

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

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

**Town of Littleton, New Hampshire**

is authorized to discharge from the facility located at

**Littleton Wastewater Treatment Plant  
323 Meadow Street  
Littleton, NH 03561**

to receiving water named

**Ammonoosuc River  
Connecticut River Watershed**

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

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 September 2, 2009.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013), and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this 28th day of August, 2020

/S/ Signature on File  
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Ken Moraff, Director  
Water Division  
Environmental Protection Agency  
Region 1  
Boston, MA

**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent through Outfall Serial Number 001 to Ammonoosuc 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>
Rolling Average Effluent Flow <sup>5</sup>	1.5 MGD <sup>5</sup>	---	---	Continuous	Recorder
Effluent Flow <sup>5</sup>	Report MGD	---	Report MGD	Continuous	Recorder
BOD <sub>5</sub>	30 mg/L 375 lb/day	45 mg/L 563 lb/day	50 mg/L 626 lb/day	2/week	Composite
BOD <sub>5</sub> Removal	≥ 85 %	---	---	---	Calculation
TSS	30 mg/L 375 lb/day	45 mg/L 563 lb/day	50 mg/L 626 lb/day	2/week	Composite
TSS Removal	≥ 85 %	---	---	---	Calculation
pH Range <sup>6</sup>	6.5 - 8.0 S.U.			1/day	Grab
Total Residual Chlorine <sup>7</sup>	68 µg/L	---	117 µg/L	1/day	Grab
Escherichia coli <sup>8</sup>	126/100 mL	---	406/100 mL	3/week	Grab
Total Phosphorus <sup>9</sup> (April 1 – October 31)	7.1 lb/day	---	Report mg/L	1/week	Composite
Total Copper <sup>10</sup>	9.5 µg/L	---	14 µg/L	2/month	Composite
Total Lead <sup>11</sup>	2.6 µg/L	---	67 µg/L	2/month	Composite
Total Zinc <sup>12</sup>	152 µg/L	---	152 µg/L	2/month	Composite
Ammonia Nitrogen (May 1 – October 31)	9.0 mg/L Report lb/day	---	Report mg/L	2/week	Composite
Ammonia Nitrogen (November 1 – April 30)	Report lb/day	---	Report mg/L	2/week	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>13</sup>	Report mg/L	---	Report mg/L	1/week	Composite
Nitrate + Nitrite <sup>13</sup>	Report mg/L	---	Report mg/L	1/week	Composite
Total Nitrogen <sup>13</sup>	Report mg/L Report lb/day	---	Report mg/L	1/week	Composite
Rolling Average Effluent Nitrogen <sup>14</sup>	125 lb/day	---	---	1/week	Composite
<b>Whole Effluent Toxicity (WET) Testing<sup>15,16</sup></b>					
LC <sub>50</sub>	---	---	≥ 100 %	1/quarter	Composite
C-NOEC	---	---	≥ 16.3 %	1/quarter	Composite
Hardness	---	---	Report mg/L	1/quarter	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/quarter	Composite
Total Aluminum	---	---	Report mg/L	1/quarter	Composite
Total Cadmium	---	---	Report mg/L	1/quarter	Composite
Total Copper	---	---	Report mg/L	1/quarter	Composite
Total Nickel	---	---	Report mg/L	1/quarter	Composite
Total Lead	---	---	Report mg/L	1/quarter	Composite
Total Zinc	---	---	Report mg/L	1/quarter	Composite
Total Organic Carbon	---	---	Report mg/L	1/quarter	Composite

Ambient Characteristic <sup>18</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
Ammonia Nitrogen	---	---	Report mg/L	1/quarter	Grab
Total Aluminum	---	---	Report mg/L	1/quarter	Grab
Total Cadmium	---	---	Report mg/L	1/quarter	Grab
Total Copper	---	---	Report mg/L	1/quarter	Grab
Total Nickel	---	---	Report mg/L	1/quarter	Grab
Total Lead	---	---	Report mg/L	1/quarter	Grab
Total Zinc	---	---	Report mg/L	1/quarter	Grab
Total Organic Carbon	---	---	Report mg/L	1/quarter	Grab
Dissolved Organic Carbon <sup>17</sup>	---	---	Report mg/L	1/quarter	Grab
pH <sup>19</sup>	---	---	Report S.U.	1/quarter	Grab
Temperature <sup>19</sup>	---	---	Report °C	1/quarter	Grab
Total Phosphorus <sup>20</sup> (April 1 - October 31)	---	---	Report µg/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. Part 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” to all non-detects for that reporting period and report the average of all the results.
4. A “grab” sample is an individual sample collected in a period of less than 15 minutes.

A “composite” sample is a composite of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.

5. The limit is a rolling annual average, reported in million gallons per day (MGD), which will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months. Also report monthly average and maximum daily flow in MGD.

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).

See Part I.G.1 below for a provision to modify the pH range.

7. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. If chlorine is not used for a month, then the Permittee shall report NODI code "9" (conditional monitoring not required).

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.

8. The monthly average limit for *E. coli* is expressed as a geometric mean. *E. coli* monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required.
9. See Part I.G.2 for special condition regarding phosphorus compliance schedule.
10. See Part I.G.4 for special condition regarding copper compliance schedule.
11. See Part I.G.5 for special condition regarding lead compliance schedule.
12. See Part I.G.6 for special condition regarding zinc compliance schedule.
13. Total Kjeldahl nitrogen and nitrate + nitrite samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen, as follows.

Total Nitrogen (mg/L) = Total Kjeldahl Nitrogen (mg/L) + Nitrate + Nitrite (mg/L)

Total Nitrogen (lb/day) = [(average monthly Total Nitrogen (mg/L) \* total monthly effluent flow (Millions of Gallons (MG)) / # of days in the month] \* 8.345

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

Report both the rolling annual average and the monthly average each month.

See Part I.G.7 for special conditions related to nitrogen.

15. The Permittee shall conduct acute toxicity tests (LC<sub>50</sub>) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in **Attachment A and B** of this permit. LC<sub>50</sub> and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected and tests completed during the same weeks each time of calendar quarters ending March 31<sup>st</sup>, June 30<sup>th</sup>, September 30<sup>th</sup>, and December 31<sup>st</sup>. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.
16. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A and B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
17. Monitoring and reporting for dissolved organic carbon (DOC) are not requirements of the Whole Effluent Toxicity (WET) tests but are additional requirements. The Permittee may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.
18. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A and B**. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.

19. 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.
20. See Part I.G.3 for special conditions regarding ambient phosphorus monitoring.



**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 substances in kind or quantity that settle to form harmful benthic deposits; float as foam, debris, scum or other visible substances; produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated uses; result in the dominance of nuisance species; or interfere with recreational activities.
4. Tainting substances shall not be present in the discharge in concentrations that individually or in combination are detectable by taste and odor tests performed on the edible portions of aquatic organisms.
5. The discharge shall not result in toxic substances or chemical constituents in concentrations or combinations in the receiving water that injure or are inimical to plants, animals, humans or aquatic life; or persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in edible portions of fish, shellfish, other aquatic life, or wildlife that might consume aquatic life.
6. The discharge shall not result in benthic deposits that have a detrimental impact on the benthic community. The discharge shall not result in oil and grease, color, slicks, odors, or surface floating solids that would impair any existing or designated uses in the receiving water.
7. The discharge shall not result in an exceedance of the naturally occurring turbidity in the receiving water by more than 10 NTUs.
8. The Permittee must provide adequate notice to EPA-Region 1 and the State of the following:
  - a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Part 301 or Part 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 C.F.R. Part 122 Appendix A as amended) discharging process water; and
  - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
  - c. For purposes of this paragraph, adequate notice shall include information on:
    - (1) The quantity and quality of effluent introduced into the POTW; and
    - (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

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**

This permit authorizes discharges only from the outfall listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit in accordance with Part II.D.1.e.(1) (24-hour reporting). See Part I.H below for reporting requirements.

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

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

1. Maintenance Staff

The Permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. Provisions to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

2. Preventative Maintenance Program

The 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 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

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

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

5. Collection System O&M Plan

The Permittee shall continue to update and implement the Collection System O&M Plan which was previously submitted to EPA and the State. The plan shall be available for review by federal, state, and local agencies as requested. The Plan shall include:

- a. A description of the collection system management goals, staffing, information management, and legal authorities;
- b. 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
- c. A preventive maintenance and monitoring program for the collection system;
- d. Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
- e. Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
- f. 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;
- g. 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;

- h. An educational public outreach program for all aspects of I/I control, particularly private inflow; and
- i. 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 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 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 monthly average flow exceeded 80 percent of the facility's 1.5 MGD design flow (1.2 MGD) for three consecutive months in the previous calendar year, 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 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**

- 1. The Permittee shall submit to EPA and the State the name of any Industrial User (IU) subject to Categorical Pretreatment Standards under 40 C.F.R. § 403.6 and 40 C.F.R.

chapter I, subchapter N (Parts 405-415, 417-430, 432, 447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended) who commences discharge to the facility after the effective date of this permit.

2. This reporting requirement also applies to any other IU who is classified as a Significant Industrial User which discharges an average of 25,000 gallons per day or more of process wastewater into the facility (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastewater which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the facility; or is designated as such by the Control Authority as defined in 40 C.F.R. § 403.3(f) on the basis that the industrial user has a reasonable potential to adversely affect the wastewater treatment facility's operation, or for violating any pretreatment standard or requirement (in accordance with 40 C.F.R. § 403.8(f)(6)).
3. In the event that the Permittee receives originals of reports (baseline monitoring reports, 90-day compliance reports, periodic reports on continued compliance, etc.) from industrial users subject to Categorical Pretreatment Standards under 40 C.F.R. § 403.6 and 40 C.F.R. chapter I, subchapter N (Parts 405-415, 417-430, 432-447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended), or from a Significant Industrial User, the Permittee shall forward the originals of these reports within ninety (90) days of their receipt to EPA, and copy the State.

#### **F. SLUDGE CONDITIONS**

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 C.F.R. Part 503, which prescribe "Standards for the Use or Disposal of Sewage Sludge" pursuant to § 405(d) of the CWA, 33 U.S.C. § 1345(d).
2. If both state and federal requirements apply to the Permittee's sludge use and/or disposal practices, the Permittee shall comply with the more stringent of the applicable requirements.
3. The requirements and technical standards of 40 C.F.R. Part 503 apply to the following sludge use or disposal practices:
  - a. Land application - the use of sewage sludge to condition or fertilize the soil
  - b. Surface disposal - the placement of sewage sludge in a sludge only landfill
  - c. Sewage sludge incineration in a sludge only incinerator
4. The requirements of 40 C.F.R. Part 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. Part 503 requirements include the following elements:

- a. General requirements
- b. Pollutant limitations
- c. Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
- d. Management practices
- e. Record keeping
- f. Monitoring
- g. Reporting

Which of the 40 C.F.R. Part 503 requirements apply to the Permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 Guidance document, “EPA Region 1 - NPDES Permit Sludge Compliance Guidance” (November 4, 1999), may be used by the Permittee to assist it in determining the applicable requirements.<sup>1</sup>

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

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

Sampling of the sewage sludge shall use the procedures detailed in 40 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 Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the Permittee does not engage a “person who prepares sewage sludge,” as defined in 40 C.F.R. § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in Part 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.

