSACHUSETTS**

The U.S. Environmental Protection Agency's Region 1 ("EPA") and the Massachusetts Department of Environmental Protection ("MassDEP") are issuing a Final National Pollutant Discharge Elimination System ("NPDES") Permit to the City of Haverhill ("the City" or "Haverhill") for the Wastewater Pollution Abatement Facility ("WPAF") located in Haverhill, Massachusetts. This permit is being issued under the Federal Clean Water Act ("CWA" or "Act"), 33 U.S.C., §§ 1251 *et. seq.*, and the Massachusetts Clean Waters Act, M.G.L. Ch. 21, §§ 26-35.

This permit is being jointly issued by EPA and MassDEP. EPA will generally present responses to comments as EPA's and MassDEP's, even where the reference is only to EPA. MassDEP's certification and joint issuance of the permit establishes that MassDEP affirms EPA's response. Accordingly, this document represents the joint determinations of EPA and MassDEP, which are reflected in separately enforceable discharge permits issued under federal and state law.

In accordance with the provisions of 40 C.F.R. § 124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit No. MA0101621 ("Draft Permit"). The Response to Comments explains and supports EPA's determinations that form the basis of the Final Permit. From June 7, 2019 through July 23, 2019, EPA and MassDEP (together, the "Agencies") solicited public comments on the Draft Permit.

EPA and MassDEP received comments from

- Robert E. Ward, Deputy DPW Director, The City of Haverhill dated July 22, 2019
- Jennifer A. Pederson, Executive Director, Massachusetts Water Works Association ("MWWA") dated July 10, 2019.
- Philip D. Guerin, President and Chairman, Massachusetts Coalition for Water Resources Stewardship ("MCWRS") dated July 23, 2019.
- Betsy Reilly, Ph.D., Director of Environmental Quality Department, Massachusetts Water Resources Authority ("MWRA") dated July 23, 2019.
- Gene Porter, Chair, Lower Merrimack River Local Advisory Committee ("LMRLAC") dated July 20, 2019.
- Heather McCann, Executive Director, Groundwork Lawrence ("GWL") dated July 23, 2019
- Joint comments from Julia Blatt, Executive Director, Massachusetts Rivers & Caitlin Peale Sloan, Senior Attorney, Conservation Law Foundation ("CLF") on July 23, 2019.
- Peter Severance, River Merrimack dated July 22, 2019.
- Christine Eckert, Co-Executive Director, and John Macone, Co-Executive Director, Merrimack River Watershed Council ("MRWC") dated July 22, 2019.

After a review of the timely-submitted comments, EPA and MassDEP have made a final decision to issue this permit authorizing the discharge. The Final Permit takes the same fundamental approach as the Draft Permit made available for public comment. EPA’s decision-making process has benefited from the various comments and additional information submitted and, as an outgrowth of those materials, EPA has made certain revisions to the permit in response. EPA also has supplemented certain analyses supporting the Final Permit, also in response to comments. These improvements and changes are detailed in this document and reflected in the Final Permit. A summary of the changes made in the Final Permit is listed below. The analyses underlying these changes are explained in the responses to individual comments that follow, which are identified after each change where applicable.

A copy of the Final Permit and this response to comments document will be posted on the EPA Region 1 web site: [http://www.epa.gov/region1/npdes/permits\\_listing\\_ma.html](http://www.epa.gov/region1/npdes/permits_listing_ma.html).

A copy of the Final Permit may be also obtained by contacting Evan Lewis, U.S. EPA, 5 Post Office Square, Suite 100 (Mail Code: 06-4), Boston, MA 02109-3912; Telephone: (617) 918-1543; Email [lewis.evan@epa.gov](mailto:lewis.evan@epa.gov).

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## I. Summary of Changes to the Final Permit

1. The effluent limit for aluminum has been removed from the Final Permit. *See* Response 2.
2. Footnote 5 (footnote 6 of the Draft Permit) to Part I.A.1 of the Final Permit has been modified to clarify that a bypass of secondary treatment is subject to the requirements of Part II.B.4. (and not just Part II.B.4.c.) of the permit. *See* Response 3.
3. The last sentence of footnote 5 (footnote 6 of the Draft Permit) to Part I.A.1 of the Final Permit has been modified to say: “The Permittee shall not add septage to the waste stream at the treatment plant during activation of the secondary treatment bypass.” *See* Response 4.
4. Part I.B.2 of the Final Permit has been modified to clarify that public notification of SSOs is required, except for SSOs that do not impact a surface water or the public. *See* Response 5.
5. Part I.B.2 of the Final Permit has been modified to require public notification within 24 hours of *becoming aware* of any unauthorized discharge impacting a surface water or the public. *See* Response 5.
6. Part I.C.4.k of the Final Permit has been updated to include “to the extent feasible.” The Final Permit also requires the following: “If certain information is determined to be infeasible to obtain, a justification must be included along with the map. If EPA disagrees with the assessment, it may require the map to be updated accordingly.” *See* Response 6.
7. Part I.C.5(b)(6) of the Final Permit has been updated to require sump pumps and roof down spouts to be evaluated and *removed where practicable*. The Final Permit also requires the following: “If removing certain sump pumps and roof downspouts is determined to be impracticable, a justification must be provided along with the submittal of the O&M Plan. If EPA disagrees with the assessment, it may require the O&M Plan to be updated accordingly.” *See* Response 7.
8. Part I.F.1 of the Final Permit has been modified to include snowmelt as a source of wet weather. *See* Response 9.
9. Part I.F.3.a of the Final Permit has been modified to read “must include the controls identified in Part I.F.3.b-g of this Permit.” *See* Response 11.
10. Part I.F.3.g of the Final Permit requires the submittal and implementation of the public notification plan within 12 months of the effective date of the permit. *See* Response 13.

11. The continuous monitoring requirement for total residual chlorine has been removed from the Final Permit and the monitoring frequency has been changed to three times per day. *See* Response 17.
12. The monthly average and weekly average TSS mass-based limits in the Final Permit have been updated to be 4,529 lb/day and 6,793 lb/day, respectively. *See* Response 19.
13. A footnote to Part I.A.1 of the Final Permit has been added to the 85% removal requirements for BOD<sub>5</sub> and TSS indicating that these limits apply only during dry weather, meaning any calendar day on which there is less than 0.1 inches of rainfall and no snowmelt. *See* Response 20.
14. Footnote 4 to Part I.A.1 of the Final Permit has been deleted and footnote 3 has been modified for clarification to say: “For reporting an average based on a mix of values detected and not detected, assign a value of “0” for all non-detects for that reporting period and report the average of all the results.” *See* Response 22.
15. Footnote 8 of Part I.A.1 of the Final Permit has been modified to specify that samples should be held in a dark environment for a period of time equal to the amount of time required for wastewater to pass between the point of collection and the outfall, but at no time shall the holding time exceed 45 minutes. *See* Response 37.
16. Footnote 8 of Part I.A.1 of the Final Permit has been modified to indicate that the holding time may be applied to *enterococci* and fecal coliform monitoring as well. *See* Response 38.
17. Footnote 12 to Part I.A.1 of the Final Permit has been modified to allow WET results to be submitted on the “second monthly DMR submittal following completion of the test.” *See* Response 39.
18. Part I.B.2 of the Final Permit has been modified to specify that notifications shall remain on the Permittee’s website for a minimum of 12 months. *See* Response 40.
19. Part I.F.3.g of the Final Permit has been modified to remove references to “affected entities” and “affected parties.” *See* Response 41.
20. Part I.F.3.f of the Final Permit has been modified to require signage in both English and Spanish, or the addition of a universal wet weather sewage discharge symbol to existing signs. *See* Response 53.

## II. Responses to Comments

Comments are reproduced below as received and have not been edited.

### A. Comments from Robert E. Ward, Deputy DPW Director, on behalf of the City of Haverhill:

#### Comment 1

Due to the substantial revisions and additional information provided in this comment letter, the City requests that EPA prepare and make available for additional public comment a revised Draft Permit incorporating the revisions requested herein. The City also requests that prior to issuing a revised Draft Permit, a meeting be held with the City to discuss the comments and additional data provided herein.

#### Response 1

EPA disagrees that another public notice period with a revised Draft Permit is necessary. The information and arguments in the comments directly related to the subject matter and issues presented in the Draft Permit. Information and data provided by the commenter and issues concerning the permit that were identified by the commenters neither raised “substantial” nor “new” questions warranting reopening the public comment period under 40 C.F.R. § 124.14(b). Clarifications made in the Final Permit are logical outgrowths of the Draft Permit.

In declining to reopen the public comment period, EPA also took into account that the permit has long-since expired, and that the new permit includes additional, new conditions that will ameliorate the impacts of Haverhill’s ongoing CSO discharges on human health and the environment. Given the nature of these impacts, in EPA’s view, time is of the essence, and forestalling issuance of the permit by taking additional, potentially cumulative and duplicative comment, would not further the objectives of the Act, which requires permits to be revisited at regular five-year terms.

The Agencies met with representatives of the Haverhill WPAF on two separate occasions to discuss the NPDES Draft Permit and the permit renewal process. On March 19, 2019, EPA and MassDEP conducted a site visit to tour the facility and discuss the process of renewing the District’s NPDES Permit. On May 15, 2019, EPA met with representatives of Haverhill to further discuss the development of the Draft Permit and answer additional questions on the Draft Permit and the NPDES permit process.

At the May meeting, EPA Region 1 also shared EPA’s goal of finalizing permits within a six months period. The goal is in the FY 2018-2022 U.S. EPA Strategic Plan and represents one of EPA’s highest policy priorities.<sup>1</sup>

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<sup>1</sup> FY 2018-2022 U.S EPA Strategic Plan, February 2018 (Updated September 2019), page 46.  
<https://www.epa.gov/sites/production/files/2019-09/documents/fy-2018-2022-epa-strategic-plan.pdf>



## Comment 2

Item 5.1.10.2 of the Fact Sheet provided by EPA with the Draft Permit includes a chronic (monthly average) aluminum limit of 87 µg/L. The City objects to the imposition of a limit for the following reasons:

a) There is no reasonable potential for aluminum to impact the river based on the City's ongoing sampling results after implementing clean sampling techniques. The samples relied upon by EPA were historically collected by the City staff with the understanding that the samples were to be utilized for toxicity testing to determine suitability of the receiving water (Merrimack River) as dilution water for the WET test, or alternately to provide analytical evidence that laboratory dilution water is more appropriate to be used. WET testing involves determining the viability of the daphnia and fat head minnows in a range of effluent concentrations. As was described to EPA during discussions prior to issuance of the Draft Permit, a detailed review of the City's WET test sample collection method clearly shows the collection methods would not be appropriate to use to develop metals limits for NPDES Permits. Sample collection consisted of a staff member using a half-gallon sized plastic pail, attaching a rope to the metal handle, and preparing for travel by coiling the rope and allowing it to drop into the bucket. At the sampling site, the employee would lower the bucket and rope into the river off the Basiliere Bridge and then pull the bucket back. During various river conditions, it was not possible to guarantee the bucket does not collect debris from the surface of the river or sediments, thus misrepresenting the river ambient conditions. As a result of this sampling protocol, the samples were likely contaminated by the method of transport to and from the sampling location as well as the sampling method.

This method of ambient river water collection would, at best, be considered marginally adequate to meet the Educational/Stewardship-level (lowest level and quality samples) as outlined in the MassDEP's Quality Management Plan ("MQMP"). EPA's reliance on this metals data to calculate reasonable potential for metals effluent limits does not come close to meeting the rigor (i.e., accuracy, precision, frequency, comparability, overall confidence, etc.) required for use in waterbody assessments or TMDL development.

Upon review of the WET sampling practices, the City staff initiated a sampling program that employs clean sampling techniques described in EPA's Method 1669, clean sample procedures for metals.<sup>2</sup>

Key aspects of the City clean sampling program are:

- Clean sampling protocols were developed with location specific considerations;
- Enthalpy Analytical Laboratory complies with EPA Method 1669 for sampling preparation, and was selected to provide the sample bottles, preparation of samples, and analytical services;

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<sup>2</sup> EPA, 1996, Method 1669, Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, Office of Water, Engineering and Analysis Division, July, 1996.

- Ambient water sampling was initiated in June 2019 and three samples were collected to date (Table 1). The City intends to continue sampling and will provide EPA with additional data. The detailed laboratory reports are included in Attachment 1.

*Table 1. Summary of Clean Sample Data of Ambient Aluminum Concentrations (mg/L)*

Sample Date	Sample Duplicate #1	Sample Duplicate #2	Average	River Flow (USGS Gage Station # 01100000) (CFS)
6/12/19	0.080	--	0.080	8,170
6/18/19	0.071	0.069	0.070	8,100
6/19/19	0.091	0.089	0.090	7,590

- The average daily flow in the Merrimac River upstream of the WPAF outfall discharge location varied from 7,590 to 8,170 cubic feet per second (CFS). This value is more than 8 times the 7Q10 flow of 907 cfs measured at USGS gage station (station #01100000). River velocity impacts ambient metal concentrations due to resuspension of sediments. Samples taken during low flow conditions (close to 7Q10) are more representative of river ambient water quality as shown in the supplemental clean sample data for Lowell RWWU that were collected during low flow periods (1,010 – 6,210 CFS) which are close to 7Q10 flow at its outfall location.
- The City’s intends to continue to collect ambient Aluminum samples employing clean sampling techniques to supplement the clean sample data collected to date. The supplemental clean sample data will be submitted to EPA after the public period for consideration of Aluminum reasonable potential calculation. It is anticipated that the City’s clean sample testing results will be close to those of Lowell RWWU when samples were taken under flow conditions close to 7Q10 conditions.

Based on the clean sample testing results collected to date and revised dilution factor, there is no reasonable potential for Aluminum exceeding current ambient water quality standard as show in Table 2.

b) As stated in the Fact Sheet (Page 27 of 39) EPA has recently adopted new aluminum criteria, which preliminary indications are would result in a substantially higher criteria when MassDEP revises the Massachusetts aluminum criteria. This will, as stated in the Fact Sheet, likely show that the WPAF will no longer show cause or reasonable potential for the imposition of a water quality based effluent limitation.

c) As stated in the Fact Sheet: *“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.”* The Fact Sheet further says: *“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.”* Although EPA acknowledges that the aluminum criteria specified in the Draft Permit is not necessary and will be

significantly higher, it places the onus on the City to (1) take steps to comply with the criteria should MassDEP delay or not complete the planned revisions; or (2) apply for a permit modification.

Table 2. Summary of Metal Reasonable Potential Calculation

Metal	Q <sub>s</sub>	<sup>1</sup> C <sub>s</sub>	Q <sub>d</sub>	<sup>2</sup> C <sub>d</sub>		Q <sub>r</sub>	C <sub>r</sub>		Criteria		Acute Reasonable Potential	Chronic Reasonable Potential	Limits		
	cfs	µg/l	cfs	Acute (µg/l)	Chronic (µg/l)	cfs	Acute (µg/l)	Chronic (µg/l)	Acute (µg/l)	Chronic (µg/l)	C <sub>d</sub> & C <sub>r</sub> > Criteria	C <sub>d</sub> & C <sub>r</sub> > Criteria	Acute (µg/l)	Chronic (µg/l)	
Aluminum	1002	80	28	194.3	194.3	1,030.0	83.11	83.11	750	87	N	N	N/A	N/A	
Cadmium		0		0	0		0	-	-	0.86	0.14	N	N	N/A	N/A
Copper		0		8.7	8.7		0.24	0.24	6	4.3	N	N	N/A	N/A	
Lead		0.2		1.1	1.1		0.22	0.22	26.1	1	N	N	N/A	N/A	
Nickel		0		5.7	5.7		0.16	0.16	219.8	24.4	N	N	N/A	N/A	
Zinc		7		393.8	393.8		17.52	17.52	56.1	56.1	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 clean sample testing data (see Attachment A).

<sup>2</sup>Values represent the 95th percentile (for n ≥ 10) or maximum (for n < 10) concentrations from the DMR data and/or WET testing data during the review period.

d) The City understands the need to invest in upgrades that will make a difference to the environment, and support, the achievement of water quality standards in the River; however, there is simply no rational reason to impose a limit for aluminum at this time. Clearly aluminum is not causing water quality to be compromised, since both EPA and MassDEP agree that the current criteria in Massachusetts is not appropriate. To require a limit, as a “paper exercise” while waiting for MassDEP to change its regulation is wasteful not only of the time and expense for the City, but the for time and wasted effort of MassDEP and EPA, whose efforts are spent imposing (and then, rescinding) an effluent limitation that has absolutely no scientific support as an appropriate criteria.

e) Although the City is appreciative of the 36 months compliance schedule that, according to the Fact Sheet, was given to allow Massachusetts time to adopt new criteria and the final permit to then be modified, once the limit is effective, rescinding this limit would be subject to stringent anti-backsliding and anti-degradation regulations, which may prevent any hope of this “paper” limit ever being removed or modified.

f) Finally, while the 36-month compliance schedule provided in Part I.H gives the appearance of a “wait and see” approach, once this limit is in the final permit, the City must immediately begin planning to meet it, since the Draft Permit allows no other option. To meet the new aluminum limit, the City will need to engage the services of an engineering firm to evaluate the current treatment process at the facility, determine the type and extent of upgrade needed to meet the limit, design the upgrade necessary, prepare bid documents and issue and award bids for construction, and finally complete the construction necessary.

This process, in and of itself, requires at least 36 months. Therefore, the City is now forced to spend money to begin the evaluation and upgrade process, for a limit that state and federal

agencies agree is not necessary. Surely there are better ways for the City to use its funds that will actually be protective of water quality.

**Request:** Remove the environmentally unnecessary and costly aluminum effluent requirement from this Draft Permit. If EPA insists on keeping the effluent limitation, modify the compliance schedule in Part I.H.1 to allow for a 96-month compliance which will:

- a) Provide additional time for Massachusetts to adopt the new criteria, or should MassDEP not adopt the criteria, allow time for the City and co-permittee to implement other operational changes in its water treatment system needed to meet the aluminum criteria;
- b) Prevent the need of the City to immediately begin planning and implementing the upgrade necessary to meet this unnecessary limit; and
- c) Remove the requirement that the City must apply for a permit modification and instead allow for a substitution of the criteria following MassDEP’s completion of its planned revisions.

**Response 2**

Based on the poor ambient sampling methodology described in the comment, EPA agrees that the ambient whole effluent toxicity (“WET”) testing data, in this case, may not have yielded representative data and appreciates the Haverhill WPAF taking the initiative to perform clean sampling techniques to provide more representative data. Because the previous data were not representative of ambient water quality, EPA has conducted a new reasonable potential analysis for aluminum using only the ambient data provided above and the same effluent data used in the Fact Sheet. The results of this reasonable potential analysis are presented below. Note that the equation used in this analysis and the definition of each term are the same as the Fact Sheet at 26-27.

Metal	Q <sub>s</sub>	C <sub>s</sub> <sup>1</sup>	Q <sub>d</sub>	C <sub>d</sub> <sup>2</sup>		Q <sub>r</sub>	C <sub>r</sub>		Criteria		Acute Reasonable Potential	Chronic Reasonable Potential
	cfs	µg/l	cfs	Acute (µg/l)	Chronic (µg/l)	cfs	Acute (µg/l)	Chronic (µg/l)	Acute (µg/l)	Chronic (µg/l)	C <sub>d</sub> & C <sub>r</sub> > Criteria	C <sub>d</sub> & C <sub>r</sub> > Criteria
Aluminum	878	80.0	28	194.2	194.3	906	83.5	83.5	750	87	N	N

<sup>1</sup>Median concentration for the receiving water just upstream of the facility’s discharge.

<sup>2</sup>Values represent the 95th percentile concentrations of the effluent.

Only when both the discharge effluent concentration (C<sub>d</sub>) and the resultant downstream concentration (C<sub>r</sub>) exceed the applicable criterion is there reasonable potential for the discharge to cause, or contribute to, an excursion above the water quality standard. For aluminum, the resultant downstream concentration does not exceed the applicable criteria. Therefore, the aluminum limit has been removed from the Final Permit.

Monitoring for these metals shall continue to be required as part of the quarterly WET tests. EPA notes that any monitoring requirements in the permit is intended to be representative and may be used in the next permit reissuance process for the purpose of conducting a reasonable potential analysis and, if necessary, establishing effluent limits.

### **Comment 3**

The Draft Permit at page 7 of 26 states: *“A bypass of secondary treatment also is subject to the requirements of Part II.B.4.c and Part II.D.1.e of this permit. Bypass flows shall be measured using a meter.”*

Part II.B.4.c refers to an anticipated bypass in which if the City knows it will have a bypass event and must provide notice at least 10 days in advance of the bypass. Part II.D.1.e references the reporting of non-compliant events.

As EPA is aware, it has permitted the City to operate the WPAF during high flow conditions to bypass a portion of the effluent from secondary treatment and blend the primary treatment flow before disinfection and discharge. This practice maximizes the volume of wastewater which receives primary treatment and disinfection, rather than to divert through the CSOs.

It is particularly concerning that each time the City initiates blending of primary and secondary treated flows, it is considered “non-compliance.” Not only does this expose the City to fines and penalties from the EPA, it also exposes the City to third party lawsuits.

In accordance with the EPA 1994 Combined Sewer Overflow Control Policy 59 Fed. Reg. 18,688 (April 19, 1994) (National CSO Policy), Section II.C.7 “Maximizing Treatment at the Existing POTW Treatment Plant,” a facility may be authorized to allow a CSO-related bypass of secondary treatment without the need to obtain approval on a case-by-case basis, where it can be shown that the facility has completed a No Feasible Alternatives Analysis in accordance with this section.

Specifically, EPA’s National CSO Policy states that a permit may “define the specific parameters under which a bypass can legally occur,” and further states:

Under this approach, EPA would allow a permit to authorize a CSO-related bypass of the secondary treatment portion of the POTW treatment plant for combined sewer flows in certain identified circumstances.

59 Fed. Reg. at 18,693 (emphasis added). The Clean Water Act (CWA) requirement that “each permit...for a discharge from a municipal combined storm and sanitary sewer shall conform to” the CSO Policy provides statutory authority for issuance of permits authorizing peak wet weather discharges consistent with the National CSO Policy. CWA 402(q)(1), 33 USC 1342(q)(1).

Further, EPA’s own guidance documents support the authorization of a CSO-related bypass. Combined Sewer Overflows Guidance for Permit Writers (EPA 832-B-95-008, Sept. 1995) (CSO Permit Writers Guidance). That document has never been withdrawn by EPA, and provides the following example permit language for authorized CSO related bypasses:

A CSO-related bypass of the secondary treatment portion of the POTW treatment plant is authorized when the flow rate to the POTW treatment plant is as a result of precipitation event exceeds [insert flow rate in MGD]. Bypasses that occur when the flow at the time of the bypass is under the specified flow rate are not authorized under this condition and are subject to the bypass provision at 40 CFR 122.41(m).

Finally, new requirements proposed by EPA for the secondary bypass reflects a substantial change in the regulatory requirements that are imposed on NPDES dischargers, which are proposed to be imposed without following any of the procedures required before such a change can be made.

Since the Draft Permit identifies that a secondary bypass may occur clearly the City is authorized under this permit to operate a secondary bypass. Therefore, the event should not be identified as a “non-compliant” event (since it is clearly authorized) and reporting requirements under Part II.D.1.e should also not be required. We note that in the recent NPDES Permit issued to the City of Springfield, EPA authorized the secondary bypass.

**Request:** EPA must clearly identify the bypass of secondary treatment under the circumstances described in the Draft Permit as an authorized bypass as it has done in other recent permits and in accordance with the National CSO Policy Section II.C.7 and remove those sections of the Draft Permit that identify this treatment process as noncompliant.

### **Response 3**

In accordance with 40 C.F.R. § 122.41, Part II.B.4 incorporates verbatim the *Bypass* rule at 40 C.F.R. § 122.41(m). Bypass “means the intentional diversion of waste streams from any portion of a treatment facility.” 40 C.F.R. § 122.41(m)(1). Under EPA regulations, “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 preventive maintenance; and
- (C) The permittee submitted notices as required under paragraph (m)(3) of this section.”<sup>3</sup>

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<sup>3</sup> 40 C.F.R. § 122.21(m)(4).

However, EPA “may approve an anticipated bypass, after considering adverse effects, if [EPA] determines that it will meet the [above] three conditions.”<sup>4</sup>

The permittee’s comments regarding the “authorization of a CSO-related bypass” reference Section 7 of the 1994 CSO Policy, entitled “Maximizing Treatment at the Existing POTW Treatment Plant.” 18688 Fed. Reg. at 18693. Following the approach set forth therein, EPA could include a CSO-related bypass provision in the permit if there are no feasible alternatives to bypassing under specific conditions. Section 7 of the CSO Policy further provides that:

“[T]he feasible alternatives requirement of the {bypass} regulation can be met if the record shows that the secondary treatment system is properly operated and maintained, that the system has been designed to meet secondary limits for flows greater than the peak dry weather flow, plus an appropriate quantity of wet weather flow, and that it is either technically or financially infeasible to provide secondary treatment at the existing facilities for greater amounts of wet weather flow. The feasible alternative analysis should include, for example, consideration of enhanced primary treatment (e.g., chemical addition) and non-biological secondary treatment. Other bases supporting a finding of no feasible alternative may also be available on a case-by-case basis.”

*Id.* at 18694.

The permittee has not submitted sufficient information or analysis to satisfy these requirements for inclusion of CSO-related bypass conditions in the Permit for specific flows. Consequently, the permit does not contain such conditions. The Permittee is welcome to submit such documentation for EPA consideration.

EPA acknowledges that the Permittee has submitted a high flow management plan (“HFMP”), dated January 20, 2016, in accordance with the Consent Decree in the matter of the U.S. and Massachusetts v. City of Haverhill, civil action # 16-11698-IT (D. Mass.). The HFMP identifies the circumstances under which the City diverts some wet weather flows around secondary treatment. The HFMP does not itself satisfy the requirements for the approach outlined in Section 7 of the CSO Policy such that it alters the appropriate permitting approach for CSO-related bypasses. Accordingly, there is no basis for incorporating the HFMP into the permit.

EPA acknowledges language contained in the *draft* NPDES permit for the Springfield Regional Waste Water Treatment Facility. EPA continues to review comments and draft language on that permit. That permit has not yet been finalized.

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<sup>4</sup> *Id.*

EPA disagrees that “new requirements” related to secondary bypass “reflect a substantial change in the regulatory requirements.” Permit provisions incorporating the *Bypass* rule at 40 C.F.R. § 122.41(m) were contained in the previous permit and are therefore not new. The Final Permit contains only three new permit provisions with regard to secondary bypass: (1) the requirement to report bypass information on monthly discharge monitoring reports (“DMRs”); and (2) the requirement to measure the flows that bypass secondary treatment using a meter; and (3) the prohibition on receiving septage during activation of the secondary treatment bypass (See Response 4). EPA does not assess these requirements to be “substantial.”

The notification requirements that apply in the event of a bypass are set forth in Part II.B.4. of the Final Permit. Specifically, if the permittee knows in advance of the need to bypass secondary treatment (i.e., an anticipated bypass), prior notice shall be submitted at least ten days before the date of the anticipated bypass (see Part II.B.4.c. of the Final Permit.). In the event of a bypass which was not anticipated, (i.e., unanticipated bypass) notification shall be submitted within twenty-four hours of the bypass in accordance with Part II.D.1.e. of the Final Permit.

Footnote 5 (footnote 6 of the Draft Permit) to Part I.A.1. of the Final Permit has been modified to clarify that a bypass of secondary treatment is subject to the requirements of Part II.B.4. (and not just Part II.B.4.c.) of the permit (which incorporates the regulations in their entirety which pertain to bypasses of secondary treatment that are established at 40 C.F.R. § 122.41(m)).

#### **Comment 4**

The Draft Permit page 7 of 26 states: “The Permittee shall not accept septage during any calendar day in which a bypass of secondary treatment is anticipated.”

The City has two comments with respect to this section:

- a) It is not clear how EPA defines “anticipated bypass. However, Part II.B.4.c requires advance notice of an anticipated bypass. As indicated above, except for a planned bypass required to conduct facility maintenance or repair, all other bypass events occur as a result of weather-related conditions.
- b) In the Fact Sheet 3.1.1, EPA notes “A 28,000-gallon septage tank, which receives about four million gallons of septage annually, is also located in the headworks area. Septage is added to the influent wastewater flow upstream of the bar racks.”

**Request:** Inasmuch as the City is able to accept and hold septage for a period of time, we request that this language be modified as follows: “The *Permittee shall not add septage at the treatment plant to the waste stream during activation of the secondary bypass*”.

#### **Response 4**

Footnote 3 to Part I.A.1. of the revised Draft Permit refers to not accepting septage on any date in which the permittee *anticipates* having to bypass secondary treatment.



Bypasses of secondary treatment typically occur during wet weather events when the secondary treatment capacity of the POTW is exceeded. During such events, the flow capacity at the POTW which would receive secondary treatment would be reduced and would also increase the probability that discharges from CSOs would occur. The intent of the provision in the Draft Permit is to minimize the amount of flows that do not receive secondary treatment. EPA recognizes that the septage receiving practices employed at the Haverhill WPAF are such that potential negative impacts from septage being received when flows bypass secondary treatment are minimized. In recognition of these practices, and to clarify the intent of Footnote 5 (footnote 6 of the Draft Permit) to Part I.A.1. of the Draft Permit, the Final Permit has been modified to read as follows:

*“The Permittee shall not add septage to the waste stream at the treatment plant during activation of the secondary treatment bypass”.*

With regard to the comment on how EPA defines “anticipated bypass,” EPA refers to 40 C.F.R. § 122.41(m), which defines “bypass” as “the intentional diversion of waste streams from any portion of a treatment facility” and “anticipated bypass” as occurring when “the permittee knows in advance of the need for a bypass.”

#### **Comment 5**

In Section 1.B.2, the Draft Permit requires: “...the Permittee must provide notification to the public within 24 hours of any unauthorized discharge on a publicly available web site. Such notification shall include the location and description of the discharge...”

The City has two comments about this section:

- a) The City understands that unauthorized discharges, including sanitary sewer overflows (SSOs) as defined by EPA, are not authorized by this Draft Permit. However, SSOs also include discharges that may occur in basements of private dwellings due to sewer system backups, or in other areas where the SSO does not result in a discharge to surface water. While the City is agreeable to providing public notification for SSO events that impact surface waters, as these could potentially result in a public health hazard, the City objects to providing public notification of basements backups in private dwellings, and other sanitary sewer releases that do not impact surface water, the municipal separate storm sewer (MS4) or would not otherwise pose a widespread public health threat.

The City is agreeable, however, to continuing to report such events to MassDEP (which is presently copied to EPA) in accordance with paragraph 3 of this section and MassDEP’s state regulations.

**Request:** Modify Part B.2 to state that public notification, except SSOs that do not impact surface water (Waters of the United States), the MS4 or otherwise provide a widespread public health threat, shall be provided within 24 hours.

- b) With respect to “notification to the public within 24 hours of any unauthorized discharge on a publicly available website...” At times, an unauthorized discharge may occur, and

the City may not become aware of it, or be notified, for a significant time. It is unreasonable to require public notification within 24 hours of the commencement of an unauthorized discharge for which there may have been a delay of the City becoming aware of the discharge.

**Request:** Modify Part B.2 as follows (underlined text additional) “...the permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge...”

### **Response 5**

a) The commenter’s view of EPA’s conditioning authority under the Act is overly narrow. EPA has authority to impose conditions related to the proper operation and maintenance of the treatment plant, and an SSO may be the result of an operation and maintenance malfunction within the collection system. However, EPA agrees it is not necessary to post every SSO on a public website since there are instances when an SSO does not impact a receiving water or the public. An example may be a low volume SSO at a manhole cover. EPA has modified the language in the Final Permit to clarify that public notification of SSOs is required, except for SSOs that do not impact a surface water or the public.

b) EPA has modified the language in Part I.B.2 to require public notification within 24 hours of becoming aware of any unauthorized discharge impacting a surface water or the public.

### **Comment 6**

In the Draft Permit, Part 1.C.4, extensive mapping of the sewer collection is required. The Draft Permit provides that within 30 months of the effective date of this permit, the permittee and co-permittee shall prepare detailed and extensive collection system mapping.

This request exceeds the requirements under the federal Nine Minimum Controls (NMCs) and lack statutory or regulatory authority.

The above notwithstanding, the City requests the following modifications:

**Request:**

- a) Pursuant to the Draft Permit, mapping is required of all sanitary sewers and manholes. Please revise this language to state, “All sanitary sewer extensions owned by the City in the public-right-of-way.”
- b) Where the requirements mention information such as pipe diameter, date of installation, type of material, distance between manholes, interconnections, etc., please revise this language to include “to the extent feasible.”
- c) Please allow 36 months to comply with this requirement to allow sufficient time to do procurement and provide a meaningful work product.

## Response 6

EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES Permits. NPDES Permit conditions are not solely limited to the Nine Minimum Controls. *See* Section 308 of the CWA; Section 402 of the CWA; 40 C.F.R. § 122.43; CSO Policy at 18696 (“BAT/BCT [for CSO permits] *at a minimum* includes the nine minimum controls”). EPA has regulatory authority to require that the Permittee properly operate and maintain the treatment plant pursuant to 40 C.F.R. § 122.41(e). EPA Region 1 has included mapping as a standard requirement in NPDES Permits issued in Massachusetts since 2007. Furthermore, 40 C.F.R. § 122.41(h) allows EPA to require permittees to furnish “any information” needed to determine permit compliance, and EPA believes that the mapping, operation and maintenance planning, and annual reporting requirements fall within the bounds of these provisions. This information will allow the City of Haverhill to assess the adequacy of the City’s sewer system, better understand vulnerabilities, and more quickly react to specific SSO and CSO events, when they occur.

The comment to restrict sewer system mapping to “All sanitary sewer extensions owned by the City in the public-right-of-way” has not been included in the Final Permit. EPA does not agree that this would provide an accurate representation of the complete collection system and the Permittee did not provide any justification for this proposed change.

Regarding the pipe diameter, date of installation, type of material, etc., EPA agrees that some information may be infeasible to obtain. Therefore, Part I.C.4.k in the Final Permit has been revised to include “to the extent feasible.” However, if certain information is determined to be infeasible to obtain, a justification must be included along with the map. If EPA disagrees with the assessment, it may require the map to be updated accordingly. EPA reserves the right to default to the original formulation in the next permit cycle if it determines that the City’s justifications were inappropriate and/or inadequate.

Regarding the request for 36 months to comply with this mapping requirement, the comment does not provide any justification for the need for an extended schedule for compliance, and EPA does not agree that additional time is needed to fulfill these requirements. Notably, given EPA’s determination above regarding information that is infeasible to obtain, the need for additional time to comply is even more diminished.

## Comment 7

The City has four comments on the Operation and Maintenance requirements in Part I.C.

- a. First, in Parts 1.C.2-3, the Draft Permit requires that the City “shall” implement preventive maintenance and infiltration/inflow programs. Although the City agrees that these programs are necessary, the City notes that such programs are already implemented by the City.

**Request:** The City requests that EPA acknowledge that the City already implements such programs and that compliance with these programs satisfies compliance with the Draft Permit.

- b. Second, in Part I.C.5(a) of the Draft Permit EPA is requiring the submission of a report that provides a description of the collection system management goals, staffing information, and legal authorities. It also requires a list of pump stations, recent studies and construction activities, and a plan for the development of a comprehensive operation and maintenance plan.

Six months is insufficient time to research, analyze, describe and report on these numerous items, particularly for any co-permittee who may not have done this in the past. In addition, the permittee and co-permittee each have its own procurement process that require board, City/Town council or meeting, and/or public work committee for approval of funding, preparation of request for proposal to select consulting firm, negotiation of contract with selected firm to start the work. This process typically takes 9-12 months. Therefore, the City requests that 18 months be allowed for compliance with this condition.

Part (b) requires that a complete and comprehensive Operation and Maintenance (O&M) Plan be completed, implemented, and submitted to EPA and MassDEP within 24 months. As above, this is a tremendous undertaking requiring extensive time and resources, particularly for any co-permittee who does not already have the prescribed O&M plan. In addition, as discussed above, the permittee and co-permittee each have its own procurement process that typically takes 9-12 months. Therefore, the City requests that 36 months be provided for the completion and implementation of this plan.

**Request:** The City requests that 18 months be provided for the completion of section (a) and 36 months be provided for the completion of the O&M Plan under section (b).

- c. Third, Part 1.C.5(b)(6) requires an infiltration and inflow (I/I) reduction program, including focusing on disconnection and redirection of illegal sump pumps and roof down spouts. The City is already required to implement an I/I program pursuant to the Consent Decree entered between the United States of America, the Commonwealth of Massachusetts and the City (Civil Action No. 166-11698-IT). In addition, the City has determined that sump pumps and roof down spouts are not a significant source of inflow in the City and not all such sources can be practicably remediated.

**Request:** The City requests that this provision requiring an I/I program or a specific program aimed at removing connected sump pumps and roof down spouts be removed from the permit or in the alternative that such connections will be evaluated and removed where practicable.

- d. Fourth Part 1.C.5(b)(8) requires the City to prepare An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the Draft Permit. However, it is unclear what such a

plan would entail or if the City's current High Flow Management Plan or the Emergency Plan required by the Consent Decree already is adequate to meet this requirement.

**Request:** The City requests that EPA clarify the scope of the Overflow Emergency Response Plan.

### **Response 7**

EPA acknowledges and supports that the Permittee is already engaged in preventative maintenance of the sewer system and activities to reduce I/I. EPA agrees that current and on-going work related to the requirements in the Part I.C may be included in the O&M Plan. The City's current and ongoing activities may satisfy the Permit requirements if they address each of the elements listed in Part I.C.2-3. EPA evaluates compliance based on the conditions set forth in the Final Permit.

Regarding the request for additional time to comply with Parts I.C.5(a) and (b), EPA believes 6 and 24 months, respectively, is sufficient time. EPA has been including these Capacity, Management, Operation and Maintenance ("CMOM") requirements in municipal permits in Massachusetts for more than 10 years and permittees and co-permittees have been able to fulfill these requirements within this timeframe. Therefore, the provision establishing that the Permittee should provide the best available information within the timeframes designated in the Permit and Part I.C.5 is unchanged in the Final Permit. EPA also notes that considerable work in this regard has already been completed as a response action to the Consent Decree (Civil Action No. 166-11698-IT).

Regarding sump pumps and roof down spouts in Part I.C.5(b)(6), EPA agrees, for the reasons described in the comment, that the Final Permit should require such connections to be evaluated and removed where practicable. However, if removing certain sump pumps and roof downspouts is determined to be impracticable, a justification must be provided along with the submittal of the O&M Plan. If EPA disagrees with the assessment, it may require the O&M Plan to be updated accordingly. EPA reserves the right to default to the original formulation in the next permit cycle if it determines that the City's justifications were inappropriate and/or inadequate. Part I.C.5(b)(6) in the Final Permit has been revised accordingly.

Regarding the Overflow Emergency Response Plan ("ERP") required in Part I.C.5(b)(8), EPA confirms that the Permittee has submitted an ERP, dated June 30, 2017, to EPA and MassDEP pursuant to the November 11, 2016, Consent Decree. *See* Consent Decree Section H ("Emergency Response Plan"). Both EPA and MassDEP conditionally approved the ERP in August of 2017. Although the Plan developed and as conditionally approved pursuant to the CD may suffice to satisfy Part I.C.5(b)(8) of the Permit, the Permittee must nevertheless include it in the required O&M Plan submittal.

### **Comment 8**

Part I.C.6 requires extensive annual reporting including a list of all expenditures for any collection system maintenance activities and corrective actions taken during the previous year. In addition, the annual report would require a description of all unauthorized discharges as defined

in the Draft Permit. Although the City is willing to submit a report detailing compliance with the O&M Plan is necessary, the materials sought are burdensome and will require significant staff time and resources. A list of all expenditures is not relevant to implementation of the O&M Plan. As discussed above in Comment #6, inclusion of SSOs that do not impact surface water is not authorized under the NPDES program or the CWA. These SSOs are otherwise reported to MassDEP and, although actions may be taken to remedy such SSOs, is not relevant to the implementation of the O&M Plan. Further, the City is already required under the Consent Decree (detailed in Section IX of the Consent Decree) with EPA to provide compliance reporting detailing the implementation of the City's IDDE program, CMOM activities, SSO/private/building backups, bypasses and other compliance with the Consent Decree.