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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>

8. The Permittee shall submit an annual report containing the information specified in the 40 C.F.R. Part 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by **February 19** (*see also* “EPA Region 1 - NPDES Permit Sludge Compliance Guidance”). Reports shall be submitted electronically using EPA’s Electronic Reporting tool (“NeT”) (*see* “Reporting Requirements” section below).
9. Compliance with the requirements of this permit or 40 C.F.R. Part 503 shall not eliminate or modify the need to comply with applicable requirements under RSA 485-A and Env-Wq 800, New Hampshire Sludge Management Rules.

## G. SPECIAL CONDITIONS

### 1. Provision to Modify pH Range

The pH range may be modified if the Permittee satisfies conditions set forth in Part I.I.5 below. Upon notification of an approval by NHDES, EPA will review and, if acceptable, will submit written notice to the Permittee of the permit change. The modified pH range will not be in effect until the Permittee receives written notice from EPA.

### 2. Phosphorus Schedule of Compliance

The effluent limit for total phosphorus shall be subject to a schedule of compliance whereby the limit takes effect 54 months after the effective date of the permit. For the period starting on the effective date of this permit and ending 54 months after the effective date, the Permittee shall report the monthly average and daily maximum phosphorus concentration on the monthly DMR.

The effluent limit for total phosphorus shall be subject to a schedule of compliance, as follows:

- a) Within twelve (12) months of the effective date of the permit, the Permittee shall submit to EPA and NHDES a status report relative to the planning and design of the facilities necessary to achieve the permit limit.
- b) Within twenty-four (24) months of the effective date of the permit, the Permittee shall complete design of the Facility improvements required to achieve the total phosphorus limit.
- c) Within thirty (30) months of the effective date of the permit, the Permittee shall initiate construction of the Facility improvements required to achieve the total phosphorus limit.
- d) Within forty-two (42) months of the effective date of the permit, the Permittee shall submit to EPA and NHDES a status report relative to construction of the Facility improvements required to achieve the total phosphorus limit.

- e) Within fifty-four (54) months of the effective date of the permit, the Permittee shall complete construction of the Facility improvements required to achieve the total phosphorus limit and shall comply with the permit limit.

### 3. Phosphorus Ambient Monitoring Requirements

The Permittee shall develop and implement a sampling and analysis plan for biannually collecting monthly samples in the receiving water for total phosphorus at a location upstream of the facility's discharge. Samples shall be collected once per month, from April through October, every other calendar year starting on the calendar year following the date of permit issuance. Sampling shall be conducted on any calendar day that is preceded by at least 72 hours with less than or equal to 0.1 inches of cumulative rainfall. A sampling plan shall be submitted to EPA and the State at least three months prior to the first planned sampling date as part of a Quality Assurance Project Plan for review and approval. For the years that monitoring is not required, the Permittee shall report NODI code "9" (conditional monitoring not required).

### 4. Copper Compliance Schedule

The effluent limit for total copper shall be subject to a schedule of compliance whereby the limit takes effect four years after the effective date of the permit. For the period starting on the effective date of this permit and ending four (4) years after the effective date, the Permittee shall comply with their existing copper limits of 17.3 µg/L (average monthly) and 24 µg/L (daily maximum). After this initial four (4) year period, the Permittee shall comply with the monthly average total copper limits of 14 µg/L daily maximum and 9.5 µg/L average monthly ("final copper effluent limit"). The Permittee shall submit an annual report due January 15<sup>th</sup> of the first four years of the permit that will detail its progress towards meeting the final copper effluent limit.

At a minimum, the Permittee shall perform the following:

- a. An evaluation of all potentially significant sources of copper in the sewer system and alternatives for minimizing these sources.
- b. An evaluation of alternative modes of operation at the wastewater treatment facility in order to reduce the effluent levels of copper.

### 5. Lead Compliance Schedule

The effluent limit for total lead shall be subject to a schedule of compliance whereby the limit takes effect one year after the effective date of the permit. For the period starting on the effective date of this permit and ending one (1) year after the effective date, the Permittee shall comply with their existing lead limits of 3.3 µg/L (average monthly) and 87 µg/L (daily maximum). After this initial one (1) year period, the Permittee shall comply with the monthly average total lead limits of 67 µg/L daily maximum and 2.6 µg/L average monthly ("final lead effluent limit"). The Permittee shall submit a report



due January 15<sup>th</sup> of the first year of the permit that will detail its progress towards meeting the final lead effluent limit.

At a minimum, the Permittee shall perform the following:

- a. An evaluation of all potentially significant sources of lead in the sewer system and alternatives for minimizing these sources.
- b. An evaluation of alternative modes of operation at the wastewater treatment facility in order to reduce the effluent levels of lead.

#### 6. Zinc Compliance Schedule

The effluent limit for total zinc shall be subject to a schedule of compliance whereby the limit takes effect one year after the effective date of the permit. For the period starting on the effective date of this permit and ending one (1) year after the effective date, the Permittee shall report the monthly average and daily maximum zinc concentration on the monthly DMR. After this initial one (1) year period, the Permittee shall comply with the monthly average total zinc limits of 152 µg/L daily maximum and 152 µg/L average monthly ("final zinc effluent limit"). The Permittee shall submit a report due January 15<sup>th</sup> of the first year of the permit that will detail its progress towards meeting the final zinc effluent limit.

At a minimum, the Permittee shall perform the following:

- a. An evaluation of all potentially significant sources of zinc in the sewer system and alternatives for minimizing these sources.
- b. An evaluation of alternative modes of operation at the wastewater treatment facility in order to reduce the effluent levels of zinc.

#### 7. Total Nitrogen Optimization Requirements

- a. The Permittee shall continue to optimize the treatment facility operations relative to total nitrogen ("TN") removal through measures and/or operational changes designed to enhance the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen.
- b. The Permittee shall submit an annual report to EPA and the NHDES-WD, by February 1st of each year, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous calendar year, and the previous five (5) calendar years. If, in any year, the treatment facility discharges of TN on an average annual basis have increased, the annual report shall include a detailed explanation of the reasons why TN discharges have increased, including any changes in influent flows/loads and any operational changes. The report shall also include all supporting data.

## H. REPORTING REQUIREMENTS

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

### 1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State 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. This includes the NHDES Monthly Operating Reports (MORs). *See* Part I.H.6. 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 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/>.

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

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

- (1) Transfer of permit notice;
- (2) Request for changes in sampling location;
- (3) Request for reduction in testing frequency;
- (4) Report on unacceptable dilution water / request for alternative dilution water for WET testing.
- (5) Report of new industrial user commencing discharge
- (6) Report received from existing industrial user

b. These reports, information, and requests shall be submitted to EPA WD electronically at [RINPDESReporting@epa.gov](mailto:RINPDESReporting@epa.gov).

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

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

(1) Prior to 21 December 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/>.

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

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

6. State Reporting

Unless otherwise specified in this permit or by the State, duplicate signed copies of all reports, information, requests or notifications described in this permit, including the reports, information, requests or notifications described in Parts I.H.3 through I.H.5 shall also be submitted to the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) electronically to the Permittee's assigned NPDES inspector at NHDES-WD or as a hardcopy to the following addresses:

New Hampshire Department of Environmental Services  
Water Division  
Wastewater Engineering Bureau  
29 Hazen Drive, P.O. Box 95  
Concord, New Hampshire 03302-0095

7. Verbal Reports and Verbal Notifications

Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to 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).

Verbal reports and verbal notifications shall be made to:

EPA ECAD at 617-918-1510  
and  
NHDES Assigned NPDES Inspector at 603-271-1494

**I. STATE PERMIT CONDITIONS**

1. The Permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification of, or interfere with the uses assigned to, said water by the New Hampshire Legislature (RSA 485-A:12).
2. This NPDES discharge permit is issued by EPA under federal law. Upon final issuance by EPA, the New Hampshire Department of Environmental Services-Water Division (NHDES-WD) may adopt this permit, including all terms and conditions, as a state permit pursuant to RSA 485-A:13.
3. EPA shall have the right to enforce the terms and conditions of this permit pursuant to federal law and NHDES-WD shall have the right to enforce the permit pursuant to state law, if the permit is adopted. 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 the permit as issued by the other agency.
4. Pursuant to New Hampshire Statute RSA 485-A:13, I(c), any person responsible for a bypass or upset at a wastewater facility shall give immediate notice of a bypass or upset to all public or privately owned water systems drawing water from the same receiving water and located within 20 miles downstream of the point of discharge regardless of whether or not it is on the same receiving water or on another surface water to which the receiving water is tributary. Wastewater facility is defined at RSA 485-A:2XIX as the structures, equipment, and processes required to collect, convey, and treat domestic and industrial wastes, and dispose of the effluent and sludge. The Permittee shall maintain a list of persons, and their telephone numbers, who are to be notified immediately by telephone. In addition, written notification, which shall be postmarked within 3 days of the bypass or upset, shall be sent to such persons.
5. The pH range of 6.5 to 8.0 Standard Units (S.U.) must be achieved in the final effluent unless the Permittee can demonstrate to NHDES-WD: 1) that the range should be widened due to naturally occurring conditions in the receiving water; or 2) that the naturally occurring receiving water pH is not significantly altered by the Permittee's discharge. The scope of any demonstration project must receive prior approval from NHDES-WD. In no case, shall the above procedure result in pH limits outside the range of 6.0 to 9.0 S.U., which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 C.F.R. § 133.102(c).
6. Pursuant to New Hampshire Code of Administrative Rules, Env-Wq 703.07(a):

Any person proposing to construct or modify any of the following shall submit an application for a sewer connection permit to the department:

- (1) Any extension of a collector or interceptor, whether public or private, regardless of flow;

- (2) Any wastewater connection or other discharge in excess of 5,000 gpd;
  - (3) Any wastewater connection or other discharge to a WWTP operating in excess of 80 percent design flow capacity or design loading capacity based on actual average flow or loading for 3 consecutive months;
  - (4) Any industrial wastewater connection or change in existing discharge of industrial wastewater, regardless of quality or quantity;
  - (5) Any sewage pumping station greater than 50 gpm or serving more than one building; or
  - (6) Any proposed sewer that serves more than one building or that requires a manhole at the connection.
7. For each new or increased discharge of industrial waste to the POTW, the Permittee shall submit, in accordance with Env-Wq 305.10(a) an “Industrial Wastewater Discharge Request.”
  8. Pursuant to Env-Wq 305.15(d) and 305.16(f), the Permittee shall not allocate or accept for treatment more than 90 percent of the headworks loading limits of the facility.
  9. Pursuant to Env-Wq 305.21, at a frequency no less than every five years, the Permittee shall submit to NHDES:
    - a. A copy of its current sewer use ordinance if it has been revised without department approval subsequent to any previous submittal to the department or a certification that no changes have been made.
    - b. A current list of all significant indirect dischargers to the POTW. At a minimum, the list shall include for each significant indirect discharger, its name and address, the name and daytime telephone number of a contact person, products manufactured, industrial processes used, existing pretreatment processes, and discharge permit status.
    - c. A list of all permitted indirect dischargers; and
    - d. A certification that the municipality is strictly enforcing its sewer use ordinance and all discharge permits it has issued.
  10. When the effluent discharged for a period of three (3) consecutive months exceeds 80 percent of the 1.5 MGD design flow (1.2 MGD) or design loading capacity, the Permittee shall submit to the permitting authorities a projection of flows and loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans. Before the design flow will be reached, or whenever treatment necessary to achieve permit limits cannot be assured, the Permittee may be required to submit plans for facility improvements.