**Request:** The City requests that annual report be limited to a description/summary of the activities taken to implement the O&M Plan, that any extraneous requirements regarding expenditures or SSOs that do not impact surface water be removed and that current compliance reporting under the Consent Decree can be submitted, in lieu of a separate annual report under the permit. The City also requests that EPA provide a template report for use by permittees.

#### **Response 8**

See Response 6.

Objectives of the collection system O&M requirements are the prevention of sanitary sewer overflows from the community's collection system and prevention of flow-related violations at Haverhill WPAF. It is a standard permit condition in 40 C.F.R. § 122.41(e), 'Proper Operation and Maintenance', to require the proper operation and maintenance of permitted wastewater systems and related facilities achieve permit conditions. The requirements at 40 C.F.R. § 122.41(d) impose a 'duty to mitigate', which requires that "all reasonable steps be taken to minimize or prevent any discharge violation of the permit that has a reasonable likelihood of adversity affecting human health or the environment."

EPA considers identifying expenditures to properly operate a facility necessary and a proactive approach to operating and maintaining the POTW. Cost effectiveness should clearly be considered in selecting projects to accomplish these goals. EPA does not provide a template for O&M Plans because such plans are unique to each facility. However, EPA encourages the City to consult the EPA document, *Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems*, which can be found on EPA's website at [http://www.epa.gov/npdes/pubs/cmom\\_guide\\_for\\_collection\\_systems.pdf](http://www.epa.gov/npdes/pubs/cmom_guide_for_collection_systems.pdf). The publication is intended to provide guidance to the regulated community (i.e. owners and/or operators of domestic sewer systems) about criteria by which to evaluate a collection system's capacity, management, operation, and maintenance ("CMOM") program activities.

## Comment 9

Part I.F.1 authorizes the City to discharge storm water/wastewater from the CSOs listed in the Draft Permit during wet weather. However, in addition to wet weather events, the City can experience high flows during periods of warm weather that cause snow melt.

**Request:** The City requests that EPA add the underlined language below to Part I.F.1: “During wet weather or when snow melt occurs, the Permittee is authorized to discharge storm water/wastewater from the CSO outfalls ... .”

## Response 9

Consistent with the CSO Policy, 18688 Fed. Reg. at 18689, and 40 C.F.R. § 122.26(b)(13), EPA agrees to the suggested change to include snow melt as a source of wet weather. The Final Permit has been updated accordingly.

## Comment 10

Footnote 6 of the Draft Permit prohibits secondary bypasses that do not qualify as allowable bypasses and that Part 1.F.2.b prohibits violations of federal or state water quality violations. However, the City has the ability to treat certain peak wet weather flows using a secondary bypass, which should be authorized as a means to maximize treatment during wet weather events. The City has submitted a High Flow Management Plan to EPA and MassDEP for operations during these events.

## Response 10

See Response 3.

## Comment 11

In section I.F.3.a, the Draft Permit states: “The permittee must implement the nine minimum controls in accordance with the documentation provided to EPA and MassDEP or as subsequently modified to enhance the effectiveness of the controls. This implementation must include the following controls plus other controls the Permittee can reasonable undertake as set forth in the documentation.”

The City understands that as a CSO permittee, it must comply with the NMC requirements of the National CSO Policy. However, the Draft Permit state that requirement in a way that improperly adds to what is required under the policy.

The parts that are underlined above have no legal authority. The NMCs are clearly laid out in the CSO policy, but here EPA appears to be adding to them, and to be doing so in a vague way, leaving the City to guess at what additional steps are required to comply. The first underlined term, “or as subsequently modified to enhance the effectiveness of the controls,” seems to imply that the City has some obligation to “enhance the effectiveness” of the steps that it is taking to meet the NMCs. Beyond the fact that “enhance the effectiveness” is a vague term that is defined nowhere in the Draft Permit or in EPA regulations or guidance, EPA has no authority to require this. Similarly, the concept of “other controls the permittee can reasonably undertake” is completely undefined and vague, and EPA has no legal authority to require the City to take any such steps. Both of the underlined clauses should be deleted from the Draft Permit language.

The City requests that EPA provide a description of “the documentation provided to the EPA and MassDEP.” Once this documentation is identified, the City will need an opportunity to review the contents and determine whether implementation of the NMCs is appropriate and feasible with respect to its contents.

The second sentence of paragraph 3.a. states: “must include the following controls . . .” Please note that there are no additional items following this statement, or as a subset of Part 3.a.

Finally, the City cannot agree to implement the NMCs in accordance with documentation that may be “subsequently modified” (in documentation which is yet to be identified). The City is not in a position to confirm, prior to having the opportunity to review any future modifications, that the modifications are feasible, attainable, practicable or technically appropriate.

**Request:** The City requests that EPA delete the underlined clauses in this language (“or as subsequently modified to enhance the effectiveness of the controls” and “plus other controls the permittee can reasonably undertake”). Please specifically identify the “documentation provided to EPA and MassDEP” prior to its inclusion in final permit; and remove references to compliance with future (unseen) modifications.

#### **Response 11**

The National CSO Control Policy, which was adopted into the Clean Water Act, clearly establishes the nine minimum controls as the required technology-based limitations for CSOs, and establishes that documentation produced by the Permittee shall be the basis for determining the appropriate implementation level of the controls. 59 Fed. Reg. at 18691 (“Permittees with CSOs should submit appropriate documentation demonstrating implementation of the nine minimum controls....”).

The “documentation” referenced in Part I.F.3.a. of the Draft Permit refers to the Permittee’s *NMC Program* (1996)<sup>5</sup>, which describes how the Nine Minimum Controls are to be implemented. For clarification, EPA notes that the permittee has submitted documentation of the implementation of the NMCs, in accordance with their NPDES permit, and not the NMC program itself (submittal of the NMC program was not a permit requirement). Therefore, EPA acknowledges that documentation of the implementation of the NMCs has been submitted and is under review by EPA and MassDEP.

Given the intent of the CSO Control Policy, which includes bringing permittees with CSOs into compliance with CWA goals by applying a flexible approach to CSO control through NPDES permitting, EPA anticipated that modification of the Permittee’s NMC

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<sup>5</sup> Should the permittee wish to review their NMC program, EPA directs them to the NMC Program that was referenced in both the Annual Combined Sewer Overflow Report, Calendar Year 2018, dated April 23, 2018, and also in the Integrated Final Combined Sewer Overflow Long Term Control Plan and Supplemental Environmental Impact Report, dated 2017, that was submitted by the City of Haverhill to EPA. Specifically, page 8 of the 2018 Annual CSO Report and Section 3.2 of the Integrated Final Long Term Control Plan state that: “*Haverhill continues to implement all aspects of its Nine Minimum Control (NMC) program submitted to the EPA in 1996.*”



program may be necessary to reflect current conditions and to determine whether it remains appropriate. This is reflected in the language in Part I.F.3.a. of the Draft and Final Permits, which is structured in such a way so as to allow for an adaptive approach to be taken towards implementation of the NMCs as continued progress is made towards implementing the CSO controls identified in the LTCP, particularly in the event that such controls are deemed unfeasible or if alternative controls are identified which would result in greater reductions in CSO discharges than those which were originally selected.

Subsequent modifications of the Permittee's program to implement the NMCs would be identified by the Permittee and submitted to EPA and MassDEP. This approach recognizes the Permittee's understanding of its own processes and how to best implement the NMCs, including adjustments that may be necessary during the permit term. Likewise, the language regarding "other controls" references measures the Permittee identifies as appropriate for implementing the NMCs. Thus, the language underlined and objected to by the commenter above will remain in the permit as it is consistent with and derived from the CSO Policy itself, does not add any additional "minimum controls," and provides the Permittee with appropriate flexibility to implement the NMCs in accordance with its expertise and knowledge of its facility.

The second sentence in paragraph three of Part I.F.3.a. of the Draft Permit, which states "must include the following controls" has been clarified in the Final Permit to read as "must include the controls identified in Part I.F.3.b-g of this Permit."

The nine minimum controls are outlined in 40 C.F.R. Part 122. Part I.F.3.a of the permit merely states that if the nine minimum controls in 40 C.F.R. Part 122 are modified (through proper rulemaking procedures), then the Permittee will be subject to the modified provisions in 40 C.F.R. Part 122. Any other controls that the Permittee may implement are discretionary.

## **Comment 12**

In Part I.F.3.e of the Draft Permit, EPA is requiring that all flows through all CSOs be quantified through direct measurement. Such measurement is to include hours of discharge and volume.

The City does not object to the need to report CSO events and flows, however, the Draft Permit should allow the City to propose alternative means to comply in the future. The City objects to the extensive and over-reaching nature of EPA's determination of NMC number 9: "Monitoring to effectively characterize CSO impact and the efficacy of CSO controls."

While recording CSO events is necessary to comply with the NMC policy, additional data collection such as hours discharge, volume of discharge, and the National Weather Service precipitation data will result in excessive costs to the City and are requirements that go far beyond those necessary to comply with the NMC, which EPA has repeatedly qualified as "low cost measures."

Section 1-7 of the NMC guidance document specifically states that, “The NMC are controls that...do not require significant engineering studies or major construction, and can be implemented in a relatively short period...”

EPA recognizes that flow metering is a component of the characterization required under Long Term Control Plan implementation and is used to develop appropriate models. Flow metering is not a requirement of the NMC (see NMC guidance document page 10-1: “This minimum control is the precursor to the more extensive characterization and monitoring efforts conducted as part of the LTCP...”)

Specifically, EPA guidance as detailed in the NMC guidance document prescribes the following levels of monitoring as complying with the National CSO Policy:

- Page 10-1: “The ninth minimum control involves visual inspection and other simple methods to determine the occurrence and apparent impacts of CSOs.”
- Page 10-2: “The municipality should record the number of CSO overflows at as many outfalls as feasible...Large systems should work with the NPDES permitting authority to select a percentage of outfalls that represent the entire drainage area and sensitive locations.”
- Page 10-2: “Monitoring of flow and quality at the level necessary to calibrate models and/or estimate pollutant loadings is addressed in EPA’s... ‘Combined Sewer Overflows-Guidance for Long Term Control Plan’ and may be beyond the intended scope of minimum control monitoring.” (emphasis added).
- Page 10-2: “In cases where a calibrated model of the CSS exists (or when one becomes available) model projections may be used to determine the frequency and location of overflow events.”
- Page 10-3: “The following measures can be applied to detect overflows;...visual inspection...a chalk mark...wood blocks...mechanical counting device...”

**Request:** In accordance with the above EPA guidance, the City requests that CSO events be recorded on DMR submittals, including the option to use variety of CSO activation recordings such as the EPA-approved methods of wood blocks, chalk lines, and mechanical counting devices, as well as any flow meters that may be available. Further, the City requests that EPA acknowledge that the City’s current measuring procedures are acceptable.

## **Response 12**

Chapter 10 of the Nine Minimum Control Guidance, Monitoring to Characterize CSO Impacts and the Efficacy of CSO Controls, discusses the implementation of NMC #9 (Monitoring to effectively characterize CSO impact and the efficacy of CSO controls) (*Combined Sewer Overflows Guidance for Nine Minimum Controls*, EPA May 1995 [EPA 832-B-95-003]). This discussion states that this minimum control is a starting point and that extensive monitoring be conducted as part of the Long-Term Control Plan (“LTCP”). The minimum control should develop information on the frequency of overflows at individual points in the system. The Guidance recommends the gathering of basic data, such as date and time of overflow events, total daily rainfall, as well as

information regarding the duration and magnitude of overflow events, as this information can enhance the implementation of CSO controls and can enable measurement of the effectiveness of particular control measures.

It is unclear from the above comment how the requirement in Part I.F.3.e. of the draft permit to report hours of discharge, volume of discharge, and National Weather Service precipitation data will result in excessive costs to the City, as this is already being implemented in accordance with the NPDES permit that was issued to the Permittee in December 2007.

EPA maintains its position that the objective of the monitoring required under the nine minimum controls is to provide data that can be used to evaluate compliance with the technology based effluent limitations for CSOs that are set forth in the permit (i.e., the nine minimum controls), the efficacy of the CSO controls that have been implemented and to validate the assumptions set forth in the permittee's LTCP, as well as to facilitate the CSO notification program. It has been EPA and MassDEP's experience that direct measurement provides the most accurate indication of CSO activations. Therefore, the collection of data through direct measurement is essential for the regulatory agencies to conduct these evaluations. Forms of direct measurement *may* include, but are not limited to, metering of flows at each CSO outfall. Alternate approaches could include, for example, extrapolating the flow volume discharged through a CSO outfall from measurements of water levels in the interceptor sewers (or some other measured metric of a known quantity from which the flow volume could be derived). The requirement to monitor CSO discharges through direct measurement remains unchanged in the Final Permit.

### **Comment 13**

The Draft Permit contains new, detailed requirements for the City to install and maintain signs at all CSO outfall structures, specifying the exact size, color, languages, and wording of the signs. The City has installed such signs. In addition, the Draft Permit requires the City to develop a public notification plan and specifies that the City has to provide notification of every CSO discharge when it occurs, and when it ends, and must do so within 4 hours of becoming aware of when the discharge began, and within 24 hours of becoming aware of when the discharge ends. Further this public notification plan must be developed, installed and implemented within 180 days of the effective date of the permit (EDP).

The City supports public notification of discharge events; however these new requirements, which will result in substantial added costs to the City and its ratepayers, go far beyond what is required by Federal and state law. Under the National CSO Policy, EPA provides that notification under the Nine Minimum Controls (NMCs) includes only: "public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts." The new requirements in the Draft Permit go well beyond the NMC provision and should be deleted from the Draft Permit.

The above notwithstanding, the City offers the following specific comments:

- a) **Public Notification Plan Contents:** The Draft Permit requires that: “Initial notification of a probable CSO activation shall be provided to the public and any other potentially affected party as soon as practicable, but not later than four (4) hours after becoming aware by monitoring, modeling or other means that a CSO discharge has occurred.”

Additionally:

“Supplemental notification shall be provided to the public and any other potentially affected party as soon as practicable, but no later than twenty-four (24) hours after becoming aware of the termination of any CSO discharge(s).”

The Draft Permit requires that the City provide public notification of:

- Date and time of probable CSO discharge
- CSO number and location
- Confirmation of CSO discharge
- Date, start time and stop time of the CSO discharge

In EPA’s Combined Sewer Overflows Guidance for Nine Minimum Controls, Chapter Nine contains specific guidance for the implementation of this NMC measure, as follows:

- Section 1-7 specifically states that, “The NMC are controls that...do not require significant engineering studies or major construction, and can be implemented in a relatively short period...”
- Section 9-1: “The intent of the eighth minimum control, public notification, is to inform the public of the location of the CSO outfalls, the actual occurrences at CSOs, the possible health and environmental effects of CSOs, and the recreational and commercial activities...curtailed as a result of CSOs.”
- EPA NMC guidance provides specific examples of control measures under public notification which are:
  - Posting at affected use areas (Haverhill will consider this in the plan)
  - Posting at selected public places (Haverhill will consider this in the plan)
  - Posting at CSO outfalls (Haverhill has completed this)
  - Notices in newspapers, radio, TV news programs, letters to residents, telephone hotline

The requirements of flow duration, and starting and stopping times, go far beyond any controls EPA considered in the NMC guidance.

The City is supportive of providing public notification of CSO events as they occur. To this end, the City is considering the development of website or other means to CSO activation notification to the public. This website could provide 24/7 notification to the public regarding which CSOs are active. The City considers the development of a meaningful public notification plan to be one of its highest priorities. Not only will the City develop a plan that meets the requirements of the National CSO Policy and NMC guidance documents, but the City may, on a limited basis, solicit input from the

surrounding community. A public notification plan will only be meaningful to the extent that it addresses the needs of the community.

However, the development and implementation of an extensive public notification plan, particularly the implementation of a web-based notification system, cannot be achieved within 180 days. This is simply insufficient time to develop a meaningful plan, solicit appropriate input, determine the content and extent of appropriate notification, develop a notification system that evaluates public posted signs and the needs for additional public postings, plus other contents of meaningful public notification plan.

Notwithstanding the significant degree of effort involved developing the web-based notification system, the City and the Commonwealth of Massachusetts procedures for bidding and procurement are extensive and require adequate time for each phase of the design, construction bidding, award, and implementation process. These procedures include but are not limited to budgeting and obtaining funding, procurement of engineering services to assist in the program development and design, development and bidding plans and specifications, advertising and bidding process and contract award – all of which must occur prior to beginning work on the contract.

**Request:** The City request that submittal and implementation of public notification system be extended to 36 months following the effective date of the final permit. The City also requests that the requirement for initial notification of probable CSOs be struck from the Draft Permit and that notification or a CSO event will be made to the public to the extent practicable when the City becomes aware that a CSO discharge has occurred.

### **Response 13**

Regarding whether flow duration, and starting and stopping times, go far beyond any controls EPA considered in the NMC guidance, EPA disagrees. Chapter 9-1 of EPA's Combined Sewer Overflow Guidance for Nine Minimum Control Measures, provides *examples* of potential measures for notifying the public of CSO discharge events. See also Response 6. As stated in the guidance, this list highlights *potential* measures for notifying the public of CSO discharge events, and is not, as suggested in the above comment, an all-inclusive list of measures that may be taken for notifying the public.

EPA recognizes the permittee's concerns regarding the need for more time than what was proposed in the Draft Permit for the development of public notification plan that meets the requirements of the permit. EPA has determined that 12 months from the effective date of the permit, an increase from the proposed 180 days, is reasonable for submitting and implementing the plan to EPA and MassDEP. Therefore, Part I.F.3.g of the Final Permit requires the submittal and implementation of the public notification plan within 12 months of the effective date of the permit.

#### **Comment 14**

Part 1.F.5 of the Draft Permit requires that monitoring be conducted and reported for “number of hours” of CSO discharge. The duration in hours of a CSO event does not provide meaningful data to the EPA or to the public. For example, a large volume CSO discharge that is flowing at the rate of 10,000 gallons per minute for one hour, has a much greater impact than a CSO discharge that is flowing at the rate of 1 gallon per minute for 24 hours. We question EPA as to what meaningful metric duration of flow in hours provides?

The City notes the flow hours are not readily available on a daily basis. The City already provides this information to EPA and MassDEP on an annual basis and agrees to continue such reporting.

Whereas total volume of a CSO event may provide a meaningful metric to measure future reductions and trends, hours of duration has no meaning unless it is associated with velocity, and the measure of velocity with duration, gives one volume of discharge – which is already required.

**Request:** The City requests that duration of CSO flow in hours duration be eliminated or in the alternative that the City may propose alternative monitoring and reporting options in the future.

#### **Response 14**

See Response 12 regarding the justification for and utility of requiring the collection and reporting of the duration of CSO discharge events, in conjunction with flow volume and number of discharge events. These reporting requirements remain unchanged in the Final Permit. EPA will consider alternative monitoring approaches proposed by the City in the future.

#### **Comment 15**

The Draft Permit Fact Sheet calculated the dilution factor based on U.S. Geological Survey gage station (#01100000) in the area of the Merrimack River in Lowell, MA. The City has found several concerns on the calculation as described below.

- a) **Smaller Number of Dataset Used to Calculate 7Q10 Causes Higher Uncertainty in Statistical Analysis:** EPA extrapolated 7Q10 flow from a portion of USGS data set of river daily discharge data (January 1989 to October 2017) as stated in 2019 Fact Sheet page 14 of 41. It is unclear why this 30-year period was selected even though USGS data set included data from June 1923 to December 2018.

The statistical estimate of 7Q10 flow was based on log Pearson Type III distribution to fit the return frequency curve with annual 7-day low flow data. For statistical analysis, the larger the dataset available, the greater the certainty of the estimated value. The Figure below shows the annual 7-day low flow values from 1923 to 2018. There is no observable trend over the entire 95-year period.

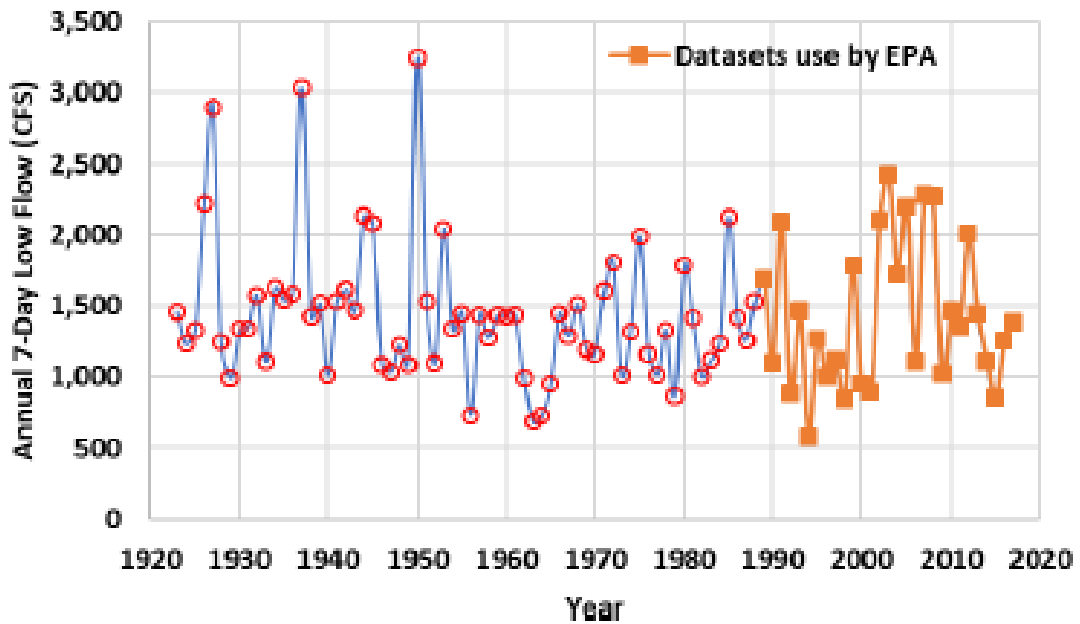


Figure 1. Annual 7-Day Low Flows from 1923 to 2018.

Table below compares 95 percent confidence intervals with Log Pearson Type III distribution analysis using entire 95 years of data versus only using most recent 30 years of data. The comparison indicates that using a smaller sample number in deriving the 7Q10 results in much higher uncertainty (reflected in a much higher discrepancy over the 95 percent confidence interval (from 637.500 to 988.060 cfs). The Log Pearson Type III analysis results are included in Attachment 2.

Table 3 Summary of Confidence Interval Estimates of 7Q10 Flow.

	95 percent confidence intervals estimate of 7Q10 flow (CFS)	
	Lower	Upper
Entire USGS Data (95 Years)	826.330	979.240
Most Recent 30 Years' Data	637.500	988.060

**Request:** To provide a more accurate estimate of 7Q10 flow with less uncertainty, EPA should use all river discharge data available (June 1923 to December 2018) for USGS gage (#01100000). It is also consistent with the example described in EPA’s Handbook for NPDES Permit Writers for calculating the 7Q10<sup>6</sup>.

- b) Calculated 7Q10 Provided in the Draft Permit at USGS Gage Station (#01100000) is Incorrect: EPA provided a 7Q10 flow of 832 cfs in 2019 Fact Sheet page 14 of 41. However, there is no description of how this value was estimated. Based on the methodology described in EPA’s 2018, Low Flow Statistics Tools, A How-To Handbook for NPDES Permit Writers and USGS’ SW Toolbox software, the City recalculated the 7Q10 value for the USGS gage station (#01100000) with all available data. The 7Q10 for

<sup>6</sup> US EPA, Office of Water, *Low Flow Statistics Tools, A How-To Handbook for NPDES Permit Writers*, EPA-833-B-18-001, October 2018.

this gage station is estimated to be 907.33 cfs as illustrated in Figure 2 below as well as shown in Attachment 2.

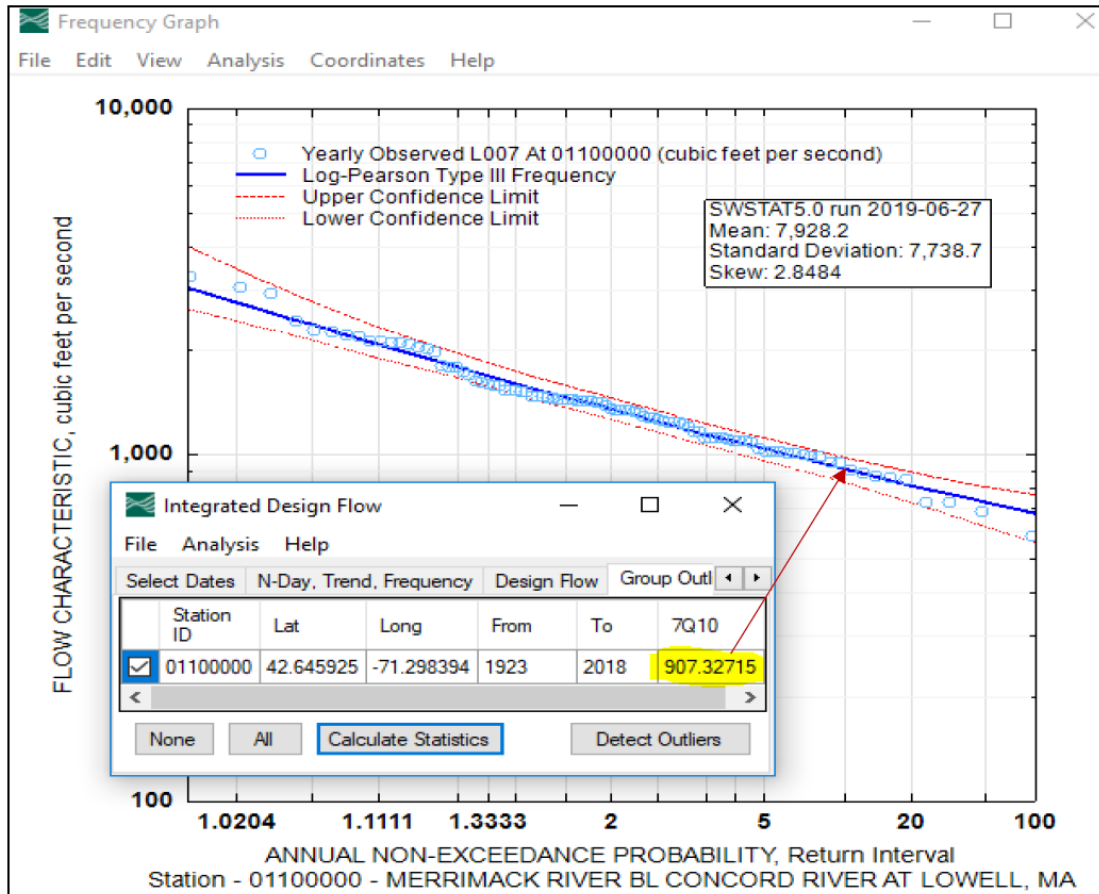


Figure 2 Low Flow Return Frequency Statistical Graph for USGS Gauge Station 01100000 Using USGS SW Toolbox Version 1.0.4<sup>3</sup>. The calculated 7Q10 flow is 907.33 cfs. The Analytical processes are based on EPA’s Handbook for NPDES Permit Writers.

**Request:** Based on EPA’s Handbook for Permit Writers on estimating 7Q10 value, the City has calculated 7Q10 value for USGS gage station (#01100000) to be 907.33 cfs. The City requests that EPA replace the 7Q10 value with updated estimated of 907.33 cfs.

- c) The Drainage Basin Area for USGS Gage Station (#01100000) is Incorrect. The Draft Permit provided drainage area at the gage to be 4,635 square miles. However, communication with USGS’ Richard J. Verdi, Chief of Hydrologic Surveillance and Surface Water Investigations, found that, “*The National Water Information System webpage indicates the total drainage area above the gage is 4,635 mi<sup>2</sup>, of which 214 mi<sup>2</sup> are used for Boston and Worcester. This nets 4,412 mi<sup>2</sup> that flows beyond the gage to Lawrence.*” The email communications with USGS are included in Attachment 3.

**Request:** Based on USGS’ estimation of the drainage area that impact Lawrence at USGS gage station (#01100000), the drainage area for calculation of low-flow factor



should be 4,412 square miles. Therefore, the flow factor for USGS #01100000 should be 0.2057 cfs/sq. mi:

$$\text{Flow factor for USGS \#01100000} = \frac{907.33 \text{ cfs}}{4,412 \text{ square miles}} \approx 0.2057 \frac{\text{cfs}}{\text{sq. mi}}$$

Given the drainage area upstream of the WPAF effluent discharge outfall is about 4,880 square miles, the 7Q10 flow at the outfall should be 1,002 cfs or 647 million gallons per day (MGD).

The dilution factor (DF) at the 7Q10 flow of 647 MGD in the receiving water upstream of the discharge,  $Q_s$ , and the Facility's design flow of 18.1 MGD,  $Q_d$ , should be calculated as 36.7:

$$DF = (Q_s + Q_d)/Q_d = (647 \text{ MGD} + 18.1 \text{ MGD})/18.1 \text{ MGD} = 36.7$$

**Request:** The City requests that EPA rerun the reasonable potential analysis as well as the calculation of all flow dependent effluent limitations and conditions in the Draft Permit using the corrected instream dilution factor of 36.7 along with any other correspondingly adjusted values for other critical flow conditions used.

### Response 15

a) The comment notes that a smaller dataset used to calculate the 7Q10 causes higher uncertainty in statistical analysis. A 30-year period was selected for analyzing the 7Q10 in order to account for changing climatic conditions, in addition to recent hydrological changes in the watershed; a model incorporating data from over 30 years ago is likely to be less representative of current conditions. EPA's 2018, *Low Flow Statistics Tools, A How-To Handbook for NPDES Permit Writers* considers flow datasets exceeding 15 years in length to be representative for 7Q10 analyses.<sup>7</sup>

The smaller range of confidence intervals derived by Haverhill is a statistical consequence of analyzing a larger dataset, but it does not necessarily imply a more representative depiction of the river's flow regime. In fact, analyzing data from the entire record will bias the 7Q10 in favor of historical conditions since the volume of data older than 30 years old dwarfs the volume of data from the past 30 years. The river's flow regime is variable over time, and analysis of the entire record would likely undermine analysis of the river's current conditions.

b) The comment notes that the calculated 7Q10 provided in the Draft Permit at USGS gage station (#01100000) is incorrect. EPA disagrees with the commenter. The calculated 7Q10 provided in the Draft Permit at USGS Gage Station (#01100000) is based on the

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<sup>7</sup> US EPA, Office of Water, *Low Flow Statistics Tools, A How-To Handbook for NPDES Permit Writers*, EPA-833-B-18-001, October 2018.

*DFlow User's Manual*, the instruction manual underlying statistical analyses done in USGS SW Toolbox<sup>8</sup>:

$$7Q10 = \exp(U + K*S)$$

Where:

U = average of natural logs of low flow values

S = standard deviation of natural logs of low flow values

$K = (2/G)([1 + G*Z/6 - G^2/36]^3 - 1)$

G = skew of natural logs of low flow values

Z = Z-score value for a ten-year recurrence interval (-1.2816)

**Table 1:** 1989 through 2017 Lowell Gage (#01100000) Consecutive Low Flow Values (cfs)

Year	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Average	Ln of Average
1989	1300	1400	1500	1500	1600	1700	1700	1528.571429	7.332088871
1990	2349	2857	3260	3354	3273	3787	3607	3212.428571	8.074782494
1991	836	931	997	1007	1077	1305	1248	1057.285714	6.963460256
1992	1945	1987	2147	2320	2414	2647	2823	2326.142857	7.751966749
1993	914	725	821	821	759	1077	1077	884.8571429	6.785426211
1994	1758	2072	2098	1899	1561	1348	1348	1726.285714	7.453727393
1995	427	455	485	493	493	618	618	512.7142857	6.239718742
1996	1453	1436	1351	1300	1333	1283	1283	1348.428571	7.206695172
1997	768	791	813	812	851	1890	1890	1116.428571	7.017890094
1998	1106	1100	1100	1116	1115	1123	1123	1111.857143	7.013786998
1999	875	1066	784	766	683	1004	1004	883.1428571	6.783486974
2000	1194	1635	1803	2291	1914	1656	1656	1735.571429	7.459091992
2001	1095	1023	981	1048	911	932	932	988.8571429	6.896549875
2002	932	922	959	960	921	944	944	940.2857143	6.84618378
2003	1790	1790	1810	1810	1810	2020	2020	1864.285714	7.530633264
2004	1480	2000	2140	2140	2210	2270	2270	2072.857143	7.636683197
2005	1888	1842	1691	1564	1592	1505	1505	1655.285714	7.41172891
2006	2345	2350	2313	2219	2025	2028	2028	2186.857143	7.690220697
2007	1078	1204	1105	1086	1078	1052	1052	1093.571429	6.997204159
2008	2276	2336	2285	2218	2063	2180	2180	2219.714286	7.705133766
2009	1950	1950	2050	2120	2250	2250	2250	2117.142857	7.65782275
2010	968	1006	1006	1038	1085	1161	1161	1060.714286	6.966697815
2011	1380	1435	1451	1529	1619	1625	1625	1523.428571	7.328718713
2012	1280	1293	1338	1356	1399	1529	1529	1389.142857	7.236442186
2013	1400	1550	1550	1670	1710	1910	1910	1671.428571	7.421433972
2014	1397	1430	1492	1511	1554	1578	1578	1505.714286	7.317022673
2015	1031	1040	1041	1115	1249	1279	1279	1147.714286	7.045527666
2016	839	849	855	855	863	899	899	865.5714286	6.7633899
2017	1150	1188	1206	1229	1299	1327	1353	1250.285714	7.131127376

Given the data above,  $U \approx 7.23$ ,  $S \approx 0.389$ ,  $G \approx -0.166$ , and the 7Q10 is 832 cfs.

<sup>8</sup> Rossman, L. A. *DFlow User's Manual*. U.S. Environmental Protection Agency, Washington, DC, EPA-600-8-90-051 (NTIS 90-225616), 1990.

c) The comment notes that the drainage basin area for USGS gage station (#01100000) is incorrect. EPA agrees with USGS's assessment that 214 square miles should be subtracted from the Lowell gage's upstream drainage area, equaling a total of 4,421 square miles. However, the 214 square miles would also need to be subtracted from Haverhill's upstream drainage area (going from 4,880 square miles to 4,666 square miles) for analysis. After subtracting 214 square miles from both the Lowell gage's upstream drainage area and Haverhill's upstream drainage area, the 7Q10 is 878 cfs, as opposed to 876 cfs when not subtracting 214 square miles: a difference of 0.2%. This does not result in any change to the dilution factor of 32.3 or to the Final Permit. The updated 7Q10 has been used in Response 2 above regarding aluminum.

### **Comment 16**

The Draft Permit has reduced the City's effluent limitation for Total Residual Chlorine (TRC) from 0.4 mg/L as a monthly average and 0.7 mg/L as a daily maximum to 355 µg/L as a monthly average and 614 µg/L as a daily maximum. This change in effluent limitation was based upon the revised dilution factor.

Based on the analysis described in item #15 above, the correct dilution factor should be 36.7. Therefore, the total residual chlorine should also be calculated with this dilution factor.

**Request:** The water quality-based chlorine limits should be calculated as follows:

$$\begin{aligned} \text{Chronic limit} &= \text{Chronic criteria} \times \text{dilution factor} \\ &= 11 \mu\text{g/L} \times 36.7 = 404 \mu\text{g/L} \end{aligned}$$

$$\begin{aligned} \text{Acute limit} &= \text{Acute criteria} \times \text{dilution factor} \\ &= 19 \mu\text{g/L} \times 36.7 = 697 \mu\text{g/L} \end{aligned}$$

### **Response 16**

See Response 15. As there has been no change to the dilution factor, there are no changes to the total residual chlorine limits in the Final Permit.

### **Comment 17**

Footnote 8 to Part I.A of the Draft Permit requires that the City report the average monthly and maximum daily TRC using data collected by a continuous TRC analyzer. "The Permittee shall substitute the average of three TRC grab samples per day, for any day that they are unable to comply with the continuous reporting requirement discharge." However, in the past the City has encountered issues with the reliability of continuous TRC analyzers. The City has found that the continuous TRC analyzers require significant ongoing maintenance and recalibration (sometimes as often as every 8 hours). In addition, as the City does not have a chlorine contact chamber, low and high dose alarms would be irrelevant at the WPAF. Finally, any analyzer would provide only instantaneous residual data and the analyzer would not show data representative of the residual after holding times.

**Request:** The City requests that the continuous reporting requirement be deleted.

## Response 17

Footnote 8 in the Draft Permit provides the Permittee with an option to “substitute the average of three TRC grab samples per day, for any day that they are unable to comply with the continuous reporting requirement.” EPA does not agree with the commenter’s assertion that continuous monitoring instrumentation is unreliable. However, given that the WPAF does not have a chlorine contact chamber and the permit allows for holding time to account for the chlorine contact time that occurs in the outfall pipe before discharge, EPA agrees that continuous monitoring for chlorine is infeasible for this discharge. Therefore, EPA has removed the continuous monitoring requirement for TRC in the Final Permit. Rather, the Permittee will be required to conduct three TRC grab samples per day because they are unable to conduct continuous monitoring.

EPA believes it is critical to have an alarm system to indicate low and high doses as well as system interruptions and malfunctions so that the Facility can notify the Massachusetts Division of Marine Fisheries as required by Part I.H.3 of the Permit. Although continuous monitoring of this discharge is not feasible, EPA recommends that the facility should be aware of the dosing necessary to meet the bacteria and total residual chlorine effluent limits based on daily grab samples and use this information as a starting point for establishing alarms.

Finally, EPA notes that the Comprehensive Plant Evaluation<sup>9</sup> conducted by Woodard and Curran, completed in 2017 and submitted as required by the City’s Consent Decree, recommends a full upgrade of the entire disinfection system. EPA notes that this upgrade should ensure compliance with the TRC and bacteria limits as well as incorporate appropriate alarms as described above.

## Comment 18

The Draft Permit requires weekly monitoring and reporting for total nitrate, total nitrite, total Kjeldahl nitrogen and total nitrogen from April through October, and monthly reporting from November through March.

The City offers the following comments:

- a) EPA should clarify that total nitrogen (TN) reporting is a calculation, not an additional analyte for the City to analyze. TN is simply the sum of Nitrate + Nitrite plus total Kjeldahl nitrogen, both of which are already required to be analyzed weekly in the Draft Permit.
- b) Weekly monitoring for seven months and monthly monitoring for five months will result in a total of 33 monitoring results. This data set far exceeds what is necessary to determine cause or reasonable potential for the need of a water quality based effluent limit for nitrogen.

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<sup>9</sup> Woodard and Curran, 2017, “Wastewater Treatment Facility, Comprehensive Plant Evaluation, City of Haverhill, MA”

Specifically, CFR 122.44(i) states that: “monitoring results shall be established on a case-by-case basis with frequency dependent on the nature and effect of the discharge, but in no case shall be less than one year.”

Further the EPA Technical Support Document (TSD), which EPA uses to determine reasonable potential and cause analysis provides for a statistical procedure for any number of samples, including a statistically sound method when smaller numbers of data are available. Section 5.5.3 of the TSD states: “*The statistically based method for permit limit derivation results in an MDL that does not depend on monitoring frequency...the AML decreases as the number of monthly samples increases because an average of 10 samples, for example, is closer to the LTA than average based on 4 samples. However, the stringency of these procedures is constant across monitoring frequencies because the probability basis and the targeted LTA performance are the same regardless of the number of samples taken.*”

The TSD goes on to state that: “*...the statistical procedure should be employed using an assumed number of samples of at least four for the AML derivation.*”

**Request:** The City requests that monitoring be reduced to quarterly for this permit cycle. This will supply a data set of ten values, which is statistically sufficient to conduct a cause or reasonable potential analysis for nitrogen. In addition, the City requests that if the permit is administratively continued after the five-year term expires, that the nitrogen reporting requirement be discontinued as EPA will have collected sufficient data for any future permitting requirements.

### **Response 18**

Regarding total nitrogen reporting, EPA agrees that the total nitrogen reporting is based on a calculation. EPA notes that this point has already been clarified in footnote 11 of the Draft Permit, which states “Total Nitrogen shall be calculated as the sum of Total Kjeldahl Nitrogen and Total Nitrate + Nitrite.”