**RESPONSE TO COMMENTS  
NPDES PERMIT NO. NH0100153  
LITTLETON WASTEWATER TREATMENT PLANT  
LITTLETON, NEW HAMPSHIRE**

The U.S. Environmental Protection Agency’s New England Region (“EPA”) is issuing a Final National Pollutant Discharge Elimination System (NPDES) Permit for the Littleton Wastewater Treatment Facility (“WWTF”) located in Littleton, New Hampshire. This permit is being issued under the Federal Clean Water Act (“CWA” and “Act”), 33 U.S.C., §§ 1251 et seq.

In accordance with the provisions of 40 Code of Federal Regulations (CFR) § 124.17, this document presents EPA’s responses to comments received on the Draft NPDES Permit Number NH0100153 (“Draft Permit”). The response to comments explains and supports EPA’s determinations that form the basis of the Final Permit. From June 19, 2020 through July 18, 2020, EPA (“Agency”) solicited public comments on the Draft Permit.

EPA received comments from:

- KV Partners Engineering Consulting LLC, dated July 10, 2020
- Connecticut Department of Energy and Environmental Protection, dated July 10, 2020

Although EPA’s knowledge of the facility has benefited from the various comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit that warranted EPA exercising its discretion to reopen the public comment period. EPA did, however, incorporate some changes to the Final Permit based on the comments and corrected some minor typographical errors. Below, EPA provided a summary of the changes made in the Final Permit. The analyses underlying these changes are contained in the responses to individual comments that follow.

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

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

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## SUMMARY OF CHANGES TO THE FINAL PERMIT

1. Section I.G.7.b of the Final Permit has been modified to require each annual report to track trends in nitrogen removal from the previous calendar year and the previous five calendar years. See Response to Comment 5 below.
2. Corrections of the following typographical errors:
  - a) The ammonia nitrogen limit of 8.6 mg/L was corrected to 9.0 mg/L as described in the Fact Sheet at page 20 and in Appendix B. This was due to correcting an earlier data entry error that was inconsistent with the limit, data, and arguments presented in the fact sheet.
  - b) The total nitrogen average monthly reporting requirements were amended to include mg/L.
  - c) The daily maximum reporting requirement for “Rolling Average Effluent Nitrogen” has been removed.
  - d) The footnote on Part I.A.1 for “Rolling Average Effluent Nitrogen” was corrected from 11 to 14.
3. A paragraph was added to the compliance schedule provisions for total phosphorus in Part I.G.2 of the permit to clarify that while the effective date of the effluent limit is delayed for 54 months after the effective date of the permit, the total phosphorus monitoring and reporting requirements take effect beginning on the effective date of the permit.

## SPECIFIC COMMENTS AND RESPONSES

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

### **I. Comments from Ray Korber, KV Partners Engineering Consultants, LLC, on July 10, 2020:**

#### **Comment 1**

The Town is hereby requesting that the proposed limits for phosphorous (7.1 lb/day), ammonia nitrogen (9.0 mg/l) and nitrogen (125 lb/day) be revised to reporting requirements and that the phosphorous schedule of compliance be revised as follows: Within 36 months of the effective date of the permit, the Permittee shall submit to EPA and NHDES a report on nutrient removal to be achieved at the wastewater treatment plant.

Rationale: The Town of Littleton recognizes the importance of nutrient removal; however, nutrient removal should be considered within the larger context of the on-going initiatives Littleton is undertaking to improve wastewater system operations. Please note the following:

- Since 2012, the Town of Littleton has been engaged in a multi-year renewal program on the wastewater collection system. Littleton has completed several sewer system evaluation and infiltration/inflow studies and sewer main and manhole replacement projects. The purpose of the renewal program is to identify and remove extraneous flows to maintain system capacity and eliminate sanitary sewer overflows. The total estimated cost to complete the renewal program is \$9M.
- The Town of Littleton is currently completing an asset management program of all horizontal and vertical wastewater assets. This work is critical to ensuring the efficient delivery of service to system users. The total estimated cost to complete the asset management program is \$100K.
- The Town of Littleton intends to complete a wastewater treatment plant facilities plan by December 2021. The purpose of the facilities plan is to evaluate plant performance and unit processes with the intent of improving facility operations and efficiency. The cost of the facilities plan is \$100K. The Town expects the cost of potential wastewater treatment plant upgrades will exceed \$1M.

In summary, adding a potential nutrient removal system to the list of capital improvement projects within the timeline proposed under the phosphorus compliance schedule will jeopardize the completion of needed infrastructure improvements already identified and partially completed.

Therefore, the Town is requesting the NPDES Permit be revised to allow additional time to achieve nutrient removal objectives within the context of the wastewater system capital improvement program already underway.

Please do not hesitate to contact us if you have any questions or require additional information.

### **Response 1**

EPA recognizes the budgetary and scheduling restrictions that many municipalities face in balancing ongoing projects and compliance with newly established permit limits. However, when a facility has shown that it has the reasonable potential to cause or contribute to a violation of water quality standards, it is EPA's duty to impose permit limits to ensure that water quality standards are met, and under the CWA cannot forestall imposition of necessary effluent limitations based on cost or technological feasibility. Therefore, in this case EPA cannot remove the phosphorus, ammonia nitrogen or nitrogen limits and replace them with a 36-month nutrient report, as requested by the Town.

Regarding the total nitrogen limit, based on a review of Littleton's effluent data during the review period of the Draft Permit (i.e., February 2015 through January 2020), the maximum total nitrogen annual rolling average was 45.3 lb/day, well below the permit limit of 125 lb/day. Based on this, EPA notes that the Permittee should be able to comply immediately with the total nitrogen limit without the need in the near-term for a facility upgrade.

Regarding the ammonia nitrogen limit, the monthly average concentration from May through October during the review period exceeded 9.0 mg/L (the new effluent limit)



only five times out of 31 months reported. Therefore, EPA expects that the Permittee can comply with this limit by means of ammonia optimization efforts and without the need in the near-term for a facility upgrade. If the Town is not be able to meet the ammonia limit using its current facility, the Town may coordinate with EPA's Enforcement Compliance Assurance Division (ECAD) to discuss implementing a compliance schedule to provide additional time to adjust operations or complete any necessary upgrades.

Regarding total phosphorus, however, EPA recognizes that the facility will likely need an upgrade in order to comply with that newly established limit. Hence, the Draft Permit included a 54-month compliance schedule in order to allow adequate time to comply. The schedule has been retained in the Final Permit. EPA notes that the first submittal of this compliance schedule is a status report relative to the planning and design of the facilities necessary to achieve the permit limit, which is due 12 months from the effective date of the permit. EPA expects the timing of this submittal to match closely with the expected completion of the wastewater treatment plant facilities plan in December 2021, as noted in the comment. This timing seems appropriate so that the Town can prioritize compliance with the phosphorus limit in the context of any other upcoming plant improvements.

If the Town is concerned that due to budgetary or scheduling restrictions it may not be able to meet the phosphorus limit in accordance with the 54-month compliance schedule laid out in the Final Permit, the Town may coordinate with EPA's Enforcement Compliance Assurance Division (ECAD) to discuss additional compliance options.

## **II. Comments from Jennifer Perry, Director, Water Planning and Management Division, Bureau of Land Protection and Water Reuse, on July 10, 2020**

### **Comment 2**

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

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

In response to the occurrence of hypoxia in LIS, Connecticut and New York jointly developed a Total Maximum Daily Load (TMDL) for nitrogen which was approved by the Federal Environmental Protection Agency (EPA) in April, 2001. In addition to a number of nitrogen reduction efforts required of Connecticut and New York, the TMDL specified a 25% reduction in the baseline nitrogen load from WWTPs located upstream of Connecticut with discharges that

ultimately flow to LIS (MA, NH, and VT). At that time, nitrogen monitoring data was not available and the baseline load for the upstream state's WWTPs was determined using design flows and an average discharge concentration (15 mg/L). It is important to note that very few, if any, WWTPs were operating at design flow capacity at that time. Because of this, the baseline load estimated in the TMDL for WWTPs located upstream of Connecticut was grossly overestimated.

Nitrogen loads from the upstream state's WWTPs were later determined using 2004-2005 monitoring data and average flows. In cases where nitrogen monitoring data were not available, an assumed concentration was used that varied based on the level of treatment. Based on this analysis, it was stated that the upstream states "are meeting" the TMDL target nitrogen load. However, little if any actual nitrogen removal efforts were implemented at that time. The total nitrogen load estimate was used as a "not to exceed" cap in WWTP discharge permits. We believe the 2004-2005 nitrogen load estimate more accurately reflects actual total nitrogen discharges from WWTP's located in the upstream states. As such, this estimate represents the baseline load from which a 25% reduction target should be established in accordance with the TMDL. Additionally, it is a misrepresentation to state or infer that the upstream states are meeting the LIS TMDL.

## **Response 2**

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

Furthermore, in 2013 the United States Geological Survey (USGS) published an estimation of the total nitrogen load to Long Island Sound from Connecticut and contributing areas to the north for October 1998 to September 2009.<sup>1</sup> Available total nitrogen and continuous flow data from 37 water-quality monitoring stations in the LIS watershed, for some or all of these years, were used to compute total annual nitrogen yields and loads. In order to extract the non-point source loadings from the total nitrogen measured, the authors relied on point source estimates from the SPARROW model of nutrient delivery to waters in the Northeastern and Mid-Atlantic states in 2002, including the Connecticut River, that was published by Moore and others in 2011.<sup>2</sup> The SPARROW model estimated that 1,776.7 metric tons per year (MT/yr) (or annual average 10,820 lb/day) of total nitrogen was discharged to the Connecticut River from

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<sup>1</sup> Mullaney, J.R., and Schwarz, G.E., 2013, Estimated Nitrogen Loads from Selected Tributaries in Connecticut Draining to Long Island Sound, 1999–2009: U.S. Geological Survey Scientific Investigations Report 2013–5171, 65

<sup>2</sup> Moore, Richard B., Craig M. Johnston, Richard A. Smith, and Bryan Milstead, 2011. Source and Delivery of Nutrients to Receiving Waters in the Northeastern and Mid-Atlantic Regions of the United States. *Journal of the American Water Resources Association (JAWRA)* 47(5):965-990. DOI: 10.1111/j.1752-1688.2011.00582.x

Massachusetts, New Hampshire and Vermont in 2002.<sup>3</sup> These estimates were based on an approach by Maupin and Ivahnenko, published the same year, which used discharge monitoring data available from EPA's Permit Compliance System (PCS) database for 2002.<sup>4,5</sup> Where no data was available, an estimated typical pollutant concentration (TPC) and flow was used to approximate nitrogen loading from point sources according to their industrial category.<sup>6</sup>

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

### **Comment 3**

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

As Connecticut continues to achieve greater nitrogen reductions at its WWTPs, the load from the upstream states consequently becomes a greater portion of the total load to LIS and warrants full attention. A study of nitrogen loading trends to LIS from New England states found that approximately 50% of the nitrogen load to LIS comes from areas north of Connecticut (Mullaney and Schwarz, 2013). This study was based on 10 years (1999-2009) of data and compared computed nitrogen loads from four gaging stations located along the Connecticut-Massachusetts

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

<sup>4</sup> Moore (2011), page 968.