Regarding monitoring frequency, EPA believes that the required frequency in the Draft Permit is reasonable. As evidenced from quarterly monitoring data from Greater Lawrence Sanitary District (“GLSD”) and Lowell Regional Wastewater Utility (“LRWU”), effluent concentrations of nitrogen can vary greatly. Over the last five years, total Kjeldahl nitrogen ranged from 14.2 to 34.9 mg/L and 3.7 to 30.1 mg/L from GLSD and LRWU, respectively. For this same period nitrate+nitrite ranged from 1 to 3.33 mg/L and 0.16 to 8.81 mg/L from GLSD and LRWU, respectively. EPA believes that weekly nitrogen monitoring during the growing season (when the impacts of nitrogen are of greatest concern) and monthly monitoring during winter months is warranted in order to most accurately characterize total nitrogen loadings from Haverhill. Furthermore, these data may be utilized by EPA to determine both the need for a limit and, if one is necessary, what that limit will be. Given the variability of effluent nitrogen concentrations over the course of the growing season, it is important for EPA to use a dataset that is accurate and representative of the receiving waters.

## Comment 19

The mass loading allowance for BOD was reduced from 4,529 lb/day as a monthly average to 4,504 lb/day as a monthly average and 6,755 lb/day as a weekly average.

EPA has based this reduction on the following: “The mass-based BOD limit in the 2007 Permit of 4,529 lb/day (monthly average) was based on the 1975 concentration-based WLA and the design flow of the facility. The design flow of the facility was revised to 18.1 MGD (instead of 18 MGD) in the 2007 Permit. Thus, the mass-based BOD limit of in the 2007 was 4,529 lb/day, less stringent than the limit specified in the 1975 Merrimack River Water Quality Management Plan.”

EPA has based this reduction in BOD loading upon a permit issuance in 2007 that provided for an increase in flow from 18.0 MGD to 18.1 MGD, and that EPA has failed to identify that a modification to the water quality management plan WQMP was necessary. As the design flow was always 18.1 MGD (as stated in the O&M Manual), the City objects to EPA’s unilateral application of load limitations rolled back to conditions present over 10 years ago, only because EPA failed to modify the WQMP.

Further, an online search for the 1975 WQMP did not locate this document. Inasmuch as the 1975 WQMP is being used as the basis for a loading reduction and is part of the administrative record for this Draft Permit, we request that the EPA make available a copy of this document for our review. The City reserves the right to modify this comment, once it has had the opportunity to review this aspect of the administrative record.

**Request:** The City should be provided the opportunity to request a modification of the WQMP to address the flow increase from 18 MGD to 18.1 MGD, to address this issue, with no change to the permitted BOD load limitations in the previous permit. Please make available to the City the 1975 WQMP, which is part of the administrative record and was used as a basis for the permit condition.

## Response 19

Regarding the commenter’s request to modify the water quality management plan (“WQMP”), MassDEP no longer revises WQMPs and instead develops total maximum daily loads (“TMDLs”) for specific water-quality stressors, where appropriate.

In order to be consistent with the 1975 Merrimack River Water Quality Management Plan,<sup>10</sup> a basin plan completed pursuant to the applicable basin plan under CWA § 209, EPA has determined that it is appropriate for the BOD<sub>5</sub> mass-based limit to be 4,500 lb/day. This is the same limit as in the Draft Permit. Therefore, the BOD<sub>5</sub> limit in the Final Permit has not been changed.

However, the TSS limits in the Draft Permit were determined to be transcribed in error from the calculations found on page 19 of the Fact Sheet. To correct this error, the

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<sup>10</sup> Massachusetts Department of Environmental Quality Engineering, *The Merrimack River Water Quality Management Plan*, 1975, page 59.

monthly average and weekly average TSS mass-based limits in the Final Permit have been updated to be 4,529 lb/day and 6,793 lb/day, respectively. This is consistent with the 2008 Permit.

Regarding the commenters request to review the 1975 WQMP, EPA notes that this document is part of the administrative record and was referenced on page 19 of the Fact Sheet. Additionally, as stated on page 37 the Fact Sheet, the administrative record (which includes this document) could have been requested at any time from the EPA contact listed.

### **Comment 20**

The Draft Permit carries over the greater than or equal to 85% removal requirement for both BOD and TSS. While the City has no objection to this limitation, we request that it can be calculated using a six-month rolling average of influent and effluent data, rather than the individual monthly average.

The Draft Permit requires influent sampling to be conducted twice/month for both TSS and BOD. Since the plant serves a combined sewer community, the influent flow can vary greatly depending on the weather conditions. During wet weather, influent TSS could be as low as 100 mg/L, which is substantially below the industry design standard of 250 mg/L.

EPA previously acknowledged that during wet weather the WPAF should be maximized. The conditions stated in the 2007 Permit Fact Sheet (pages 7 and 8 of 21) stated that “to encourage the maximum use of the treatment plant, the average weekly mass loading limits are discontinued in this draft permit. The average weekly concentration and both average monthly concentration and mass limits are retained.” Further, the 2007 Permit Fact Sheet included that 85% removal requirement “applies only during dry weather and the average percent removal will be calculated each month, using only those samples collected on days with less than 0.1 inches of precipitation and no snow melt.”

Having the ability to use a six-month rolling average of influent flow values when calculating percent removal will allow the City to have better representative data when calculating the limit.

**Request:** The City requests that (1) EPA allow the City to continue sampling five times per week as presently conducted and that (2) EPA allow a six-month rolling average value of influent BOD and TSS to be used when calculating percent removal. In the alternative, the City requests that the conditions stated in the 2007 Permit Fact Sheet (pages 7 and 8 of 21) discussed above be included in the Draft Permit, limiting the required removal percentage to only dry weather.

### **Response 20**

Regarding influent sampling frequency, EPA notes that the requirement to sample influent twice per month is a minimum number of samples. Hence, the Permittee may exceed two samples per month and instead sample five times per month.

Regarding the percent removal requirement, EPA notes that the 85 percent removal requirements for BOD<sub>5</sub> and TSS are included in the Draft Permit as technology-based limits for secondary treatment pursuant to 40 C.F.R. § 133.102. However, a special consideration may be made for treatment works with combined sewer systems based on 40 C.F.R. § 133.103(a), which allows for flexibility with respect to percentage removal levels on a case-by-case basis. EPA has determined upon review of the record before it that an attainable percentage removal level cannot be defined under wet weather conditions. To avoid creating any disincentive to minimize CSO discharges, EPA agrees with the commenter and has added a footnote in Part I.A.1 of the Final Permit to clarify that the 85 percent removal requirement applies only during dry weather (meaning any calendar day on which there is less than 0.1 inches of rainfall and no snow melt).

### **Comment 21**

The flow limitation in the permit should be removed or designated as a “report only” requirement. EPA should recognize that flow is not a regulated parameter because it is not a “pollutant” and should not be included in the permit. It is not permissible to regulate flow, regardless of the pollutant levels present. The City disagrees with EPA’s assertion that the flow of water is considered a pollutant in 33 U.S.C. §1362(6), which defines “pollutant” as”

dredged spoil [sic], solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

Although the City agrees that municipal waste such as that discharged by the City qualifies of a pollutant, flow is not a pollutant. However, EPA’s identification of “non-conventional pollutants” as defined at 40 CFR § 439.1(n) does not identify flow as a parameter. EPA is seeking to re-write the applicable NPDES rules as well as the Clean Water Act to regulate flow regardless of the pollutant levels present, a premise that the federal courts have found impermissible. See e.g. *Iowa League of Cites v. EPA* (8th Cir. 2013).

EPA contends at page 8 of 39 in the Fact Sheet that its “practice is to use design flow as a reasonable and important worst-case condition” to calculate reasonable potential and water quality based effluent limitations. As stated by a US District Court decision in the case *Virginia Department of Transportation et al. vs. EPA*, No. 1:12-CV-775, 2013 WL 53741 (E.D. Va. Jan. 3, 2013), where the Court decided in favor of Virginia DOT that stormwater cannot be considered a pollutant as a surrogate for sediment load. The Court affirms that there is “no ambiguity in the wording” of 33 U.S.C. §1362(6), *id.* \*3, stating on Page 9 that “Stormwater runoff is not a pollutant, so EPA is not authorized to regulate it via TMDL.” *Id.* \*5. The Court goes on to state that

Claiming that the maximum stormwater load is a surrogate for sediment, which is a pollutant and therefore regulable, does not bring stormwater within the ambit of EPA’s TMDL authority. Whatever reason EPA has for thinking that a stormwater flow rate TMDL is a better way of limiting sediment load than a sediment load TMDL, EPA cannot be allowed to exceed its clearly limited



statutory authority.

*Id.*

This decision applies equally to EPA's rationale in the Draft Permit, because EPA intends to use "design flow as a reasonable and important worst-case condition," or, in other words, as a surrogate for the load of pollutants discharged by the City.

The City notes that Section 5.1.1 of the Fact Sheet incorrectly states that the City had two violations of the 12-month rolling flow average of 18.1 MGD during the prior permit period. This is not correct.

**Request:** The City requests that the flow limit be deleted, recognizing that EPA does not have the authority to regulate such flow. In addition, the City requests that EPA revise the Fact Sheet to acknowledge that the City has not violated the 12-month rolling flow average of 18.1 MGD during the prior permit period.

### **Response 21**

EPA Region 1 has included limits on the wastewater effluent flow from POTWs, based on the design capacity of the facility, throughout Massachusetts (96 facilities since 1984, 13 of which include CSOs, including the 2008 NPDES Permit issued to Haverhill) and increasingly in New Hampshire (13 facilities since 2005). Moreover, States and other EPA Regions have issued over 3,750 NPDES permits (92 facilities with CSOs) to POTWs with similar limits in other parts of the country.

The inclusion of a wastewater effluent flow limit in the Haverhill WPAF permit is authorized by the CWA § 402(a)(2), which provides that "[t]he Administrator shall prescribe conditions for such permits to assure compliance with the requirements of" CWA § 402(a)(1) – including, by reference, CWA § 301 – "and such other requirements as [she] deems appropriate." As discussed below, the Haverhill wastewater effluent flow limit is an appropriate "operation and maintenance" requirement that assures compliance with the technology and water quality-based effluent limitations required by CWA § 301 and is "appropriate" pursuant to CWA § 402(a)(2).

40 C.F.R. §§ 122.41(d) and (e) require the permittee to (1) "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," and (2) "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 the permit." The design capacity-based wastewater effluent flow limit is authorized by section 402(a)(2) and appropriate in order to assure that Haverhill operates its facility to comply with its permit's technology- and water quality-based effluent limitations.

As stated in the Fact Sheet, using a facility's design flow in the derivation of pollutant effluent limitations, including conditions to limit wastewater effluent flow, is fully consistent with, and anticipated by NPDES permit regulations. 40 C.F.R. § 122.45(b)(1)

provides, “permit effluent limitations...shall be calculated based on design flow.” POTW permit applications are required to include the design flow of the treatment facility. Id. § 122.21(j)(1)(vi).

The City unfairly contends that EPA sought to limit wastewater effluent flow from the facility on the basis that flow, or quantity of water, was a “pollutant” whose discharge could be regulated under the Act. This is not the case. Establishing water quality-based effluent limitations that are sufficiently protective to meet in-stream water quality criteria requires EPA to account for both *wastewater effluent* and receiving water flows, as EPA explained in the Fact Sheet. Conditions imposed by EPA to limit wastewater effluent flows from the facility for the permit term are designed to assure that the facility’s pollutant discharges do not result in excursions above in-stream water quality criteria, in accordance with section 301(b)(1)(C) of the Act and implementing regulations. 40 C.F.R. §§ 122.4(d), 122.44(d)(1), 122.44(d)(1)(vii)(A), 122.44(d)(5). Most trenchantly, 40 C.F.R. § 122.4(d) prohibits issuance of an NPDES permit “[w]hen the imposition of conditions cannot *ensure* [emphasis added] compliance with the applicable water quality requirements of all affected States.” Section 122.44(d)(1) is similarly broad in scope and obligates the Region to include in NPDES permits “any requirements...necessary to: (1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.” “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). Under CWA section 402, EPA may issue NPDES permits “for the discharge of any pollutant, or combination of pollutants” if the permit conditions assure that the discharge complies with certain requirements, including those of section 301 of the CWA. The Act defines “pollutant” to mean, inter alia, “municipal . . . waste[.]” and “sewage...discharged into water.” CWA § 502(6). EPA has implemented Sections 301(b)(1)(C) and 402 of the Act through numerous regulations, which specify when the Region must include specific permit conditions, water quality-based effluent limitations or other requirements in NPDES permits. The wastewater effluent flow limit is a condition designed to ensure that WQS will be met. More specifically, EPA based both its reasonable potential calculations and its permit effluent limitations for individual pollutants on a presumed maximum wastewater effluent discharge from the facility. EPA’s reasonable potential regulations require EPA to consider “where appropriate, the dilution of the effluent in the receiving water,” 40 C.F.R. § 122.44(d)(1)(ii), which is a function of both the wastewater effluent flow and receiving water flow. EPA guidance directs that this reasonable potential analysis be based on critical conditions. EPA, accordingly, is authorized to carry out its reasonable potential analysis by presuming that a plant is operating at its design flow during critical instream conditions (*i.e.*, 7Q10) when assessing reasonable potential.<sup>11</sup>

The commenter’s reliance on *Virginia Department of Transportation* is badly misplaced and not relevant to this proceeding. That case concerned EPA’s approval of TMDLs

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<sup>11</sup> USEPA, 2010, National Pollutant Discharge Elimination System (NPDES) Permit Writers’ Manual, EPA-833-K-10-001, p. 6-17

under Section 303 of the Act, not the development of reasonable effluent limitations under separate and distinct authority governing the NPDES permitting process—Sections 301, 402 and implementing regulations.

EPA notes, for the record, the commenter’s concession that “municipal waste such as that discharged by the City qualifies of a pollutant,” and would thus be subject to limitation under Section 402, rendering its arguments regarding surrogates at best incongruous, if not irrelevant.

EPA agrees with the comment that the Permittee did not have any violations of the flow limit during the review period, contrary to page 16 of the Fact Sheet which references two violations. While the Fact Sheet has not been updated because it was developed to support the Draft Permit, this response serves to update the administrative record.

Finally, EPA notes that the previous permit also contained a flow limit. To the extent the Permittee anticipates compliance issues with this limit, EPA notes that it has been able to work with municipalities on this issue through enforcement mechanisms. The Permittee is encouraged to contact EPA’s Enforcement and Compliance Assurance Division (“ECAD”) if it has such concerns. Please see [https://r1-gis-web.r1.epa.gov/ecad/enforcement\\_comp.html](https://r1-gis-web.r1.epa.gov/ecad/enforcement_comp.html) for relevant contacts.

## **Comment 22**

Average Monthly Concentration Reporting: Footnote 4 in Part I.A states that “in calculating and reporting the average monthly concentration when the pollutant is not detected, assign zero to the non-detected sample result if the pollutant was not detected for all monitoring periods in the prior 12 months. If the pollutant was detected in at least one monitoring period in the prior twelve months, then assign each non-detected sample result a value that is equal to one half of the minimum level of detection for the purposes of calculating averages.” Based on this, if one sample is found to exceed a level, then there is a monthly average violation. However, for certain parameters, all other samples that are measured as non-detect would then need to be given the designation of half the detection limit. This would then cause 12 violations rather than one. This would also skew the annual average for certain parameters, and would effectively result in reporting concentrations which were not actually detected in qualified laboratory analysis.

In addition, requiring the City to revise data values from past time periods where non-detect results must be revised due to a later detection, makes calculating the results and management of the data extremely complex. The City likely could not document how the monthly average is calculated in a straightforward way, if it changes from month to month. Automating the calculation procedure would also likely be impossible.

**Request:** The City requests that Footnote 4 be deleted from the Draft Permit.

## **Response 22**

EPA agrees that footnote 4 should be removed from the Final Permit to avoid any compliance issues raised based on non-detected sampling results. Additionally, EPA has added the following language to footnote 3 for clarification in calculating averages:

*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.*

### **Comment 23**

Part I.E.1 of the Draft Permit requires that “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.” Although the City has and will continue to develop and enforce local limits, it objects to the use of the term that it will “ensure” compliance.

**Request:** The City requests that any requirement to “ensure” compliance other than developing and enforcing local limits be deleted from the Draft Permit; this can be done simply by deleting the last phase of the sentence.

### **Response 23**

The City does not specify its precise objection to the use of the term “ensure compliance” in connection with the City’s NPDES permit. EPA agrees that Haverhill is not affirmatively required by the terms of Part I.E to do anything beyond developing and enforcing local limits. This represents EPA’s binding interpretation of the permit. In fact, the City explicitly acknowledges that it develops and enforces local limits, as required by the terms of the permit, and will continue to do so. No changes have been made to the Final Permit

### **Comment 24**

Part I.D of the Draft Permit requires that “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.” The City presently operates pursuant to an Emergency Response Plan approved by MassDEP that provides for backup power for the City’s pump stations. Backup power for the pump stations is provided through the use of permanent and portable generators and/or contracts to pump wastewater directly by third-party waste haulers when necessary. Alternate power at the WPAF provides for operation of the primary systems at the WPAF except for the aeration tanks. However, as part of the Collection System Improvement Plan being implemented by the City, the City will be adding full backup power to the WPAF in the future.

**Request:** The City requests that EPA and MassDEP acknowledge that the City’s implementation of its Generator Emergency Procedure provides adequate alternate power in compliance with the terms of the Draft Permit and implantation of full alternate power pursuant to the schedule provided for in the City’s Capital Improvement Plan and the Consent Decree complies with any requirement to implement backup power.

## **Response 24**

Part I.D of the Permit requires the Permittee and Co-permittee to provide alternative power sufficient to operate the portion of the publicly owned treatment works it owns and operates. EPA notes that this was also a requirement in the 2008 Permit. EPA notes that the Generator Emergency Procedure may comply with this permit condition until such time that full backup power is installed, so long as this near-term procedure is adequate to operate the POTW. However, the comment notes that alternate power provides for operation of the primary systems but is insufficient to operate the aeration tanks. EPA notes that this is not in accordance with the permit condition and must be addressed.

While the City's Emergency Response Plan (to respond to SSO events) was conditionally approved by MassDEP and EPA, Civil Action No. 166-11698-IT also required the submittal of CMOM Reports, a Long-Term CSO Control Plan, and a Comprehensive Plant Evaluation. MassDEP cited concerns about the City's pump stations, including backup power needs in their comments on the CMOM Program Assessment and Corrective Action Plan, and in comments on the City's February 2017 Integrated Plan. The City has affirmed their commitment to upgrade the backup power system at the treatment plant, and at a number of pump stations in response to agency comments. However, there has not been a formal resolution of these issues. EPA and MassDEP will continue to work with the City to address backup power issues, in the context of the Consent Decree.

## **Comment 25**

The Draft Permit contains effluent limits for Enterococci (35 cfu/L average monthly and 276 cfu/100 ml maximum daily) and Fecal Coliform (88 MPN/100 ml average monthly and 260 MPN/100 ml maximum daily). These effluent limits are carried over from the current NPDES Permit. The City notes that the Fecal Coliform is unnecessary as generally, if the City meets the Enterococci limit, dilution will result in very, very low Fecal Coliform levels a short distance downstream. For example, if the City's daily maximum Enterococci is at the limit of 276, 100 dilutions result in "3" counts of Enterococci and should translate to below the USDA 14 MPN for shellfish. Having both effluent limits is not more protective of the river and results in increased sampling costs to the City.

**Request:** The City requests that EPA remove the fecal coliform limit, finding that the Enterococci limit is adequately protective.

## **Response 25**

Although the City suggests that "generally" fecal coliform will be low, this does not fulfill EPA's legal obligation to ensure compliance with applicable water quality standards. As stated in the Fact Sheet, the fecal coliform bacteria limits are established to protect shellfishing uses in the receiving water. These requirements are found in the MA SWQSs at 314 CMR 4.05(b)(4)a, and their inclusion in the permit as enforceable limits will ensure compliance with those standards. Enterococci bacteria limits are established to protect recreational uses and those requirements are found at 314 CMR 4.05(b)(4)b. Both effluent limits shall remain in the Final Permit.

## **B. Comments from Jennifer A. Pederson, Executive Director, on behalf of Massachusetts Water Works Association**

### **Comment 26**

Massachusetts Water Works Association (MWWA) is writing to offer comments on the draft National Pollutant Discharge Elimination System (NPDES) permit issued to the Town of Haverhill for their Wastewater Treatment Plant. MWWA has been engaged in discussions with the United States Environmental Protection Agency's (EPA) Region 1 office since 2008 on the issue of numeric limits on Aluminum in NPDES permits. We have been specifically focused on EPA's NPDES permit for Potable Water Treatment Facilities but feel compelled to comment on this permit given we see that EPA is proposing to require compliance with an Aluminum standard in this permit. Our comments on this draft permit will be isolated to this one issue.

We previously commented on the Towns of Hudson, Maynard, and Milford's draft permits and appreciate that the language contained in Haverhill's permit offers some flexibility to revisit the Aluminum criteria. However, we remain concerned at any limit being proposed in this permit given the recent guidance issued by EPA Headquarters with a new methodology for looking at Aluminum criteria. The limits noticed in Haverhill's permit draft permit do not acknowledge this new guidance.

MWWA has gone on record numerous times that 87 µg/L is an inappropriate standard for Aluminum in permits in the New England region. Many of the receiving waters in Massachusetts, including many high quality, pristine waterways, already have natural background levels of Aluminum that exceed the national water quality standard that is currently used as the basis for numeric permit limits. The high levels of background Aluminum in waters generally considered to be very clean suggest that the current standard is grossly inaccurate and unnecessarily overprotective.

We are concerned that EPA is moving forward with issuing any permits with Aluminum criteria given the recent adoption of new national guidance and the fact that Massachusetts intends to very shortly update its surface water quality standards to incorporate the new guidance.

As indicated in the Fact Sheet, "EPA is aware of ongoing efforts by MassDEP to soon revise the Massachusetts aluminum criteria based, at least in part, on forthcoming new EPA aluminum criteria recommendations which are expected to be finalized within the coming months. ...EPA's draft aluminum criteria recommendations indicate that the new aluminum criteria recommendations may be higher than the current recommendations. ...EPA reasonably expects its (MassDEPs) new criteria may also be higher." For this reason, we ask that EPA strike the numeric criteria for Aluminum from this permit and change it to a monitoring requirement until the state updates its surface water quality standards.

### **Response 26**

Comment noted. See Response 2.

**C. Comments from Philip D. Guerin, President & Chairman, on behalf of Massachusetts Coalition for Water Resources Stewardship:**

**Comment 27**

On June 24, 2019, MCWRS had requested from EPA Region 1 a 90-day extension of the comment period for this draft permit. That request was denied and instead a 15-day extension was granted. Given the complexities and far-reaching impacts of this permit, MCWRS again suggests that a comment period extension of an additional 90 days would best serve the agencies and stakeholders. The additional time would allow further discussion of many issues and perhaps resolution of most. In lieu of an extension, EPA will have to reissue the draft permit as it needs to be substantially modified to remain fair, accurate and consistent.

**Response 27**

Comment noted. See Response 1.

**Comment 28**

MCWRS fully supports the comments submitted by the City of Haverhill. In particular, their request for a revised Draft permit should be heeded. As pointed out by the City, there are a number of factual inaccuracies in the draft permit including 7Q10 flows and dilution factors.

**Response 28**

EPA has responded to the comments submitted by the City of Haverhill in the relevant sections above. *See* Responses 1 through 25. Regarding the 7Q10 and dilution factor, see Response 15.

**Comment 29**

The City also makes a strong case for eliminating limits on aluminum based on recent clean sample testing rather than historic test results that were questionable for this purpose.

**Response 29**

Comment noted. See Response 2.

**Comment 30**

In addition to the City's comments, MCWRS also suggests that EPA Region 1 is missing a wonderful opportunity to advance watershed-based permitting by handling permits for Haverhill, Lowell and the Greater Lawrence Sanitary District in an isolated fashion. These three large communities are each situated on the Merrimack River within a relatively short stretch of river. They all share the same issues of wastewater treatment, CSOs and aging water infrastructure. Through new language in a revised draft permit, EPA could allow and encourage collaboration between these communities in a way that advances river improvement while minimizing fiscal impacts and duplicative work. Some form of pollution trading or similar actions which allow a community to utilize its strengths and work with a neighboring system to share costs and implement beneficial improvements would be a great step forward in NPDES permitting in New England.

### **Response 30**

EPA appreciates the suggestion to encourage more collaboration between Permittees within the Merrimack River watershed and notes that the concurrent development of the Draft Permits for these three Permittees has certainly resulted in an increase in collaboration, efficiency and consistency. EPA welcomes more specific suggestions for how environmental benefits can be achieved in a more collaborative fashion in the future. Note that collaborative efforts are not precluded by the issuance of the permit and EPA can revisit the structure of permits, including the introduction of general permits, in future permitting cycles should collaborative efforts coalesce.

### **D. Comments from Betsy Reilly, Ph.D., Director of Environmental Quality Department, on behalf of Massachusetts Water Resources Authority**

#### **Comment 31**

Comments on Co-Permittees

MWRA appreciates that the United States Environmental Protection Agency (EPA) has included language that provides clarity about responsibilities among the co-Permittees. However, MWRA continues to have reservations about the inclusion of municipal entities that have not applied for a permit and are not directly discharging to a water of the Commonwealth or the United States. MWRA remains concerned that the co-Permittee model is inconsistent with the intent of the Clean Water Act.

#### **Response 31**

For a discussion of the three aspects of EPA's co-permitting approach identified in the comment, please see *In re Charles River Pollution Control Dist.*, 16 EAD 623 (EAB 2015). Those specific rationales, as well as the bases identified by the Board in upholding EPA co-permittee approach, are incorporated here.

#### **Comment 32**

Comments on BOD and TSS Percent Removal

The draft permit includes a requirement to achieve 85 percent removal of BOD<sub>5</sub> and TSS. Pursuant to 40 C.F.R. 133.103(a), this requirement should be applied only "during dry weather" because the treatment plant serves a combined sewer system and thus may not be able to meet the percentage removal requirements established under §§133.102(a)(3) and 133.102(b)(3), or §§133.105(a)(3) and 133.105(b). During wet weather the Nine Minimum Controls requirement to maximize flow to the treatment facility, conflicts with a percent removal requirement. MWRA recommends adding a footnote such as the following:

The permittee's treatment facility will maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand during dry weather. Dry weather is defined as any calendar day on which there is less than 0.1 inch of rain and no snow melt. The percent removal shall be calculated as a monthly average using the influent and effluent BOD<sub>5</sub> and TSS values collected during dry weather days.



## Response 32

See Response 20.

## Comment 33

### Comments on Phosphorus

The draft permit does not include a limit for phosphorus; however, MWRA disagrees with EPA's "reasonable potential" analysis in the Fact Sheet relating to phosphorus.

Massachusetts Water Quality Standards include a narrative standard for nutrients. There is no Gold Book<sup>12</sup> criterion for phosphorus in freshwater. In fact, the Gold Book outlines, "No national criterion is presented for phosphate phosphorus for the control of eutrophication." Nor has Massachusetts established either a loading allocation such as an approved TMDL, or site-specific criteria, for the Merrimack River for phosphorus.

The Gold Book, as noted above, explicitly does not recommend a criterion for phosphorus in fresh water. However, the following statement in the Fact Sheet is used to support the phosphorus values used for the reasonable potential analysis:

EPA's 1986 Quality Criteria for Water (the "Gold Book") recommends that in-stream phosphorus concentrations not exceed 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.

The Fact Sheet erroneously uses values mentioned in one (1973) literature citation in the Gold Book, ignoring the remainder of the text, and uses those numbers as though they were approved water quality criteria or standards. Such use is inappropriate.

The Clean Water Act requires states to develop TMDLs where numeric criteria are not available or where required to restore impaired waters. EPA's web site<sup>13</sup> on TMDLs notes:

The TMDL process is important for improving water quality because it serves as a link in the chain between water quality standards and implementation of control actions designed to attain those standards.

Furthermore, once a TMDL is approved the state must allocate pollutant loads equitably to contributing point and nonpoint sources, before permit limits can be set based on the TMDL. Although the TMDL process is time-consuming, it requires public input and allows for scientific review. Therefore, EPA cannot apply arbitrary criteria that have not gone through a review and public participation process. The statement in the Fact Sheet "In the absence of numeric criteria for phosphorus, EPA uses nationally recommended criteria and other technical guidance to develop effluent limitations for the discharge of phosphorus" has no legal basis.

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<sup>12</sup> <https://www.epa.gov/sites/production/files/2018-10/documents/quality-criteria-water-1986.pdf>

<sup>13</sup> <https://www.epa.gov/tmdl/overview-total-maximum-daily-loads-tmdls>

The draft permit further cites the *Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion XIV* (EPA December 2000). MWRA notes that the Foreword to this document states:

This document presents EPA's nutrient criteria for Rivers and Streams in Nutrient Ecoregion XIV. These criteria provide EPA's recommendations to States and authorized Tribes for use in establishing their water quality standards consistent with section 303(c) of CWA. Under section 303(c) of the CWA, States and authorized Tribes have the primary responsibility for adopting water quality standards as State or Tribal law or regulation. The standards must contain scientifically defensible water quality criteria that are protective of designated uses. **EPA's recommended section 304(a) criteria are not laws or regulations** – they are guidance that States and Tribes may use as a starting point for the criteria for their water quality standards. (*emphasis added*)

### Response 33

The commenter begins by questioning the use of the Gold Book in setting phosphorus limits. As stated in the Fact Sheet (at 23), the Massachusetts Water Quality Standards ("MA WQS") contain a narrative criterion for phosphorus. *See* 314 CMR 4.05(5)(c). Until the State adopts numeric criteria, EPA must derive phosphorus limits that are protective of the State's narrative water quality standards by translating those standards based on the best information available at the time of permit issuance.

In the course of deriving protective phosphorus effluent limits that would meet the narrative phosphorus criterion, the Region looked to a variety of sources, including the Gold Book, Ecoregional Nutrient Criteria (*Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion XIV* (EPA December 2000)) and Nutrient Criteria Guidance (*Nutrient Criteria Technical Guidance Manual: Rivers and Streams, July 2000*). These constitute information published under CWA § 304(a) and were used as *guidance* to interpret the State's narrative criterion for nutrients and not as substitutes for state water quality criteria. The Region's use of the Gold Book and other relevant materials published under Section 304(a) to develop a numeric phosphorus limit sufficiently stringent to achieve the narrative nutrient criterion is consistent with applicable NPDES regulations. When deriving a numeric limit to implement a narrative water quality criterion, EPA is authorized (40 C.F.R. § 122.44(d)(1)(vi)(B)) to: "Establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under Section 304(a) of the CWA, supplemented where necessary by other relevant information." EPA also relied on 40 C.F.R. §122.44(d)(1)(vi)(A) in arriving at its determination, which provides EPA the ability to derive an instream target based on relevant information that will protect the designated use.

EPA recognizes that the Gold Book does not contain a phosphorus criterion *per se*, but instead presents a "rationale to support such a criterion." Gold Book at 240. The guidance document goes on to recommend in-stream phosphorus concentrations of 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 the lake or reservoir.

Consistent with the guidance documents cited by the commenter, EPA relied on these values as information relevant to the translation of the Commonwealth's narrative nutrient and nutrient-related criteria. EPA evaluated these values and methodological approaches and included them in the total mix of information, from which it ultimately derived a protective instream target, which fell within a range of available targets, set against a backdrop of scientific uncertainty. EPA did not apply them as binding criteria and may refine the target in future permitting cycles based on all the information in the record before it at the time of permitting. EPA did not select the most stringent available instream target available to it from the peer-reviewed literature in the administrative record, which it was fully authorized to do, and instead opted as a policy matter to measure receiving water response during the permit term and reevaluate the need for a limit, in future permitting cycles after assessing receiving water response. EPA reserves the right to revisit this judgment.

Neither the CWA nor EPA regulations require that a TMDL, or its equivalent, be completed before a water quality-based limit may be included in an NPDES permit.<sup>14</sup> Rather, water quality-based effluent limitations in NPDES permits must be "consistent with the assumptions and requirements of any *available* [emphasis added] wasteload allocation." 40 C.F.R. § 122.44(d)(1)(vii)(B). *Id.* Thus, an approved TMDL is not a precondition to the issuance of an NPDES permit for discharges to an impaired waterway. *Id.* This interpretation is consistent with the preamble to 40 C.F.R. § 122.44(d)(1), which expressly outlines the relationship between subsections 122.44(d)(1)(vi) (i.e., procedures for implementing narrative criteria), and (d)(1)(vii):

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.

*See* 54 Fed. Reg. 23,868, 23,876 (June 2, 1989). If a TMDL is completed and approved by EPA, the effluent limitation in any subsequently issued NPDES permit must be consistent with the wasteload allocation assigned to the facility. In the meantime, relevant regulations require that EPA develop water quality based effluent limitations based on the existing applicable water quality standard in order to ensure that the permit complies with the EPA regulations requiring permits to include requirements "necessary to achieve

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<sup>14</sup> *See, e.g.,* 43 FR 60662, 60664 (December 28, 1978) ("EPA does not consider the establishment of TMDL's as essential to setting of water quality based effluent limits. Development of TMDL's pursuant to section 303(d) is not a necessary prerequisite to adoption or enforcement of water quality standards, and therefore, will not determine the validity of existing, revised or new water quality standards.")

water quality standards” (40 C.F.R. § 122.44(d)(1)) and limits “derived from, and [that comply] with” water quality standards (§ 122.44(d)(1)(vii)). These requirements implement Clean Water Act section 301(b)(1)(C), which mandates inclusion of “any more stringent limitation, including those necessary to meet water quality standards” in NPDES permits. See *In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 604-05 (EAB 2010) (expressly rejecting the idea that the permitting authority cannot proceed to determine permit effluent limits where a TMDL has yet to be established), *aff’d*, 690 F.3d 9 (1st Cir. 2012), *cert. denied*, 133 S. Ct. 2382 (2013).

### **Comment 34**

#### Comments on Nitrogen

The draft permit requires monitoring of total nitrogen in the effluent. The Fact Sheet (section 5.1.9.1) asserts that estuarine portions of the Merrimack River have “elevated” nitrogen and chlorophyll ‘a’ levels, which can be related. The Fact Sheet goes on to describe observed levels of nitrogen and chlorophyll ‘a’ in the estuarine portion of the river, and then states “most of these results are outside the range typically found in healthy estuaries in Massachusetts”. However, the citation given as a basis for that assertion is a study of *southeastern* Massachusetts estuaries, which are very different in their sensitivity to nitrogen loading from the colder, deeper, macrotidal, better-flushed estuaries north of Cape Cod. For example, Boston Harbor total nitrogen ranges from 0.15 to 0.99 mg/L while chlorophyll ‘a’ ranges from 0.13 to 68 µg/L (surface samples, collected biweekly year-round, throughout the estuary, 2014-2018)<sup>15</sup>. These ranges, from the now-healthy Boston Harbor, are similar to those cited for the brackish portions of the Merrimack River.

Although monitoring of effluent nitrogen is likely not onerous, MWRA cautions that the Fact Sheet does not adequately justify a concern about nitrogen loading to the Merrimack River. Establishing whether the receiving water, or the downstream estuary, is impaired because of nitrogen loading, is not the responsibility of NPDES permittees. In addition, as for phosphorus, the appropriate next step for addressing any such impairment would be development of an approved TMDL.

### **Response 34**

EPA concurs that more information is necessary to comprehensively assess the impact of nitrogen loadings in the Merrimack River watershed, because it will result in a more effective permitting regime, should limits prove to be necessary. EPA explains its approach to permitting for TN more fully in Response 59 below. Over the course of the next permit term, EPA expects to gather a variety of effluent and ambient data from various permittees and other entities. Although EPA agrees that the decision to impose an effluent limitation for a pollutant of concern upon finding reasonable potential is the obligation of EPA, the commenter’s suggestion that wastewater dischargers may not be subject to monitoring or sampling requirements imposed for the purpose of determining the quality of the waters that receive their pollutant discharges, and the need to control

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<sup>15</sup> [http://www.mwra.state.ma.us/harbor/html/wq\\_data.htm](http://www.mwra.state.ma.us/harbor/html/wq_data.htm)

those pollutant discharges, is without foundation in the Act. To the contrary, it is expressly contemplated by NPDES regulations and is supported by case law.

EPA frequently includes monitoring requirements in a permit with the objective of using the data to determine the need for a limit in a subsequent permit, and is authorized to do so under the Act and implementing regulations. The data collected during this permit cycle in conjunction with other water quality data will be used by EPA in the development of a subsequent permit.

See Response 33 regarding TMDL development.

### **Comment 35**

Comments on Footnote 4

It is concerning that in Footnote 4 results are reported differently based on other results. Results should always stand on their own; their values should not depend on other results collected later. What is the rationale for the time period of 12 months? Why is the Permittee to use half the detection limit? It is also not clear that if a result in month 12 is a detect, then do all the nondetects in the previous 11 months get retroactive values of half the detection limit, or is it just any other nondetected result in month 12? There is no logical or scientific rationale for arbitrarily changing values of results.

As a practical matter, conditioning data values on whether all measurements in some past time period were nondetects, makes calculating the results and management of the data extremely complex. It would be difficult for the permittee to document how the monthly average is calculated in a straightforward way, if it changes from month to month. Automating the calculation procedure may become impossible. It also makes the reported results unusable for examining trends. MWRA also does not understand why Footnote 4 only applies to the average monthly effluent limits and not the average weekly or maximum daily limits. EPA should be consistent in how nondetects are treated, both within this footnote and between Footnotes 3 and 4.

MWRA recommends that non-detect results continue to be assigned a value of '0' as is the current practice according to the most recent available instructions for completing a discharge monitoring report (DMR) in EPA Region 1, the NPDES Permit Program Instructions For the Discharge Monitoring Report Forms (DMRs) Report Year 2010, (EPA January 2010). In this document, Permittees are instructed to substitute '0' for any non-detect results prior to averaging or reporting results on the DMR.

### **Response 35**

See Response 22.

## Comment 36

### Comments on Footnote 6

MWRA recommends that EPA include the following bypass language in Haverhill's draft NPDES permit as they did in Springfield's draft NPDES permit (MA0101613): "A bypass of secondary treatment is allowed when wet weather influent flow exceeds the wet weather capacity of the secondary treatment." Wastewater treatment plants are designed and constructed with the understanding that, at times, primary-treated-only wastewater will be blended with secondary treated flows and disinfected, provided that the final blended effluent meets secondary permit limits. This practice allows the POTW to maximize flow to the treatment plant from its combined collection system, which may be subject to large fluctuations in flow during wet weather, to minimize combined sewer overflows (CSOs), consistent with EPA policy and regulation.

Additionally, it is unclear why the permit states that a bypass of secondary treatment is subject to the requirements of Part II.B.4.c (prior notice/24-hour reporting). The permit should clarify that Part II.B.4.c applies only when flow bypasses secondary treatment at flows less than the secondary process limit. Thus, the permit should clarify that, for plant flows greater than the secondary process limit that do not cause violations of numerical permit limits or endanger health or the environment, 24-hour reporting of blending is not required.

EPA should also clarify that discharges from CSO outfalls during wet weather are not bypasses of secondary treatment.

### Response 36

EPA's response to comments concerning footnote 5 (footnote 6 in the Draft Permit) and the conditions in the permit which relate to bypasses of secondary treatment are found in Responses 3 and 4.

EPA's response to comments concerning footnote 5 (footnote 6 in the Draft Permit) and the conditions in the permit which relate to bypasses of secondary treatment are found in Responses 3 and 4.

EPA acknowledges language contained in the *draft* NPDES permit for the Springfield Regional Waste Water Treatment Facility. EPA continues to review comments and draft language on that permit, which has not yet been finalized.

The distinction between CSOs and bypasses of secondary treatment are clearly established in Part I.A. of the National CSO Control Policy, 59 Fed. Reg. 18688, which defines a CSO as "a discharge from a combined sewer system at a point prior to the POTW Treatment Plant," and at 40 C.F.R. § 122.41(m) which defines a bypass as "the intentional diversion of waste streams from any portion of a treatment facility". *See also* 40 C.F.R. § 403.3(r) (defining "POTW Treatment Plant" as "that portion of the POTW which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste.").

Notice requirements in Part II.B.4.c incorporate required regulatory language at 40 C.F.R. § 122.41(m)(3). Regarding bypasses which do not require notice, Part II.B.4.c., pursuant to 40 C.F.R. § 122.41(m)(2), clearly states that bypasses which do not “cause effluent limitations to be exceeded” and are “essential for maintenance to assure efficient operation” are not subject to the sub-section (c) notice provisions.

### **Comment 37**

Comment on Footnote 8

MWRA recommends that instead of a rigid 45 or 15 minute simulated chlorine contact time based on plant flow versus design flow, the simulated chlorine contact time should be calculated based on the plant flow at the time of sample collection. To accurately reflect what is happening in the treatment process at the time of collection, samples should be held in a dark environment for a period of time equal to the amount of time required for wastewater to pass between the point of collection and the outfall.

### **Response 37**

EPA agrees that the simulated chlorine contact time should be calculated based on the plant flow at the time of sample collection because this results in a more accurate representation of conditions at end of pipe. Therefore, EPA agrees that samples should be held in a dark environment for a period of time equal to the amount of time required for wastewater to pass between the point of collection and the outfall, but at no time shall the holding time exceed 45 minutes. The Final Permit has been updated accordingly.

### **Comment 38**

Comment on Footnote 9

EPA should clarify if it means for Enterococci and fecal coliform samples to be tested concurrently with total residual chlorine after a simulated chlorine contact time.

### **Response 38**

EPA clarifies that the same holding time may be applied to the total residual chlorine, enterococci and fecal coliform samples. See Response 37. This will allow all samples to represent the effluent at the end of pipe.

### **Comment 39**

Comments on Footnote 13

It is unclear whether EPA is eliminating the submittal of separate, quarterly DMRs for Whole Effluent Toxicity testing. Due to the time necessary to complete the toxicity test report, particularly for chronic tests, it will not usually be the case that results are available by the 15th of the following month. If EPA intends for the Permittee to submit quarterly toxicity DMRs, MWRA suggests that the language below be modified:

The complete report for each toxicity test shall be submitted as an attachment to the monthly DMR submittal immediately following the completion of the test should be changed to:

The complete report for each toxicity test shall be submitted by the last day of the month following the completion of the test. The results are due by February 28, May 31, August 31, and November 30.

If EPA intends for the quarterly toxicity results to be submitted on the same monthly DMR form as the other results for the reporting month, the permit should clarify what NODI code should be used for data not yet available, and that the permittee should resubmit the DMR with the toxicity data and report once they become available. It should also clarify that the updated DMR will not be considered late, provided that the non-toxicity results were submitted by the 15th of the month.

### **Response 39**

First, EPA clarifies that the Draft Permit does not require the submittal of separate, quarterly DMRs for WET tests.

Second, EPA agrees that the requirement to submit results with the “monthly DMR submittal immediately following completion of the test” could result in a report being due before it is available. However, EPA does not agree with the proposed alternative because of the technical challenges involving EPA’s NetDMR and ICIS systems that may be associated with consistent submittal of late WET test data. Rather, to account for the processing time of each WET test, EPA has revised the language to allow for the WET results to be reported on the “second monthly DMR submittal following the completion of the test.”

### **Comment 40**

Comments on Unauthorized Discharges

Part I.B.2 is not consistent with Part II.D.1.e.(1) (Standard Conditions, 24-hour reporting) of the draft permit, nor with 314 CMR 3.19 (20)(e). Part II.D.1.e.(1) requires verbal reporting of any noncompliance which may endanger health or the environment within 24 hours from the time the Permittee becomes aware of the circumstances. A written report containing discharge volumes is then required within five days of the time the Permittee becomes aware of the circumstances.

It is generally infeasible to provide accurate information on the timing and volume of unauthorized discharges such as sanitary sewer overflows within 24 hours. The Permittee should be given adequate time to analyze, process, and validate data to report accurate information. Specifically, the permit should allow five days to report the “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.” If the 24-hour notification requirement is retained as written, the unauthorized discharge information is very likely to undergo some corrections between the 24-hour notification and the five-day report. It is not clear in the permit how the Permittee is to handle any discrepancies.

EPA should also clarify how long it intends for this information to be available on the Permittee’s website.



## Response 40

The two provisions cited by the commenter are distinct requirements in the Draft Permit, which were included to achieve different objectives.

Part I.B.2. requires public notification of an unauthorized discharge (i.e., plant upset, sanitary sewer overflow (“SSO”), etc.), so that appropriate precautions can be taken to minimize exposure risks by the public associated with recreating on or near receiving waters where untreated wastewater may be present. Part I.B.2 is properly included, as stated in the Fact Sheet, to minimize the occurrence of permit violations that have a reasonable likelihood of adversely affecting human health or the environment pursuant to authority established in 40 C.F.R. § 122.41(d) (“*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.”). It is, in EPA’s judgment, reasonable to expeditiously disclose these occurrences, even subject to correction, given the potential risks to the public, so that it may be put on notice and assess the risks prior to utilizing the resource. Although EPA must strike a balance between notifying the public in a timely manner and ensuring the accuracy of the notification, a five-day delay would likely lead to members of the public recreating or otherwise utilizing the resource while unaware of potential risks. It is unclear to EPA why any discrepancies between an initial public notification may not be addressed by simply by providing updated information on the website. As for the commenter’s concern about reporting “volumes,” Part I.B.2. requires only reporting of the *estimated volume* of any unauthorized discharge, not an exact volume. The commenter does not specify why Part I.B.2 is inconsistent with 314 CMR 3.19(20)(e).

Part II.D.1.(e), on the other hand, requires that notification be provided to the permitting authority(ies) of *any noncompliance* which may endanger health or the environment. Moreover, reporting of discharge volumes is generally not required by Part II.D.1(e) except for noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events.

Additionally, EPA has modified the language in Part I.B.2 to require public notification within 24 hours of *becoming aware* of any unauthorized discharge impacting a surface water or the public, which is consistent with the language set forth in Part II.D.1.(e). See Response 5.

Finally, EPA agrees that clarification regarding the length of time notifications of unauthorized discharges are to remain on the permittee’s website is needed, and therefore, Part I.B.2. of the Final Permit specifies that such notifications shall remain posted for a minimum of 12 months. This will provide a reasonable record and history that the public may consult when assessing the frequency of unauthorized discharges in particular water bodies in assessing whether to utilize them.

## **Comment 41**

### Comments on Combined Sewer Overflows

The permit should allow flexibility in choosing the most effective way to “characterize CSO impacts and the efficacy of CSO controls” (Nine Minimum Controls [NMC] #9), as EPA did in the Public Notification Requirements for Combined Sewer Overflows to the Great Lakes Basin final rule promulgated in the Federal Register on January 8, 2018. MWRA's experience is that due to the complexity of CSO regulator structures, and the difficulty in maintaining sensors in the harsh environment of a combined sewer, it is usually impossible to accurately measure and report CSO discharges (i.e., “Duration (hours) of discharge; Volume (gallons) of discharge” for “each combined sewer outfall” [pg. 18; Part I.F.3.e]) over a short period of time. These measurements in the field -- as opposed to those at CSO treatment facilities -- require extensive, expensive metering at each outfall and regulator. Once the collected meter data are determined (through careful technical assessment) to be valid, the data must then undergo post-processing and expert interpretation, as well as validation against other information such as system performance records and model output, to determine reasonably accurate activation start and stop times and discharge volumes. MWRA has seen that, even with good meter “data,” the discharge durations and volumes determined from the data are often suspect or unreliable.

CSO discharge estimates can change between an immediate or short-term notification, and annual reporting. To avoid concern about “discrepancies,” the permit should state that discharge estimates in initial notifications are “preliminary and subject to change with new information or additional evaluation.”

As an alternative to direct measurement, MWRA encourages EPA to also allow modeling, precipitation-based estimates and other analytical tools to estimate CSO discharge duration and volume as EPA does in the Public Notification Plan section of the draft permit (Part I.F.3.g.(2)). Under the right conditions, modeling can be an effective method for determining the occurrence and characteristics of CSOs.

MWRA is providing rapid public notification of CSO discharges at CSO treatment facilities. These facilities are typically the most active CSOs in their respective receiving waters, and can be accurately measured and verified compared to stand-alone CSO regulator structures.

#### Public notification plan

The draft permit provides 180 days to develop a public notification plan (CSO Nine Minimum Controls #8). Because the infrastructure to provide notification needs to be put in place, MWRA recommends that additional time, at least 36 months from the effective date of the permit, be allowed for implementation of the plan.

MWRA also recommends that EPA include a schedule for implementation and a listing of potentially affected entities in the plan. EPA should also provide guidance to the Permittee on how to determine which downstream communities might be potentially affected entities.

### Initial notification

MWRA supports the draft permit language that allows the use of “monitoring, modeling, or other means” to determine that a CSO discharge has occurred.

It is important to keep in mind that notifying the public of CSO discharges into a receiving water body that is affected by many wet weather (and possibly dry weather) sources of pathogens is likely to give the false impression that the water is safe for contact recreation when CSOs are not discharging; or, that the water is safe if there has not been a CSO activation in a storm or a series of wet weather events. The risk to public health is influenced by a number of factors, not just CSO discharges. A requirement for rapid public notification of CSO discharges may give the erroneous impression that the receiving waters are safe during and immediately after storms in the absence of CSO discharges.

More helpful to the public and protective of public health would be a much more general short-term notification of the potential for one or more CSO discharges to a receiving water segments (along with stormwater and other discharges). The risk to public health is best determined and communicated by public health authorities rather than wastewater Permittees. MWRA recommends that the language be changed to provide a general notification that because large storms can trigger CSOs, public health officials recommend avoiding contact with water bodies during rainstorms and for 48 hours afterwards, as there may be increased health risks due to bacteria or other pollutants associated with urban stormwater runoff and CSO discharges.

### Follow-up notification

The draft permit requires a supplemental notification within 24 hours after becoming aware of the end of a CSO discharge. This supplemental notification would confirm whether the CSO did indeed discharge and provide the start and stop times. MWRA believes it is infeasible to provide accurate information on the timing of each activation within 24 hours at any CSO outfall other than those from staffed CSO treatment facilities. As discussed above, the Permittee should be given adequate time to analyze, process and validate data (or model results) to report accurate information. Furthermore, it is not clear what public health benefit would be obtained by such a notification. The potential benefit of these notifications is not immediate public health protection but as input to longer term CSO public policy and control efforts, which are adequately provided for with the other CSO discharge reporting requirements in the draft permit.

MWRA recommends that the follow-up notification requirement be eliminated.

### **Response 41**

The Final Rule Public Notification for CSOs to the Great Lakes implements Section 425 of the Consolidated Appropriations Act of 2016, which requires EPA to work with the Great Lakes States to establish public notification requirements for combined sewer discharges to the Great Lakes. It does not apply to dischargers outside of the area.

EPA maintains its position that the objective of the monitoring required under the nine minimum controls is to provide data that can be used to evaluate compliance with the technology based effluent limitations for CSOs that are set forth in the permit (i.e., the

nine minimum controls), the efficacy of the CSO controls that have been implemented and to validate the assumptions set forth in the permittee's LTCP, as well as to facilitate the CSO notification program. It has been EPA and MassDEP's experience that direct measurement provides the most accurate indication of CSO activations. Therefore, the collection of data through direct measurement is essential for the regulatory agencies to conduct these evaluations. Forms of direct measurement *may* include, but are not limited to, metering of flows at each CSO outfall. Alternate approaches could include, for example, extrapolating the flow volume discharged through a CSO outfall from measurements of water levels in the interceptor sewers (or some other measured metric of a known quantity from which the flow volume could be derived). The requirement to monitor CSO discharges through direct measurement remains unchanged in the Final Permit.

EPA understands that additional time may be needed to validate and refine CSO data that is collected each month through direct measurement, and as such, the permit requires CSO discharge data to be submitted with the Annual Report that is submitted in accordance with Part I.F.4. of the permit.

EPA agrees that CSO discharge estimates may change between the time the initial and supplemental notifications are provided. This understanding is reflected in Part I.F.3.e.(2) (initial notification) of the Draft Permit, which states that "Initial notification of a *probable* CSO activation shall be provided...". This language has been maintained in the Final Permit.

#### Public notification plan

With respect to the commenter's request that the deadline for the submittal and implementation of the public notification plan be extended to 36 months, the deadline for complying with this requirement remains unchanged in the Final Permit. Neither the commenter nor the permittee have identified any specific impediments to meeting this requirement within the time frame established in the permit.

With respect to the commenter's concerns regarding the requirement to provide notification to "potentially affected parties", upon further consideration, EPA has determined that the public notification requirements in the Draft Permit, including the requirements in Part I.F.3.g. to provide the general public with notification of CSO discharges and the requirements in Part I.H.2. and Part I.H.3. to notify downstream community water systems and the Massachusetts Division of Marine Fisheries of any emergency condition, plant upset, bypass, CSO discharges, SSO discharges or other system failure that has the potential to violate permit limits or affect the quality of the water to be withdrawn for drinking water purposes, are inclusive of all categories of the public, and the references to "affected entities" and "affected parties" have been removed from Part I.F.3.g. of the Final Permit.

### Initial Notification

EPA disagrees with the commenter's statement that notifying the public of the cessation of a CSO discharge will provide a false sense of security that the water is safe. While water quality may be negatively impacted by non-CSO sources, including stormwater runoff, providing timely notice of CSO discharges may allow the public to take steps to reduce potential exposure to pathogens associated with untreated wastewater. EPA does, however, encourage the permittee to provide the public with information relative to the impacts of wet weather, including those due to stormwater and other non-CSO sources, on the quality of the receiving water as well as to public health. Additionally, EPA supports the collaboration between the permittee and public health entities in communicating the health risks presented by untreated discharges of combined stormwater and wastewater.

### Follow-up Notification

EPA disagrees with the commenter's suggestion that confirmation of a CSO discharge can only be made if the discharge is from a CSO treatment facility. The concerns expressed by the commenter regarding the time needed to analyze, process and validate data (or model results) to report accurate information appear to be more appropriately directed towards the collection and reporting of flow volumes, as opposed to confirming whether a CSO discharge occurred.

The intent of the supplemental notification, in conjunction with the initial notification, is to provide the public with timely information relative to CSO discharges so that appropriate precautions can be taken to minimize exposure risks associated with recreating on or near receiving waters into which CSO discharges occur. These public notification requirements are reasonable given the uses of the receiving water and remain unchanged in the Final Permit.

## **Comment 42**

### Comments on Special Conditions

Condition I.H.3 requires monitoring of phosphorus (see also Footnote 10.) There is no justification for this requirement provided in the Fact Sheet. It is not clear what the purpose is or how the proposed study design is going to meet that purpose. The classic reference for designing marine pollution monitoring programs, *Managing Troubled Waters*<sup>16</sup>, emphasizes the importance of starting with clear monitoring questions in order to assure that the study design will generate data that will answer those questions.

If there were a rationale provided for the study, reviewers could make more relevant comments on the appropriateness of the study design. What is the reason for sampling in dry weather? How will tidal aliasing be avoided?

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<sup>16</sup> National Research Council. 1990. *Managing Troubled Waters: The Role of Marine Environmental Monitoring*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/1439>.

Furthermore, the requirement to collect monthly samples in dry weather is infeasible. The permittee may schedule sampling during an expected dry day, only to have the weather change. If there are no dry days during a month, how should the lack of data be reported on the DMR?

If this ambient monitoring condition is retained, EPA should clarify that Part I.H.3 refers to monitoring for total phosphorus only.

#### **Response 42**

EPA clarifies that the purpose of the ambient monitoring requirement for phosphorus is to track background conditions over the life of the permit. These data can be used in the next permit reissuance to ensure that appropriate limits are in place to protect water quality standards.

The comment questions the condition of dry weather and tidal aliasing. Monitoring during dry weather is required because the critical condition for the impact of phosphorus loading from the Haverhill discharge is during periods of low flow. If it is raining, then the conditions of the river are likely impacted by stormwater and are not representative of critical dry weather conditions.

During the summer of 2017 EPA deployed datasondes in the lower Merrimack River. The farthest station upstream was just above the POTW located in Merrimac, MA. The maximum salinity at this location was 3.4 ppt so tidal aliasing would not be expected to cause any issues upstream of Merrimac, MA. Since Merrimac, MA is downstream of Haverhill, EPA does not believe that tidal aliasing will be an issue for Haverhill.

EPA disagrees that monitoring during dry weather is infeasible. However, if there are no dry days during a month, the Permittee may report a No Data Indicator (“NODI”) code “V” (Weather Related) for that month.

Part I.H.3 applies to total phosphorus monitoring only.

#### **Comment 43**

Typographic errors

Fact sheet, page 1

The Massachusetts municipality of Groveland is a co-permittee for specific activities required in I.D, I.E., and I.F. of the Draft Permit...

MWRA believes this reference should be to I.B, I.C, and I.D.

Fact sheet page 7

Section 2.2.4, Reasonable Potential Analysis, at the end of the second paragraph, “...which are then compared to the applicable WQC” should say “...which are then compared to the applicable

WQS”, since effluent concentrations are compared to state water quality *standards*, not recommended water quality *criteria*.

Fact sheet page 23

The units of chlorophyll ‘a’ in the CDM report cited, are µg/L (parts per million), not “ppt” (parts per thousand or parts per trillion, not clear from the context).

Page 30 of the Fact Sheet, section 5.5

“Specific permit conditions have also been included in Part I.C. and I.D. of the Draft Permit.”

The reference here should be to Part I.B and I.C.

Page 32 of Fact Sheet – There appears to be text missing before the paragraph that begins “This initial notification ...”, that would describe the rationale and content of the initial notification.

Page 36 of Fact Sheet:

- The Draft Permit proposes to limit BOD, TSS, pH, total residual chlorine, *E. coli*, fecal coliform, total aluminum and total phosphorus; [instead, it should read]
- The Draft Permit proposes to limit BOD, TSS, pH, total residual chlorine, *Enterococcus*, fecal coliform, and total aluminum;

**Response 43**

EPA agrees with the typographical edits (except the one on page 7) and they are noted here for the record.

EPA does not agree that page 7 of the Fact Sheet should say WQS (i.e., water quality standards) instead of WQC (i.e., water quality criteria). EPA notes that WQC are a part of WQS and a reasonable potential analysis specifically compares pollutant concentrations to the WQC.

Finally, while the Fact Sheet has not been updated because it was developed to support the Draft Permit, EPA is updating the administrative record by including the “missing text” on page 32 of the Fact Sheet below:

To reflect advances in technologies, the Draft Permit includes more specific public notification implementation level requirements to ensure that the public receives adequate notification of CSO occurrences and CSO impacts. The Draft Permit requires the Permittee to develop a public notification plan to fulfill NMC #8. As part of this plan, notification shall be provided electronically to any interested party, and a posting made on the permittee’s website, of a probable CSO activation. EPA is proposing a requirement in the revised Draft Permit for the Permittee to provide initial notification to the public of a probable CSO

discharge no later than four hours after becoming aware of a likely CSO discharge. This notification may be based on modeling estimates of discharge(s) based on rainfall (or other predictive modeling methodologies) rather than on actual CSO discharge measurements.

## **E. Comments from Gene Porter, Chair, on behalf of Lower Merrimack River Local Advisory Committee**

### **Comment 44**

I am the Chair of New Hampshire's Lower Merrimack River Local Advisory Committee (LMRLAC) and have a vested interest in the EPA's efforts to upgrade the permits for all wastewater treatment facilities that discharge untreated effluent to the River. Although the two major permits in New Hampshire are not scheduled for review until next year, the precedent set by the Massachusetts permits will be important.

The more people who feel confident in using the River for recreational purposes, the more people who will have a vested interest in helping ensure that environmental safeguards are observed and strengthened. To that end, greater transparency of the limits of any pollution threats will increase public confidence in the safety of the River's waters.

My major comment applies to all three Massachusetts permits. I trust you will transmit these comments to the appropriate officials before the 7/23 deadline.

CSO discharges pose a significant public health risk to the recreational users of the River. It is therefore gratifying to see that the draft EPA permits specifically call out the threat to recreational use as a major reason for strengthening the CSO reporting requirements from only downstream drinking water suppliers but to now include the general public. Nevertheless, the draft language requiring such reporting is needlessly vague and needs to be strengthened to at least reflect more explicitly current "best practices" for the notification of potentially affected parties of the emergence of an imminent public health hazard. To that end, the existing draft public notification language:

- **Public Notification of CSO discharges:** within 4 hours of becoming aware of a probable CSO discharge, notice shall be provided to the public and downstream communities; supplemental notification confirming the occurrence of a CSO discharge, the CSO outfall number, and the start and stop times of the discharge shall be provided within 24 hours of the termination of any CSO discharge; an annual report shall be posted, summarizing annual CSO activation information.

should be strengthened, not just by allowing electronic notification, but by mandating that each municipality that employs CSOs establish an internet-based public alerting system that allows interested downstream individuals and recreation oriented entities, such as marinas, to subscribe to a free alerting service that conveys the foregoing information in a timely fashion. Such "list-serve" systems have already been established in many municipalities for disseminating similar time-sensitive information and would not pose an undue burden if CSO reports were to be added to the menu.



#### **Response 44**

EPA sought to strike a balance in fashioning the draft permit requirements for the minimum implementation level for NMC #8 (Public notification to ensure that the public receives adequate notification of CSO occurrences and impacts). As contemplated by NMC #8, the public notification plan affords the permittee reasonable flexibility in implementing the plan to account for facility-specific concerns (e.g., logistics in obtaining and disseminating information in a timely and efficient manner given funding and staffing resources), while at the same time ensuring that important health and safety information is disseminated to the public in a timely manner. *Combined Sewer Overflow, Guidance For Nine Minimum Controls*, at 9-1 (EPA 1995) (“The measure selected should be the most cost-effective measure that provides reasonable assurance that the affected public is informed in a timely manner.”) The communication strategy described in the above comment is one approach that may be employed to satisfy the Public Notification requirement, and the permittee is encouraged to consider this as it develops its public notification plan in accordance with Part I.F.g.3. of the Final Permit.

#### **Comment 45**

There is also a larger issue involving the need for at least rudimentary predictions of the geographic and temporal boundaries of the likely plume of contaminated water under various river flow conditions. The absence of a rigorous river sampling program immediately after major CSO events in each location precludes the establishment of reliable models that permit prediction of the limits of the public health threat. The resulting general advice to "stay away from the river for 48 hours" may be excessively conservative. It would seem to me appropriate that the EPA include such sampling and modeling requirements in the emerging NPDES permits. Users of the River would benefit greatly.

#### **Response 45**

EPA encourages collaboration between stakeholders, including community-based organizations, MassDEP and the Permittee to develop and implement an extensive ambient monitoring program, such as the one requested in the above comment.

### **F. Comments from Heather McMann, Executive Director, on behalf of Groundwork Lawrence**

#### **Comment 46**

We strongly support the inclusion of a total aluminum average monthly limit of 87 µg/L. Given updates made to EPA’s aluminum criteria in 2018 and MassDEP’s ongoing efforts to update their own Surface Water Quality Standards to include this updated metric, we appreciate the inclusion of the three-year compliance schedule in the permit. We urge EPA to strongly consider the significant ecological implications of excess aluminum on critical species functions, particularly respiratory functions, as they evaluate compliance with this metric.

#### **Response 46**

Comment noted. See Response 2.

#### **Comment 47**

We strongly recommend the inclusion of a total phosphorous average monthly limit. The MassDEP's Massachusetts Year 2014 Integrated List of Waters (2014 Integrated List), the 303(d) list, includes the Merrimack River, Segment MA84A-04 and the Spicket River, Segment MA84A-10 as Massachusetts Category 5 Waters, with the Merrimack River impaired for total phosphorous. Given these significant impairments, we strongly disagree that there is not reasonable potential for the discharges to contribute to an exceedance of water quality standards for phosphorous. We are particularly concerned that the only data used for the phosphorous reasonable potential analysis was HWPAF's sampling in April 2019. We strongly encourage EPA to conduct additional sampling for this criterion before making a final decision on this metric.

#### **Response 47**

As described on pages 13 and 14 of the Fact Sheet, only segments of the Merrimack River upstream of the Haverhill WPAF discharge are impaired for phosphorus. The Merrimack River is not impaired for phosphorus in the segment receiving Haverhill's discharge.

EPA notes that a reasonable potential analysis was conducted based on all available data which indicated that a phosphorus limit is not necessary in this permit reissuance. This analysis was conducted using all available data to characterize the ambient and effluent phosphorus concentrations. For effluent data, the only available data that represents current conditions was from April 2019.

Finally, EPA included a requirement for the Permittee to monitor both ambient and effluent phosphorus concentrations during this permit cycle so that EPA can conduct another reasonable potential analysis when this permit is reissued again. EPA does not believe it would be prudent to delay issuance of the permit in order to collect additional data, given that the permit has long since expired. Additionally, such sampling will demand additional resources and time, and will forestall the other improvements associated with the permit, while there is no indication that it will change the permitting outcome for total phosphorus.

#### **Comment 48**

We support the addition of total Kjeldahl nitrogen, total nitrate/nitrite, and total nitrogen weekly (April - October) and monthly (November - March) monitoring and reporting, but we recommend that EPA proposes a total nitrogen average monthly limit for the permit. As noted in the Fact Sheet, nitrogen levels in the Merrimack River estuary are higher than is acceptable for a healthy nearshore coastal system. Recent nitrogen data collected by CDM Smith in 2014 and 2016 in the estuarine portions of the Merrimack River indicates elevated total nitrogen and chlorophyll 'a' levels. In addition, in 2012, the Gulf of Maine Council on the Marine Environment reported that the Merrimack was the second greatest contributor of nitrogen and phosphorus to the Gulf of Maine. We disagree that any additional reasonable potential analyses need to be conducted for this criterion. EPA should move forward with establishing a limit total nitrogen, but at a minimum should include in the current permit that a future permit may require nitrogen limits and/or process optimization at the facility.

### **Response 48**

See Responses 18 and 59.

The commenter suggests that EPA “at a minimum should include in the current permit that a future permit may require nitrogen limits and/or process optimization at the facility.” EPA agrees with this comment and has already indicated in the Fact Sheet (at 23) that “The Agencies recommend the Town factor in treatment methods to reduce nitrogen in the effluent for any planned upgrades at the treatment plant, as nitrogen limits may be included in subsequent permits.”

### **Comment 49**

We support the inclusion of additional characteristics beyond LC50 and C-NOEC for Whole Effluent Toxicity (WET) testing in the permit, but recommend that EPA includes specific time frames for quarterly monitoring to occur, similar to the schedule established in the Springfield Waste Water Treatment Facility and CSO draft NPDES permit (MA0101613).

### **Response 49**

EPA notes that footnote 12 of the Haverhill Draft Permit states: “Toxicity test samples shall be collected, and tests completed, during the same weeks in January, April, July and October.” This level of specificity in the timing of the WET tests is already consistent with the Draft Permit for the Springfield WWTF referenced in the comment. Therefore, no change has been made to the Final Permit.

### **Comment 50**

We support the inclusion of public notifications for unauthorized discharges on a publicly available website, but we recommend that notices be made to the public within two hours rather than within 24 hours. These discharges can pose significant risks to public health ranging from hepatitis to gastrointestinal illnesses. Unless a timely notification is shared broadly, the public cannot take the necessary precautions to protect their health. 24 hours is not sufficient notice for individuals who choose to recreate in or near the Merrimack River.

### **Response 50**

Requiring the permittee to provide notification within 24 hours of becoming aware of an unauthorized discharge is appropriate given the nature of such discharges, specifically, because they are unpredictable and not amenable to modeling, as are, for example, discharges from CSOs, which would provide information for providing notifications on a shorter timeframe. EPA must balance the need to notify the public in a timely way while also accounting for administrative, staffing and logistical constraints with which a permittee may be confronted. EPA also needs to ensure that there is sufficient time for a permittee to preliminarily assess any data and ensure that the information disclosed is reasonably accurate. Finally, EPA observes that the condition mandates disclosure *within* 24 hours; it is likely as a practical matter that, in many if not most cases, notification will occur before that time, given that elected officials and municipal employees have an interest in providing timely information to protect the health and welfare of the City’s citizens.

### **Comment 51**

We support the inclusion of a collection system mapping and collection system operation and maintenance plan to ensure that the most accurate data is utilized in system review.

#### **Response 51**

Comment noted.

### **Comment 52**

We support the inclusion of inspections and reporting for CSO structures in the permit, but we recommend that the frequency of inspections be increased from once per month to twice per month to ensure that adequate assessments are occurring and fix and address problems as they arise.

#### **Response 52**

The inspection frequency of one per month that was included in Part I.F.2.b. of the Draft Permit was carried forward from the 2008 Permit. EPA does not have any specific basis to conclude that the existing inspection frequency is inadequate, or that more frequent inspections would materially impact the operational integrity of the CSO structures. The Permittee is required to document any necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. EPA is unaware of any issues that have occurred with this frequency. Should EPA become aware of specific facts relating to this issue, it may revisit its determination. Part I.F.2.b. of the Final Permit remains unchanged from the Draft Permit.

### **Comment 53**

We support the inclusion of additional signage at CSO locations, but recommend that the permit makes signage in additional languages a requirement rather than a suggestion. We recommend that signage be posted in both English and Spanish, as according to the most recent U.S. Census data from July 1, 2018, 21% of the population of Lawrence identifies as Hispanic or Latino and according to Data USA, 16% of the populations speaks Spanish or Spanish Creole as their first-language.

#### **Response 53**

EPA agrees with this comment and has updated Part I.F.3.f. of the Final Permit to require Spanish and English signage, or the addition of a universal wet weather sewage discharge symbol to existing signs.

### **Comment 54**

We support the inclusion of initial notifications for CSO discharges, but we recommend that the notice is required within two hours rather than four hours. These discharges can pose significant risks to public health ranging from hepatitis to gastrointestinal illnesses. Unless a timely notification is shared broadly, the public cannot take the necessary precautions to protect their health. Four hours is not sufficient notice for individuals who choose to recreate in or near the Merrimack River. In addition, the most recent Springfield Waste Water Treatment Facility and CSO draft NPDES permit (MA0101613) includes a requirement that initial notifications are made by no later than two hours. Despite the fact that discharges across multiple treatment

facilities to the Merrimack River collectively number in the hundreds and total more than 800 million gallons of sewage annually, the Merrimack River is still used heavily for recreation. From kayak and boat clubs to spin-rod and fly fishermen, the River supports a substantial recreation community. To provide these individuals with adequate notice and maintain consistency across CSO permits, we strongly recommend that this requirement is corrected to two hours.

#### **Response 54**

The 2-hour initial notification requirement that was proposed in the Draft Permit for the Springfield Wastewater Treatment Facility, which has not yet been finalized, was based, in part, on existing requirements in the State of Connecticut, including EPA's obligation to consider and protect the water quality of a downstream state, the proximity of the discharges to the downstream State of Connecticut and the time of travel from the Springfield Water and Sewer Commission's CSOs to the state border (approximately 2 hours). *See* 33 U.S.C. § 1341(a)(2). Again, EPA must balance the need to notify the public in a timely way while also accounting for administrative, staffing and logistical constraints with which a permittee may be confronted. EPA also must ensure that there is sufficient time for a permittee to preliminarily assess any data and ensure that the information disclosed is reasonably accurate. EPA will evaluate the protectiveness of this condition over the course of the permit term, and based on that information, will make a record-based judgment on whether more rapid dissemination of this information is warranted. Therefore, the Final Permit has not been changed.

#### **Comment 55**

We support the inclusion of supplemental notifications for CSO discharges, but we recommend that the notifications also include total volume discharged from the CSO. The most recent Springfield Waste Water Treatment Facility and CSO draft NPDES permit (MA0101613) includes this information as a requirement for reported information. In the interest of maintaining consistency across CSO permits and ensuring accurate data is presented to the public, we strongly recommend that the total volume discharged from the CSO is included in the notifications as well.

#### **Response 55**

EPA acknowledges language contained in the *draft* NPDES permit for the Springfield Regional Waste Water Treatment Facility. EPA continues to review comments and draft language on that permit. That permit has not yet been finalized and remains subject to change.

In consideration of the time needed for the validation, post-processing and interpretation of CSO data, EPA has determined that requiring the reporting of CSO discharge volumes in the annual notification is more appropriate than the supplemental notification. See also Response 41 regarding the time needed to verify and process CSO data to ensure the reporting of accurate information. The annual notification requirements in the Final Permit remain unchanged.

## **Comment 56**

We ask that the permit Fact Sheet be updated to include the following information: (1) the most recent annual volume reports for CSO discharges at each outfall, (2) the most recent version of GLSD's Long Term Control Plan and the status of improvements made in accordance with the plan thus far, and (3) summaries of reductions or eliminations of CSO's that have been made in accordance with the plan. It is extremely difficult to evaluate the impacts on receiving waters without complete information on the discharges.

### **Response 56**

Fact sheets are not modified following the public comment period, however, an annual CSO discharge summary from 2014-2018 (as submitted by the permittee with their Annual CSO Reports) is provided in **Attachment A** to this document and is hereby incorporated into the administrative record. Inquiries into Long Term Control Plans may be directed to EPA's Enforcement and Compliance Assurance Division ("ECAD"). Please see [https://r1-gis-web.r1.epa.gov/ecad/enforcement\\_comp.html](https://r1-gis-web.r1.epa.gov/ecad/enforcement_comp.html) for relevant contacts.

## **G. Comments from Julia Blatt, Executive Director, on behalf of Massachusetts River Alliance & Caitlin Peale Sloan, Senior Attorney, on behalf of Conservation Law Foundation:**

### **Comment 57**

We strongly support the inclusion of a total aluminum average monthly limit of 87 µg/L. Given updates made to EPA's aluminum criteria in 2018 and MassDEP's ongoing efforts to update their own Surface Water Quality Standards to include this updated metric, we appreciate the inclusion of the three-year compliance schedule in the permit. We urge EPA to strongly consider the significant ecological implications of excess aluminum on critical species functions, particularly respiratory functions, as they evaluate compliance with this metric.

### **Response 57**

Comment noted. See Response 2.

### **Comment 58**

We strongly recommend the inclusion of a total phosphorous average monthly limit. The MassDEP's Massachusetts Year 2014 Integrated List of Waters (2014 Integrated List), the 303(d) list, includes the Merrimack River, Segment MA84A-04 and the Spicket River, Segment MA84A-10 as Massachusetts Category 5 Waters, with the Merrimack River impaired for total phosphorous. Given these significant impairments, we strongly disagree that there is not reasonable potential for the discharges to contribute to an exceedance of water quality standards for phosphorous. We are particularly concerned that the only data used for the phosphorous reasonable potential analysis was HWPAF's sampling in April 2019. We strongly encourage EPA to conduct additional sampling for this criterion before making a final decision on this metric.

### **Response 58**

EPA notes that, although current data did not trigger reasonable potential or support the need of a permit limit in order to protect water quality standards, the Permittee is required to conduct ambient and effluent phosphorus monitoring throughout the life of the permit. Therefore, EPA will have a robust dataset to conduct another reasonable potential analysis in the next permit reissuance.

### **Comment 59**

We support the addition of total Kjeldahl nitrogen, total nitrate/nitrite, and total nitrogen weekly (April - October) and monthly (November - March) monitoring and reporting, but we recommend that EPA proposes a total nitrogen average monthly limit for the permit. As noted in the Fact Sheet, nitrogen levels in the Merrimack River estuary are higher than is acceptable for a healthy nearshore coastal system. Recent nitrogen data collected by CDM Smith in 2014 and 2016 in the estuarine portions of the Merrimack River indicates elevated total nitrogen and chlorophyll 'a' levels. In addition, in 2012, the Gulf of Maine Council on the Marine Environment reported that the Merrimack was the second greatest contributor of nitrogen and phosphorus to the Gulf of Maine. We disagree that any additional reasonable potential analyses need to be conducted for this criterion. Delaying reductions in nutrients is not a viable strategy as noted by the EAB: "Due to the tendency of nutrients to recycle once released into the system and contribute to future impairment, delay in addressing point source nutrient contributions will only compound the challenges in restoring receiving waters" (Upper Blackstone Water Pollution Abatement District, Determination on Remand, EAB, 7/7/2010, p. 3). EPA should move forward with establishing a total nitrogen limit. In addition, as EPA moves forward with other CSO NPDES permits on the Merrimack, we remind EPA that discharge permitting on the Merrimack River in both Massachusetts and New Hampshire should be consistent and ensure that the concentrations and loads of nutrients discharged in the river system as whole will prevent the creation of eutrophic conditions both in the river and in the lower Merrimack estuary.

### **Response 59**

As EPA evaluated both phosphorus and nitrogen impacts from this discharge, it notes that there is an inherent distinction in the approach to ensure the attainment of water quality standards and evaluate eutrophic impacts from each nutrient. Typically, phosphorus is the limiting nutrient in freshwaters, such as the Merrimack River immediately downstream of this discharge. Nitrogen is the limiting nutrient much farther downstream in saltwater segments near the mouth of the Merrimack River. This distinction plays an important role in EPA's evaluation of whether the discharge has the reasonable potential to cause or contribute to an excursion of water quality standards with respect to each nutrient specifically.

As EPA evaluated both phosphorus and nitrogen impacts from this discharge, it notes that there is an inherent distinction in the approach to ensure the attainment of water quality standards and evaluate eutrophic impacts from each nutrient. Typically, phosphorus is the limiting nutrient in freshwaters, such as the Merrimack River immediately downstream of this discharge. Nitrogen is the limiting nutrient in downstream estuarine segments. This distinction plays an important role in EPA's evaluation of whether the discharge has the

reasonable potential to cause or contribute to an excursion of water quality standards with respect to each nutrient specifically.

For phosphorus, the impacted waterbody is immediately downstream and impacts can be measured or predicted with relative ease using all available site-specific ambient and effluent data. For nitrogen, on the other hand, impacts to segments much farther downstream may be impacted by a variety of sources including over 40 POTWs in the Merrimack River watershed as well as significant non-point source loads. The evaluation of watershed-wide nitrogen loading and far-field impacts of such nitrogen loading lends itself to a much larger-scale evaluation and approach to establishing reasonable potential and setting permit limits to ensure water quality standards are met.

EPA has the discretion to apply a site-specific analysis and establish nitrogen permit limits for any individual discharger based on information available at the time of permit reissuance; it need not base that decision on the collection of a comprehensive watershed-wide data set. The reasonable potential standard governing the imposition of effluent limitations in NPDES requires, after all, certainty only beyond a “mere possibility” of a water quality impact. However, the Agency has chosen at this juncture to evaluate nitrogen impacts, including those from this discharger, on a watershed-wide basis. This permit cycle will be focused on gathering information to characterize watershed loading and evaluate far-field impacts so that the next permitting cycle can more definitively determine whether such loadings have the reasonable potential to cause or contribute to a violation of water quality standards and, if necessary, establish appropriate nitrogen limits throughout the watershed to ensure that water quality standards are met. EPA concurs with the commenter’s view that permitting should follow a consistent approach in both New Hampshire and Massachusetts, which it believes counsels as a matter of policy, in favor of collecting a more comprehensive dataset on which to base limits, in order to lay the groundwork for consensus between upstream and downstream states, which will generate more sustainable and impactful water quality-based solutions to any problems that are found. Again, should EPA’s preferred approach fail to cohere prior to the next permit cycle, EPA is authorized to move forward on a more disaggregated, individualized basis with information that is reasonably available at the time concerning a particular discharge.

EPA fully agrees with the comment that delaying nutrient reductions is not a viable strategy when confronted with a waterbody impaired for nitrogen such as in the Upper Blackstone permit. However, more data are necessary at this time to better understand the impact of nitrogen loading in the Merrimack River and the Gulf of Maine. A model, sophisticated statistical analyses and years of water quality information were available for Blackstone and Upper Narragansett Bay; although EPA requires a far lower quantum of proof prior to making a permitting decision, EPA remains cognizant of the fact that, at this time, the Merrimack River is not well characterized for nitrogen impacts. *See, e.g.*, “National Estuarine Eutrophication Assessment, Effects of Nutrient Enrichment in the Nation’s Estuaries” (National Oceanic and Atmospheric Administration) at 18 [https://ian.umces.edu/nea/pdfs/eutro\\_report.pdf](https://ian.umces.edu/nea/pdfs/eutro_report.pdf). Although this report is dated, EPA is not aware of any comprehensive assessment that has been conducted and made available



since its publication. It is in the interests of the watershed and all stakeholders for EPA to make as informed a decision as possible on this critically important issue, in order for EPA to select an appropriate permit regime (*i.e.*, one that will be effective on a watershed-wide basis should EPA find permit limits to be necessary and that will entail a systematic and efficient expenditure of federal, state and municipal resources toward that end).