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

<sup>6</sup> Maupin (2011), page 954.

border to the total nitrogen load computed from gages (and estimates) within Connecticut. Based on Mullaney et al. 2018, Connecticut's nitrogen load to the CT River continued to be about 50% of the total nitrogen load to LIS and ranged from 31-52% based on 5 years (2009-2014) of monitoring data collected at two locations in the Connecticut River. Both of these studies include nonpoint source nitrogen loads as well as point source. Finally, a study conducted by Smith et al. 2008 found that very little to no attenuation occurs in the Connecticut River, so this entire total nitrogen load from the upstream states is essentially transported directly to LIS.

### **Response 3**

EPA acknowledges this comment.

### **Comment 4**

CTDEEP notes that the draft permit includes a total nitrogen limit in pounds per day as a monthly average based on the twelve-month rolling average. This total nitrogen limit of 125 pounds per day exceeds the annual average loading of 34 pounds per day based on 2014-2018 data. This equates to an allowable increase of 73% in the total nitrogen load to LIS. It has been assumed that this permit limit will not result in an increase of total nitrogen above the target load.

However, as stated in the above paragraphs, the TMDL baseline total nitrogen load for upstream states was overestimated and therefore, the TMDL target for plants such as this, is an overestimate. WWTPs located in the upstream states have initiated little nitrogen removal efforts, none of which would result in a 25% reduction. Any increase in total nitrogen loading from the WWTP likely represents an actual total nitrogen increase since the TMDL was established in 2001, and such increased load has the potential to adversely impact LIS.

### **Response 4**

EPA acknowledges that the nitrogen limit of 125 lb/day is well above Littleton's 2014-2018 annual average load. However, EPA is adopting a systemic permitting approach that includes continued optimization with effluent limits that provide assurance that long term loads will not increase. The permit allocates the current TN load so that: the aggregate out-of-basin TN load does not increase; effluent limits are annual average mass-based; consistent with the assumptions of the TMDL, no individual facility is left with an effluent limit that is not achievable using readily available treatment technology at the facility's design flow; and smaller facilities can achieve their limits through optimization. Under this systemic permitting approach, nitrogen effluent limits and/or optimization will be pursued for all facilities in the LIS watershed, and the approach is designed so that nitrogen loadings to LIS will not increase. This aggregate, gross-level approach is appropriate given the large number of facilities whose discharges contribute to TN loading into LIS and the geographic expanse in which they are situated.

### **Comment 5**

The draft permit contains a condition for the WWTP to complete an evaluation of optimization methods in order to achieve the greatest performance of nitrogen removal and submit a report to EPA within one year. We concur with this condition and would like to see a requirement for the

permittee to incorporate nitrogen reduction methods specifically, in the event of an increase in flow and subsequent nitrogen loads.

#### **Response 5**

EPA notes that the Draft Permit did not actually include a requirement for Littleton to complete an evaluation of optimization methods. In developing the Draft Permit, EPA found that the Permittee had already evaluated the existing facility for alternative methods to optimize for nitrogen removal, in compliance with the 2009 Permit, and is currently implementing optimization. Therefore, Section I.G.7.a of the Draft Permit states:

“The Permittee shall continue to optimize the treatment facility operations relative to total nitrogen (“TN”) removal through measures and/or operational changes designed to enhance the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen.”

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

#### **Comment 6**

Also specified with the optimization study, is a condition for the WWTP to report annually on the nitrogen load discharged from the facility and track changes in the load relative to the previous year. CTDEEP requests that the observation of trends in total nitrogen loading be expanded to include the entire record of available total nitrogen data.

#### **Response 6**

EPA agrees with the comment that tracking trends in nitrogen removal on a longer-term basis than simply comparing to the most recent calendar year is appropriate. Therefore, EPA has modified the language in Section I.G.7.b to require tracking based on all available data from the previous calendar year and the previous five calendar years.

EPA notes that all data are also publicly available on the EPA website, Environment and Compliance Data Database (see EPA ECHO Database, <https://echo.epa.gov>).

#### **Comment 7**

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

**Response 7**

EPA acknowledges this comment and is making efforts to reduce nitrogen loading in LIS from upstream states, as evidenced by the holistic approach presented in new LIS permits in both Massachusetts and New Hampshire. This is discussed in more detail in Section 5.1.9.1 of the Fact Sheet.

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

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

**Town of Littleton, New Hampshire**

is authorized to discharge from the facility located at

**Littleton Wastewater Treatment Plant  
323 Meadow Street  
Littleton, NH 03561**

to receiving water named

**Ammonoosuc River  
Connecticut River Watershed**

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

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 September 2, 2009.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013), and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this        day of

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

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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. Procedures for appealing EPA's Final Permit decision may be found at 40 C.F.R. § 124.19.

**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent through Outfall Serial Number 001 to Ammonoosuc 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>
Rolling Average Effluent Flow <sup>5</sup>	1.5 MGD <sup>5</sup>	---	---	Continuous	Recorder
Effluent Flow <sup>5</sup>	Report MGD	---	Report MGD	Continuous	Recorder
BOD <sub>5</sub>	30 mg/L 375 lb/day	45 mg/L 563 lb/day	50 mg/L 626 lb/day	2/week	Composite
BOD <sub>5</sub> Removal	≥ 85 %	---	---	---	Calculation
TSS	30 mg/L 375 lb/day	45 mg/L 563 lb/day	50 mg/L 626 lb/day	2/week	Composite
TSS Removal	≥ 85 %	---	---	---	Calculation
pH Range <sup>6</sup>	6.5 - 8.0 S.U.			1/day	Grab
Total Residual Chlorine <sup>7</sup>	68 µg/L	---	117 µg/L	1/day	Grab
Escherichia coli <sup>8</sup>	126/100 mL	---	406/100 mL	3/week	Grab
Total Phosphorus <sup>9</sup> (April 1 – October 31)	7.1 lb/day	---	Report mg/L	1/week	Composite
Total Copper <sup>10</sup>	9.5 µg/L	---	14 µg/L	2/month	Composite
Total Lead <sup>11</sup>	2.6 µg/L	---	67 µg/L	2/month	Composite
Total Zinc <sup>12</sup>	152 µg/L	---	152 µg/L	2/month	Composite
Ammonia Nitrogen (May 1 – October 31)	8.6 mg/L Report lb/day	---	Report mg/L	2/week	Composite
Ammonia Nitrogen (November 1 – April 30)	Report lb/day	---	Report mg/L	2/week	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>13</sup>	Report mg/L	---	Report mg/L	1/week	Composite
Nitrate + Nitrite <sup>13</sup>	Report mg/L	---	Report mg/L	1/week	Composite
Total Nitrogen <sup>13</sup>	Report mg/L	---	Report mg/L	1/week	Composite
Rolling Average Effluent Nitrogen <sup>11</sup>	125 lb/day	---	Report mg/L	1/week	Composite
<b>Whole Effluent Toxicity (WET) Testing<sup>15,16</sup></b>					
LC <sub>50</sub>	---	---	≥ 100 %	1/quarter	Composite
C-NOEC	---	---	≥ 16.3 %	1/quarter	Composite
Hardness	---	---	Report mg/L	1/quarter	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/quarter	Composite
Total Aluminum	---	---	Report mg/L	1/quarter	Composite
Total Cadmium	---	---	Report mg/L	1/quarter	Composite
Total Copper	---	---	Report mg/L	1/quarter	Composite
Total Nickel	---	---	Report mg/L	1/quarter	Composite
Total Lead	---	---	Report mg/L	1/quarter	Composite
Total Zinc	---	---	Report mg/L	1/quarter	Composite
Total Organic Carbon	---	---	Report mg/L	1/quarter	Composite

Ambient Characteristic <sup>18</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
Ammonia Nitrogen	---	---	Report mg/L	1/quarter	Grab
Total Aluminum	---	---	Report mg/L	1/quarter	Grab
Total Cadmium	---	---	Report mg/L	1/quarter	Grab
Total Copper	---	---	Report mg/L	1/quarter	Grab
Total Nickel	---	---	Report mg/L	1/quarter	Grab
Total Lead	---	---	Report mg/L	1/quarter	Grab
Total Zinc	---	---	Report mg/L	1/quarter	Grab
Total Organic Carbon	---	---	Report mg/L	1/quarter	Grab
Dissolved Organic Carbon <sup>17</sup>	---	---	Report mg/L	1/quarter	Grab
pH <sup>19</sup>	---	---	Report S.U.	1/quarter	Grab
Temperature <sup>19</sup>	---	---	Report °C	1/quarter	Grab
Total Phosphorus <sup>20</sup> (April 1 - October 31)	---	---	Report µg/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. Part 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” to all non-detects for that reporting period and report the average of all the results.
4. A “grab” sample is an individual sample collected in a period of less than 15 minutes.

A “composite” sample is a composite of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.

5. The limit is a rolling annual average, reported in million gallons per day (MGD), which will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months. Also report monthly average and maximum daily flow in MGD.

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).

See Part I.G.1 below for a provision to modify the pH range.

7. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. If chlorine is not used for a month, then the Permittee shall report NODI code "9" (conditional monitoring not required).

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.

8. The monthly average limit for *E. coli* is expressed as a geometric mean. *E. coli* monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required.
9. See Part I.G.2 for special condition regarding phosphorus compliance schedule.
10. See Part I.G.4 for special condition regarding copper compliance schedule.
11. See Part I.G.5 for special condition regarding lead compliance schedule.
12. See Part I.G.6 for special condition regarding zinc compliance schedule.
13. Total Kjeldahl nitrogen and nitrate + nitrite samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen, as follows.

Total Nitrogen (mg/L) = Total Kjeldahl Nitrogen (mg/L) + Nitrate + Nitrite (mg/L)

Total Nitrogen (lb/day) = [(average monthly Total Nitrogen (mg/L) \* total monthly effluent flow (Millions of Gallons (MG)) / # of days in the month] \* 8.345

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

Report both the rolling annual average and the monthly average each month.

See Part I.G.7 for special conditions related to nitrogen.