**Comment 60**

We support the inclusion of additional characteristics beyond LC50 and C-NOEC for Whole Effluent Toxicity (WET) testing in the permit, but recommend that EPA includes specific time frames for quarterly monitoring, similar to the schedule established in the Springfield Waste Water Treatment Facility and CSO draft NPDES permit (MA0101613).

**Response 60**

See Response 49.

**Comment 61**

We support the inclusion of public notifications for unauthorized discharges on a publicly available website, but we strongly recommend that notices be made to the public within two hours rather than within 24 hours. These discharges can pose significant risks to public health ranging from hepatitis to gastrointestinal illnesses. Unless a timely notification is shared broadly, the public cannot take the necessary precautions to protect their health. Twenty-four hours is not sufficient notice for individuals who choose to recreate in or near the Merrimack River and will not protect public health.

**Response 61**

See Response 50.

**Comment 62**

We support the inclusion of a collection system mapping and collection system operation and maintenance plan to ensure that the most accurate data is utilized in system review.

**Response 62**

Comment noted.

**Comment 63**

We support the inclusion of inspections and reporting for CSO structures in the permit, but we recommend that the frequency of inspections be increased from once per month to twice per month to ensure that adequate assessments are occurring and operators are able to fix and address problems as they arise.

**Response 63**

See Response 52.

**Comment 64**

We support the inclusion of additional signage at CSO locations, but recommend that the permit make signage in additional languages a requirement rather than a suggestion. We recommend that signage be posted in both English and Spanish, as according to the most recent U.S. Census data from July 1, 2018, 21% of the population of Haverhill identifies as Hispanic or Latino and according to Data USA, 16% of the populations speaks Spanish or Spanish Creole as their first language.

**Response 64**

See Response 53.

**Comment 65**

We support the inclusion of initial notifications for CSO discharges, but we recommend that the notice is required within two hours rather than four hours. These discharges can pose significant risks to public health ranging from hepatitis to gastrointestinal illnesses. Unless a timely notification is shared broadly, members of the public cannot take the necessary precautions to protect their health. Four hours is not sufficient notice for individuals who choose to recreate in or near the Merrimack River. We note that the most recent Springfield Waste Water Treatment Facility and CSO draft NPDES permit (MA0101613) includes a requirement that initial notifications are made by no later than two hours. Despite the fact that discharges across multiple treatment facilities to the Merrimack River collectively number in the hundreds and total more than 800 million gallons of sewage annually, the Merrimack River is still used heavily for recreation. From kayak and boat clubs to spin-rod and fly fishermen, the River supports a substantial recreation community. To provide these individuals with adequate notice and maintain consistency across CSO permits, we strongly recommend that this requirement is corrected to two hours.

**Response 65**

See Response 54.

**Comment 66**

We support the inclusion of supplemental notifications for CSO discharges, but we recommend that the notifications also include total volume discharged from the CSO. The most recent Springfield Waste Water Treatment Facility and CSO draft NPDES permit (MA0101613) includes this information as a requirement for reported information. In the interest of maintaining consistency across CSO permits and ensuring accurate data is presented to the public, we strongly recommend that the total volume discharged from the CSO is included in the notifications as well.

**Response 66**

See Response 55.

**Comment 67**

We ask that the permit Fact Sheet be updated to include the following information: (1) the most recent annual volume reports for CSO discharges at each outfall, (2) the most recent version of HWPAF's Long Term Control Plan and the status of improvements made in accordance with the

plan thus far, and (3) summaries of reductions or eliminations of CSO's that have been made in accordance with the plan. It is extremely difficult to evaluate the impacts on receiving waters without complete information on the discharges.

### **Response 67**

See Response 56.

## **H. Comments from Peter Severance, River Merrimack**

### **Comment 68**

#### **I. Ambient Monitoring.**

a. I would suggest that Chlorophyll-a be added to the list of parameters for ambient monitoring. This will add valuable information concerning response to / need for additional nutrient controls.

b. I would further suggest that ambient monitoring (all monitoring?) be conducted with sufficient quality and controls so as to be useful and acceptable per the quality standards of the the MassDEP Watershed Planning Program. This would entail a couple of additional things:

1. Writing of a detailed QAPP per the Watershed Planning Program standards.
2. Having all testing of grab samples be conducted by labs which hold current Massachusetts certification for the analytical methods specified in the QAPP.

### **Response 68**

EPA anticipates that water quality monitoring for chlorophyll-a and other nutrient response variables will be conducted in the coming years by EPA, MassDEP and other stakeholders. EPA has been contacted by Massachusetts Coastal Zone Management and the Mass Bays Program about monitoring needs in the lower Merrimack. This has been a poorly monitored area for a long time but it is now receiving more attention from local watershed groups and the state related to increased monitoring needs. Therefore, EPA has not added additional parameters to the ambient monitoring requirement in the Final Permit but notes that such parameters may be required in a future permit.

EPA recommends that any sampling and analysis performed should be conducted consistent with a state-approved quality assurance project plan ("QAPP") developed for the monitoring work to ensure inclusion in MassDEP's assessment program. Additionally, EPA approved analytical methods found in 40 C.F.R. Part 136 must be employed by any state-certified lab.

### **Comment 69**

You probably would be implementing controls on Total Nitrogen if MassDEP had a finding that the lower Merrimack was IMPAIRED for nutrients according to their current standards. Unfortunately, they have never looked at the estuary. I believe that the monitoring the USACE and EPA has done for the past 5 or 6 years shows clear need for this, taking into consideration several things we know about the estuary.

a. As outlined in the draft permits, the levels of Total nitrogen in the lower Merrimack are clearly very high.

b. Taking a look at the 45 observations from USACE (2014-2016) and EPA (2017) data for Chlorophyll-a -- for stations downstream from Rivermile 7 (the estuary proper). Consider them non-parametric perspective, in light of the 2018 Massachusetts CALM guidance:

- 51% exceeded the 10 mg/L “impaired” standard
- 22% met the  $\leq 5$  mg/L “healthy” standard
- 27% fell in between the “impaired” and “healthy” standards
- 78% exceeded the “healthy” standard.

c. Historical records make the case for long-standing nutrient impairment of the estuary:

1. NOAA and the EPA have known for decades that nitrogen in the Merrimack estuary is among the worst in all of Massachusetts. For example, in 1994, NOAA published data from 1989 and 1990 for the 14 estuarine systems from Cape Cod and Massachusetts Bay to Passamaquoddy Bay in Maine -- the Merrimack estuary was far and away the worst for nitrogen pollution:

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Table 4. Summary of physical and hydrological characteristics, nitrogen and phosphorus discharges, and predicted nutrient concentration statuses for estuarine systems bordering the Gulf of Maine [a]

Estuarine System	Total Drain. Area (mi <sup>2</sup> )	Water Surf. Area (mi <sup>2</sup> )	Water Depth (ft)	Average Daily Freshw. Inflow (10 <sup>6</sup> cfs)	Volume (10 <sup>6</sup> ft <sup>3</sup> )	1980 Pop. Density (no./mi <sup>2</sup> )	Total Nitrogen Disch. (tons/yr)	Nitrogen Conc. & Status [b] (mg/l)	Total Phos. Disch. (tons/yr)	Phos. Conc. & Status [b] (mg/l)
Passamaquoddy Bay	3200	157	72	62	315	11	293	0.008L	28	0.001L
Englishtown Bay	900	76	38	16	80	12	150	0.014L	22	0.002L
Narragansett Bay	400	70	32	9	63	17	104	0.016L	11	0.002L
Blue Hill Bay	800	115	75	13	241	28	154	0.016L	35	0.004L
Penobscot Bay	9400	361	72	161	725	58	7808	0.102M	771	0.010M
Muscongus Bay	300	72	43	6	85	67	56	0.013L	16	0.004L
Sheepscot Bay	10100	103	41	176	118	66	8745	0.077L	641	0.006L
Casco Bay	1200	164	42	21	191	172	1412	0.086L	465	0.028M
Saco Bay	1800	17	32	36	15	71	1257	0.057L	193	0.009L
Great Bay	1000	15	11	20	5	243	636	0.098L	204	0.031M
Merrimack River	5000	6	12	84	2	423	10111	1.021H	1625	0.164H
Massachusetts Bay	1200	364	77	29	786	2228	7995	0.216M	4091	0.110H
Boston Bay	700	69	26	18	50	2789	N/A	N/A	N/A	N/A
Cape Cod Bay	800	548	77	18	1178	392	377	0.026L	187	0.013M

[a] Data sources: Strategic Assessment Branch (1990); NOAA/EPA Team on Near Coastal Waters (1989).  
 [b] Concentration status: L = low; M = medium; H = high.

2. Decades ago, specialists on the vascular plants and algae of estuaries were studying New England estuaries and concluded that pollution was having a dramatic impact on the Merrimack. Miller (1971) included this analysis:

*“Pollution is often an important limiting factor in algal distribution and abundance. A comparison of species composition of seaweeds from the Merrimack River Estuary with*

*that of the Hampton-Seabrook Estuary (Mathieson and Fralick, In Press) and the Great Bay Estuary Systems (Mathieson, Reynolds, and Hehre, In Press) of New Hampshire indicates a paucity of species in the Merrimack.”*

- Hampton-Seabrook Estuary: 118 species
- Great Bay: 150 species
- Merrimack: 28 species

*“The abundance of many Ulotrichalean green algae (e.g., Enteromorpha spp., Ulva lactuca, Ulva flexuosa subsp. paradoxa, and Monostroma sp.) typifies a polluted estuarine habitat. The latter species are not only tolerant of extremes in pollution, but to gross fluctuations in hydrographic factors.”*

c. Consider the following historical notes concerning the state of eelgrass in the estuary. While it is currently present, it used to be thriving, but is likely to be impaired at present:

1. Jerome (1965) made note of a 1903 Newburyport Daily News article on clammers digging back "abundant" beds of eelgrass from Plum Island to what is now known as Ring's Island (Salisbury).
2. “Abundant growth” of eelgrass was observed in the lower Merrimack River, Plum Island Sound and the Ipswich River (Addy and Aylward, 1944).
3. By 2010 there was no eelgrass recorded in Plum Island Sound (Novak, 2012).
4. Fred Short (personal communication) observed beds of eelgrass in the Merrimack in the 1980s; however, it had disappeared in the 1990s.
5. Within the last decade, the eelgrass beds of the Merrimack were surveyed and catalogued in the Massachusetts NHESP Natural Communities inventory (MassGIS, 2016), and described as follows:

COMMUN\_NAM Seagrass Community

COMMUN\_RAN S3

Acres 849.231

COMMUN\_DES Seagrass Communities occur on estuarine or marine flats with sand or mud substrates that are submerged by, usually, less than 2m of water at high tide.

SPECIFIC\_D This example of Marine Subtidal Flats is extremely sparsely vegetated but has a rich diversity of invertebrate fauna that provide forage for many species of birds. [emphasis added]

6. Four of the nine EFH species have eelgrass mentioned in association with habitat of one or more of their life stages.

I would suggest that if there is any hope of restoring the richness of the eelgrass beds to this ~850 acres of EFH (which by the way is used by an additional 38 economically and ecologically important marine species - ELMR) the high levels of TN and resulting Chlorophyll-a in the estuary are probably the key impediment to success of that effort.

d. Macroalgae growth on the shorelines of Deer Island appears to be significant, per the photos sent with the email I forwarded to you from Dr. Mathiesson

#### **Response 69**

EPA appreciates the detailed information regarding the history of nitrogen loading and eelgrass health within the lower Merrimack River estuary. EPA agrees that this information may be useful in determining the impairment status of the estuary. MassDEP will consider this information in its next assessment of the lower Merrimack River.

As explained above, EPA plans to require nitrogen monitoring in NPDES permits throughout the Merrimack River watershed and expects monitoring for other response variables (*e.g.*, chlorophyll-a, dissolved oxygen, eelgrass) to be collected by EPA, MassDEP and other stakeholders, which will result in a comprehensive dataset on which to make systematic regulatory decisions. This approach will ensure EPA has sufficiently representative effluent and ambient data to make effective permitting decisions on a watershed level, as it has done in Upper Narragansett Bay and more recently in the Taunton River Estuary/Mount Hope Bay.

#### **Comment 70**

**The most abundant species of fish using the Merrimack estuary are forage fish** (Jerome, 1965; ELMR) the prey species that feed the cod, the seabirds, the dolphins and whales of the Gulf of Maine and Massachusetts bay. The populations of many of the the fish using the Merrimack as a nursery – the river herring, Atlantic herring, mackerel and others – are not doing well. The list of ELMR species utilizing the estuary and their life stages is found in [this shared directory](#).<sup>17</sup>

The Atlantic States Marine Fisheries Commission is considering designating important shad and river herring spawning and nursery habitat as HAPC (January, 2019).

#### **Response 70**

Comment noted.

#### **Comment 71**

##### **Additional Economic considerations for taking steps to restore the estuary:**

- a. Jerome (1965) estimated that the estuary would support the harvest of 30,000 bushels of soft-shell clams, worth \$4,500,000 - \$6,000,000 at today's wholesale prices.
- b. Ipswich Shellfish Group is interested in farming oysters in the estuary, but not until it's cleaned up.

#### **Response 71**

Comment noted.

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<sup>17</sup> <https://drive.google.com/open?id=1RT1X3jtNTNfY57Nrv8sp8AlMo9Rv1Esz>

## **I. Comments from Christina Eckert and John Macone, on behalf of Merrimack River Watershed Council**

### **Comment 72**

**We strongly support the inclusion of notification requirements for CSOs, but we encourage the permit to require notifications within 2 hours. Further, we ask that the information reported be consistent between the Lowell, GLSD and Haverhill wastewater treatment plants.**

Because these discharges pose a health risk to those fishing, swimming or using the river for recreation, it's imperative to notify the public in a timely manner so they can avoid contact with the water. Currently Lowell sends out notifications almost as soon as CSOs begin, with follow-up notifications when they end. Within 24 hours, they follow up with notifications estimating the volume of effluent released. MRWC believes that Haverhill should be held to the same standard, for the health and safety of all those living downstream of a CSO.

### **Response 72**

See Response 50 regarding 2-hour notification.

To address the commenter's concerns regarding consistency between Lowell, GLSD, and Haverhill wastewater treatment plants, the information reported relating to CSOs in the Draft and Final NPDES Permits for all three permittees is consistent. The requirement in the Draft Permit for CSO discharge volumes to be included in the Annual Notification and Annual Report is appropriate given the additional time that may be needed to validate and refine data that is collected for each discharge event.

### **Comment 73**

**MRWC recommends that the EPA includes a total phosphorous average monthly limit.**

The MassDEP's Integrated List of Waters in 2014 listed the Merrimack as impaired for total phosphorous. Five years later, it is time to address this issue. Lowell's limit is 1.08 mg/L and Greater Lawrence Sanitary District is held to a limit of .53 mg/L. A similar limit should be set for Haverhill.

### **Response 73**

See Response 47.

### **Comment 74**

**MRWC recommends that the EPA/Mass DES require an average monthly limit for total nitrate/nitrite, total nitrogen, and total Kjeldahl nitrogen.**

The Merrimack's nitrogen levels are increasing. As stated above, the Merrimack is the second greatest contributor of nitrogen to the Gulf of Maine. As difficult as it is, our region must find a way to limit or eliminate these pollutants threatening priceless wildlife, not only within the Merrimack, but in the Gulf.

**Response 74**

See Responses 18, 48 and 59.



## **Attachment A – Combined Sewer Overflows Background and Annual CSO Discharge Summary 2014-2018**

### **Haverhill Wastewater Pollution Abatement Facility (NPDES Permit No. MA0101621)**

This Attachment provides background on the statutory and regulatory framework that applies to combined sewer overflows (“CSOs”). It briefly describes the Region’s approach to key permitting and enforcement issues. Finally, it provides data documenting the trends in CSO discharges at the Haverhill Wastewater Pollution Abatement Facility.

A combined sewer system (“CSS”) is a wastewater collection system owned by a state or municipality (as defined by section 502(4) of the Clean Water Act (“CWA”)) which conveys sanitary wastewaters (domestic, commercial and industrial wastewaters) and storm water through a single-pipe system to a Publicly Owned Treatment Works (“POTW”) Treatment Plant (as defined in 40 C.F.R. § 403.3(p)). A CSO is the discharge from a CSS at a point prior to the POTW Treatment Plant. CSO discharges occur when the volume of wastewater exceeds the capacity of the CSS or treatment plant (e.g., during heavy rainfall events or snowmelt). When this occurs, untreated stormwater and wastewater, discharges directly to nearby streams, rivers, and other water bodies.

Like all point sources, CSOs are subject to sections 301 and 402 of the CWA. CSOs require National Pollutant Discharge Elimination System (“NPDES”) permits, which may include technology-based and water quality-based requirements of the CWA. Additionally, where EPA is the permitting authority it must ensure that the state or authorized tribe where the CSO discharge may originate either issues a section 401 water quality certification finding compliance with existing water quality requirements or waives the certification requirement.

Further, Section 402(q) of the CWA states that: “[e]ach permit, order, or decree issued pursuant to this chapter after December 21, 2000 for a discharge from a municipal combined storm and sanitary sewer shall conform to the Combined Sewer Overflow Control Policy signed by the Administrator on April 11, 1994.” The Combined Sewer Overflow Control Policy (“CSO Policy”), 59 Fed. Reg. 18688 (April 19, 1994), provides a national strategy for the control of CSOs through the NPDES program at 40 C.F.R. Part 122. The CSO Policy “presents a uniform, nationally consistent permitting approach that should ... result in the establishment of both technology-based and water quality-based requirements for all CSOs.”<sup>18</sup>

Under the CSO Policy, permittees must undertake a process to accurately characterize their CSS and CSO discharges, demonstrate implementation of the nine-minimum technology-based controls (“NMCs”), and develop long-term CSO controls plans (“LTCs”) which evaluate alternatives for attaining compliance with the CWA, including compliance with water quality standards and protection of designated uses. All CSO permittees are required to implement the Best Available Technology Economically Achievable / Best Conventional Pollutant Control Technology (“BAT/BCT”), which at a minimum includes the NMCs, as determined on a best

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<sup>18</sup> “Combined Sewer Overflows Guidance for Permit Writers,” at 2-1 (September 1995), available at [https://www.epa.gov/sites/production/files/2015-10/documents/csopermitwriters\\_full.pdf](https://www.epa.gov/sites/production/files/2015-10/documents/csopermitwriters_full.pdf) (“CSO Guidance for Permit Writers”)

professional judgment basis (“BPJ”) by the permitting authority. Implementation of the NMCs is achieved through specific control measures deemed most appropriate for a specific permit and necessary to satisfy the BAT/BCT requirement based on BPJ of the permit writer, considering the factors presented in 40 C.F.R. § 125.3(d).<sup>19</sup>

The CSO Policy sets out a phased approach to CSO permitting. The immediate requirement for CSO permits are: (1) immediately implement the BAT/BCT, which includes at a minimum the NMCs; (2) submit a report documenting such implementation; (3) comply with applicable WQS, no later than the date allows under the State’s WQS, “expressed in the form of a narrative limitation;” and (4) develop and submit a LTCP.<sup>20</sup> Once a permittee has developed a LTCP and selected controls necessary to achieve WQS, the CSO Policy articulates the following, among other elements, for inclusion in CSO permits: (1) requirements to implement the NMCs and (2) water quality-based effluent limits under 40 C.F.R. § 122.44(d)(1) and 122.44(k), requiring, at a minimum, numeric performance standards for the selected CSO controls.<sup>21</sup>

For CSO permits on the Merrimack River, EPA has and continues to require implementation of the NMCs. Development of LTCPs, on the other hand, has been and continues to be addressed as part of enforcement actions taken by Region 1’s Enforcement and Compliance Assurance Division.

EPA or the relevant state has worked with virtually every CSO community in New England to develop CSO abatement schedules to be memorialized in administrative or judicial enforcement mechanisms. As necessary, such schedules are adjusted to reflect new information and evolving financial conditions.

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<sup>19</sup> *Id.* at 3-6.

<sup>20</sup> 59 Fed. Reg. at 18696.

<sup>21</sup> *Id.*

### Haverhill CSO Discharges - Activations and Volume by Year

EPA notes that the data on activations and volume discharged are significantly influenced by the number and intensity of rainfall events in a given year and/or by improvements made by the permittee in measuring and reporting CSO events and volumes. This permit requires, for the first time, direct measurement of CSO flows. EPA and MassDEP have also taken various enforcement actions against WWTF permittees on the Merrimack River similarly requiring improvements in CSO monitoring and reporting. Accordingly, EPA expects the quality and accuracy of this data to continue to improve.

Outfall	YEAR 2014		YEAR 2015		YEAR 2016		YEAR 2017		YEAR 2018	
	Activations	Volume (MG)	Activations	Volume (MG)	Activations	Volume (MG)	Activations	Volume (MG)	Activations	Volume (MG)
013 Lower Siphon	7	8.744	6	1.382	5	4.374	2	6.03	6	0.010
019 Main Street North	0	0	0	0			1	0.011	1	0.045
021A Middle Siphon	13	9.194	7	0.404	4	3.179	13	6.302	14	0.016
021B (Locke Street 12" siphon)	2	0.065	0	0	1	0.033	2	0.047	2	0.015
021D Little River North	38	2.582	24	1.178	33	0.466				
021F Center Barrel Orchard St	33	7.797	19	2.016	28	3.975	35	6.575	48	8.752
021E Little River South	7	0.025	4	0.004	3	0.138				
021H Winter/Hale Street	11	1.258	10	0.523	13	1.457	22	2.566	23	3.276
021G Winter Street	10	0.602	7	0.158	5	0.098	10	0.226	8	0.148
038 Broadway/High Street	4	0.035	0	0	0	0			2	0.004
037 Broadway (shared outfall w/038)	0	0	0	0					1	0.454
024 Upper Siphon	10	7.302	3	0.124	4	3.125	6	4.366	9	5.360
032 Bradford Avenue	14	1.927	9	0.466	7	1.041	7	0.443	5	0.301
034 Middlesex Street	13	1.548	8	0.243	8	1.334	20	2.444	16	3.469
039 South Webster Street	14	0.860	10	0.080	16	0.267	18	0.218	25	1.036
040 Bethany Avenue	12	0.661	12	0.360	21	0.758	25	1.276	19	0.826
041 Chestnut Street	13	0.607	24	0.920	14	0.245	17	0.23	18	0.327
042 (Colby St. and Salem Regulator)	0	0	0	0	1	0				
021M (Marginal Pump Station)	0	0	5	0.201	20	0.942				
<b>TOTAL</b>	<b>201</b>	<b>43</b>	<b>148</b>	<b>8</b>	<b>183</b>	<b>21.432</b>	<b>178</b>	<b>30.734</b>	<b>197</b>	<b>24.03897</b>

**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"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§ 26-53),

**City of Haverhill, Massachusetts**

is authorized to discharge from the facility located at

**City of Haverhill  
Water Pollution Abatement Facility  
40 South Porter Street  
Bradford, MA 01835**

**And**

**Combined Sewer Overflow (CSO) discharges at 13 locations**

to receiving water named

**Merrimack River, Little River  
Merrimack Watershed**

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

The Town of Groveland is a co-permittee for Part B, Unauthorized Discharges; Part C, Operation and Maintenance of the Sewer System, which include conditions regarding the operation and maintenance of the collection system owned and operated by the Town; and Part D, Alternate 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 the 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 Groveland  
Town Hall  
183 Main Street  
Groveland, MA 01834

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 December 7, 2005.

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<sup>1</sup> Pursuant to 40 Code of Federal Regulations (C.F.R.) § 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 the cover pages, **Part I, Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Reassessment of Technically Based Industrial Discharge Limits), **Attachment C** (Industrial Pretreatment Program Annual Report Requirements), and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this        day of

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

\_\_\_\_\_  
Lealdon Langley, Director  
Division of Watershed Management  
Department of Environmental Protection  
Commonwealth of Massachusetts  
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 046 to the Merrimack 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</sup>	
	Average Monthly <sup>4</sup>	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>5</sup>
Effluent Flow <sup>6</sup>	18.1 MGD Rolling Average	---	Report MGD	Continuous	Recorder
Effluent Flow <sup>6</sup>	Report MGD	---	---	Continuous	Recorder
BOD <sub>5</sub>	30 mg/L 4,500 lb/day	45 mg/L 6,755 lb/day	Report mg/L Report lb/day	5/week	Composite
BOD <sub>5</sub> Removal	≥ 85 %	---	---	---	---
TSS	30 mg/L 4,504 lb/day	45 mg/L 6,755 lb/day	Report mg/L Report lb/day	5/week	Composite
TSS Removal	≥ 85 %	---	---	---	---
pH Range <sup>7</sup>	6.5 - 8.5 S.U.			1/day	Grab
Total Residual Chlorine <sup>8,9</sup>	355 µg/L	---	614 µg/L	1/day	Grab
Total Residual Chlorine <sup>8</sup>	Report µg/L	---	Report, µg/L	Continuous	Recorder
<i>Enterococci</i> <sup>8,9</sup>	35 cfu/100 mL	---	276 cfu/100 mL	1/month	Grab
Fecal Coliform <sup>8,9</sup>	88 MPN/100 mL	---	260 MPN/100 mL	5/week	Grab
Total Aluminum <sup>10</sup>	87 µg/L	---	---	1/month	Composite
Total Phosphorus (April 1 – October 31)	Report mg/L	---	Report mg/L	1/month	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly <sup>4</sup>	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>5</sup>
Total Nitrogen <sup>11</sup> (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	--- ---	Report mg/L ---	1/week 1/month	Composite Composite
Total Kjeldahl Nitrogen <sup>11</sup> (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	--- ---	Report mg/L ---	1/week 1/month	Composite Composite
Total Nitrate+Nitrite <sup>11</sup> (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	--- ---	Report mg/L ---	1/week 1/month	Composite Composite
<b>Whole Effluent Toxicity (WET) Testing<sup>12,13</sup></b>					
LC <sub>50</sub>	---	---	≥ 100 %	1/quarter	Composite
Hardness	---	---	Report mg/L	1/quarter	Composite
Total Organic Carbon	---	---	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
Total Zinc	---	---	Report mg/L	1/quarter	Composite
Dissolved Organic Carbon	---	---	Report mg/L	1/quarter	Composite

Ambient Characteristic <sup>14</sup>	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly <sup>4</sup>	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>5</sup>
Hardness	---	---	Report mg/L	1/quarter	Grab
Total Organic Carbon	---	---	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
Dissolved Organic Carbon	---	---	Report mg/L	1/quarter	Grab
pH <sup>15</sup>	---	---	Report S.U.	1/quarter	Grab
Temperature <sup>15</sup>	---	---	Report °C	1/quarter	Grab
Total Phosphorus <sup>10</sup> (April 1 – October 31)	---	---	Report mg/L	1/month	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly <sup>4</sup>	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>5</sup>
BOD <sub>5</sub>	Report mg/L	---	---	2/month	Composite
TSS	Report mg/L	---	---	2/month	Composite



## 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. 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 C.F.R. § 136.
2. In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. 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 C.F.R. Part 136 or required under 40 C.F.R. 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).
4. In calculating and reporting the average monthly concentration when the pollutant is not detected, assign zero to the non-detected sample result if the pollutant was not detected for all monitoring periods in the prior twelve months. If the pollutant was detected in at least one monitoring period in the prior twelve months, then assign each non-detected sample result a value that is equal to one half of the minimum level of detection for the purposes of calculating averages.
5. Each composite sample will consist 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.
6. Report annual average, monthly average, and the maximum daily flow in million gallons per day (MGD). The limit is an annual average, which shall be reported as a rolling average. The value 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.

The following information shall be reported and submitted as an attachment to the monthly DMRs for each day there was a bypass of secondary treatment:

- date and time of initiation
- total influent flow at time of initiation
- date and time of termination
- total influent flow at time of termination
- total duration of flow
- total volume of flow

A bypass of secondary treatment also is subject to the requirements of Part II.B.4.c. and Part II.D.1.e. of this permit. Bypass flows shall be measured using a meter.

The Permittee shall not accept septage during any calendar day in which a bypass of secondary treatment is anticipated.

7. 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.).
8. 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. For the purposes of this permit, TRC analysis must be completed using a test method in 40 C.F.R. § 136 that achieves a minimum level no greater than 20 µg/L.

The Permittee may simulate the chlorine contact time in the outfall pipe prior to discharge into the Merrimack River by holding TRC samples in a dark environment for up to 45 minutes before measuring TRC when flows at the facility are at or below the design flow of 18.1 MGD. When plant flows exceed 18.1 MGD, the allowable TRC holding time is reduced to 15 minutes.

The Permittee shall report the average monthly and maximum daily discharge of TRC using data collected by the continuous TRC analyzer. The Permittee shall collect and analyze a minimum of one grab sample per day for calibration purposes. The same grab sample can be used for both compliance and calibration. Four continuous recording charts (1/week), showing weekly data shall be submitted as an attachment to the monthly DMRs. The Permittee shall substitute the average of three TRC grab samples per day, for any day that they are unable to comply with the continuous reporting requirement.

- 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.
9. *Enterococci* and Fecal coliform monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required. The monthly average limit for Fecal Coliform is expressed as a geometric mean. For samples tested using the Most Probable Number (MPN) method, the units may be expressed as MPN. The units may also be expressed as colony forming units (cfu) when using the Membrane Filtration method.
  10. See Special Condition in Section I.H.1. for aluminum compliance schedule. See Part I.H.3. for ambient phosphorus monitoring requirements.
  11. Total Nitrogen shall be calculated as the sum of Total Kjeldhal Nitrogen and Total Nitrate + Nitrite.
  12. 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** of this permit. LC<sub>50</sub> is defined in Part II.E. of this permit. The Permittee shall test the fathead minnow (*Pimephales promelas*). Toxicity test samples shall be collected, and tests completed, during the same weeks in January, April, July and October. The complete report for each toxicity test shall be submitted as an attachment to the monthly DMR submittal immediately following the completion of the test.
  13. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A**, 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**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.
  14. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A**, 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**. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

15. 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.

**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 § 301 or § 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 C.F.R. §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.
9. 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 and thirteen combined sewer overflow outfalls (CSOs) listed in Part I.F.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 and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this permit (24-hour reporting).
2. Starting December 21, 2020, the Permittee must provide notification to the public within 24 hours of any unauthorized discharge on a publicly available web site. 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 of the collection system owned and operated respectively by the City of Haverhill and the Town of Groveland, Massachusetts (“co-permittee”) shall be in compliance with the activities and required reporting with respect to the portions of the collection system that each owns or operates. The Permittee and co-permittee shall only be responsible for violations relative to the portions of the collection system that they own and operate.

The Permittee and co-permittee are required to complete the following activities for the respective portions of the collection system which they operate:

**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 (see page 1 of this permit for the effective date). 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.

Any existing mapping shall be updated to contain the elements required by this permit, as described above.

#### 5. Collection System O&M Plan

The Permittee and co-permittee shall develop and implement a Collection System O&M Plan. Any existing Collection System O&M Plans shall be updated to contain the required elements described below.

- a. Within six (6) months of the effective date of the permit, the 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 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 18.1 MGD design flow (14.5 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 the 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 B** – 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 C.F.R. § 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 the 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 C** (Industrial Pretreatment Program Annual Report Requirements) of this permit and shall be submitted no later than **March 1** 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 C.F.R. 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 C.F.R. § 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 C.F.R. § 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.

## F. COMBINED SEWER OVERFLOWS (CSOs)

### 1. Effluent Limitations

During wet weather, the Permittee is authorized to discharge storm water/wastewater from the CSO outfalls listed below:

Outfall #	CSO Outfall Name	Latitude	Longitude	Receiving Water
Upper Siphon System				
024	Upper Siphon-Varnum Street	42.76683934	71.09305991	Merrimack River
Middle Siphon System				
021H	Winter Street and Hale Street	42.777451933	71.088324285	Little River
038	High Street Diversion	42.777229680	71.088322017	Little River
021B	Emerson Street	42.774568391	71.082998651	Little River
021F	Center Barrel - Locke Street	42.775143535	71.084998584	Little River
021A	Middle Siphon - Essex Street	42.773064312	71.078315989	Little River
Lower Siphon System				
019	Main Street North	42.774516793	71.076343479	Merrimack River
040	Bethany Avenue	42.774511831	71.074242947	Merrimack River
041	Chestnut Street	42.768424503	71.065258650	Merrimack River
013	Lower Siphon - Buttonwood Ave.	42.770229811	71.064186948	Merrimack River
Bradford System				
032	Bradford Avenue	42.770121267	71.085433959	Merrimack River
034	Middlesex Street	42.772581435	71.078322954	Merrimack River
039	South Webster	42.768424503	71.065258650	Merrimack River

2. The effluent discharged from these CSOs is subject to the following limitations:
  - a. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT) to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgment (BPJ) determination that BPT, BCT, and BAT for combined sewer overflow (CSO) control includes the implementation of Nine Minimum Controls (NMC) specified below. These Nine Minimum Controls and the Nine Minimum Controls Minimum Implementation Levels which are detailed further in Part I.F.3. are requirements of this permit.
    - (1) Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows;
    - (2) Maximum use of the collection system for storage;
    - (3) Review and modification of the pretreatment program to assure CSO impacts are minimized;
    - (4) Maximization of flow to the POTW for treatment;
    - (5) Prohibition of dry weather overflows from CSOs;
    - (6) Control of solid and floatable materials in CSOs;
    - (7) Pollution prevention programs that focus on contaminant reduction activities;
    - (8) Public notification to ensure that the public receives adequate notification of CSO occurrences and impacts;
    - (9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.
  - b. The discharges shall not cause or contribute to violations of federal or state Water Quality Standards.
3. Nine Minimum Controls Minimum Implementation Levels
  - a. The Permittee must implement the nine minimum controls in accordance with the documentation provided to EPA and MassDEP or as subsequently modified to enhance the effectiveness of the controls. This implementation must include the following controls plus other controls the Permittee can reasonably undertake as set forth in the documentation.
  - b. Each CSO structure/regulator, pumping station and/or tidegate shall be routinely inspected, at a minimum of once per month, to ensure that they are in good working

condition and adjusted to minimize combined sewer discharges (NMC # 1, 2 and 4). The following inspection results shall be recorded: the date and time of inspection, the general condition of the facility, and whether the facility is operating satisfactorily. If maintenance is necessary, the Permittee shall record: the description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The Permittee shall maintain all records of inspections for at least three years.

- c. **Annually, no later than March 31<sup>st</sup>**, the Permittee shall submit a certification to MassDEP and EPA which states that the previous calendar year's monthly inspections were conducted, results recorded, and records maintained. MassDEP and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the Permittee. Discharges to the combined system of septage, holding tank wastes, or other material which may cause a visible oil sheen or containing floatable material are prohibited during wet weather when CSO discharges may be active (NMC # 3, 6, and 7).
- d. Dry weather overflows (DWOs) are prohibited (NMC # 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and MassDEP orally within 24 hours of the time the Permittee becomes aware of the circumstances and a written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. See also Paragraph D.1.e. of Part II of this permit.
- e. The Permittee shall quantify and record all discharges from combined sewer outfalls (NMC # 9). Quantification shall be through direct measurement. The following information must be recorded for each combined sewer outfall for each discharge event, as set forth in Part I.F.4.:
  - Duration (hours) of discharge;
  - Volume (gallons) of discharge;
  - National Weather Service precipitation data from the nearest gage where precipitation is available at daily (24-hour) intervals and the nearest gage where precipitation is available at one-hour intervals. Cumulative precipitation per discharge event shall be calculated.

The Permittee shall maintain all records of discharges for at least six years after the effective date of this permit.

- f. The Permittee shall install and maintain identification signs for all combined sewer outfall structures (NMC # 8). The signs must be located at or near the combined sewer outfall structures and easily readable by the public from the land and water. These signs shall be a minimum of 12 x 18 inches in size, with white lettering against a green background, and shall contain the following information:

CITY OF HAVERHILL  
WET WEATHER  
SEWAGE DISCHARGE  
OUTFALL (discharge serial number)

Where easements over property not owned by the Permittee must be obtained to meet this requirement, the Permittee shall identify the appropriate landowners and obtain the necessary easements, to the extent practicable.

The Permittee, to the extent feasible, shall place additional signs in Spanish or add a universal wet weather sewage discharge symbol to existing signs.

g. Public Notification Plan

- (1) Within 180 days of the effective date of the permit, the Permittee shall submit to EPA and MassDEP a Public Notification Plan describing the measures that will be taken to meet NMC#8 in Part I.F.2 of this permit (NMC #8). The public notification plan shall include the means for disseminating information to the public, including communicating the initial and supplemental notifications required in Part I.F.3.g.(2) and (3) of this permit, as well as procedures for communicating with public health departments and any other potentially affected entities, including downstream communities, whose waters may be affected by discharges from the Permittee's CSOs.
- (2) Initial notification of a probable CSO activation shall be provided to the public and any other potentially affected party as soon as practicable, but no later than, four (4) hours after becoming aware by monitoring, modeling or other means that a CSO discharge has occurred. Notification may be made through electronic means, including posting to the Permittee's website. The initial notification shall include the following information:
  - Date and time of probable CSO discharge
  - CSO number and location
- (3) Supplemental notification shall be provided to the public and any other potentially affected party as soon as practicable, but no later than, twenty-four (24) hours after becoming aware of the termination of any CSO discharge(s). Notification may be made through electronic means, including posting to the Permittee's website. The supplemental notification shall include the following information:
  - CSO number and location
  - Confirmation of CSO discharge
  - Date, start time and stop time of the CSO discharge
- (4) Annual notification - **Annually, by March 31<sup>st</sup>**, the Permittee shall post information on the locations of CSOs, a summary of CSO activations and volumes, status and

progress of CSO abatement work, and contacts for additional information on CSOs and water quality on a website. This information shall be disseminated through the means identified in the Public Notification Plan that is submitted in accordance with Part I.F.3.g.(1) of this permit.

The Public Notification Plan shall be implemented no later than 180 days following the effective date of the permit. The initial, supplemental, and annual public notification requirements shall become effective 180 days following the effective date of the permit.

4. Nine Minimum Controls Reporting Requirement

**Annually, no later than March 31<sup>st</sup>**, the Permittee shall submit a report summarizing activities during the previous calendar year relating to compliance with the nine minimum controls. The annual report shall include the CSO outfall monitoring data required by Part I.F.5. of this permit.

5. Combined Sewer Overflow Outfall Monitoring

For each combined sewer overflow outfall listed in Part I.F.1 of this permit, the Permittee must monitor the following:

Parameters	Reporting Requirements	Monitoring Requirements	
	Total Monthly	Measurement Frequency	Sample Type
Total Flow	Report Gallons	Daily, when discharging	Continuous
Total Flow Duration (Duration of flow through CSO)	Report Hours	Daily, when discharging	Continuous
Number of CSO Discharge Events	Report Monthly Count	Daily, when discharging	Count

- a. For Total Flow, measure the total flow discharged from each CSO outfall during the month. For Total Flow Duration, report the total duration (hours) of discharges for each CSO outfall during the month.
- b. For those months when a CSO discharge does not occur, the Permittee must indicate “no discharge” for the outfall for which data was not collected.
- c. This information shall be submitted with the annual report required by Part I.F.4. of this permit.

**G. 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 C.F.R. § 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 C.F.R. § 503.6.
5. The 40 C.F.R. § 503 requirements include the following elements:
  - General requirements
  - Pollutant limitations
  - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
  - Management practices
  - Record keeping
  - Monitoring
  - Reporting

Which of the 40 C.F.R. § 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

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<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>



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 C.F.R. § 503.8.

7. Under 40 C.F.R. § 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 C.F.R. § 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 § 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 C.F.R. § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in § 503 are met. 40 C.F.R. § 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 C.F.R. § 503 Subpart B.
8. The Permittee shall submit an annual report containing the information specified in the 40 C.F.R. § 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).

## H. SPECIAL CONDITIONS

1. 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 87 µg/L (“final aluminum effluent limit”). The Permittee shall submit an 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.

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 C.F.R. § 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 C.F.R. § 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.<sup>3</sup>

2. The Permittee shall notify the Massachusetts Division of Marine Fisheries within 4 hours of any emergency condition, plant upset, bypass, CSO discharges, SSO discharges or other system failure which has the potential to violate bacteria permit limits. Within 24 hours a notification of a permit excursion or plant failure shall be sent to the following address and telephone number:

Division of Marine Fisheries  
Shellfish Management Program  
30 Emerson Avenue  
Gloucester, MA 01930  
(978)282-0308

3. The Permittee shall develop and implement a sampling and analysis plan for collecting monthly samples from the Merrimack River at a representative location upstream of the facility. Samples shall be collected once per month, from April through October, during dry weather. Dry weather is defined as any calendar day on which there is less than 0.1 inch of rainfall that is preceded by at least 72 hours without rainfall. The sampling plan shall be submitted to EPA and DEP as part of a Quality Assurance Project at least three months prior to the first planned sampling date.

## I. 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 no later than the 15th day of the month electronically using NetDMR. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to 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.I.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

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<sup>3</sup> The final effluent limit of 87 µg/l for aluminum may be modified prior to the end of the three-year compliance schedule if warranted by the new criteria and a reasonable potential analysis and consistent with anti-degradation requirements. Such a modification would not trigger anti-backsliding prohibitions, as reflected in CWA 402 § (o) and 40 C.F.R. § 122.44(l).

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 2020, 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 Region 1 EPA Water Division (EPA WD). Starting on 21 December 2020, 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:

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

b. 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 WD

a. The following requests, reports, and information described in this permit shall be submitted to the NPDES Applications Coordinator in EPA WD:

- (1) Transfer of permit notice;
- (2) Request for changes in sampling location;
- (3) Request for reduction in testing frequency;
- (4) Request for change in WET testing requirement; and

- (5) 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 (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 2020, 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 2020, 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 Assistance Division (ECAD)  
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's Emergency Response at 888-304-1133**

## **J. STATE PERMIT CONDITIONS**

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are 1) a Federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*; and 2) an identical State surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and 314 CMR 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this State surface water discharge permit.
2. This authorization also incorporates the State water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this State surface water discharge permit as special conditions pursuant to 314 CMR 3.11.
3. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as a NPDES Permit issued by the EPA. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit shall remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.

**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>	<u>Effluent</u>	<u>Receiving Water</u>	<u>ML (mg/l)</u>
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

### 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 TBLs 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 planing 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.



**REASSESSMENT OF TECHNICALLY BASED LOCAL LIMITS  
(TBLLs)**

POTW Name & Address : \_\_\_\_\_

NPDES                                  PERMIT                                  #                                  :

\_\_\_\_\_

Date EPA approved current TBLLs : \_\_\_\_\_

Date          EPA          approved          current          Sewer          Use          Ordinance          :

\_\_\_\_\_

**ITEM I.**

In Column (1) list the conditions that existed when your current TBLLs were calculated. In Column (2), list current conditions or expected conditions at your POTW.		
	Column (1) EXISTING TBLLs	Column (2) PRESENT CONDITIONS
POTW Flow (MGD)		
Dilution Ratio or 7Q10 (from NPDES Permit)		
SIU Flow (MGD)		
Safety Factor		N/A
Biosolids Disposal Method(s)		

**ITEM II.**

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

**ITEM III.**

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

**ITEM IV.**

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

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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 Maximum (ug/l)	Average (ug/l)	Water Quality Criteria (Gold Book) From TBLLs Today (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)	Biosolids	Columns (2A) (2B) Biosolids Criteria From TBLLs	
	Data Analyses  Average (mg/kg)		New (mg/kg) (mg/kg)	
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Molybdenum				
Selenium				
Other (List)				

## **Attachment C**

### **Industrial Pretreatment Program Annual Report Requirements**

The Permittee shall provide to the Approval Authority with an annual report that briefly describes the POTW's program activities, including activities of all participating agencies, if more than one jurisdiction is involved in the local program. The report required by this section shall be submitted no later than one year after approval of the POTW's Pretreatment Program, and at least annually thereafter, and must include, at a minimum, the applicable required data in appendix A to 40 CFR Part 127. The report required by this section must also include a summary of changes to the POTW's pretreatment program that have not been previously reported to the Approval Authority and any other relevant information requested by the Approval Authority. As of December 21, 2020 all annual reports submitted in compliance with this section must be submitted electronically by the POTW Pretreatment Program to the Approval Authority or initial recipient, as defined in 40 CFR 127.2(b), in compliance with this section and 40 CFR Part 3 (including, in all cases, Subpart D to Part 3), 40 CFR 122.22, and 40 CFR Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, the Approval Authority may also require POTW Pretreatment Programs to electronically submit annual reports under this section if specified by a particular permit or if required to do so by state law.

The permitted shall submit to Approval Authority and the state permitting authority a report that contains the following information requested by EPA:

1. An updated list of the POTW's Industrial Users by category as set forth in 40 C.F.R. 403.8(f)(2)(i), to include:
  - a. Names and addresses, or a list of deletions and additions keyed to a previously submitted list. The POTW shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical Pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The POTW shall also list the Industrial Users that are subject only to local Requirements. The list must also identify Industrial Users subject to categorical Pretreatment Standards that are subject to reduced reporting requirements under paragraph (e)(3), and identify which Industrial Users are Non-Significant Categorical Industrial Users.
  - b. Permit status. Whether each SIU has an unexpired control mechanism and an explanation as to why any SIUs are operating without a current, unexpired control mechanism (e.g. permit);
  - c. Baseline monitoring reporting requirements for newly promulgated industries
  - d. In addition, a brief description of the industry and general activities;
2. A summary of compliance and enforcement activities during the preceding year, including the number of:

- a. significant industrial users inspected by POTW (include inspection dates for each industrial user),
  - b. significant industrial users sampled by POTW (include sampling dates for each industrial user),
  - c. compliance schedules issued (include list of subject users),
  - d. written notices of violations issued (include list of subject users),
  - e. administrative orders issued (include list of subject users),
  - f. criminal or civil suits filed (include list of subject users) and,
  - g. penalties obtained (include list of subject users and penalty amounts);
3. 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;
  4. The Permittee shall prepare annually a list of industrial users, which during the preceding twelve (12) months have significantly violated Pretreatment Standards or requirements 40 C.F.R. 403.8(f)(2)(vii). This list is to be published annually in a newspaper of general circulation in the Permittee's service area.
  5. A summary of all monitoring activities performed within the previous twelve (12) months. The following information shall be reported:

Total number of SIUs inspected; and  
Total number of SIUs sampled.

- a. For all industrial users that were in Significant Non-Compliance during the previous twelve (12) months, provide the name of the violating industrial user; indicate the nature of the violations, the type and number of actions taken (administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. Indicate if the company returned to compliance and the date compliance was attained. Determination of Significant Non-Compliance shall be performed.
6. A summary of all enforcement actions not covered by the paragraph above conducted in accordance with the approved Enforcement Response Plan.
  7. A description of actions being taken to reduce the incidence of significant violations by significant industrial users.
  8. A detailed description of all interference and pass-through that occurred during the past year.
  9. A thorough description of all investigations into interference and pass-through during the past year.



10. 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;
11. The Permittee shall analyze the treatment facility influent and effluent at least Annually for the presence of the toxic pollutants listed in 40 CFR Part 122 Appendix D (NPDES Application Testing Requirements) Table III as follows:
  - Antimony
  - Arsenic
  - Beryllium
  - Cadmium
  - Chromium
  - Copper
  - Lead
  - Mercury
  - Nickel
  - Selenium
  - Silver
  - Thallium
  - Zinc
  - Cyanide
  - Phenols

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. All analytical procedures and method detection limits must be specified when reporting the results of such analyses.

12. The Permittee shall analyze the treatment facility sludge (biosolids) prior to disposal, for the presence of toxic pollutants listed above in 40 CFR Part 122 Appendix D (NPDES Application Testing Requirements) Table III at least once per year. If the Permittee does not dispose of biosolids during the calendar year, the Permittee shall certify to that in the Pretreatment Annual Report and the monitoring requirements in this paragraph shall be suspended for that calendar year.
  - a. The Permittee shall use sample collection and analysis procedures as approved for use under 40 CFR Part 503 or specified in the EPA Region 8 General Permit for biosolids.
13. The summary shall include an evaluation 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 paragraphs above or any similar sampling program described in this Permit.
14. Identification of the specific locations, if any, designated by the Permittee for receipt (discharge) of trucked or hauled waste, if modified;
15. Information as required by the Approval Authority or state permitting authority on the discharge to the POTW from the following activities:
  - (A) Ground water clean-up from underground storage tanks;
  - (B) Trucked or hauled waste; and,
  - (C) Groundwater clean-up from RCRA or Superfund sites.
16. A description of all changes made during the previous calendar year to the Permittee's pretreatment program that were not submitted as substantial or non-substantial modifications to EPA.
17. The date of the latest adoption of local limits and an indication as to whether or not the Town is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.
18. Any other information that may be deemed necessary by the Approval Authority.

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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

**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:** MA0101621

**PUBLIC NOTICE START AND END DATES:** June 7, 2019 – July 8, 2019

**NAME AND MAILING ADDRESS OF APPLICANT:**

City of Haverhill  
Water Pollution Abatement Facility  
40 South Porter Street  
Bradford, MA 01835

The Massachusetts municipality of Groveland is a co-permittee for specific activities required in I.D, I.E., and I.F. of the Draft Permit and described in Section 5.5 of this Fact Sheet. The responsible municipal department is:

Town of Groveland  
Town Hall  
183 Main Street  
Groveland, MA 01834

**NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:**

City of Haverhill  
Water Pollution Abatement Facility  
40 South Porter Street  
Bradford, MA 01835  
and from 13 Combined Sewer Overflow Discharge Outfalls

**RECEIVING WATER AND CLASSIFICATION:**

Merrimack River Watershed – USGS Code: 01070002  
Merrimack River (MA84A-04): Class B – Warm Water Fishery, CSO  
Merrimack River (MA84A-05): Class SB – Restricted Shellfishing, CSO  
Little River (MA84A-09): Class B – Warm Water Fishery, CSO



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## 1 Proposed Action

The above-named applicant (the “Permittee”) has applied to the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge from the Treatment Plant (the “Facility”) into the designated receiving water.

The permit currently in effect was issued on December 5, 2007 with an effective date of February 1, 2008 and expired on January 31, 2013 (the “2008 Permit”). The Permittee filed an application for permit reissuance with EPA dated June 21, 2012, as required by 40 Code of Federal Regulations (C.F.R.) § 122.6. Since the permit application was deemed timely and complete by EPA on January 4, 2013, the Facility’s 2008 Permit has been administratively continued pursuant to 40 C.F.R. § 122.6 and § 122.21(d). EPA and the State conducted a site visit on March 19, 2019.

This NPDES Permit is issued jointly by EPA and MassDEP under federal and state law, respectively. As such, all the terms and conditions of the permit are, therefore, incorporated into and constitute a discharge permit issued by the Director of the Division of Watershed Management pursuant to M.G.L. Chap. 21, § 43.

## 2 Statutory and Regulatory Authority

Congress enacted the Clean Water Act (CWA), “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” *See* 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 §§ 303(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. *See* 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 C.F.R. §§ 122, 124, 125, and 136.

Section 301 of the CWA provides 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, 304(b); 40 C.F.R. §§ 122, 125, and 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 BOD<sub>5</sub>, TSS and pH. *See* 40 C.F.R. § 133.

Under § 301(b)(1) of the CWA, 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 C.F.R. § 125.3(a)(1).

## **2.2 Water Quality Based Requirements**

The CWA and federal regulations require that effluent limitations 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* § 301(b)(1)(C) of the CWA and 40 C.F.R. §§ 122.44(d)(1) and 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 C.F.R. § 131.10-12. Generally, WQSs consist of three parts: 1) beneficial designated use or uses 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) anti-degradation 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 C.F.R. § 131.12. The applicable State WQSs can be found in Title 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00)

Receiving water requirements are established according to numerical and narrative standards in WQSs adopted under State law for each water body classification. When using chemical-specific numeric criteria to develop permit limits, 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 are therefore typically applicable to monthly average limits.

When permit effluent limits are necessary for a pollutant to meet narrative water quality criteria, the permitting authority must establish effluent limits in one of three ways: 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,” on a “case-by-case basis” using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, in certain circumstances, based on an indicator parameter. *See* 40 C.F.R. § 122.44(d)(1)(vi)(A-C).

### **2.2.2 Anti-degradation**

Federal regulations found at 40 C.F.R. § 131.12 require states to develop and adopt a statewide anti-degradation 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 anti-degradation policy ensures that high quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and support recreation in and on the water, are maintained 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 anti-degradation 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 anti-degradation policy, and all existing in-stream uses and the level of water quality necessary to protect the existing uses of a receiving water must be maintained and protected.

This permit is being reissued with effluent limitations sufficiently stringent to protect 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, the 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 is essentially a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from direct and indirect discharges, determines the maximum load of the pollutant that can be discharged to a specific water body while maintaining WQSs for designated uses, and allocates that load to the various pollutant sources, including point source discharges, subject to NPDES permits. *See* 40 C.F.R. § 130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation for a NPDES permitted discharge, the effluent limit in the permit may not exceed the waste load allocation. *See* 40 C.F.R. § 122.44(d)(1)(vii)(B).

#### 2.2.4 Reasonable Potential

Pursuant to 40 C.F.R. § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs necessary to achieve water quality standards established under § 303 of the CWA. In addition, limitations “must control any pollutant or pollutant parameters (conventional, non-conventional, or toxic) 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 water quality standard, including State narrative criteria for water quality”. *See* 40 C.F.R. § 122.44(d)(1)(i). There is reasonable potential to cause or contribute to an excursion if the projected or actual in-stream concentration exceeds the applicable criterion. If the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to such an excursion, the permit must contain WQBELs for the pollutant. *See* 40 C.F.R. 122.44(d)(1)(iii).

In determining reasonable potential, 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 in the receiving water. EPA typically considers the statistical approach outlined in *Technical Support Document for Water Quality-based Toxics Control (TSD)*<sup>1</sup> to determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS. *See* 40 C.F.R. § 122.44(d). EPA’s quantitative approach statistically projects effluent concentrations based on available effluent data, which are then compared to the applicable WQC.

#### 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 WQSs or it is deemed that the state has waived its right to certify. Regulations governing state certification are set forth in 40 C.F.R. § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 C.F.R. § 124.53 and expects that the Draft Permit will be certified.

If the State believes that any conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either the CWA §§ 208(e), 301, 302, 303, 306 and 307 or the appropriate requirements of State law, the State should include such conditions and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. The only exception to this is that the sludge conditions/requirements implementing § 405(d) of the CWA are not subject to the § 401 State Certification requirements. Reviews and appeals of limitations and conditions

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<sup>1</sup> March 1991, EPA/505/2-90-001

attributable to State certification shall be made through the applicable procedures of the State and may not be made through the applicable procedures of 40 C.F.R. § 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 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." *See* 40 C.F.R. § 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 limits based upon water quality standards and state requirements are contained in 40 C.F.R. § 122.4 (d) and 40 C.F.R. § 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).

EPA may use design flow of wastewater effluent both to determine the necessity for effluent limitations in the permit that comply with the Act, and to calculate the limits themselves. EPA practice is to use design 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 wastewater effluent flow exceed the flow assumed in these calculations, the instream dilution would decrease and the calculated effluent limits may not be protective of WQSs. Further, pollutants that do not have the reasonable potential to exceed WQSs at the lower wastewater discharge flow may have reasonable potential at a higher flow due to the decreased dilution. To ensure that the assumptions underlying the Region's reasonable potential analyses and derivation of permit effluent limitations remain sound for the duration of the permit, the Region may ensure its "worst-case" wastewater effluent flow assumption through imposition of permit conditions for wastewater effluent flow. Thus, the wastewater effluent flow limit is a component of WQBELs because the WQBELs are premised on a maximum level of flow. In addition, the wastewater effluent flow limit is necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

Using a facility's design flow in the derivation of pollutant effluent limitations, including conditions to limit wastewater effluent flow, is consistent with, and anticipated by NPDES permit regulations. Regarding the calculation of effluent limitations for POTWs, 40 C.F.R. § 122.45(b)(1) provides, "permit effluent limitations...shall be calculated based on design flow." POTW permit applications are required to include the design flow of the treatment facility. *Id.* § 122.21(j)(1)(vi).

Similarly, EPA's reasonable potential regulations require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," 40 C.F.R. § 122.44(d)(1)(ii), which is a function of *both* the wastewater effluent flow and receiving water flow. EPA guidance directs that this "reasonable potential" analysis be based on "worst-case" conditions. EPA accordingly is authorized to carry out its reasonable potential calculations by presuming that a plant is operating at its design flow when assessing reasonable potential.

The limitation on wastewater effluent flow is within EPA's authority to condition a permit in order to carry out the objectives of the Act. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 C.F.R. §§ 122.4(a) and (d); 122.43 and 122.44(d). A condition on the discharge designed to protect EPA's WQBEL and reasonable potential calculations is encompassed by the references to "condition" and "limitations" in 402 and 301 and implementing regulations, as they are designed to assure compliance with applicable water quality regulations, including anti-degradation. 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.

In addition, as provided in Part II.B.1 of this permit and 40 C.F.R. § 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. Thus, the permit's wastewater effluent flow limitation is necessary to ensure proper facility operation, which in turn is a requirement applicable to all NPDES permits. *See* 40 C.F.R. § 122.41.

EPA has also included the wastewater 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 C.F.R. §§ 122.41(d) and (e).



## 2.4 Monitoring and Reporting Requirements

### 2.4.1 Monitoring Requirements

EPA has the authority in accordance with several statutory and regulatory requirements established pursuant to the CWA, 33 USC § 1251 *et seq.*, the NPDES program (*See* § 402 and the implementing regulations generally found at 40 C.F.R. §§ 122, 124, 125, and 136), CWA § 308(a), 33 USC § 1318(a), and applicable state regulations to include requirements such as monitoring and reporting in NPDES permits.

The monitoring requirements included in this permit have been established to yield data representative of the discharges under the authority of §§ 308(a) and 402(a)(2) of the CWA, and consistent with 40 C.F.R. §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The monitoring requirements included in this permit specify routine sampling and analysis, which will provide ongoing, representative information on the levels of regulated constituents in the wastewater discharge streams. The monitoring program is needed to assess effluent characteristics, evaluate permit compliance, and determine if additional permit conditions are necessary to ensure compliance with technology-based and water quality-based requirements, including WQSs. 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 § 304(a)(1) of the CWA, 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 C.F.R. § 122. Therefore, the monitoring requirements in this permit are included for specific regulatory use in carrying out the CWA.

NPDES permits require that the approved analytical procedures found in 40 C.F.R. § 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 C.F.R. § 122.21(e)(3) (completeness), 40 C.F.R. § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 C.F.R. § 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 applicable water quality criterion or permit limitation for the measured pollutant or pollutant parameter; or

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<sup>2</sup> Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.

<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* Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.

- 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 EPA-approved analytical methods.

## 2.4.2 Reporting Requirements

The Draft Permit requires the Permittee to electronically report monitoring results obtained during each calendar month as a Discharge Monitoring Report (DMR) to EPA and the State using NetDMR no later than the 15th day of the month following the completed reporting period. NetDMR is a national web-based tool for regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has allowed participants to discontinue mailing in hard copy forms to EPA under 40 C.F.R. §§ 122.41 and 403.12. NetDMR is accessed from the following website: <https://netdmr.zendesk.com/hc/en-us>. Further information about NetDMR can be found on the EPA Region 1 NetDMR website.<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, 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 Anti-backsliding

A permit may not be renewed, reissued or modified with less stringent limitations or conditions than those contained in a previous permit unless in compliance with the anti-backsliding requirements of the CWA. See §§ 402(o) and 303(d)(4) of the CWA and 40 C.F.R. § 122.44(l)(1 and 2). Anti-backsliding provisions apply to effluent limits based on technology, water quality, Best Professional Judgement (BPJ) and state certification requirements.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2008 Permit unless specific conditions exist to justify one of the exceptions listed in 40 C.F.R. § 122.44(l)(2)(i) and/or in accordance with § 303(d)(4). Discussion of any applicable exceptions are discussed in sections that follow. Therefore, the Draft Permit complies with the anti-backsliding requirements of the CWA.

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<sup>4</sup> <https://netdmr.zendesk.com/hc/en-us/articles/209616266-EPA-Region-1-NetDMR-Information>.

### **3 Description of Facility and Discharge**

#### **3.1 Location and Type of Facility**

The location of the treatment plant and the 13 outfalls to the Little and Merrimack Rivers are shown in Figure 1. The latitude and longitude of the combined sewerage outfalls are shown in Appendix E. The treatment plant outfall (outfall 046) is not a combined sewerage outfall. The latitude and longitude of outfall 046 is 42.761111 N, 71.061667 W.

The Haverhill Water Pollution Abatement Facility (Haverhill WPAF) is an activated sludge secondary wastewater treatment facility that is engaged in the collection and treatment of municipal wastewater. Currently, the Facility serves approximately 65,500 residents, 62,000 in the City of Haverhill (almost 100% of the population), and 3,500 in the Town of Groveland (about 50% of the population). The collection system is a combined sewer system, with a higher proportion of separate sewers closer to the Merrimack River.

The Facility has a design flow of 18.1 MGD; the annual average daily flow reported in the 2012 application was 12 MGD, and the average for the last 5 years has been 10.3 MGD. Although the system is partially composed of combined sewers, the majority of the system is a separate system, with 37% of the system being combined sewers. Wastewater is comprised of mostly domestic sewage with some commercial sewage and some septage. The Facility receives flow from 10 categorical industrial users. 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.

Additionally, EPA is retaining one Co-permittee to the Draft Permit. The Town of Groveland, Massachusetts owns and operates a sanitary wastewater collection system whose discharge flows to the WPAF for treatment. The municipality is a Co-permittee for certain activities pertaining to proper operation and maintenance of their respective collection system (*See Part I.B. I.C and I.D of the Draft Permit*). Adding it to the Draft Permit ensures that it complies with requirements to operate and maintain the collection system so as to avoid discharges of sewage from the collection system. The Co-permittee did not apply for permit coverage; with a letter sent July 7, 2015, EPA waived application requirements for the Co-permittee.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the permittee from January 2014 through December 2018 is provided in Appendix A of this Fact Sheet.

##### **3.1.1 Treatment Process Description**

Flow enters the plant headworks through a force main to the aerated grit chambers and passes through mechanically cleaned bar racks. Screenings are trucked away for disposal. A 28,000-gallon septage tank, which receives about four million gallons of septage annually, is also located in the headworks area. Septage is added to the influent wastewater flow upstream of the bar racks.

Influent flow is then measured by a Parshall flume and treated in three primary sedimentation tanks, followed by biological treatment in up to three aeration tanks and three secondary sedimentation tanks. Treated effluent is then chlorinated with a flow-paced hypochlorite feed system. The contact time at 18.1 MGD is approximately 45 minutes. The extended contact time is achieved through a 1,143 ft long outfall pipe with a diffuser.

Primary sludge is pumped directly to the gravity thickeners. Secondary sludge is thickened in dissolved air floatation thickeners and sent to storage tanks. Thickened primary and secondary sludge is blended and dewatered by two centrifuges. Dewatered sludge is currently trucked to Waste Management's facility in Rochester, NH; this facility is owned and operated by Waste Management. See process diagram, Figure 2. The average mass of sludge shipped for incineration in 2012 was 2,464 dry metric tons.

In 2016, changes at the plant included an upgrade of the dewatering system, including centrifuges, grit classifiers, gravity thickeners and all ancillary equipment, which gives better control of the solids in the plant. The Facility uses three aeration tanks at all times, resulting in higher DO, better settling and more storage for wet weather flows. Further, the industrial pretreatment program developed and implemented a new FOG program resulting in a large reduction in FOG, contributing to a better settling rate.

### 3.1.2 Collection System Description

The Haverhill WPAF is served by combined sewers in Haverhill and a separate sewage system in Groveland. A combined sanitary sewer conveys domestic, industrial, and commercial sewage in addition to stormwater; a separate sanitary sewer conveys domestic, industrial and commercial sewage, but not stormwater. Haverhill's collection system has 13 combined sanitary sewer outfalls. See Appendix E, Outfall Coordinates. In contrast, Groveland's sanitary system leads directly to the wastewater treatment plant, and the storm sewers discharge to a local water body.

## 4 Description of Receiving Water and Dilution

The Haverhill WPAF discharges through Outfall 046, along with CSOs (034, 019, 035, 016, 013, 010, 001) into the Merrimack River within Segment MA84A-05. This segment is 1.8 miles in length and extends from the confluence with the Little River, Haverhill to the confluence of the Indian River, West Newbury/Amesbury.

This segment of the Merrimack River has been classified as Class SB, CSO and shellfishing in the Massachusetts WQSs 314 Code of The Massachusetts Regulations ("CMR") 4.05(4)(a). The MA WQS at 314 CMR 4.05(4)(b) state that Class SB waters *"are designated as a 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. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetic value."*

The Merrimack River at the point of discharge is tidally influenced. The level of the river changes on the incoming tide at the location of Outfall 046. Incoming saltwater, however, does not reach to the point of Haverhill's discharge. Data collected by EPA in 2017 found salinity levels several miles downstream of the Haverhill WPAF did not exceed 3.4 ppt. Limits for total residual chlorine, ammonia and whole effluent toxicity are based on freshwater criteria.

The MassDEP's Massachusetts Year 2014 Integrated List of Waters (2014 Integrated List), the 303(d) list, includes this segment of the Merrimack River as a Massachusetts Category 5 Water and in need of a total maximum daily load (TMDL) due to enterococcus and PCBs in fish tissue. To date no TMDLs have been developed for this segment for any of the listed impairments.

CSO Outfalls (025, 031, 024, 023-266, 022, 032, 033 and 021A) discharge into the Merrimack River within Segment MA84A-04. This segment is 10 miles in length and travels from the Essex Dam in Lawrence to the confluence with the Little River, Haverhill.

This segment of the Merrimack River has been classified as Class B, warm water and CSO in the Massachusetts WQSs 314 Code of The Massachusetts Regulations ("CMR") 4.05(4)(a). The MA WQS at 314 CMR 4.05(3)(b) states that Class B waters *"are designated as a 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. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment ("Treated Water Supply"). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value."*

The MassDEP's Massachusetts Year 2014 Integrated List of Waters (2014 Integrated List), the 303(d) list, includes this segment of the Merrimack River as a Massachusetts Category 5 Water and in need of a TMDL due to Escherichia coli, PCBs in fish tissue and Phosphorus (Total). To date, no TMDLs have been developed for this segment for any of the listed impairments.

CSO Outfalls (021H, 038, 021D, and 021E) discharge into the Little River, a tributary of the Merrimack River, within Segment MA84A-09. This segment is 4.6 miles in length and travels from the New Hampshire state line, Haverhill to the confluence with the Merrimack River, Haverhill.

The Little River has been classified as Class B, warm water and CSO in the Massachusetts WQSs 314 Code of The Massachusetts Regulations ("CMR") 4.05(4)(a). The MA WQS at 314 CMR 4.05(3)(b) states that Class B waters *"are designated as a 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. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment ("Treated Water Supply"). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value."*

The MassDEP's Massachusetts Year 2014 Integrated List of Waters (2014 Integrated List), the 303(d) list, includes the Little River as a Massachusetts Category 5 Water and in need of a TMDL due to Debris/Floatable/Trash, Habitat Assessment (Stream), and Escherichia coli. To date no TMDLs have been developed for this segment for any of the listed impairments.

There is a 1975 water quality management plan for the Merrimack River<sup>5</sup>. The plan includes a wasteload allocation for the Haverhill WPAF based on the secondary treatment requirement for BOD<sub>5</sub> of 30 mg/L at the design flow of 18 MGD for a BOD<sub>5</sub> load of 4,500 lb/day.

A summary of the ambient data collected in the receiving water upstream of the outfall can be found in Appendix A of this Fact Sheet.

#### 4.1 Available Dilution

##### 7-Day, 10-Year Low Flow

To ensure that discharges do not cause or contribute to violations of WQS under all expected circumstances, WQBELs are derived assuming critical conditions for the receiving water (*See EPA Permit Writer's Manual, Section 6.2.4*). For most pollutants and criteria, the critical flow in rivers and streams is some measure of the low flow of that river or stream. Massachusetts water quality regulations require that the available effluent dilution be based on the 7-day, 10-year low flow (7Q10 flow) of the receiving water (314 CMR 4.03(3)(1)). The 7Q10 low flow is the mean low flow over 7 consecutive days, recurring every 10 years.

The 7Q10 flow used in the Draft Permit has been extrapolated from flow data from the most recent 30 years (1989 to 2017; October 2017 bounded the range of the verifiable dataset through January 2019) at one U.S. Geological Survey gage station (#01100000) in the area of the Merrimack River in Haverhill, MA (which does not have a permanent flow gage station). The discharge is located about 97 miles downstream from the headwaters of the Merrimack River (at the confluence of the Pemigewasset and Winnepesaukee Rivers in Franklin, NH). The total drainage area for the Merrimack River watershed is about 5,010 square miles; the drainage area upstream of the discharge is about 4,880 square miles.

7Q10 at USGS 01100000 – Merrimack River below Concord River at Lowell, MA January 1, 1989 - October 30, 2017

= 832 cubic feet per second (cfs)

Drainage Area at gage = 4,635 square miles

$$\text{Flow factor for USGS 01100000} = \frac{832.0 \text{ cfs}}{4,635 \text{ square miles}} \approx 0.1795 \text{ cfs/sq. mi.}$$

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<sup>5</sup> Massachusetts Department of Environmental Quality Engineering, Division of Water Pollution Control, 1975, "Merrimack River Basin, Water Quality Management Plan"

Using a low-flow factor of 0.1795 cfs per square mile yields a receiving water 7Q10 flow of about 876 cfs or 566 million gallons per day (MGD).

The dilution factor (DF) was calculated using the upstream 7Q10 flow of 566 MGD ( $Q_s$ ) and the Facility's design flow of 18.1 MGD ( $Q_d$ ), as shown below:

$$DF = (Q_s + Q_d)/Q_d = (566 \text{ MGD} + 18.1 \text{ MGD}) / 18.1 \text{ MGD} = 32.3$$

## 5 Proposed Effluent Limitations and Conditions

The proposed limitations and conditions, the bases of which are discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit. EPA determined the pollutants of concern based on EPA's technology based effluent requirements, pollutants believed present in the permit application, and other information.

### 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 their permit application as well as in monthly discharge monitoring reports (DMRs) and in WET test reports from January 2014 to December 2018 (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*).

#### 5.1.1 Wastewater Effluent Flow

The effluent flow limit in the 2008 Permit is 18.1 MGD, as a rolling annual average flow, based on the Facility's design flow. There were two violations of the flow limit during the review period.

The Draft Permit continues the 18.1 MGD flow limit from the 2008 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>)

##### 5.1.2.1 BOD<sub>5</sub> Concentration Limits

The monthly average BOD<sub>5</sub> limit in the 2008 Permit was established in the Massachusetts 1975 Merrimack River Water Quality Management Plan. The document established BOD<sub>5</sub> wasteload allocations (WLA) for Lowell RWU, Greater Lawrence Sanitary District, and Haverhill WPAF<sup>6</sup>;

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<sup>6</sup> Massachusetts Department of Environmental Quality Engineering, *The Merrimack River Water Quality Management Plan*, 1975, page 59.

the average monthly concentration limit for all of the facilities was 30 mg/L. The average weekly limit of 45 mg/L was based on the secondary treatment standards in 40 C.F.R. § 133.102.

There were seven violations of monthly average and six violations of weekly average BOD<sub>5</sub> concentration limits during the review period.

The Draft Permit proposes the same BOD<sub>5</sub> concentration limits as in the 2008 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains 5 times per week.

### 5.1.2.2 BOD<sub>5</sub> Mass Limits

The mass-based BOD<sub>5</sub> limit in the 2008 Permit of 4,529 lb/day (monthly average) was based on the 1975 concentration-based WLA and the design flow of the facility. The design flow of the facility was revised to 18.1 MGD (instead of 18 MGD) in the 2008 Permit. Thus, the mass-based BOD<sub>5</sub> limit in the 2008 Permit was 4,529 lb/day, less stringent than the limit specified in the 1975 Merrimack River Water Quality Management Plan.

There was one violation of the BOD<sub>5</sub> mass limit during the review period.

In the derivation of limits for the Draft Permit, EPA found that in order to be consistent with the intention of the 1975 WLA, the BOD<sub>5</sub> mass limits must be based on the facility's design flow at the time the WLA was issued, rather than the facility's current design flow. Therefore, the mass based BOD<sub>5</sub> limits have been recalculated at the 1975 flow of 18 MGD, as shown below.

#### BOD 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 at the time of 1975 WLA

8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day

Limit:

Monthly Average: 30 mg/L \* 18 MGD \* 8.34 = 4,504 lb/day

Weekly Average: 45 mg/L \* 18 MGD \* 8.34 = 6,755 lb/day

The Draft Permit proposes the monthly average BOD<sub>5</sub> loading limit referenced in the 1975 WLA of 4,500 lb/day. The monthly average mass-based limit is slightly lower than the limit in the



2008 Permit and the weekly average mass-based limit is newly established. The weekly average limit is based on the secondary treatment standards in 40 C.F.R. § 133.102 and the Facility's design flow. The monitoring frequency remains five times per week.

### 5.1.3 Total Suspended Solids (TSS)

#### 5.1.3.1 TSS Concentration Limits

The TSS limits in the 2008 Permit were based on the secondary treatment standards in 40 C.F.R. § 133.102; the average monthly limit is 30 mg/L, and the average weekly limit is 45 mg/L.

There was one violation of monthly average and seven violations of weekly average TSS concentration limits during the review period.

The Draft Permit proposes the same TSS concentration limits as in the 2008 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains five times per week.

#### 5.1.3.2 TSS Mass Limits

The mass-based TSS limit in the 2008 Permit of 4,529 lb/day (monthly average) was based on secondary treatment standards and the design flow of the Facility.

There was one violation of the TSS mass limit during the review period.

The mass based TSS limits have been calculated at the design flow of 18.1 MGD, as shown below.

TSS Mass Loading Calculations:

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

8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day

Limit:

Monthly Average:  $30 \text{ mg/L} * 18.1 \text{ MGD} * 8.34 = 4,529 \text{ lb/day}$   
Weekly Average:  $45 \text{ mg/L} * 18.1 \text{ MGD} * 8.34 = 6,793 \text{ lb/day}$

The monthly average mass-based limit is the same as the limit in the 2008 Permit and the weekly average mass-based limit is newly established. The weekly average limit is based on the secondary treatment standards in 40 C.F.R. § 133.102 and the Facility's design flow. The monitoring frequency remains five times per week.

#### **5.1.4 Eighty-Five Percent (85%) BOD<sub>5</sub> and TSS Removal Requirement**

In accordance with the provisions of 40 C.F.R. § 133.102(a)(3), (4) and (b)(3), the 2008 Permit requires that the 30-day average percent removals for BOD<sub>5</sub> and TSS are not less than 85%.

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(4)(b)(3), the Permit requires that the pH of the effluent is not less than 6.5 or greater than 8.5 standard units (S.U.) at any time. The monitoring frequency is once per day. There were 16 violations of the minimum pH limitation during the review period. Correspondence with the Facility on February 20, 2019 indicated that the violations were attributed to influent from a significant industrial user.

The pH requirements in the 2008 Permit are carried forward into the Draft Permit as there has been no change in the WQS with regards to pH.

#### **5.1.6 Bacteria**

The 2008 Permit includes effluent limitations for bacteria using fecal coliform bacteria as the indicator bacteria to protect shellfishing uses in the receiving water. In accordance with the MA SWQS at 314 CMR 4.05(4)(b)(4), a monthly geometric mean limit of 88 colony forming units (cfu)/100 ml and a maximum daily limit of 260 cfu/100 ml were established. The DMR data during the review period shows that there has been one violation of the monthly geometric mean fecal coliform limitation and five violations of the maximum daily limit.

The 2008 Permit also includes effluent limits for bacteria using Enterococci bacteria as the indicator bacteria to protect recreational uses. MA WQS at 314 CMR 4.05(b)(4) require a monthly geometric mean of 35 cfu/100 ml and a maximum daily limit of 276 cfu/100 ml. The DMR data during the review period shows numerous violations. There were twelve violations of the monthly geometric mean and thirteen violations of the maximum daily limit during the review period.

The Draft Permit proposes maintaining the effluent limits for bacteria in the 2008 Permit. The fecal coliform limits are a monthly geometric mean limit of 88 MPN/100 ml and a maximum daily limit of 260 MPN/100 ml and the Enterococci limits are a monthly geometric mean of 35 cfu/100 ml and a maximum daily limit of 276 cfu/100 ml. The sampling frequency for fecal coliform bacteria is five times per week and for enterococci bacteria is once per month. These limits and sampling frequency are the same as in the 2008 permit.

### 5.1.7 Total Residual Chlorine

The Facility uses chlorine for disinfection of the effluent. The 2008 Permit includes effluent limitations for total residual chlorine (TRC) of 0.4 mg/L (400 µg/L) as a monthly average and 0.7 mg/L (700 µg/L) as a maximum daily. There have been two violations of the TRC limitations during the review period.

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). The freshwater instream criteria for chlorine are 11 ug/l (chronic) and 19 ug/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 criteria \* dilution factor = Chronic limit  
11 ug/l \* 32.3 = 355 ug/l (average monthly)

Acute criteria \* dilution factor = Acute limit  
19 ug/l \* 32.3 = 614 ug/l (maximum daily)

These limits are included in the Draft Permit and are more stringent than in the 2008 permit since the revised dilution factor is lower. The monitoring frequency for TRC is once per day using a grab sample. Additionally, TRC in the effluent shall be monitored continuously. Compliance will be based upon grab sample results. The results of the grab sample and comparison to the continuous analyzer reading, including the time of the grab sample, shall be included with the discharge monitoring reports (DMRs). Continuous monitoring should continue, and the Draft Permit requires that the chlorination system include an alarm system for indicating interruptions and malfunctions.

Sampling at the point of discharge is impractical. Therefore, the 2008 permit allowed the permittee to simulate the chlorine contact time in the outfall pipe by holding TRC samples in a dark environment for up to 45 minutes when flows at the facility are at or below the design flow of 18.1 MGD. When plant flows are above 18.1 MGD, the allowable TRC holding time is reduced to 15 minutes. This is based on the estimated chlorine contact time in the outfall pipe during high flow (60 MGD) events, as stated in Section 2.6 of the August 2002, Volume II Appendices to the Final Environmental Impact Report.

### 5.1.8 Ammonia

Nitrogen in the form of ammonia can reduce the receiving stream's dissolved oxygen concentration through nitrification and can be toxic to aquatic life, particularly at elevated temperatures. The toxicity level of ammonia depends on the temperature and pH of the receiving water (USEPA 1999). The applicable ammonia water quality criteria are pH dependent and, for the chronic criteria, temperature dependent and can be derived using EPA-recommended ammonia criteria from the document: *Update of Ammonia Water Quality Criteria for Ammonia*, 1999 (EPA 822-R-99-014). These are the freshwater ammonia criteria in EPA's *National Recommended Water Quality Criteria*, 2002 (EPA 822-R-02-047) document, which are included by reference in the Massachusetts WQS (*See* 314 CMR 4.05(5)(e)). The chronic criteria are also dependent on whether early life stages of fish are present. The Merrimack River in the vicinity of the Haverhill WPAF 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.

The 2008 Permit does not include ammonia limits, but it does require the permittee to monitor and report effluent and ambient ammonia concentrations on a quarterly basis as part of the Whole Effluent Toxicity (WET) testing. Ambient data, taken upstream of the Haverhill outfall in the Merrimack River, is presented in Appendix A and shows ammonia concentrations that range from 0 to 0.79 mg/L. The median concentration for the warm weather period (April 1 through October 31) is 0.21 mg/L and for the cold weather period (November 1 through March 31) is 0.32 mg/L. Ambient sampling included pH monitoring as well, which indicates that the median pH is 6.9 S.U. Ambient temperature data is not available, so EPA has assumed a warm weather temperature of 25° C and a cold weather temperature of 5° C. Based on this information, the applicable ammonia criteria are summarized in Table 1 below.