15. The Permittee shall conduct acute toxicity tests (LC<sub>50</sub>) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in **Attachment A and B** of this permit. LC<sub>50</sub> and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected and tests completed during the same weeks each time of calendar quarters ending March 31<sup>st</sup>, June 30<sup>th</sup>, September 30<sup>th</sup>, and December 31<sup>st</sup>. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.
16. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A and B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
17. Monitoring and reporting for dissolved organic carbon (DOC) are not requirements of the Whole Effluent Toxicity (WET) tests but are additional requirements. The Permittee may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.
18. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A and B**. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.

19. 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.
20. See Part I.G.3 for special conditions regarding ambient phosphorus monitoring.

**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 substances in kind or quantity that settle to form harmful benthic deposits; float as foam, debris, scum or other visible substances; produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated uses; result in the dominance of nuisance species; or interfere with recreational activities.
4. Tainting substances shall not be present in the discharge in concentrations that individually or in combination are detectable by taste and odor tests performed on the edible portions of aquatic organisms.
5. The discharge shall not result in toxic substances or chemical constituents in concentrations or combinations in the receiving water that injure or are inimical to plants, animals, humans or aquatic life; or persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in edible portions of fish, shellfish, other aquatic life, or wildlife that might consume aquatic life.
6. The discharge shall not result in benthic deposits that have a detrimental impact on the benthic community. The discharge shall not result in oil and grease, color, slicks, odors, or surface floating solids that would impair any existing or designated uses in the receiving water.
7. The discharge shall not result in an exceedance of the naturally occurring turbidity in the receiving water by more than 10 NTUs.
8. The Permittee must provide adequate notice to EPA-Region 1 and the State of the following:
  - a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Part 301 or Part 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 C.F.R. Part 122 Appendix A as amended) discharging process water; and
  - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
  - c. For purposes of this paragraph, adequate notice shall include information on:
    - (1) The quantity and quality of effluent introduced into the POTW; and
    - (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

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**

This permit authorizes discharges only from the outfall listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit in accordance with Part II.D.1.e.(1) (24-hour reporting). See Part I.H below for reporting requirements.

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

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

1. Maintenance Staff

The Permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. Provisions to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

2. Preventative Maintenance Program

The 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 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

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



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

5. Collection System O&M Plan

The Permittee shall continue to update and implement the Collection System O&M Plan which was previously submitted to EPA and the State. The plan shall be available for review by federal, state, and local agencies as requested. The Plan shall include:

- a. A description of the collection system management goals, staffing, information management, and legal authorities;
- b. 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
- c. A preventive maintenance and monitoring program for the collection system;
- d. Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
- e. Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
- f. 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;
- g. 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;

- h. An educational public outreach program for all aspects of I/I control, particularly private inflow; and
- i. 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 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 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 monthly average flow exceeded 80 percent of the facility's 1.5 MGD design flow (1.2 MGD) for three consecutive months in the previous calendar year, 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 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**

- 1. The Permittee shall submit to EPA and the State the name of any Industrial User (IU) subject to Categorical Pretreatment Standards under 40 C.F.R. § 403.6 and 40 C.F.R.

chapter I, subchapter N (Parts 405-415, 417-430, 432, 447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended) who commences discharge to the facility after the effective date of this permit.

2. This reporting requirement also applies to any other IU who is classified as a Significant Industrial User which discharges an average of 25,000 gallons per day or more of process wastewater into the facility (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastewater which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the facility; or is designated as such by the Control Authority as defined in 40 C.F.R. § 403.3(f) on the basis that the industrial user has a reasonable potential to adversely affect the wastewater treatment facility's operation, or for violating any pretreatment standard or requirement (in accordance with 40 C.F.R. § 403.8(f)(6)).
3. In the event that the Permittee receives originals of reports (baseline monitoring reports, 90-day compliance reports, periodic reports on continued compliance, etc.) from industrial users subject to Categorical Pretreatment Standards under 40 C.F.R. § 403.6 and 40 C.F.R. chapter I, subchapter N (Parts 405-415, 417-430, 432-447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended), or from a Significant Industrial User, the Permittee shall forward the originals of these reports within ninety (90) days of their receipt to EPA, and copy the State.

## F. SLUDGE CONDITIONS

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 C.F.R. Part 503, which prescribe "Standards for the Use or Disposal of Sewage Sludge" pursuant to § 405(d) of the CWA, 33 U.S.C. § 1345(d).
2. If both state and federal requirements apply to the Permittee's sludge use and/or disposal practices, the Permittee shall comply with the more stringent of the applicable requirements.
3. The requirements and technical standards of 40 C.F.R. Part 503 apply to the following sludge use or disposal practices:
  - a. Land application - the use of sewage sludge to condition or fertilize the soil
  - b. Surface disposal - the placement of sewage sludge in a sludge only landfill
  - c. Sewage sludge incineration in a sludge only incinerator
4. The requirements of 40 C.F.R. Part 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. Part 503 requirements include the following elements:

- a. General requirements
- b. Pollutant limitations
- c. Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
- d. Management practices
- e. Record keeping
- f. Monitoring
- g. Reporting

Which of the 40 C.F.R. Part 503 requirements apply to the Permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 Guidance document, “EPA Region 1 - NPDES Permit Sludge Compliance Guidance” (November 4, 1999), may be used by the Permittee to assist it in determining the applicable requirements.<sup>2</sup>

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

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

Sampling of the sewage sludge shall use the procedures detailed in 40 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 Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the Permittee does not engage a “person who prepares sewage sludge,” as defined in 40 C.F.R. § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in Part 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.

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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>

8. The Permittee shall submit an annual report containing the information specified in the 40 C.F.R. Part 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by **February 19** (*see also* “EPA Region 1 - NPDES Permit Sludge Compliance Guidance”). Reports shall be submitted electronically using EPA’s Electronic Reporting tool (“NeT”) (see “Reporting Requirements” section below).
9. Compliance with the requirements of this permit or 40 C.F.R. Part 503 shall not eliminate or modify the need to comply with applicable requirements under RSA 485-A and Env-Wq 800, New Hampshire Sludge Management Rules.

## G. SPECIAL CONDITIONS

### 1. Provision to Modify pH Range

The pH range may be modified if the Permittee satisfies conditions set forth in Part I.I.5 below. Upon notification of an approval by NHDES, EPA will review and, if acceptable, will submit written notice to the Permittee of the permit change. The modified pH range will not be in effect until the Permittee receives written notice from EPA.

### 2. Phosphorus Schedule of Compliance

The effluent limit for total phosphorus shall be subject to a schedule of compliance, as follows:

- a) Within twelve (12) months of the effective date of the permit, the Permittee shall submit to EPA and NHDES a status report relative to the planning and design of the facilities necessary to achieve the permit limit.
- b) Within twenty-four (24) months of the effective date of the permit, the Permittee shall complete design of the Facility improvements required to achieve the total phosphorus limit.
- c) Within thirty (30) months of the effective date of the permit, the Permittee shall initiate construction of the Facility improvements required to achieve the total phosphorus limit.
- d) Within forty-two (42) months of the effective date of the permit, the Permittee shall submit to EPA and NHDES a status report relative to construction of the Facility improvements required to achieve the total phosphorus limit.
- e) Within fifty-four (54) months of the effective date of the permit, the Permittee shall complete construction of the Facility improvements required to achieve the total phosphorus limit and shall comply with the permit limit.

3. Phosphorus Ambient Monitoring Requirements

The Permittee shall develop and implement a sampling and analysis plan for biannually collecting monthly samples in the receiving water for total phosphorus at a location upstream of the facility's discharge. Samples shall be collected once per month, from April through October, every other calendar year starting on the calendar year following the date of permit issuance. Sampling shall be conducted on any calendar day that is preceded by at least 72 hours with less than or equal to 0.1 inches of cumulative rainfall. A sampling plan shall be submitted to EPA and the State at least three months prior to the first planned sampling date as part of a Quality Assurance Project Plan for review and approval. For the years that monitoring is not required, the Permittee shall report NODI code "9" (conditional monitoring not required).

4. Copper Compliance Schedule

The effluent limit for total copper shall be subject to a schedule of compliance whereby the limit takes effect four years after the effective date of the permit. For the period starting on the effective date of this permit and ending four (4) years after the effective date, the Permittee shall comply with their existing copper limits of 17.3 µg/L (average monthly) and 24 µg/L (daily maximum). After this initial four (4) year period, the Permittee shall comply with the monthly average total copper limits of 14 µg/L daily maximum and 9.5 µg/L average monthly ("final copper effluent limit"). The Permittee shall submit an annual report due January 15<sup>th</sup> of the first four years of the permit that will detail its progress towards meeting the final copper effluent limit.

At a minimum, the Permittee shall perform the following:

- a. An evaluation of all potentially significant sources of copper in the sewer system and alternatives for minimizing these sources.
- b. An evaluation of alternative modes of operation at the wastewater treatment facility in order to reduce the effluent levels of copper.

5. Lead Compliance Schedule

The effluent limit for total lead shall be subject to a schedule of compliance whereby the limit takes effect one year after the effective date of the permit. For the period starting on the effective date of this permit and ending one (1) year after the effective date, the Permittee shall comply with their existing lead limits of 3.3 µg/L (average monthly) and 87 µg/L (daily maximum). After this initial one (1) year period, the Permittee shall comply with the monthly average total lead limits of 67 µg/L daily maximum and 2.6 µg/L average monthly ("final lead effluent limit"). The Permittee shall submit a report due January 15<sup>th</sup> of the first year of the permit that will detail its progress towards meeting the final lead effluent limit.

At a minimum, the Permittee shall perform the following:

- a. An evaluation of all potentially significant sources of lead in the sewer system and alternatives for minimizing these sources.
- b. An evaluation of alternative modes of operation at the wastewater treatment facility in order to reduce the effluent levels of lead.

6. Zinc Compliance Schedule

The effluent limit for total zinc shall be subject to a schedule of compliance whereby the limit takes effect one year after the effective date of the permit. For the period starting on the effective date of this permit and ending one (1) year after the effective date, the Permittee shall report the monthly average and daily maximum zinc concentration on the monthly DMR. After this initial one (1) year period, the Permittee shall comply with the monthly average total zinc limits of 152 µg/L daily maximum and 152 µg/L average monthly (“final zinc effluent limit”). The Permittee shall submit a report due January 15<sup>th</sup> of the first year of the permit that will detail its progress towards meeting the final zinc effluent limit.

At a minimum, the Permittee shall perform the following:

- a. An evaluation of all potentially significant sources of zinc in the sewer system and alternatives for minimizing these sources.
- b. An evaluation of alternative modes of operation at the wastewater treatment facility in order to reduce the effluent levels of zinc.

7. Total Nitrogen Optimization Requirements

- a. The Permittee shall continue to optimize the treatment facility operations relative to total nitrogen (“TN”) removal through measures and/or operational changes designed to enhance the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen.
- b. The Permittee shall submit an annual report to EPA and the NHDES-WD, by February 1st of each year, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous calendar year. If, in any year, the treatment facility discharges of TN on an average annual basis have increased, the annual report shall include a detailed explanation of the reasons why TN discharges have increased, including any changes in influent flows/loads and any operational changes. The report shall also include all supporting data.

## H. REPORTING REQUIREMENTS

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

1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State 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. This includes the NHDES Monthly Operating Reports (MORs). *See* Part I.H.6. 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 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/>.

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

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

- (1) Transfer of permit notice;
- (2) Request for changes in sampling location;
- (3) Request for reduction in testing frequency;
- (4) Report on unacceptable dilution water / request for alternative dilution water for WET testing.
- (5) Report of new industrial user commencing discharge
- (6) Report received from existing industrial user

b. These reports, information, and requests shall be submitted to EPA WD electronically at [R1NPDESReporting@epa.gov](mailto:R1NPDESReporting@epa.gov).

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

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



(1) Prior to 21 December 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/>.

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

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

#### 6. State Reporting

Unless otherwise specified in this permit or by the State, duplicate signed copies of all reports, information, requests or notifications described in this permit, including the reports, information, requests or notifications described in Parts I.H.3 through I.H.5 shall also be submitted to the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) electronically to the Permittee's assigned NPDES inspector at NHDES-WD or as a hardcopy to the following addresses:

New Hampshire Department of Environmental Services  
Water Division  
Wastewater Engineering Bureau  
29 Hazen Drive, P.O. Box 95  
Concord, New Hampshire 03302-0095

#### 7. Verbal Reports and Verbal Notifications

Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to 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).

Verbal reports and verbal notifications shall be made to:

EPA ECAD at 617-918-1510  
and  
NHDES Assigned NPDES Inspector at 603-271-1494

### I. STATE PERMIT CONDITIONS

1. The Permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality

classification of, or interfere with the uses assigned to, said water by the New Hampshire Legislature (RSA 485-A:12).

2. This NPDES discharge permit is issued by EPA under federal law. Upon final issuance by EPA, the New Hampshire Department of Environmental Services-Water Division (NHDES-WD) may adopt this permit, including all terms and conditions, as a state permit pursuant to RSA 485-A:13.
3. EPA shall have the right to enforce the terms and conditions of this permit pursuant to federal law and NHDES-WD shall have the right to enforce the permit pursuant to state law, if the permit is adopted. 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 the permit as issued by the other agency.
4. Pursuant to New Hampshire Statute RSA 485-A:13, I(c), any person responsible for a bypass or upset at a *wastewater facility* shall give immediate notice of a bypass or upset to all public or privately owned water systems drawing water from the same receiving water and located within 20 miles downstream of the point of discharge regardless of whether or not it is on the same receiving water or on another surface water to which the receiving water is tributary. Wastewater facility is defined at RSA 485-A:2XIX as the structures, equipment, and processes required to collect, convey, and treat domestic and industrial wastes, and dispose of the effluent and sludge. The Permittee shall maintain a list of persons, and their telephone numbers, who are to be notified immediately by telephone. In addition, written notification, which shall be postmarked within 3 days of the bypass or upset, shall be sent to such persons.
5. The pH range of 6.5 to 8.0 Standard Units (S.U.) must be achieved in the final effluent unless the Permittee can demonstrate to NHDES-WD: 1) that the range should be widened due to naturally occurring conditions in the receiving water; or 2) that the naturally occurring receiving water pH is not significantly altered by the Permittee's discharge. The scope of any demonstration project must receive prior approval from NHDES-WD. In no case, shall the above procedure result in pH limits outside the range of 6.0 to 9.0 S.U., which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 C.F.R. § 133.102(c).
6. Pursuant to New Hampshire Code of Administrative Rules, Env-Wq 703.07(a):

Any person proposing to construct or modify any of the following shall submit an application for a sewer connection permit to the department:

- (1) Any extension of a collector or interceptor, whether public or private, regardless of flow;
- (2) Any wastewater connection or other discharge in excess of 5,000 gpd;
- (3) Any wastewater connection or other discharge to a WWTP operating in excess of 80 percent design flow capacity or design loading capacity based on actual average flow or loading for 3 consecutive months;

- (4) Any industrial wastewater connection or change in existing discharge of industrial wastewater, regardless of quality or quantity;
  - (5) Any sewage pumping station greater than 50 gpm or serving more than one building; or
  - (6) Any proposed sewer that serves more than one building or that requires a manhole at the connection.
7. For each new or increased discharge of industrial waste to the POTW, the Permittee shall submit, in accordance with Env-Wq 305.10(a) an “Industrial Wastewater Discharge Request.”
8. Pursuant to Env-Wq 305.15(d) and 305.16(f), the Permittee shall not allocate or accept for treatment more than 90 percent of the headworks loading limits of the facility.
9. Pursuant to Env-Wq 305.21, at a frequency no less than every five years, the Permittee shall submit to NHDES:
  - a. A copy of its current sewer use ordinance if it has been revised without department approval subsequent to any previous submittal to the department or a certification that no changes have been made.
  - b. A current list of all significant indirect dischargers to the POTW. At a minimum, the list shall include for each significant indirect discharger, its name and address, the name and daytime telephone number of a contact person, products manufactured, industrial processes used, existing pretreatment processes, and discharge permit status.
  - c. A list of all permitted indirect dischargers; and
  - d. A certification that the municipality is strictly enforcing its sewer use ordinance and all discharge permits it has issued.
10. When the effluent discharged for a period of three (3) consecutive months exceeds 80 percent of the 1.5 MGD design flow (1.2 MGD) or design loading capacity, the Permittee shall submit to the permitting authorities a projection of flows and loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans. Before the design flow will be reached, or whenever treatment necessary to achieve permit limits cannot be assured, the Permittee may be required to submit plans for facility improvements.

## 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  
Water Division  
U.S. Environmental Protection Agency-New  
England 5 Post Office Sq., Suite 100 (06-5)  
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:

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

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

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

Methods of Estimation:

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

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

### No Observed Acute Effect Level (NOAEL)

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

## **VIII. TOXICITY TEST REPORTING**

A report of the results will include the following:

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

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

**I. GENERAL REQUIREMENTS**

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

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

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

**II. METHODS**

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

**III. SAMPLE COLLECTION AND USE**

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

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

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

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

#### IV. DILUTION WATER

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

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

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

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

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

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

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

Director  
Water Division  
U.S. Environmental Protection Agency, Region 1  
Five Post Office Square, Suite 100  
Mail Code 06-5  
Boston, MA 02109-3912

and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## VI. CHEMICAL ANALYSIS

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

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

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

Other as permit requires

#### Notes:

1. Hardness may be determined by:

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

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

### **A. Test Review**

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

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

Guidance for this review can be found at

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

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

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

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



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

## B. Statistical Analysis

### 1. General - Recommended Statistical Analysis Method

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

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

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

### 2. *Pimephales promelas*

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

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

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

### 3. *Ceriodaphnia dubia*

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

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

## VIII. TOXICITY TEST REPORTING

A report of results must include the following:

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

In addition to the summary sheets the report must include:

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

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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:** NH0100153

**PUBLIC NOTICE START AND END DATES:** June 19, 2020 – July 18, 2020

**NAME AND MAILING ADDRESS OF APPLICANT:**

Town of Littleton  
126 Main Street, Suite 200  
Littleton, New Hampshire 03561

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

Littleton Wastewater Treatment Plant  
323 Meadow Street  
Littleton, NH 03561

**RECEIVING WATER AND CLASSIFICATION:**

Ammonoosuc River (Assessment Unit ID: NHRIV801030403-16)  
Connecticut River Watershed  
Class B



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## 1.0 Proposed Action

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

The permit currently in effect was issued on September 2, 2009 with an effective date of November 1, 2009 and expired on October 31, 2014 (the “2009 Permit”). The Permittee filed an application for permit reissuance with EPA dated April 1, 2014, 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 April 24, 2014, the Facility’s 2009 Permit has been administratively continued pursuant to 40 C.F.R. § 122.6 and § 122.21(d).

The NPDES Permit is issued by EPA under federal law, New Hampshire construes Title L, Water Management and Protection, Chapters 485-A, Water Pollution and Waste Disposal, to authorize the New Hampshire Department of Environmental Services (NHDES) to “consider” a federal NPDES permit to be a State surface water discharge permit. As such, all the terms and conditions of the permit may, therefore, be incorporated into and constitute a discharge permit issued by NHDES.

## 2.0 Statutory and Regulatory Authority

Congress enacted the Federal Water Pollution Control Act, codified at 33 U.S.C. § 1251-1387 and commonly known as the Clean Water Act (CWA), “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specific permitting sections of the CWA, one of which is § 402. *See* CWA §§ 301(a), 402(a). Section 402(a) established one of the CWA’s principal permitting programs, the NPDES Permit Program. Under this section, EPA may “issue a permit for the discharge of any pollutant or combination of pollutants” in accordance with certain conditions. CWA § 402(a). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA’s NPDES permit program are generally found in 40 C.F.R. §§ 122, 124, 125, and 136.

“Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits” in order to achieve the statutory mandates of Section 301 and 402. *Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992). *See also* 40 C.F.R. §§ 122.4(d), 122.44(d)(1), 122.44(d)(5). CWA §§ 301 and 306 provide for two types of effluent limitations to be included in NPDES permits: “technology-based” effluent limitations (TBELs) and “water quality-based” effluent limitations (WQBELs). *See* CWA §§ 301, 304(d); 40 C.F.R. Parts 122, 125, 131.

### 2.1 Technology-Based Requirements

Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted. *See* CWA § 301(b). As a class, publicly owned treatment works (POTWs) must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 301(b)(1)(B). The performance level for POTWs is referred to as “secondary treatment.” Secondary treatment is comprised of technology-based requirements expressed in terms of BOD<sub>5</sub>, TSS and pH. *See* 40 C.F.R. Part 133.

Under CWA § 301(b)(1), POTWs must have achieved effluent limits based upon secondary treatment technology by July 1, 1977. Since all statutory deadlines for meeting various treatment technology-based effluent limitations established pursuant to the CWA have expired, when technology-based effluent limits are included in a permit, compliance with those limitations is from the date the issued permit becomes effective. *See* 40 C.F.R. § 125.3(a)(1).

## **2.2 Water Quality Based Requirements**

The CWA and federal regulations also require that permit effluent limits based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water. *See* CWA § 301(b)(1)(C) and 40 C.F.R. §§ 122.44(d)(1), 122.44(d)(5).

### **2.2.1 Water Quality Standards**

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the State. *See* CWA § 303 and 40 C.F.R. § 131.10-12. Generally, WQSs consist of three parts: 1) the designated use or uses assigned for a water body or a segment of a water body; 2) numeric or narrative water quality criteria sufficient to protect the assigned designated use(s); and 3) antidegradation requirements to ensure that once a use is attained it will not be degraded and to protect high quality and National resource waters. *See* CWA § 303(c)(2)(A) and 40 C.F.R. § 131.12. The applicable State WQSs can be found in the New Hampshire Code of Administrative Rules, Surface Water Quality Regulations, Chapter Env-Wq 1700, *et seq.* *See also generally*, N.H. Rev. Stat. Title L, Water Management and Protection, Chapters 485-A, Water Pollution and Waste Disposal.

As a matter of state law, state WQSs specify different water body classifications, each of which is associated with certain designated uses and numeric and narrative water quality criteria. When using chemical-specific numeric criteria to develop permit limitations, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and, therefore, are typically applicable to monthly average limits.