In determining whether the discharge has the reasonable potential to cause or contribute to excursions above the instream water quality criteria for ammonia, the following mass balance equation is used to project the instream ammonia concentrations downstream from the discharge under 7Q10 conditions during both warm and cold weather.

$$Q_d C_d + Q_s C_s = Q_r C_r$$

Solving for the downstream pollutant concentration ( $C_r$ ) gives:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

Where:

- $Q_s$  = 7Q10 flow upstream of Facility (876 cfs)
- $Q_d$  = design flow of Facility (18.1 MGD = 28.0 cfs)
- $Q_r$  = combined stream flow (7Q10 + design flow = 876 + 28 = 904 cfs)
- $C_s$  = median upstream ammonia concentration
  - = 0.21 mg/L in warm weather
  - = 0.32 mg/L in cold weather

$$C_d = \text{effluent ammonia concentration}$$

$$= 95^{\text{th}} \text{ percentile}^7 \text{ of warm weather data (N=16)} = 24.27 \text{ mg/L}$$

$$= \text{maximum of cold weather data (N=4)} = 4.74 \text{ mg/L}$$

Reasonable potential is then determined by comparing this resultant in-stream concentration with the relevant acute and chronic criteria. The discharge is determined to have the reasonable potential to cause or contribute to a violation of water quality standards if both the effluent concentration ( $C_d$ ) and the downstream concentration ( $C_r$ ) exceed the criteria. In EPA's Technical Support Document for Water Quality Based Toxics Control, EPA/505/2-90-001, March 1991, commonly known as the "TSD", box 3-2 describes the statistical approach in determining if there is reasonable potential for an excursion above the maximum allowable concentration. If there is reasonable potential, the appropriate limit is then calculated by rearranging the above mass balance to solve for the effluent concentration ( $C_d$ ) using the relevant criterion as the resultant in-stream concentration ( $C_r$ ). Table 1 shows the results of the reasonable potential analysis and the resulting limits, if necessary.

**Table 1: Ammonia Reasonable Potential Analysis and Limit Derivation**

Season	Q <sub>s</sub>	C <sub>s</sub>	Q <sub>d</sub>	C <sub>d</sub>	Q <sub>r</sub>	C <sub>r</sub>	Criteria	Reasonable Potential	Limits
	cfs	mg/l	cfs	mg/l	cfs	mg/l	mg/l	C <sub>d</sub> & C <sub>r</sub> > Criteria	mg/l
Warm Weather – Chronic	876	0.21	28	24.3	904	0.96	3.1	N	N/A
Warm Weather – Acute		0.21		24.3		0.96	26.2	N	N/A
Cold Weather – Chronic		0.32		4.7		0.45	6.1	N	N/A
Cold Weather - Acute		0.32		4.7		0.45	26.2	N	N/A

Based on the analysis, there is no reasonable potential, so the Draft Permit does not require ammonia limits. Effluent and ambient monitoring for ammonia will continue to be required in the quarterly WET tests.

### 5.1.9 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 fish and other aquatic animals. Recent studies provide evidence that both phosphorus and nitrogen can play a role in the eutrophication of certain ecosystems. However, typically phosphorus is the limiting nutrient triggering eutrophication in fresh water ecosystems and nitrogen in marine or estuarine ecosystems. Thus, for this receiving water, phosphorus and nitrogen are nutrients of concern evaluated for effluent limitations in the discussion below.

<sup>7</sup> The Facility's effluent concentrations (See Appendix A) were characterized assuming a lognormal distribution to determine the estimated 95th percentile of the daily maximum (See Appendix C).

### 5.1.9.1 Nitrogen

The Merrimack River is a largely and densely populated watershed including 40 POTW discharges in Massachusetts and New Hampshire. EPA estimates that approximately 15,000 lb/day of nitrogen is discharged by POTWs into the fresh water portion of the watershed and another 2,000 lb/day into the marine portion. Recent nitrogen data collected by CDM Smith in 2014 and 2016 in the estuarine portions of the Merrimack River indicates elevated total nitrogen and chlorophyll 'a' levels. High nutrient concentrations can lead to increased levels of chlorophyll 'a', therefore chlorophyll 'a' can be an indicator of elevated nutrient concentrations. In samples with salinity greater than 10 ppt, total nitrogen ranged from 0.442 to 1.67 mg/L while chlorophyll 'a' ranged from 4 to 42 ppt<sup>8</sup>. EPA collected samples on the outgoing tide in 2017 in this area and found total nitrogen levels in the range of 0.62 mg/L to 1.3 mg/L and chlorophyll 'a' ranging from 2 to 11 ppt in samples with salinity greater than 10 ppt. EPA is concerned about the impacts that these nitrogen levels may be having on aquatic life in the estuary as most of these results are outside the range typically found in healthy estuaries in Massachusetts.<sup>9</sup> However, more data is necessary to determine whether there is reasonable potential for nitrogen discharges from the Facility to cause or contribute to a violation of the Massachusetts narrative nutrient criteria in the Merrimack River estuary, particularly data that characterizes aquatic life designated uses that may be affected in this area so that the narrative criteria can be interpreted numerically. In the meantime, EPA finds that quantifying the load of total nitrogen from this Facility and others in the Merrimack River watershed is an important first step to understanding the loading of nitrogen from point sources and their potential impact on the estuary.

The Draft Permit includes weekly monitoring and reporting requirement for total nitrate, total nitrite, total Kjeldahl nitrogen and total nitrogen from April through October and monthly reporting from November through March. The monitoring data will provide additional information on the fate of nitrogen through the treatment process and its impact to the Merrimack River estuary. The Agencies recommend the Town factor in treatment methods to reduce nitrogen in the effluent for any planned upgrades at the treatment plant, as nitrogen limits may be included in subsequent permits.

### 5.1.9.2 Phosphorus

Phosphorus is an essential nutrient for the growth of aquatic plants and 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; 2) causing an unpleasant appearance and odor; 3) interfering with navigation and recreation; 4) reducing water clarity; 5) reducing the quality and availability of suitable habitat for aquatic life; 6) producing toxic cyanobacteria during certain algal blooms. Cultural (or accelerated) eutrophication is the term used to describe dense and excessive plant

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<sup>8</sup> CDM Smith/US Army Corps of Engineers New England District, *Merrimack River Watershed Assessment Study - Phase III Final Monitoring Data Report August 2017*, Appendix C.

<sup>9</sup>Howes, Brian, et al, *Site-Specific Nitrogen Thresholds for Southeastern Massachusetts Embayments: Critical Indicators Interim Report*, Massachusetts Estuaries Project, December 22, 2003.

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.

In the absence of numeric criteria for phosphorus, EPA uses nationally recommended criteria and other technical guidance to develop effluent limitations for the discharge of phosphorus. EPA has published national guidance documents that contain recommended total phosphorus criteria and other indicators of eutrophication. EPA's 1986 *Quality Criteria for Water* (the "Gold Book") recommends that in-stream phosphorus concentrations not exceed 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. The recommended water quality criteria for the segments of the Merrimack River upstream and downstream of the discharge is 0.1 mg/L.

More recently, EPA has released recommended Ecoregional Nutrient Criteria, established as part of an effort to reduce problems associated with excess nutrients in water bodies in specific areas of the country. The published criteria represent conditions in waters within ecoregions that are minimally impacted by human activities, and thus free from the effects of cultural eutrophication. The Merrimack River is located within Ecoregion XIV, Eastern Coastal Plains. The recommended total phosphorus criteria for this ecoregion, found in [Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion XIV](#) (EPA December 2000) is 31.25 µg/L (0.03125 mg/L).

EPA uses the effects-based Gold Book threshold as a general target applicable in free-flowing streams. As the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophication 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. In this case, EPA is not aware of any evidence that the Merrimack River is unusually susceptible to eutrophication impacts, so that the 100 µg/L threshold appears sufficient in this receiving water.

Although the 2008 Permit did not require monitoring for total phosphorus, the Haverhill WPAF sampled for total phosphorus effluent concentration in April 2019 and provided the results to EPA. The monthly average concentration was 0.66 mg/L. This was the only data available after the 2016 process improvement described in Section 3.1.1 above; therefore, this data was used for the reasonable potential analysis.

Ambient sampling performed by the U.S. Army Corps of Engineers<sup>10</sup> provided a total phosphorus concentration of 0.065 mg/L upstream of the discharge. EPA used the Army Corp data in the mass balance equation since there was not additional phosphorus data available

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<sup>10</sup> Appendix C. Merrimack River Watershed Assessment Study – Phase III Final Monitoring Data Report. U.S. Army Corps of Engineers – New England District. August 2017.

immediately upstream of the discharge; however, the total phosphorus concentration further upstream was similar to this concentration.

In determining whether the discharge has the reasonable potential to cause or contribute to an exceedance of water quality standards for phosphorus, a mass balance equation is used to project the instream phosphorus concentration downstream of the discharge under 7Q10 conditions.

$$Q_d C_d + Q_s C_s = Q_r C_r$$

Solving for the downstream phosphorus concentration:

$$C_r = \frac{[(Q_d C_d) + (Q_s C_s)]}{Q_r}$$

$C_r$  = downstream phosphorus concentration in the Merrimack River (mg/L)

$Q_d$  = design flow of treatment plant 18.1 mgd)

$C_d$  = maximum monthly average effluent phosphorus concentration during the growing season (0.66 mg/L)

$Q_s$  = 7Q10 low flow of Merrimack River upstream of the discharge (876 cfs = 566 mgd)

$C_s$  = upstream phosphorus concentration in the Merrimack River (0.065 mg/L)

$Q_r$  = flow in the river downstream of the discharge (18.1 + 566 = 584.1 mgd)

$$C_r = \frac{[(566 \text{ MGD})(0.065 \text{ mg/L}) + (18.1 \text{ MGD})(0.66 \text{ mg/L})]}{584.1 \text{ MGD}}$$

$$C_r = 0.083 \text{ mg/L}$$

The concentration of phosphorus downstream of the discharge equals 0.083 mg/L and is less than the Gold Book recommended water quality threshold. There is not reasonable potential for the discharge to cause or contribute to an exceedance of water quality standards and an effluent limit is not included in the Draft Permit. However, the Draft Permit requires monthly monitoring for total phosphorus to better characterize the effluent for future analyses.

### 5.1.10 Metals

Dissolved fractions of certain metals in water can be toxic to aquatic life. Therefore, there is a need to limit toxic metal concentrations in the effluent where aquatic life may be impacted. For the development of the Draft Permit, analyses were completed to evaluate whether there is reasonable potential for effluent discharges to cause or contribute to exceedances of the water quality criteria for aluminum, cadmium, copper, lead, nickel and zinc, given the updated upstream hydrologic and chemical characteristics of the receiving water. A summary of recent metals monitoring data is provided in Appendix A.



### 5.1.10.1 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 C.F.R. § 122.45(c) require, with limited exceptions, that effluent limits for metals in NPDES permits be expressed as total recoverable metals.

Additionally, 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 Merrimack 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 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 the next section (substituting hardness for metal concentration), the resulting downstream hardness is 26.7 mg/L and the corresponding criteria are presented in Appendix B.

Massachusetts aluminum criteria are not hardness-dependent and are expressed as total recoverable aluminum.

### 5.1.10.2 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, the following mass balance is used to project in-stream metal concentrations downstream from the discharge.

$$Q_d C_d + Q_s C_s = Q_r C_r$$

Solving for the receiving water metal concentration downstream of the discharge ( $C_r$ ) yields:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

Where:

- $Q_s$  = 7Q10 flow upstream of Facility
- $Q_d$  = design flow of Facility
- $Q_r$  = combined stream flow (7Q10 + design flow)
- $C_s$  = median upstream metal concentration

$C_d$  = effluent metals concentration (95<sup>th</sup> percentile<sup>11</sup>)

Reasonable potential is then determined by comparing this resultant in-stream concentration with the acute and chronic criteria for each metal. The discharge is determined to have the reasonable potential to cause or contribute to a violation of water quality standards if both the effluent concentration ( $C_d$ ) and the downstream concentration ( $C_r$ ) exceed the criteria. In EPA's Technical Support Document for Water Quality Based Toxics Control, EPA/505/2-90-001, March 1991, commonly known as the "TSD", box 3-2 describes the statistical approach in determining if there is reasonable potential for an excursion above the maximum allowable concentration. If there is reasonable potential for either acute or chronic conditions, the appropriate limit is then calculated by rearranging the above mass balance to solve for the effluent concentration ( $C_d$ ) using the relevant criterion as the resultant in-stream concentration ( $C_r$ ).

The results of this analysis for each metal are presented in Appendix B, indicating the Draft Permit must include a chronic (monthly average) aluminum limit of 87  $\mu\text{g/L}$  to protect WQSSs. Aluminum shall be monitored once per month.

#### Aluminum Compliance Schedule:

The final aluminum effluent limit is based on current Massachusetts, EPA approved, aluminum criteria to protect fresh water aquatic life. However, EPA is aware of ongoing efforts by MassDEP to soon revise the Massachusetts aluminum criteria based upon EPA aluminum criteria finalized in December 2018. MassDEP has informed EPA that it expects to propose the revisions to its aluminum criteria in 2019. 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 C.F.R. § 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*

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<sup>11</sup> The Facility's effluent concentrations (*See Appendix A*) were characterized assuming a lognormal distribution to determine the estimated 95th percentile of the daily maximum (*See Appendix C*).

*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.”).

### 5.1.11 Whole Effluent Toxicity

Sections 402(a)(2) and 308(a) of the CWA 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 affect aquatic life or human health.

In addition, under § 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on WQSs. Under certain narrative State WQSs, and §§ 301, 303 and 402 of the CWA, EPA and the States may establish toxicity-based limitations to implement the narrative “no toxics in toxic amounts”. 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 the 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, EPA assumes that there is a reasonable potential for this discharge to cause or contribute to an exceedance of the “no toxics in toxic amounts” narrative water quality standard.

Further, EPA Region 1 and MassDEP<sup>12</sup> current toxic policy requires toxicity testing for all dischargers such as the Haverhill WPAF. In accordance with these policies, 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>. According to this policy dischargers having a dilution factor greater than 20 but less than 100 are required to conduct acute toxicity testing four times per year for two species.

The acute WET limit in the 2008 Permit is a LC<sub>50</sub> greater than or equal to 100%, using the fathead minnow (*Pimephales promelas*), as the test species. The Facility has had a single violation of this limit in April 2018, as can be seen from the DMR summary in Appendix A. It is noted that as part of the 2008 permit issuance, EPA eliminated the required testing for the daphnid, (*Ceriodaphnia dubia*) in 1998, based on WET Testing results.

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<sup>12</sup> Implementation Policy for the Control of Toxic Pollutants in Surface Waters, MassDEP 1990

Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the dilution factor of 32, and in accordance with EPA national and regional policy and 40 C.F.R. § 122.44(d), the Draft Permit continues the effluent limits from the 2008 Permit including the test organism and the testing frequency. Toxicity testing must be performed in accordance with the updated EPA Region 1 WET test procedures and protocols specified in Attachment A of the Draft Permit (USEPA Region 1 Freshwater Acute Toxicity Test Procedure and Protocol, February 2011). The freshwater toxicity protocol is used for this facility based on low ambient salinity at the point of discharge.

## **5.2 Industrial Pretreatment Program**

The Permittee is required to administer a pretreatment program based on the authority granted under 40 C.F.R. 122.44(j), 40 C.F.R. Part 403 and Section 307 of the Act. The Haverhill WPAF's pretreatment program received EPA approval on September 31, 1982 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 C.F.R. 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. Those 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 March 1st, 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 and co-permittee to control infiltration and inflow (I/I) within the sewer collections systems that they own and operate. The Permittee and co-permittee shall each develop an I/I removal program commensurate with the severity of I/I in their respective collection systems. 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 C.F.R. § 122.41(e), require the proper operation and maintenance of permitted wastewater systems and related facilities to achieve permit conditions. The requirements at 40 C.F.R. § 122.41(d) impose a 'duty to mitigate' upon the permittee, which requires that "all reasonable steps be taken to minimize or prevent any discharge violation of the permit that has a reasonable likelihood of adversity affecting human health or the environment. EPA and MassDEP maintain 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 C.F.R. § 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 2008 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 for completing these requirements in the Draft Permit.

Because the City of Groveland, Massachusetts owns and operates a collection system that discharges to the Haverhill WPAF, they have been included as a co-permittee 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 Combined Sewer Overflows

### Description

The wastewater collection system that conveys flow to the Haverhill WPAF consists partially of combined sewers that convey both sanitary sewage and stormwater runoff during rain events. During wet weather, the combined flow exceeds the capacity of the interceptor sewers and the wastewater treatment plant, and a portion of the combined flow is discharged to the Merrimack and Little Rivers through combined sewer overflows (CSOs). CSOs have been identified as causing or contributing to water quality impairments in the segments of the Merrimack and Little Rivers where Haverhill's CSO discharges occur. See *Merrimack River Watershed 2004 Water Quality Assessment Report* (MassDEP January 2010).

Of the original twenty CSO outfalls identified in the 2008 permit, fifteen remain. These outfalls discharge to the Merrimack and Little Rivers (see list of CSO outfalls in Appendix E).

### Regulatory Framework

CSOs are point sources subject to NPDES permit requirements for both water-quality based and technology-based requirements but are not subject to the secondary treatment regulations applicable to publicly owned treatment works in accordance with 40 C.F.R. §133.103(a). Section 301(b)(1)(C) of the Clean Water Act of 1977 mandated compliance with water quality standards by July 1, 1977. Technology-based permit limits must be established for best conventional pollutant control technology (BCT) and best available technology economically achievable (BAT) based on best professional judgment (BPJ) in accordance with Section 301(b) and Section 402(a) of the Water Quality Act Amendments of 1987 (WQA). The framework for compliance with Clean Water Act requirements for CSOs is set forth in EPA's National CSO Control Policy, 59 Fed. Reg. 18688 (1994). It sets the following objectives:

- 1) To ensure that if the CSO discharges occur, they are only as a result of wet weather;
- 2) To bring all wet weather CSO discharge points into compliance with the technology-based requirements of the CWA and applicable federal and state water quality standards; and
- 3) To minimize water quality, aquatic biota, and human health impacts from wet weather flows.

Among the elements established to achieve these objectives, the CSO Policy set forth the minimum BCT/BAT controls (i.e., technology-based limits) that represent the BPJ of the Agency on a consistent, national basis. These are the Nine Minimum Controls (NMCs) defined in the CSO Policy and set forth in Part I.F. of the Draft Permit: 1) proper operation and regular maintenance programs for the sewer system and the combined sewer overflows; 2) maximum use of the collection system for storage; 3) review and modification of the pretreatment programs to assure CSO impacts are minimized; 4) maximization of flow to the POTW for treatment; 5) prohibition of dry weather overflows; 6) control of solid and floatable materials in CSOs; 7) pollution prevention programs which focus on contaminant reduction activities; 8) public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and 9) monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

This initial notification shall be followed by supplemental notification within twenty-four hours of the cessation of a discharge event to confirm whether an actual discharge occurred, and if so, to include information specific to each discharge, including the CSO outfall number and location, the date of the discharge, as well as the time the discharge commenced and ceased.

The CSO Policy also recommended that each community that has a combined sewer system develop and implement a CSO Long-Term Control Plan (CSO LTCP) that will ultimately result in compliance with the requirements of the CWA. The permittee is implementing various projects to reduce or eliminate CSO discharges as set forth in the 2017 Integrated Final LTCP.

### Permit Requirements

In accordance with the National CSO Policy, the Draft Permit contains the following conditions for the CSO discharges:

- (i) Dry weather discharges from CSO outfalls are prohibited. Dry weather discharges must be immediately reported to EPA and MassDEP.
- (ii) During wet weather, the discharges must not cause any exceedance of water quality standards.
- (iii) The permittee shall meet the technology-based NMCs described above and shall comply with the implementation levels as set forth in Part I.B. of the Draft Permit.
- (iv) The permittee shall review its entire NMC program and revise it as necessary. Documentation of this review and any resultant revisions made to the NMC program shall be submitted to EPA and MassDEP within 6 months of the effective date of the permit. An annual report shall be provided by April 30th of each year which describes any subsequent revisions made to the NMC program and shall also include monitoring results from CSO discharges, and the status of CSO abatement projects.

## 5.7 Standard Conditions

The standard conditions of the permit are based on 40 C.F.R. §122, Subparts A, C, and D and 40 C.F.R. § 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

## 6 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 habitat of such species that has been designated as critical (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 Marine Fisheries Service (NMFS) 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 City of Haverhill Water Pollution Abatement Facility, which discharges to the Merrimack River from Outfall 046 at 42.761111 N and 71.061667 W, along with thirteen Combined Sewer Overflow (CSO) discharges. Outfall 046 discharges through a diffuser at the end of a 1,143 ft long outfall pipe. The action area is within Merrimack River Segment MA84A-05. This segment is 1.8 miles in length and travels from the confluence with the Little River, Haverhill to the confluence of the Indian River, West Newbury/Amesbury.

The Draft Permit is intended to replace the 2008 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. For protected species under the jurisdiction of the USFWS, one listed endangered species, the northern long-eared bat (*Myotis septentrionalis*), was identified as potentially occurring in the action area of the Merrimack River.<sup>13</sup> According to the USFWS, the northern long-eared bat is found in “winter – mines and caves, summer – wide variety of forested habitats. This species is not aquatic, so the discharge will have no direct effect on this mammal. Further, the permit action is also expected to have no indirect effect on the species because it is not expected to impact insects, the primary prey of the northern long-

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<sup>13</sup>See §7 resources for USFWS at <https://ecos.fws.gov/ipac/>.



eared bat. Therefore, the proposed permit action is deemed to have no impact on this listed species.

For protected species under the jurisdiction of NMFS, subadult and adult life stages of Atlantic sturgeon (*Acipenser oxyrinchus*), as well as post yolk-sac larvae, young-of-year, juvenile and adult life stages of shortnose sturgeon (*Acipenser brevirostrom*), are present in the Merrimack River in the vicinity of the action area. Their upstream passage is limited by the Essex Dam (Great Stone Dam) in Lawrence, Massachusetts. In addition, areas of the Merrimack River downstream of the Essex Dam have been designated as critical habitat for Atlantic sturgeon.<sup>14</sup> These protected species life stages, as well as the listed Atlantic sturgeon critical habitat, are likely influenced by the discharge from this Facility.

Because these species may be affected by the discharge authorized by the proposed permit, EPA has evaluated the potential impacts of the permit action on these two species of sturgeon. On the basis of the evaluation, EPA's preliminary determination is that this action may affect, but is not likely to adversely affect, the life stages of shortnose sturgeon and Atlantic sturgeon expected to inhabit the Merrimack River in the vicinity of the action area of the discharge. In addition, EPA has made the preliminary determination that the proposed action may affect, but is not likely to adversely affect, the designated critical habitat that overlaps with the action area. Therefore, EPA has judged that a formal consultation pursuant to Section 7 of the ESA is not required. EPA is seeking concurrence from NMFS regarding this determination through the information in the Draft Permit, this Fact Sheet, as well as a letter that will be sent to NMFS Protected Resources Division under separate cover.

Reinitiation of consultation will take place: (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 consultation; (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 the consultation; or (c) if a new species is listed or critical habitat is designated that may be affected by the identified action.

## 6.2 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) (*see* 16 U.S.C. § 1801 *et seq.*, 1998), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat". *See* 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". *See* 16 U.S.C. § 1802(10). "Adverse impact" means any impact that reduces the quality and/or quantity of EFH, 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical

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<sup>14</sup> See §7 resources for NMFS at <https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=1bc332edc5204e03b250ac11f9914a27>

disruption), indirect (e.g., loss of prey, reduction in species' fecundity), 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. In some cases, a narrative identifies rivers and other waterways that should be considered EFH due to present or historic use by federally managed species.<sup>15</sup>

The Federal action being considered in this case is EPA's proposed NPDES permit for the City of Haverhill Water Pollution Abatement Facility, which discharges to the Merrimack River from Outfall 046 at latitude 42.761111 N, longitude 71.061667 W, along with thirteen Combined Sewer Overflow (CSO) discharges. Outfall 046 discharges through a diffuser at the end of a 1,143 ft long outfall pipe. The affected area is within Merrimack River Segment MA84A-05. This segment is 1.8 miles in length and travels from the confluence with the Little River, Haverhill to the confluence of the Indian River, West Newbury/Amesbury.

The Draft Permit is intended to replace the 2008 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to EFH and initiates consultation with the NMFS when required by the MSFCMA.

The following EFH species and life stages (Table 2) are believed to be present within the EFH Area, which encompasses the existing discharge site.

**Table 2. EFH Species and Life Stages Found in the Merrimack River Segment MA84A-04**

<b>Species/Management Unit</b>	<b>Lifestage(s) Found at Location</b>
Atlantic Wolffish	ALL
Winter Flounder	Eggs, Juvenile, Larvae/Adult, ALL
Atlantic Herring	Juvenile, Larvae, ALL
Pollock	Juvenile, Eggs, Larvae, ALL
Red Hake	Eggs/Larvae/Juvenile, ALL
Silver Hake	Eggs/Larvae, ALL
White Hake	Eggs, ALL
Atlantic Salmon	ALL

No "habitat areas of particular concern", as defined under §600.815(a)(9) of the Magnuson-Stevens Act, have been designated for this site. Although EFH has been designated for this location, EPA has concluded that this activity is not likely to adversely affect EFH or its associated species for the following reasons:

- This permit action does not constitute a new source of pollutants. It is the reissuance of an existing NPDES permit;
- The Facility withdraws no water from the Merrimack River, so no life stages of EFH species are vulnerable to impingement or entrainment from this facility;

<sup>15</sup> NOAA EFH Mapper available at <http://www.habitat.noaa.gov/protection/efh/efhmapper/>

- The flow from the Facility is limited by the Draft Permit to 18.1 mgd, as a monthly average;
- Effluent receives secondary treatment with extended aeration process;
- Effluent is discharged into the Merrimack River via a diffuser with a dilution factor of 32.3;
- The Draft Permit proposes to limit BOD, TSS, pH, total residual chlorine, *E. coli*, fecal coliform, total aluminum and total phosphorus;
- The Permittee is required to minimize the use of chlorine while maintaining adequate bacterial control;
- Acute toxicity tests will be continued four times a year. Present toxicity test results are in compliance with the permit limits;
- The Draft Permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life; and
- The Draft Permit prohibits violations of the state water quality standards.

EPA believes that the conditions and limitations contained within the Draft Permit adequately protect all aquatic life, including the designated EFH species in the receiving water, and that further mitigation is not warranted. Should adverse impacts to EFH be detected as a result of this permit action, or if new information is received that changes the basis for EPA's conclusions, NMFS will be contacted and an EFH consultation will be reinitiated.

In addition to this Fact Sheet and the Draft Permit, information to support EPA's finding is included in a letter under separate cover that will be sent to the NMFS Habitat Division during the public comment period.

## **7 Public Comments, Hearing Requests and Permit Appeals**

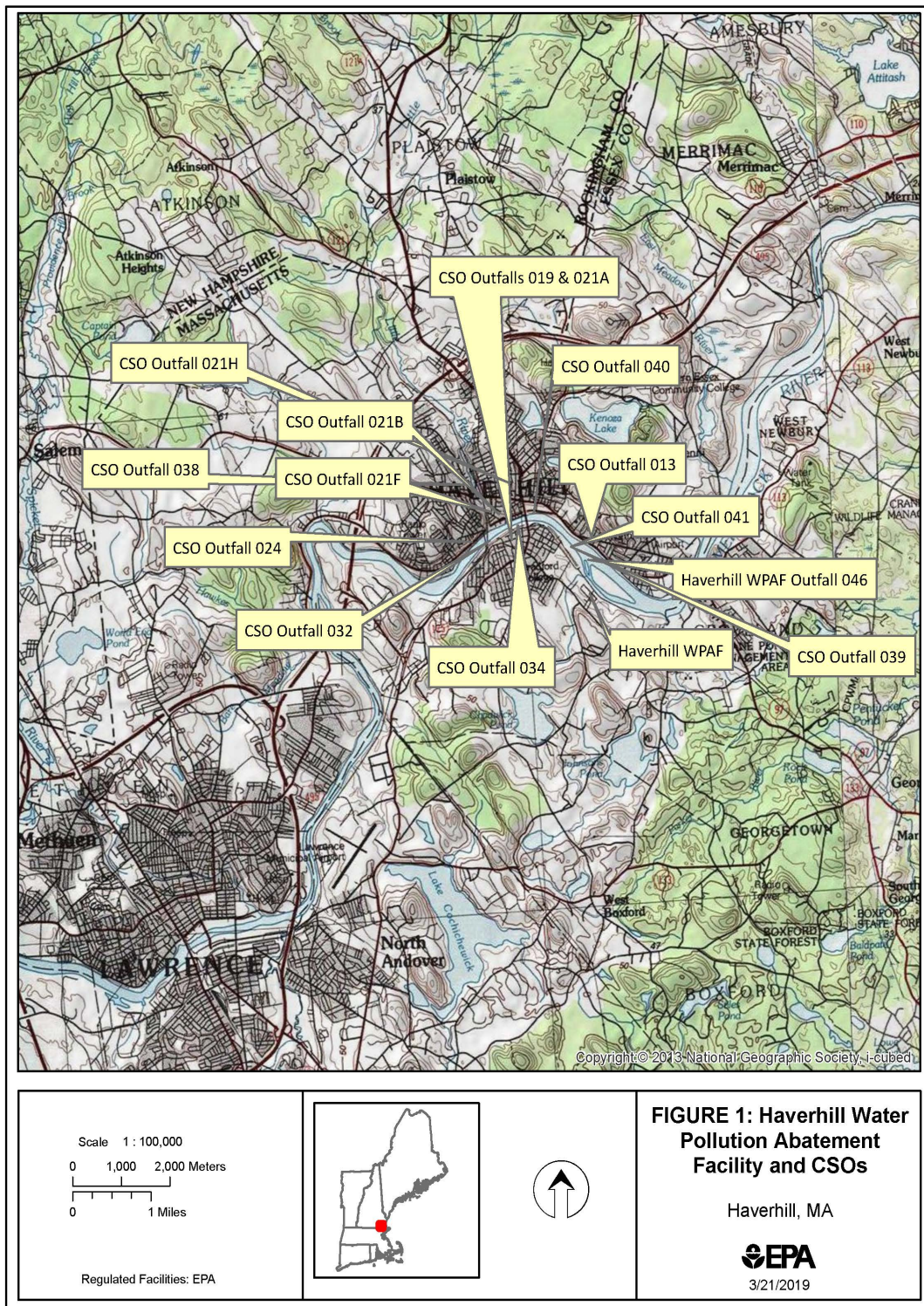
All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to Evan Lewis, U.S. EPA, Water Division, Municipal Permits Section, 5 Post Office Square, Suite 100 (06-4), Boston, Massachusetts 02109-3912 or via email to [lewis.evan@epa.gov](mailto:lewis.evan@epa.gov); and Jennifer Wood, MassDEP, Surface Water Discharge Permit Program, One Winter Street, 5<sup>th</sup> Floor, Boston, MA 02108 or via email to [jennifer.wood@mass.gov](mailto:jennifer.wood@mass.gov).

Any person, prior to the close of the public comment period, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

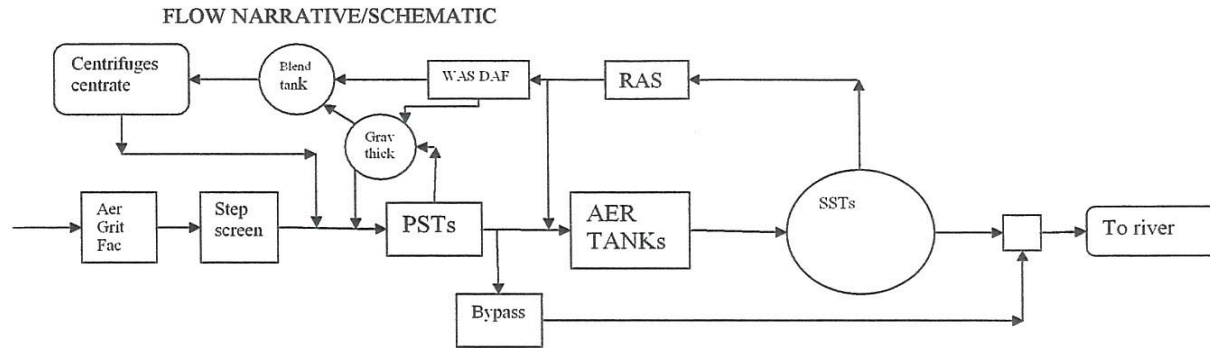
Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who



**Figure 1: Location of the Haverhill Water Pollution Abatement Facility**



**Figure 2: Flow diagram – Haverhill Water Pollution Abatement Facility**



$Q_{inf} = 100\%$  to  $AGF_{inf}$   
 $AGF_{eff} 100\%$  to Step Screens  
 $Step\ Screen_{eff} 100\%$  to PSTs      Primary Sludge to Gravity Thickeners  
 Dry Weather  $PST_{eff} 100\%$  to ATs    Wet Weather  $PST_{eff}$  divided between AT and Bypass  
 $AT_{eff} 100\%$  to SSTs  
 $RAS$  Rate is equal to  $100\% \pm Q_{inf}$   
 $WAS$  Rate is  $\sim 100,000$  to  $150,000$  gpd, 5 days/week to DAF  
 $SST_{eff} 100\%$  to  $cl_2$  contact  
 DAF overflow to Gravity Thickeners estimate 60,000 to 80,000 gpd  
 Gravity thickeners overflow to PST Inlet channel  
 TWAS and Primary Sludge to centrifuge 80,000 gpd  
 Centrate from Centrifuge to PST Inlet channel estimate 70,000 gallons per operational day

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## APPENDIX A

## DISCHARGE MONITORING REPORT SUMMARY

## Outfall 046

Parameter	Flow	Flow	Flow	BOD5	BOD5	BOD5	BOD5
	Annual Rolling Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave
Units	MGD	MGD	MGD	lb/d	mg/L	lb/d	mg/L
Effluent Limit	18.1	Report	Report	4529	30	Report	45
Minimum	8.22	5.59	7.78	489	5.84	615	6.8
Maximum	12.43	22.64	46.27	4792	40.4	16767	81.9
Average	9.89	10.3	21.7	1520	17.5	2620	25.5
No. of Violations	0	N/A	N/A	1	7	N/A	6
1/31/2014	9.99	11.19	23.53	1249	9.1	2888	17.1
2/28/2014	9.92	9.95	21.06	489	6.2	615	6.8
3/31/2014	9.77	14.31	44.13	4792	29	5946	50.4
4/30/2014	10.14	16.73	27.06	3674	22.3	16767	68
5/31/2014	10.18	10.7	21.16	1569	11.4	1168	12.8
6/30/2014	9.64	7.77	13.07	713	11	1174	17.8
7/31/2014	9.47	8.12	18.52	2810	34.2	7304	81.9
8/31/2014	9.46	7.25	22.45	2768	32	7053	57.1
9/30/2014	9.39	6.4	9.85	2415	40.4	4088	49.4
10/31/2014	9.55	8.15	36.06	2566	35.5	4232	67.2
11/30/2014	9.71	8.86	18.16	1094	14.41	1434	22.9
12/31/2014	10.4	16.19	39.35	1003	7.42	1468	9.6
1/31/2015	10.34	10.48	23.91	965	8.78	2378	16.32
2/28/2015	10.18	7.84	8.56	1019	14.86	1110	15.96
3/31/2015	10.04	12.73	23.32	1665	15.5	2676	22.1
4/30/2015	10.07	16.1	24.64	2039	15.3	3087	19.8
5/31/2015	9.92	8.95	12.82	1440	20.7	1583	25.5
6/30/2015	10.16	10.68	27.53	2480	27.4	3582	36.5
7/31/2015	10.16	8.09	19.26	1531	21.7	2232	26.5
8/31/2015	10.09	6.45	12.7	1503	27.6	1744	32.5
9/30/2015	10.09	6.43	26.92	873	17.5	1076	23.9
10/31/2015	9.95	6.42	13.54	883	16.69	2158	33.94
11/30/2015	9.82	7.28	14.54	989	17.2	1117	20
12/31/2015	9.14	8.25	14.26	1345	19	1852	24.4
1/31/2016	9.12	10.28	26.71	1154	11.4	2608	18.8
2/29/2016	9.36	10.81	20.37	1198	13.5	1875	18.1
3/31/2016	9.29	11.97	19.49	2275	21.8	3528	30.3
4/30/2016	8.91	11.5	26.01	2415	25.7	3528	36.2
5/31/2016	8.86	8.32	11.08	2676	35.35	3476	41.32
6/30/2016	8.54	6.73	16.42	2038	34.6	2649	39.1
7/31/2016	8.33	5.59	7.78	1602	33.4	1958	41.2
8/31/2016	8.25	5.61	13.02	852	15.8	1502	28.5
9/30/2016	8.22	5.98	14.39	1051	19.93	1523	21.97
10/31/2016	8.35	7.95	19.12	1197	20.29	1813	38.39

## APPENDIX A

## DISCHARGE MONITORING REPORT SUMMARY

## Outfall 046

Parameter	Flow	Flow	Flow	BOD5	BOD5	BOD5	BOD5
	Annual Rolling Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave
Units	MGD	MGD	MGD	lb/d	mg/L	lb/d	mg/L
Effluent Limit	18.1	Report	Report	4529	30	Report	45
11/30/2016	8.39	7.83	16.08	1490	20.3	2230	24.47
12/31/2016	8.48	9.2	16.55	1010	14.47	1156	15.07
1/31/2017	8.68	12.71	23.93	1976	16.69	2595	18.38
2/28/2017	8.79	12.33	21.31	1467	14.81	1658	18.48
3/31/2017	8.88	13.01	23	2332	18.71	7958	43.95
4/30/2017	9.59	20.14	40.77	2574	14.45	5679	21.75
5/31/2017	10	13.2	24.09	1898	16.84	2893	20.47
6/30/2017	10.43	11.9	28.14	1771	16.38	2688	18.1
7/31/2017	10.63	7.92	15.01	1257	16.46	1507	21.93
8/31/2017	10.71	6.58	12.35	874	15.13	1250	19.38
9/30/2017	10.86	7.79	17.49	1083	13	2144	21.23
10/31/2017	10.84	7.78	20.89	1585	20.01	2726	33.58
11/30/2017	10.93	8.9	14.89	1660	22.43	2839	34.02
12/31/2017	10.89	8.69	13.07	722	9.48	951	11.83
1/31/2018	10.74	11.04	24.34	807	8.89	1216	11.25
2/28/2018	10.84	13.58	31.97	745	5.84	1146	6.86
3/31/2018	11.08	15.82	27.27	845	6.54	960	7.84
4/30/2018	10.76	16.25	37.08	1007	7	1837	8.84
5/31/2018	10.57	11.01	17.02	904	9.58	1186	10.19
6/30/2018	10.27	8.23	18.67	779	11.69	988	13.42
7/31/2018	10.24	7.55	18.71	767	10.98	1351	16.49
8/31/2018	10.41	8.57	16.79	1013	14.91	1122	17.81
9/30/2018	10.55	9.47	30.33	1102	12.46	1404	13.26
10/31/2018	10.8	10.7	22.92	955	10.8	1213	13.28
11/30/2018	11.93	22.64	46.27	1399	6.96	1983	8.12
12/31/2018	12.43	14.64	30.91	1054	8.46	1605	8.46