When permit effluent limitation(s) are necessary to ensure that the receiving water meets narrative water quality criteria, the permitting authority must establish effluent limits in one of the following three ways: 1) based on a “calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use,” 2) based on a “case-by-case basis” using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, 3) in certain circumstances, based on use of an indicator parameter. *See* 40 C.F.R. § 122.44(d)(1)(vi)(A-C).

### **2.2.2 Antidegradation**

Federal regulations found at 40 C.F.R. § 131.12 require states to develop and adopt a statewide antidegradation policy that maintains and protects existing in-stream water uses and the level of water quality necessary to protect these existing uses. In addition, the antidegradation policy ensures maintenance of high quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water, unless the State finds that allowing degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

The New Hampshire Antidegradation Policy, found at Env-Wq 1708, applies to any new or increased activity that would lower water quality or affect existing or designated uses, including increased loadings to a water body from an existing activity. The antidegradation regulations focus on protecting high quality waters and maintaining water quality necessary to protect existing uses. Discharges that cause “significant degradation” are defined in NH WQS (Env-Wq 1708.09(a)) as those that use 20% or more of the remaining assimilative capacity for a water quality parameter in terms of either concentration or mass of pollutants or flow rate for water quantity. When NHDES determines that a proposed increase would cause a significant impact to existing water quality, the applicant must provide documentation to demonstrate that the lowering of water quality is necessary, that it will provide net economic or social benefit in the area in which the water body is located, and that the benefits of the activity outweigh the environmental impact caused by the reduction in water quality. *See* Env-Wq 1708.10(b).

This permit is being reissued with effluent limitations sufficiently stringent to satisfy the State’s antidegradation requirements, including the protection of the existing uses of the receiving water.

### **2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads.**

The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nation’s waters. To meet this goal, the CWA requires states to develop information on the quality of their water resources and report this information to EPA, the U.S. Congress, and the public. To this end, EPA released guidance on November 19, 2001, for the preparation of an integrated “List of Waters” that could combine reporting elements of both § 305(b) and § 303(d) of the CWA. The integrated list format allows states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories: 1) unimpaired and not threatened for all designated uses; 2) unimpaired waters for some uses and not assessed for others; 3) insufficient

information to make assessments for any uses; 4) impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) impaired or threatened for one or more uses and requiring a TMDL.

A TMDL is a planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL essentially provides a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from point sources and non-point sources, determines the maximum load of the pollutant that the water body can tolerate while still attaining WQSs for the designated uses, and allocates that load among to the various sources, including point source discharges, subject to NPDES permits. *See* 40 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 (WLA) for a NPDES permitted discharge, the effluent limitation in the permit must be “consistent with the assumptions and requirements of any available WLA”. 40 C.F.R. § 122.44(d)(1)(vii)(B).

#### **2.2.4 Reasonable Potential**

Pursuant to CWA § 301(b)(1)(C) and 40 C.F.R. § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs that are necessary to achieve water quality standards established under § 303 of the CWA. *See also* 33 U.S.C. § 1311(b)(1)(C). In addition, limitations “must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality.” 40 C.F.R. § 122.44(d)(1)(i). To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. *See* 40 C.F.R. § 122.44(d)(1)(ii).

If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQSs, the permit must contain WQBELs for that pollutant. *See* 40 C.F.R. § 122.44(d)(1)(i).

#### **2.2.5 State Certification**

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQSs, the State waives (or is deemed to have waived), its right to certify. *See* 33 U.S.C. § 1341(a)(1). Regulations governing state certification are set forth in 40 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 conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307 or the applicable requirements of State law, the State should include such conditions in its certification and, in each case, cite the CWA or State law provisions upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. EPA includes properly supported State certification conditions in the NPDES permit. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through the EPA permit appeal procedures of 40 C.F.R. Part 124.

In addition, the State should provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law. Since the State's certification is provided prior to final permit issuance, any failure by the State to provide this statement waives the State's right to certify or object to any less stringent condition.

It should be noted that under CWA § 401, EPA's duty to defer to considerations of state law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by state law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." 40 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 limitations based upon WQS and State requirements are contained in 40 C.F.R. §§ 122.4 (d) and 122.44(d).

### **2.3 Effluent Flow Requirements**

Sewage treatment plant discharge is encompassed within the definition of "pollutant" and is subject to regulation under the CWA. The CWA defines "pollutant" to mean, *inter alia*, "municipal...waste" and "sewage...discharged into water." 33 U.S.C. § 1362(6).

Generally, EPA uses effluent flow both to determine whether an NPDES permit needs certain effluent limitations and to calculate the limitations themselves. EPA practice is to use effluent flow as a reasonable and important worst-case condition in EPA's reasonable potential and WQBEL calculations to ensure compliance with WQSs under § 301(b)(1)(C). Should the effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations may not be sufficiently protective (i.e. might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at the lower discharge flow may have reasonable potential at a higher flow due to the decreased dilution. In order to ensure that the assumptions underlying the EPA's reasonable potential analyses and permit effluent limitation derivations remain sound for the duration of the permit, EPA may ensure the validity of its "worst-case" wastewater effluent flow assumptions through

imposition of permit conditions for effluent flow.<sup>1</sup> In this regard, the effluent flow limitation is a component of WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit is also necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

The limitation on wastewater effluent flow is within EPA's authority to condition a permit to carry out the objectives of the Act. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 C.F.R. §§ 122.4(a) and (d); 122.43 and 122.44(d). A condition on the discharge designed to ensure the WQBEL and reasonable potential calculations account for "worst case" conditions is encompassed by the references to "condition" and "limitations" in CWA §§ 402 and 301 and implementing regulations, as they are designed to assure compliance with applicable water quality regulations, including antidegradation. Regulating the quantity of pollutants in the discharge through a restriction on the quantity of wastewater effluent is consistent with the overall structure and purposes of the CWA.

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.

EPA has also included the effluent flow limit in the permit to minimize or prevent infiltration and inflow (I/I) that may result in unauthorized discharges and compromise proper operation and maintenance of the facility. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes or deteriorated joints. Inflow is extraneous flow added to the collection system that enters the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow, reducing the capacity available for treatment and the operating efficiency of the treatment works and to properly operate and maintain the treatment works.

Furthermore, the extraneous flow due to significant I/I greatly increases the potential for sanitary sewer overflows (SSOs) in separate systems. Consequently, the effluent flow limit is a permit condition that relates to the permittee's duty to mitigate (*i.e.*, minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment) and to properly operate and maintain the treatment works. *See* 40 C.F.R. §§ 122.41(d), (e).

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<sup>1</sup> EPA's regulations regarding "reasonable potential" require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," *id* 40 C.F.R. §122.44(d)(1)(ii). *Both* the effluent flow and receiving water flow may be considered when assessing reasonable potential. *In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 599 (EAB 2010). EPA guidance directs that this "reasonable potential: analysis be based on "worst-case" conditions. *See In re Washington Aquaduct Water Supply Sys.* 11 E.A.D. 565, 584 (EAB 2004)



## 2.4 Monitoring and Reporting Requirements

### 2.4.1 Monitoring Requirements

Sections 308(a) and 402(a)(2) of the CWA and the implementing regulations at 40 C.F.R. Parts 122, 124, 125, and 136 authorize EPA to include monitoring and reporting requirements in NPDES permits.

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 C.F.R. §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the wastewater discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. EPA and/or the State may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to CWA § 304(a)(1), State water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 C.F.R. Part 122.

NPDES permits require that the approved analytical procedures found in 40 C.F.R. Part 136 be used for sampling and analysis unless other procedures are explicitly specified. Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*.<sup>2</sup> This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 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 effluent limitation established in the permit for the measured pollutant or pollutant parameter; or
- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high

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<sup>2</sup> Fed. Reg. 49,001 (Aug 19, 2014).

<sup>3</sup> The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL). Minimum levels may be obtained in several ways: They may be published in a method; they may be sample concentrations equivalent to the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a lab, by a factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." See Fed. Reg. 49,001 (Aug. 19, 2014).

enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or

- The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 126 or required under 40 C.F.R. chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

#### **2.4.2 Reporting Requirements**

The Draft Permit requires the Permittee to report monitoring results obtained during each calendar month to EPA and the State electronically using NetDMR. The Permittee must submit a Discharge Monitoring Report (DMR) for each calendar month no later than the 15<sup>th</sup> day of the month following the completed reporting period.

NetDMR is a national web-based tool enabling regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has eliminated the need for participants to mail in paper forms to EPA under 40 C.F.R. §§ 122.41 and 403.12. NetDMR is accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>. Further information about NetDMR can be found on the EPA NetDMR support portal webpage.<sup>4</sup>

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the State unless otherwise specified in the Draft Permit. In most cases, reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR. Certain exceptions are provided in the permit, such as for providing written notifications required under the Part II Standard Conditions.

#### **2.5 Standard Conditions**

The standard conditions, included as Part II of the Draft Permit, are based on applicable regulations found in the Code of Federal Regulations. *See generally* 40 C.F.R. Part 122.

#### **2.6 Anti-backsliding**

The CWA's anti-backsliding requirements prohibit a permit from being renewed, reissued or modified to include with less stringent limitations or conditions than those contained in a previous permit except in compliance with one of the specified exceptions to those requirements. *See* CWA §§ 402(o) and 303(d)(4) and 40 C.F.R. § 122.44(l). Anti-backsliding provisions apply to effluent limits based on technology, water quality and/or state certification requirements.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2009 Permit unless specific conditions exist to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

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

### **3.0 Description of Facility and Discharge**

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

The location of the treatment plant and Outfall 001 to the Ammonoosuc River are shown in Figure 1. The longitude and latitude of the outfall are N 44.307028°, W 71.792970°.

The Littleton Wastewater Treatment Facility (WWTF) is a biological secondary wastewater treatment facility. Currently, the Facility serves approximately 3,658 residents in the Town of Littleton with the collection system primarily focused in the town center (Route 302 corridor). The Facility has a design flow of 1.5 MGD, the annual average daily flow reported in the 2014 application was 0.78 MGD and the median for the last 5 years has been 0.6285 MGD. Twenty percent (20%) of the collection system is combined storm and sanitary sewer and 80% is separate sanitary sewer.

There are 2 industrial users that discharge to the POTW consisting of process and non-process wastewater:

(1) Tender Corporation, 106 Burndy Street, consisting of process (120 gpd) and non-process (999 gpd) wastewater which contributes an average of 1,119 gallons per day.

(2) Hitchiner Manufacturing Co., Inc, 24 Beacon Street, consisting of industrial (11,318 gpd) and sanitary (4,500 gpd) wastewater which contributes an average of 15,818 gallons per day.

Pollutants introduced into POTWs by a non-domestic source shall not pass through the POTW or interfere with the operation or performance of the treatment works.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the Permittee from February 2015 through January 2020 is provided in Appendix A of this Fact Sheet.