## APPENDIX A

## DISCHARGE MONITORING REPORT SUMMARY

## Outfall 046

Parameter	BOD5	BOD5	BOD5	TSS	TSS	TSS	TSS
	Daily Max	Daily Max	Monthly Ave Min	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave
Units	lb/d	mg/L	%	lb/d	mg/L	lb/d	mg/L
Effluent Limit	Report	Report	85	4529	30	Report	45
Minimum	1082	8.09	86.9	374	4.72	469	5.72
Maximum	27800	212.6	97.8	4746	31.36	17791	117.96
Average	6200	46.6	94.2	1250	12.4	2780	23.1
No. of Violations	N/A	N/A	0	1	1	N/A	7
1/31/2014	12928	65.9	96.2	2106	14.76	4589	28.34
2/28/2014	1265	11.9	97.8	374	4.72	469	5.76
3/31/2014	26738	85.8	87.4	4746	28.5	6823	50.24
4/30/2014	17156	101.1	86.9	4210	25.41	17791	74.84
5/31/2014	23369	132.4	90.2	2281	15.41	977	10.8
6/30/2014	2206	25.6	97.1	591	8.11	1542	19.36
7/31/2014	23420	212.6	94.4	2774	31.36	10836	117.96
8/31/2014	27800	148.5	92	1745	12.98	6343	36.54
9/30/2014	12554	152.8	92	1689	26.16	4229	53.56
10/31/2014	9186	111	90	1663	23.65	5405	81.88
11/30/2014	3047	32.94	93.7	419	5.65	475	6.38
12/31/2014	1940	13.18	97.3	803	5.63	1433	6.68
1/31/2015	7131	35.76	96.1	1044	9.37	2608	17.14
2/28/2015	1655	24.41	95.9	523	7.85	743	10.69
3/31/2015	4931	31.8	93.5	761	7.16	909	7.64
4/30/2015	6285	33.3	90.6	1320	9.29	2421	14.22
5/31/2015	2355	30.1	93.1	575	7.46	600	8.6
6/30/2015	6392	54.3	91.4	2350	17.65	1966	17
7/31/2015	3264	38.1	92.9	785	8.4	7795	50.64
8/31/2015	2880	40.7	93.1	587	10.74	711	14.08
9/30/2015	1261	30.7	96.1	375	6.46	596	8
10/31/2015	5495	59.25	96.4	989	14.21	2797	32.44
11/30/2015	1744	28.7	96.2	481	8.38	622	10.42
12/31/2015	2934	33.1	94.8	836	11.51	1342	13.25
1/31/2016	6745	30	96.6	1224	11.76	2928	21.02
2/29/2016	4383	38.1	96	1185	11.37	1888	14.86
3/31/2016	6151	40.2	92.6	1439	12.59	2372	18.44
4/30/2016	4050	47.9	91.7	1750	18.62	3000	35.8
5/31/2016	5907	69.51	92.1	1806	23.83	3481	40.48
6/30/2016	5027	62.3	94.6	1045	17.64	1766	25.62
7/31/2016	2316	46.4	94	619	13.33	841	17.28
8/31/2016	4707	43.4	96.9	639	10.99	1359	18.08
9/30/2016	4235	35.68	96.1	607	10.36	1215	15.16
10/31/2016	4366	87.75	95.8	762	13.12	1261	26.08

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## DISCHARGE MONITORING REPORT SUMMARY

## Outfall 046

Parameter	BOD5	BOD5	BOD5	TSS	TSS	TSS	TSS
	Daily Max	Daily Max	Monthly Ave Min	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave
Units	lb/d	mg/L	%	lb/d	mg/L	lb/d	mg/L
Effluent Limit	Report	Report	85	4529	30	Report	45
11/30/2016	5173	38.57	95.6	1299	16.11	2189	22.53
12/31/2016	2642	35.14	96.2	1402	15.13	3115	28.68
1/31/2017	5537	37.09	93.1	1800	12.97	3802	21.08
2/28/2017	2057	23.12	93.7	677	6.5	671	7.2
3/31/2017	15262	80.19	91.6	1986	14.71	5577	31.08
4/30/2017	11175	46	90.8	4418	21.87	13546	54.15
5/31/2017	6656	33.13	93.7	1209	9.82	2330	14.87
6/30/2017	7698	38.46	96.1	1704	13.62	3518	25.96
7/31/2017	4783	38.21	96.6	2005	21.56	4666	40.2
8/31/2017	4054	39.36	96.9	745	12.33	1488	19.44
9/30/2017	5536	37.95	95.7	966	11.62	2581	23.91
10/31/2017	5272	42	93.9	1207	15.61	2050	25.99
11/30/2017	3150	55.29	92.4	1081	14.15	2183	19.75
12/31/2017	1766	16.65	95.9	737	9.9	1063	13.59
1/31/2018	2196	15.1	95.1	901	10.09	1316	12.43
2/28/2018	3258	12.22	96.1	1010	7.77	1594	9.18
3/31/2018	1082	8.09	95.9	766	5.98	1087	7.72
4/30/2018	4493	14.53	95.5	908	6.02	1644	8.28
5/31/2018	1299	12.76	95	641	7.18	852	11.88
6/30/2018	1831	31.18	95.1	505	6.69	652	8.68
7/31/2018	2534	20.38	95.4	441	6.11	849	10.24
8/31/2018	1778	25	94.3	561	7.85	802	9.45
9/30/2018	4174	19.19	93.5	614	6.73	838	9.08
10/31/2018	2272	15.78	94.5	436	4.9	537	5.72
11/30/2018	5985	15.51	92.3	1164	5.65	1760	6.6
12/31/2018	4506	10.66	94.3	913	6.76	1840	8.68

## APPENDIX A

## DISCHARGE MONITORING REPORT SUMMARY

## Outfall 046

Parameter	TSS	TSS	TSS	pH	pH	Fecal Coliform	Fecal Coliform
	Daily Max	Daily Max	Monthly Ave Min	Minimum	Maximum	Monthly Geometric Mean	Daily Max
Units	lb/d	mg/L	%	SU	SU	CFU/100mL	CFU/100mL
Effluent Limit	Report	Report	85	6.5	8.5	88	260
Minimum	768	8.5	85.3	6.2	6.8	1.1	2
Maximum	38824	334	98.2	6.9	8.2	260	8000
Average	8690	61.8	95.5	6.53	7.25	7.84	302
No. of Violations	N/A	N/A	0	16	0	1	5
1/31/2014	21488	109.5	91.5	6.5	7	2	255
2/28/2014	1109	11.4	98.2	6.5	7	1.3	4
3/31/2014	28207	102	85.3	6.3	7	1.9	26
4/30/2014	19703	134	86.2	6.3	7.5	260	900
5/31/2014	38824	220	94.3	6.3	7	1.4	15
6/30/2014	6405	74.2	97.9	6.4	6.9	3.3	55
7/31/2014	36797	334	89.8	6.4	7.3	25.2	82
8/31/2014	30706	164	96	6.5	7	5.8	36
9/30/2014	19634	239	96.8	6.6	7.3	4.3	100
10/31/2014	11800	156	97.5	6.8	7.2	1.3	88
11/30/2014	768	12.3	98.2	6.5	7.2	1.6	8
12/31/2014	2322	8.8	97.7	6.5	7.2	1.8	15
1/31/2015	8515	42.7	95.8	6.5	7.1	1.2	6
2/28/2015	1062	15.67	97.6	6.5	7.2	1.2	5
3/31/2015	1599	11.2	97.2	6.6	6.9	1.1	3
4/30/2015	7298	38.7	95.3	6.5	6.9	1.2	7
5/31/2015	1202	14.3	97.7	6.6	6.9	1.4	89
6/30/2015	27066	161.3	94.3	6.6	7	1.9	180
7/31/2015	8995	58	97.3	6.5	7.3	1.8	7
8/31/2015	1402	22	96.7	6.7	7.2	1.9	103
9/30/2015	1888	8.5	98.1	6.7	7.2	2.3	4400
10/31/2015	6306	68	96.1	6.6	7	2.8	160
11/30/2015	1224	15.7	97.6	6.4	7	1.9	16
12/31/2015	2581	21.7	96	6.2	7.4	2.2	31
1/31/2016	7797	35	95.2	6.4	7	1.2	3
2/29/2016	5467	36.7	94.9	6.3	7.3	1.3	7
3/31/2016	7809	51	95.1	6.5	7	1.2	4
4/30/2016	5244	63	93.1	6.5	6.8	1.7	250
5/31/2016	7471	88	93.2	6.6	7.2	2.4	220
6/30/2016	4361	70	96.7	6.7	7.2	4.2	470
7/31/2016	1084	21	97.4	6.8	7.8	1.7	10
8/31/2016	4734	43.6	97.4	6.6	7.2	2.3	118
9/30/2016	4224	35.2	97	6.7	7.3	11.5	157
10/31/2016	4242	88	96.8	6.3	7.2	3.5	8000

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## DISCHARGE MONITORING REPORT SUMMARY

## Outfall 046

Parameter	TSS	TSS	TSS	pH	pH	Fecal Coliform	Fecal Coliform
	Daily Max	Daily Max	Monthly Ave Min	Minimum	Maximum	Monthly Geometric Mean	Daily Max
Units	lb/d	mg/L	%	SU	SU	CFU/100mL	CFU/100mL
Effluent Limit	Report	Report	85	6.5	8.5	88	260
11/30/2016	7242	54	96.1	6.4	6.8	3.8	16
12/31/2016	11972	90	95.1	6.3	7	3.2	23
1/31/2017	15567	78	94.6	6.5	7.4	3	69
2/28/2017	1646	11	97.2	6.5	7.7	3.5	188
3/31/2017	14885	77.6	92	6.6	7.9	2.2	205
4/30/2017	31021	137	86.6	6.7	7.5	2.8	180
5/31/2017	7500	37.33	95.8	6.7	7.4	5.7	600
6/30/2017	16137	110	96.5	6.5	7.9	9.1	203
7/31/2017	21657	173	94.9	6.4	8.2	4.7	67
8/31/2017	5047	49	96.5	6.9	7.4	12.3	168
9/30/2017	8363	57.33	95.9	6.9	7.3	5.2	17
10/31/2017	4514	40	95	6.5	7.3	5.2	55
11/30/2017	1945	20.67	94.5	6.7	7.6	2.7	20
12/31/2017	1610	18	95.6	6.4	7.7	1.1	2
1/31/2018	2003	19.6	93.9	6.3	7.4	1.8	13
2/28/2018	4874	18.28	94.6	6.7	7.2	1.7	8
3/31/2018	1496	10.4	95.7	6.7	7.4	1.3	3
4/30/2018	3278	13.2	95.9	6.8	7.2	1.4	16
5/31/2018	1656	14.2	96.6	6.4	7.1	1.2	4
6/30/2018	1588	13.4	97.6	6.5	7.6	1.1	2
7/31/2018	1685	14.6	98	6.6	7.5	1.8	6
8/31/2018	1259	11.75	97	6.5	7.5	6.3	67
9/30/2018	2404	20	97.6	6.5	7.2	5.2	25
10/31/2018	1018	10.6	97.7	6.5	7.1	2.6	23
11/30/2018	5557	14.4	95.4	6.5	7.2	3.7	41
12/31/2018	5929	23	95.7	6.5	7	16	246

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## DISCHARGE MONITORING REPORT SUMMARY

## Outfall 046

Parameter	TRC	TRC	Enterococci	Chlorine rate	Enterococci
	Monthly Ave	Daily Max	Monthly Geometric Mean	Daily Max	Daily Max
Units	mg/L	mg/L	CFU/100mL	mg/L	CFU/100mL
Effluent Limit	0.4	0.7	35	Report	276
Minimum	0.27	0.33	1	No Data	1
Maximum	0.53	2.2	1473	No Data	2000
Average	0.347	0.598	89.4	No Data	237
No. of Violations	1	1	12	N/A	13
1/31/2014	0.28	0.38	24	NODI: G	24
2/28/2014	0.32	0.53	28	NODI: G	28
3/31/2014	0.34	0.54	127	NODI: G	400
4/30/2014	0.36	0.58	24	NODI: G	24
5/31/2014	0.35	0.57	132	NODI: G	700
6/30/2014	0.31	0.59	743	NODI: G	2000
7/31/2014	0.33	0.6	30	NODI: G	30
8/31/2014	0.37	0.67	200	NODI: G	210
9/30/2014	0.37	0.65	10	NODI: G	10
10/31/2014	0.53	2.2	60	NODI: G	60
11/30/2014	0.34	0.57	30	NODI: G	30
12/31/2014	0.35	0.69	1	NODI: G	1
1/31/2015	0.32	0.57	411	NODI: G	805
2/28/2015	0.33	0.51	457	NODI: G	890
3/31/2015	0.36	0.6	788	NODI: G	1320
4/30/2015	0.35	0.62	33	NODI: G	1120
5/31/2015	0.33	0.57	239	NODI: G	1560
6/30/2015	0.35	0.65	30	NODI: G	30
7/31/2015	0.35	0.56	56	NODI: G	120
8/31/2015	0.33	0.61	15	NODI: G	15
9/30/2015	0.37	0.64	8	NODI: G	60
10/31/2015	0.37	0.63	22	NODI: G	50
11/30/2015	0.35	0.59	8	NODI: G	72
12/31/2015	0.31	0.56	1473	NODI: G	2000
1/31/2016	0.34	0.64	1	NODI: G	1
2/29/2016	0.33	0.49	1	NODI: G	1
3/31/2016	0.37	0.61	164	NODI: G	800
4/30/2016	0.36	0.64	18	NODI: G	330
5/31/2016	0.37	0.59	1	NODI: G	1
6/30/2016	0.35	0.54	25	NODI: G	25
7/31/2016	0.35	0.55	33	NODI: G	55
8/31/2016	0.33	0.59	1	NODI: G	1
9/30/2016	0.31	0.5	1	NODI: X	1
10/31/2016	0.33	0.61	1	NODI: X	1

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## DISCHARGE MONITORING REPORT SUMMARY

## Outfall 046

Parameter	TRC	TRC	Enterococci	Chlorine rate	Enterococci
	Monthly Ave	Daily Max	Monthly Geometric Mean	Daily Max	Daily Max
Units	mg/L	mg/L	CFU/100mL	mg/L	CFU/100mL
Effluent Limit	0.4	0.7	35	Report	276
11/30/2016	0.33	0.52	5	NODI: X	5
12/31/2016	0.35	0.52	8	NODI: X	8
1/31/2017	0.37	0.64	16	NODI: X	16
2/28/2017	0.36	0.61	6	NODI: X	6
3/31/2017	0.35	0.59	2	NODI: X	2
4/30/2017	0.35	0.54	14	NODI: X	14
5/31/2017	0.34	0.55	1	NODI: X	1
6/30/2017	0.38	0.57	6	NODI: X	6
7/31/2017	0.33	0.45	2	NODI: X	2
8/31/2017	0.37	0.54	28	NODI: X	800
9/30/2017	0.37	0.6	2	NODI: X	2
10/31/2017	0.39	0.62	1	NODI: X	1
11/30/2017	0.36	0.58	1	NODI: X	1
12/31/2017	0.38	0.55	6	NODI: X	6
1/31/2018	0.33	0.51	6	NODI: X	6
2/28/2018	0.36	0.6	5	NODI: X	5
3/31/2018	0.35	0.68	4	NODI: X	4
4/30/2018	0.37	0.65	1	NODI: X	1
5/31/2018	0.36	0.59	2	NODI: X	2
6/30/2018	0.36	0.54	28		400
7/31/2018	0.29	0.53	1	NODI: X	1
8/31/2018	0.3	0.48	1	NODI: X	1
9/30/2018	0.34	0.49	1	NODI: X	1
10/31/2018	0.34	0.52	1	NODI: X	1
11/30/2018	0.27	0.33	1	NODI: X	1
12/31/2018	0.33	0.61	17	NODI: X	146

## APPENDIX A

## DISCHARGE MONITORING REPORT SUMMARY

## WET - Effluent Data

Parameter	LC50 Static 48Hr Acute Pimephales	Ammonia	pH	Hardness	Aluminum	Cadmium	Copper	Lead	Nickel
	Daily Min	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	%	mg/L	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	100	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	66	0.1	6.4	22.7	0.029	0	0	0	0
Maximum	100	17.9	7.5	174	0.197	0	0.01	0.0014	0.008
Average	98.4	5.77	6.92	130	0.0905	0	0.00324	0.000315	0.00287
No. of Violations	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/31/2014	100	0.1	6.8	157	0.048	0	0.0031	0	0.0024
4/30/2014	100	1.06	7.2	135	0.167	0	0.007	0.0014	0.004
7/31/2014	100	4.71	7.1	112	0.071	0	0.004	0	0.002
10/31/2014	100	17.9	6.9	140	0.139	0	0.002	0	0.004
1/31/2015	100								
4/30/2015	100	8.22	6.9	139	0.149	0	0	0	0.003
7/31/2015	100	17.2	7.5	34.6	0.197	0	0	0.0007	0.002
10/31/2015	100	2.63	6.9	110	0.121	0	0	0.0006	0
1/31/2016	100	1.81	7	171	0.139	0	0	0	0.001
4/30/2016	100	10.4	6.6	174	0.041	0	0.004	0	0.003
7/31/2016	100	16.30	7.4	77.7	0.083	0	0.004	0	0.008
10/31/2016	100	15.8	7	106	0.063	0	0.01	0.0012	0.002
1/31/2017	100	4.74	6.6	155	0.061	0	0.003	0.0005	0.003
4/30/2017	100	2.61	6.6	171	0.045	0	0.001	0.0007	0.004
7/31/2017	100	1.28	6.4	162	0.029	0	0.004	0.0006	0.003
10/31/2017	100	1.96	6.9	128	0.155	0	0.0054	0	0.003
1/31/2018	100	2.13	6.8	169	0.077	0	0.0062	0	0.003
4/30/2018	66	1.98	7	164	0.063	0	0.0026	0	0.003
5/31/2018	100	1.47	6.6	157	0.065	0	0.0036	0	0.004
7/31/2018	100	0.66	7.2	115	0.051	0	0.0049	0	0.003
10/31/2018	100	2.39	6.9	22.7	0.045	0	0	0.0006	0

## APPENDIX A

## DISCHARGE MONITORING REPORT SUMMARY

## WET - Effluent Data

Parameter	Zinc
	Daily Max
Units	mg/L
Effluent Limit	Report
Minimum	0.006
Maximum	0.183
Average	0.108
No. of Violations	N/A
1/31/2014	0.18
4/30/2014	0.135
7/31/2014	0.116
10/31/2014	0.126
1/31/2015	
4/30/2015	0.064
7/31/2015	0.007
10/31/2015	0.078
1/31/2016	0.136
4/30/2016	0.091
7/31/2016	0.128
10/31/2016	0.079
1/31/2017	0.152
4/30/2017	0.102
7/31/2017	0.126
10/31/2017	0.122
1/31/2018	0.183
4/30/2018	0.114
5/31/2018	0.097
7/31/2018	0.114
10/31/2018	0.006



## APPENDIX A

## DISCHARGE MONITORING REPORT SUMMARY

## WET - Ambient Data

Parameter	Ammonia	pH	Hardness	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limi	Report	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	6.7	16	0	0	0	0	0	0.004
Maximum	0.79	7.42	206	0.272	0.0001	0.012	0.0111	0.005	0.103
Median	0.25	6.9	22	0.17	0	0	0.0003	0	0.007
1/31/2014	0.31	7	22	0.207	0	0.0009	0.0009	0.0006	0.0117
4/30/2014	0.20	6.7	16	0.221	0	0.002	0.0007	0	0.01
7/31/2014	0.27	7.1	20.4	0.094	0	0.001	0.0009	0	0.007
10/31/2014	0.79	6.9	16.9	0.255	0	0	0.0008	0	0.01
1/31/2015									
4/30/2015	0.29	6.9	17.2	0.272	0	0	0.0006	0	0.005
7/31/2015	0.15	7.2	206	0.134	0	0.012	0	0.005	0.033
10/31/2015	0.29	7.04	21.5	0.217	0.0001	0	0.0009	0	0.006
1/31/2016	0.25	6.72	21.5	0.17	0	0	0	0	0.005
4/30/2016	0.20	6.9	24.5	0.119	0	0.003	0.0007	0	0.004
7/31/2016	0.2	6.9	27.3	0.122	0	0	0	0	0.005
10/31/2016	0.18	6.7	32.1	0.18	0	0	0	0.002	0.007
1/31/2017	0.46	7	35.3	0.09	0	0	0.0003	0.001	0.014
4/30/2017	0.23	6.9	19.2	0.189	0	0	0.0006	0	0.006
7/31/2017	0.26	6.7	20.6	0.201	0	0.002	0.0111	0	0.007
10/31/2017	0.15	6.9	32.2	0	0	0	0	0	0.007
1/31/2018	0.32	6.89	21.6	0.22	0	0.0011	0	0	0.011
4/30/2018	0.22	7	24.2	0.077	0	0	0	0	0.006
5/31/2018	0.26	7.21	26.4	0.102	0	0.0019	0	0	0.006
7/31/2018	0.00	7.42	32	0.05	0	0.0017	0	0	0.007
10/31/2018	0.07	6.82	150	0.039	0	0.0037	0	0.004	0.103

**APPENDIX B  
METALS REASONABLE POTENTIAL AND LIMITS CALCULATIONS**

Metal	Q <sub>s</sub>	C <sub>s</sub> <sup>1</sup>	Q <sub>d</sub>	C <sub>d</sub> <sup>2</sup>		Q <sub>r</sub>	C <sub>r</sub>		Criteria		Acute Reasonable Potential	Chronic Reasonable Potential	Limits	
	cfs	µg/l	cfs	Acute (µg/l)	Chronic (µg/l)	cfs	Acute (µg/l)	Chronic (µg/l)	Acute (µg/l)	Chronic (µg/l)	C <sub>d</sub> & C <sub>r</sub> > Criteria	C <sub>d</sub> & C <sub>r</sub> > Criteria	Acute (µg/l)	Chronic (µg/l)
Aluminum	876	152.0	28	194.3	194.3	904	153.31	153.3	750	87	N	Y	N/A	87.0
Cadmium		0.0		0.0	0.0		0.10	N	N	N/A	N/A			
Copper		0.0		8.7	8.7		0.27	0.27	4.04	3.02	N	N	N/A	N/A
Lead		0.2		1.1	1.1		0.18	0.18	15.21	0.59	N	N	N/A	N/A
Nickel		0.0		5.7	5.7		0.18	0.18	153.56	17.07	N	N	N/A	N/A
Zinc		7.0		393.8	393.8		18.99	19.0	39.15	39.15	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 ≥ 10) or maximum (for n < 10) concentrations from the DMR data and/or WET testing data during the review period (see Appendices A & C). If the metal already has a limit (for either acute or chronic conditions), the value represents the existing limit.

## Appendix C

### Statistical Approach for Effluent Data (N ≥ 10)

EPA bases its determination of “reasonable potential” on a characterization of the upper bound of expected effluent concentrations based on a statistical analysis of the available monitoring data. As noted in the *Technical Support Document for Water Quality Based Toxics Control* (EPA 1991) (“TSD”), “[a]ll monitoring data, including results for concentrations of individual chemicals, have some degree of uncertainty associated with them. The more limited the amount of test data available, the larger the uncertainty.” Thus, with a limited data set, the maximum concentration that has been found in the samples may not reflect the full range of effluent concentration.

To account for this, EPA has developed a statistical approach to characterizing effluent variability when the monitoring dataset includes 10 or more samples.<sup>1</sup> As “experience has shown that daily pollutant discharges are generally lognormally distributed,” *TSD* at App. E, EPA uses a lognormal distribution to model the shape of the observed data, unless analysis indicates a different distributional model provides a better fit to the data. The model parameters (mean and variance) are derived from the monitoring data. The model parameter  $\mu$  is the mean of the natural logs of the monitoring data values, while  $\sigma$  is the standard deviation of the natural logs of the monitoring data values.

The lognormal distribution generally provides a good fit to environmental data because it is bounded on the lower end (i.e. you cannot have pollutant concentrations less than zero) and is positively skewed. It also has the practical benefit that if an original lognormal data set  $X$  is logarithmically transformed (i.e.  $Y = \ln[X]$ ) the resulting variable  $Y$  will be normally distributed. Then the upper percentile expected values of  $X$  can be calculated using the z-score of the standardized normal distribution (i.e. the normal distribution with mean = 0 and variance = 1), a common and relatively simple statistical calculation. The  $p^{\text{th}}$  percentile of  $X$  is estimated by

$$X_p = \exp(\mu_y + z_p \times \sigma_y),$$

where  $\mu_y$  = mean of  $Y$   
 $\sigma_y$  = standard deviation of  $Y$   
 $Y = \ln[X]$   
 $z_p$  = the z-score for percentile “p”

For the 95<sup>th</sup> percentile,  $z_{95} = 1.645$ , so that

$$X_{95} = \exp(\mu_y + 1.645 \times \sigma_y)$$

The 95<sup>th</sup> percentile value is used to determine whether a discharge has a reasonable potential to cause or contribute to an exceedance of a water quality standard. The combination of the upper bound effluent concentration with dilution in the receiving water is calculated to determine whether the water quality criteria will be exceeded.

#### Datasets including non-detect values

The *TSD* also includes a procedure for determine such percentiles when the dataset includes non-detect results, based on a delta-lognormal distribution. In the delta-lognormal procedures, non-detect values are weighted in proportion to their occurrence in the data. The values above the detection limit are assumed to be lognormally distributed values.

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<sup>1</sup> A different statistical approach is applied where the monitoring data set includes less than 10 samples.

The statistical derivation of the delta-lognormal upper bounds is quite complex and is set forth in the TSD at Appendix E. Calculation of the 95<sup>th</sup> percentile of the distribution, however, involves a relatively straightforward adjustment of the equations given above for the lognormal distribution, as follows.

For the delta-lognormal, the p<sup>th</sup> percentile of X, referred to here as X<sub>p</sub><sup>\*</sup>, is given by

$$X_p^* = \exp(\mu_y^* + z_p^* \times \sigma_y^*),$$

where  $\mu_y^*$  = mean of Y values for data points above the detection limit;  
 $\sigma_y^*$  = standard deviation of Y for data points above the detection limit;  
 $Y = \ln[X^*]$ ;  
 $X^*$  = monitoring data above detection limit; and  
 $z_p^*$  = an adjusted z score that is given by the equation:

$$z_p^* = z\text{-score}[(p - \delta)/(1 - \delta)]$$

where  $\delta$  is the proportion of non-detects in the monitoring dataset.

$k$  = total number of dataset  
 $r$  = number of non-detect values in the dataset  
 $\delta = r/k$

For the 95<sup>th</sup> percentile, this takes the form of  $z_p^* = z\text{-score}[(.95 - \delta)/(1 - \delta)]$ . The resulting values of  $z_p^*$  for various values of  $\delta$  is set forth in the table below; the calculation is easily performed in excel or other spreadsheet programs.

<b>Example calculations of <math>z_p^*</math> for 95th percentile</b>		
$\delta$	$(0.95 - \delta) / (1 - \delta)$	$z_p^*$
0	0.95	1.645
0.1	0.94	1.593
0.3	0.93	1.465
0.5	0.90	1.282
0.7	0.83	0.967

## 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

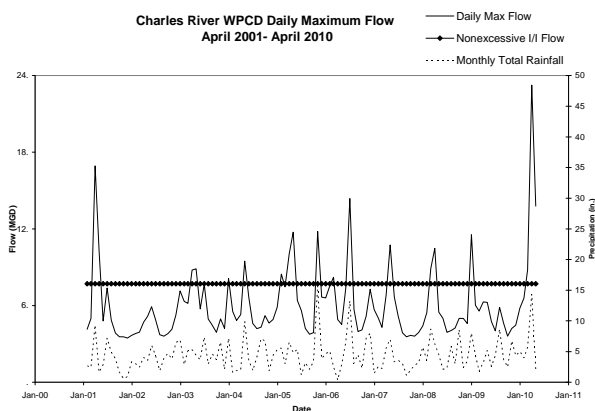
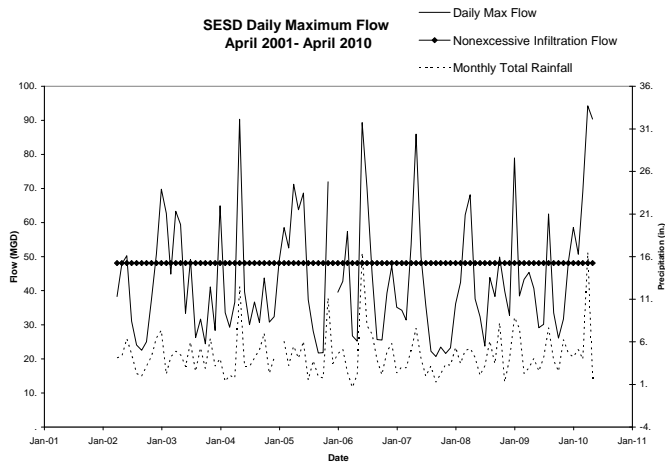


Figure 2. SESD Daily Maximum Flow Compared to Nonexcessive I/I Standard



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

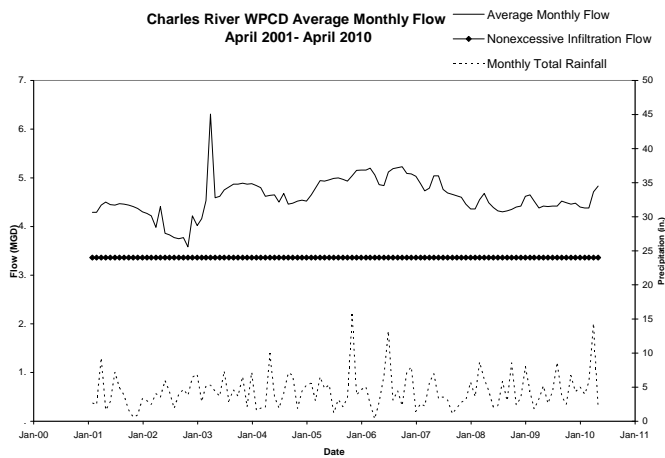
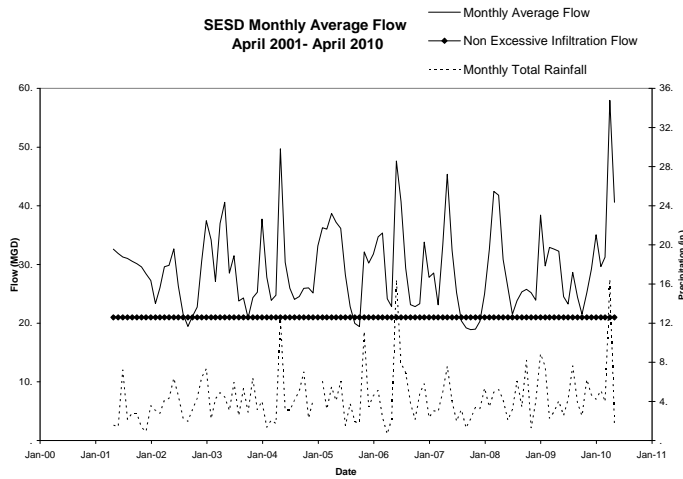


Figure 4. SESD Monthly Average Flow Compared to Nonexcessive Infiltration Standard



## 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

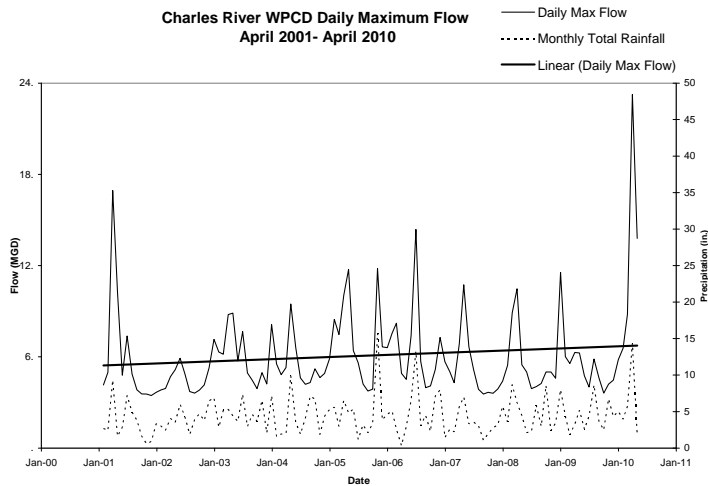
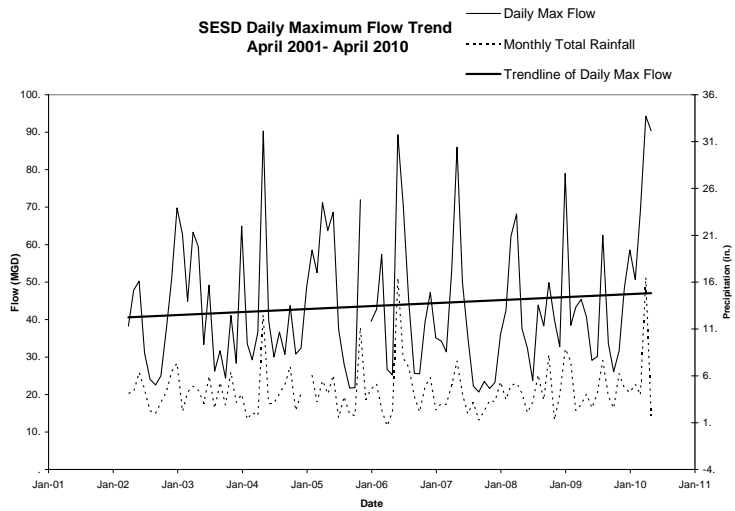


Figure 6. SESD Daily Maximum Flow Trend



### 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

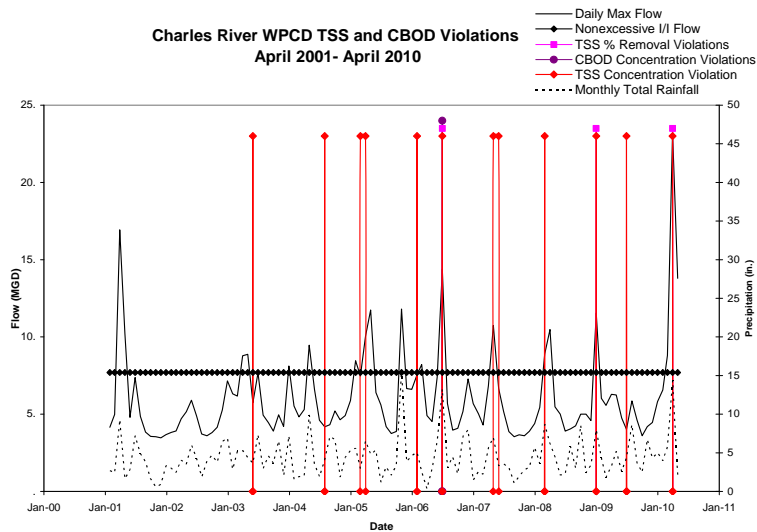
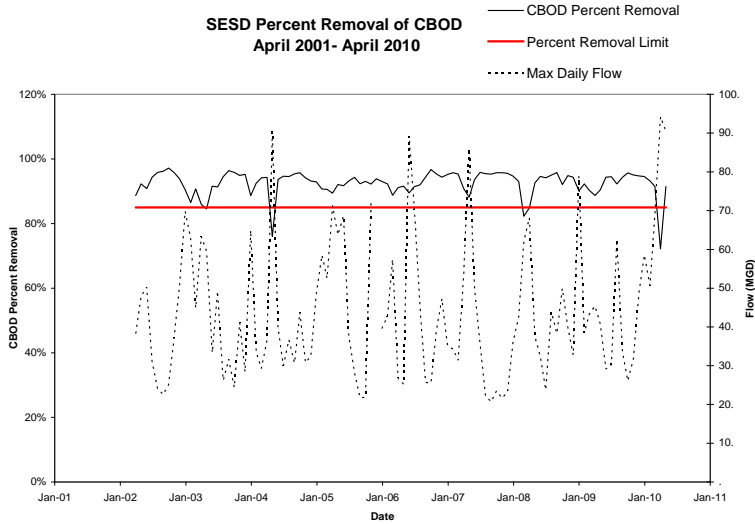


Figure 8 shows SESD's results for removal of CBOD, in percentage, as compared to maximum daily flow. SESD had three permit violations where CBOD removal fell below 85%, all during months with high Maximum Daily Flows.

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 [EPA Contact] at [Contact Info].



Sincerely,

Regional Administrator

**Appendix E**  
**CSO Outfall Locations**

<b>Outfall #</b>	<b>CSO Outfall Name</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Receiving Water</b>
<b>Upper Siphon System</b>				
024	Upper Siphon-Varnum Street	42.76683934	71.09305991	Merrimack River
<b>Middle Siphon System</b>				
021H	Winter Street and Hale Street	42.777451933	71.088324285	Little River
038	High Street Diversion	42.777229680	71.088322017	Little River
021B	Emerson Street			Little River
021F	Center Barrel - Locke Street			Little River
021A	Middle Siphon - Essex Street	42.773064312	71.078315989	Little River
<b>Lower Siphon System</b>				
019	Main Street North	42.774516793	71.076343479	Merrimack River
040	Bethany Avenue			Merrimack River
041	Chestnut Street	42.768424503	71.065258650	Merrimack River
013	Lower Siphon - Buttonwood Ave.	42.770229811	71.064186948	Merrimack River
<b>Bradford System</b>				
032	Bradford Avenue	42.770121267	71.085433959	Merrimack River
034	Middlesex Street	42.772581435	71.078322954	Merrimack River
039	South Webster	42.768424503	71.065258650	Merrimack River

MASSACHUSETTS DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
COMMONWEALTH OF MASSACHUSETTS  
1 WINTER STREET  
BOSTON, MASSACHUSETTS 02108

UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY  
WATER DIVISION  
REGION I  
BOSTON, MASSACHUSETTS 02109

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO THE WATERS OF THE UNITED STATES UNDER SECTION 301 AND 402 OF THE CLEAN WATER ACT (THE "ACT"), AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE ACT.

DATE OF NOTICE: **June 7, 2019**

PERMIT NUMBER: **MA0101621**

PUBLIC NOTICE NUMBER: **MA-011-19**

NAME AND MAILING ADDRESS OF APPLICANT:

City of Haverhill  
Haverhill Water Pollution Abatement Facility  
40 South Porter Street  
Bradford, MA 01835

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

City of Haverhill  
Haverhill Water Pollution Abatement Facility  
40 South Porter Street  
Bradford, MA 01835

and 13 Combined Sewer Overflow Outfalls (CSOs)

RECEIVING WATER AND CLASSIFICATION:

Merrimack River (MA84A-04): Class B–Warm Water Fishery, CSO  
Merrimack River (MA84A-05): Class SB–Restricted Shellfishing, CSO  
Little River (MA84A-090): Class B-Warm Water Fishery

PREPARATION OF THE DRAFT PERMIT:

The U.S. Environmental Protection Agency, (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) have cooperated in the development of a permit for the above identified facility. The effluent limits and permit conditions imposed have been drafted to assure that State Water Quality Standards and provisions of the Clean Water Act will be met. EPA has formally requested that the State certify this draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMIT:

A fact sheet or a statement of basis (describing the type of facility; type and quantities of wastes; a brief summary of the basis for the draft permit conditions; and significant factual, legal and policy questions considered in preparing this draft permit) may be obtained at no cost by writing or calling EPA's contact person named below:

Evan Lewis  
U.S. EPA  
5 Post Office Square  
Suite 100  
Boston, MA 02109-3912  
Telephone: (617) 918-1543

The administrative record containing all documents relating to this draft permit is on file and may be inspected at the EPA Boston office mentioned above between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays.

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of this Draft Permit is inappropriate, must raise all issues and submit all available comments and all supporting material for their comments in full by **July 8, 2019**, to the EPA contact and address listed above. Any person, prior to such date, may submit a request in writing to EPA and the State Agency for a public hearing to consider this Draft Permit. 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 whenever 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 at EPA's Boston office.

FINAL PERMIT DECISION AND APPEALS:

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 forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the final permit decision any interested person may submit a request for a formal hearing to reconsider or contest the final decision.

LEALDON LANGLEY, DIRECTOR  
DIVISION OF WATERSHED MGMT  
MASSACHUSETTS DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

KEN MORAFF, DIRECTOR  
WATER DIVISION  
UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY – REGION 1

MASSACHUSETTS DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
COMMONWEALTH OF MASSACHUSETTS  
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UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY  
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REGION I  
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**JOINT EXTENSION OF PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO THE WATERS OF THE UNITED STATES UNDER SECTION 301 AND 402 OF THE CLEAN WATER ACT (THE "ACT"), AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE ACT.**

DATE OF ORIGINAL PUBLIC NOTICE PERIOD: **June 7, 2019 – July 8, 2019**

PUBLIC NOTICE EXTENDED TO: **July 23, 2019**

PERMIT NUMBER: **MA0101621**

PUBLIC NOTICE NUMBER: **MA-018-19**

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