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

The Littleton Wastewater Treatment Plant (WWTP) is a biological secondary wastewater treatment facility. Wastewater enters the facility through a 30-inch diameter interceptor. A mechanical bar screen provides preliminary treatment by removing coarse solids from the wastewater. The wastewater then flows, by gravity, through a grit chamber and flow measuring equipment to a wet well. Two enclosed screw pumps convey the wastewater to oxidation ditches, where secondary biological treatment occurs. Mixing and aeration of the wastewater is provided by rotary aeration discs.

Process liquid from the oxidation ditches is divided between two clariflocculators (settling tanks). There, biological solids are separated and removed from the treated wastewater. The clarified liquid, of effluent, flows to an ultraviolet disinfection system and is discharged into the Ammonoosuc River. A flow diagram of the Treatment Facility is shown in Figure 2.

Biological solids required to support the activated sludge process are recycled to the oxidation ditches from the clariflocculators by return sludge pumps. Excess biological solids, not needed in the oxidation ditches, are pumped to an aerated sludge holding tanks. From the sludge holding tank, sludge is transferred to the centrifuge for dewatering. The dewatered sludge is then hauled to North County Environmental Services landfill in Bethlehem, New Hampshire. The average mass of sludge shipped for landfilling in 2014 was 800 dry metric tons.

### 3.1.2 Collection System Description

The Littleton WWTP is served by a partially combined (20%) and partially separate (80%) sewer system. Although part of the collection system is a combined stormwater and sewer system, there are no combined sewer overflows (CSOs) or CSO structures.

## 4.0 Description of Receiving Water and Dilution

### 4.1 Receiving Water

The Littleton WWTP discharges through Outfall 001 into the Ammonoosuc River, a tributary of the Connecticut River, Assessment Unit NHRIV801030403-16. This segment is 4.9 miles in length and travels from the Littleton WWTF to the confluence with Gale River/Bowen Brook in Lisbon, NH. The Ammonoosuc River then flows into the Connecticut River, which discharges to the Long Island Sound Estuary.

The Ammonoosuc River is classified as a Class B water by the State of New Hampshire. According to New Hampshire's WQS (RSA 485-A:8), "*Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics, shall contain a dissolved oxygen content of at least 75 percent of saturation, and shall contain not more than either a geometric mean based on at least 3 samples obtained over a 60-day period of 126 Escherichia coli per 100 milliliters, or greater than 406 Escherichia coli per 100 milliliters in any one sample; and for designated beach areas shall contain not more than a geometric mean based on at least 3 samples obtained over a 60-day period of 47 Escherichia coli per 100 milliliters, or 88 Escherichia coli per 100 milliliters in any one sample; unless naturally occurring. There shall be no disposal of sewage or waste into said waters except those which have received adequate treatment to prevent the lowering of the biological, physical, chemical or bacteriological characteristics below those given above, nor shall such disposal of sewage or waste be inimical to aquatic life or to the maintenance of aquatic life in said receiving waters. The pH range for said waters shall be 6.5 to 8.0 except when due to natural causes. Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water, water diversions, or releases shall not be such as to appreciably interfere with the uses assigned to this class.*"

The NHDES 2018 List of Threatened or Impaired Waters That Require a TMDL<sup>5</sup> (2018 303(d) List), includes the Ammonoosuc River Assessment Unit NHRIV801030403-16 as a Category 5 Water and in need of a total maximum daily load (TMDL) assessment due to aluminum and pH.

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<sup>5</sup> <https://www.des.nh.gov/organization/divisions/water/wmb/swqa/2018/index.htm>

The listed sources are unknown. To date no TMDL has been developed for this segment for the listed impairments and the TMDL priority remains categorized as low.

The status of each designated use is presented in Table 1.

**Table 1: Summary of Designated Uses and Listing Status**

<b>Designated Use</b>	<b>Status</b>
Aquatic Life	Not supporting, severe (aluminum, pH)
Potential Drinking Water Sources	Full support, good
Primary Contact Recreation	Likely good, insufficient information
Secondary Contact Recreation	Full support, good
Fish Consumption	Not Supporting, marginal (mercury)

EPA has proposed effluent limits in the Draft Permit that ensure that the discharge results in no more than an insignificant degradation of water quality in the Ammonoosuc River and the downstream waters.

#### **4.2 Ambient Data**

A summary of the ambient data collected in the receiving water in the vicinity of the outfall that is referenced in this Fact Sheet can be found in Appendix A of this Fact Sheet.

#### **4.3 Available Dilution**

To ensure that discharges do not cause or contribute to violations of WQS under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water<sup>6</sup>. The critical flow in rivers and streams is some measure of the low flow of that river or stream. For rivers and streams where flows are not regulated by dams, NH WQSs require that effluent dilution be calculated based on the receiving water lowest observed mean river flow for seven consecutive days, recorded over a 10-year recurrence interval, or 7-day 10-year low flow (7Q10).

The Littleton WWTP is located about 10 miles downstream of the USGS Ammonoosuc River at Bethlehem Junction, NH Gage (01137500) and approximately three miles downstream of the Apthorp Dam, a Federal Energy Regulatory Commission (FERC) licensed hydroelectric facility (NH00611). The FERC license for the Apthorp Dam contains a minimum flow requirement of 90 cubic feet per second (cfs) or at least 90 percent of the inflow. In addition, the Bethlehem Wastewater Treatment Plant discharges to the Ammonoosuc River upstream of the Apthorp Dam (and the water source for the discharge is located outside of the basin upstream of the discharge), and Bethlehem Power Station has an intake from the Ammonoosuc River upstream of the Apthorp Dam. In addition, an island near the Littleton WWTP essentially divides the flow of the Ammonoosuc River in half, and the 7Q10 flow calculated below takes into account that the flow at the location of the Littleton WWTP outfall is approximately half of the total flow for the Ammonoosuc River at that location.

<sup>6</sup> EPA Permit Writer's Manual, Section 6.2.4

**Table 2: Summary of 7Q10 Calculations**

Identifier	Description	7Q10 component (cfs)
A. USGS 01137500	Ammonoosuc River at Bethlehem Junction, NH. Upstream of facility	29.3
B. Estimated 7Q10 watershed contributions for river segment between gage and dam	Calculated using the Dingman <sup>7</sup> equation	1.41
C. Bethlehem WWTP discharge to Ammonoosuc River	Average monthly flow limit in 2018 NPDES permit (NH01001392)	0.53
D. Bethlehem Power Station intake from Ammonoosuc River	Maximum allowable intake flow in 2020 NPDES permit modification (NH0021423)	0.67
E. Estimated 7Q10 watershed contributions for river segment between dam and WWTP	Calculated using the Dingman equation	0.40
<b>7Q10 Upstream of Littleton WWTP Outfall</b>	<b>7Q10 = 0.5*(0.9*(A+B+C-D) + E)</b>	<b>14.0</b>

NHDES calculated the 7Q10 for the Ammonoosuc River based on data from the United States Geological Survey (USGS) low-flow frequency statistics for the nearest USGS gaging to the Facility along the Ammonoosuc River (Station Number 01137500 at Bethlehem Junction). The dilution factor (DF) was calculated using the design flow ( $Q_d$ ) and the critical flow in the receiving water upstream of the discharge ( $Q_s$ ) as follows:

$$DF = 0.9 * (Q_s + Q_d) / Q_d$$

Where:

$Q_s$  = 7Q10 flow of Ammonoosuc River just upstream of outfall = 14.0 cfs

$Q_d$  = design flow of the Littleton WWTP = 1.5 MGD = 2.32 cfs

0.9 = factor to reserve 10% of the receiving water assimilative capacity

Therefore:

$$DF = 0.9 * (14.0 + 2.32) / 2.32 \text{ cfs} = 6.3$$

<sup>7</sup> Dingman, S.L., and S.C. Lawlor, 1995. Estimating Low-Flow Quantiles from Drainage-Basin Characteristics in New Hampshire and Vermont, American Water Resources Association, Water Resources Bulletin, pp 243-256.

## **5.0 Proposed Effluent Limitations and Conditions**

The proposed effluent limitations and conditions derived under the CWA and State WQSs are described below. These proposed effluent limitations and conditions, the basis of which are discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit.

### **5.1 Effluent Limitations and Monitoring Requirements**

In addition to the State and Federal regulations described in Section 2, data submitted by the Permittee in its permit application, in monthly discharge monitoring reports (DMRs) and in WET test reports from February 2015 to January 2020 (the “review period”) were used to identify the pollutants of concern and to evaluate the discharge during the effluent limitations development process (*See Appendix A*). A reasonable potential analysis is included in Appendix B and results are discussed in the sections below.

#### **5.1.1 Effluent Flow**

There was no effluent flow limit in the 2009 Permit, rather, there was an effluent flow reporting requirement. The Littleton WWTP has a design flow of 1.5 MGD, as per their application.

The Draft Permit implements a flow limit of 1.5 MGD. 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 year-round BOD<sub>5</sub> limits in the 2009 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. The daily maximum of 50 mg/L was carried forward from the previous permit. The DMR data during the review period shows that there have been no violations of BOD<sub>5</sub> concentration limits.

The Draft Permit proposes the same BOD<sub>5</sub> concentration limits as in the 2009 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains twice per week.

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

The year-round mass-based BOD<sub>5</sub> limits in the 2009 Permit of 375 lb/day (average monthly), 563 lb/day (average weekly), and 626 lb/day (daily maximum) were based on pollutant concentration limits and the design flow of the Facility.

The DMR data from the review period shows that there have been no violations of BOD<sub>5</sub> mass limits.

Calculations of maximum allowable loads for average monthly, average weekly, and daily maximum BOD<sub>5</sub> are based on the following equation:

$$L = C_d * Q_d * 8.345$$

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

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

Limits:

Average Monthly: 30 mg/L \* 1.5 MGD \* 8.345 = 375 lb/day

Average Weekly: 45 mg/L \* 1.5 MGD \* 8.345 = 563 lb/day

Daily Maximum: 50 mg/L \* 1.5 MGD \* 8.345 = 626 lb/day

The mass-based limits from the 2009 permit are carried forward, as is the sampling frequency of twice per week.

### 5.1.3 Total Suspended Solids (TSS)

Solids could include inorganic (e.g. silt, sand, clay and insoluble hydrated metal oxides) and organic matter (e.g. flocculated colloids and compounds that contribute to color). Solids can clog fish gills, resulting in an increase in susceptibility to infection and asphyxiation. Suspended solids can increase turbidity in receiving waters and reduce light penetration through the water column or settle to form bottom deposits in the receiving water. Suspended solids also provide a medium for the transport of other adsorbed pollutants, such as metals, which may accumulate in settled deposits that can have a long-term impact on the water column through cycles of re-suspension.

#### 5.1.3.1 TSS Concentration Limits

The year-round TSS limits in the 2009 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. The daily maximum of 50 mg/L was carried forward from the previous permit. The DMR data during the review period shows that there have been no violations of BOD<sub>5</sub> concentration limits.

The Draft Permit proposes the same TSS concentration limits as in the 2009 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains twice per week.



### 5.1.3.2 TSS Mass Limits

The year-round mass based TSS limits in the 2009 Permit of 375 lb/day (average monthly), 563 lb/day (average weekly), and 626 lb/day (daily maximum) were based on pollutant concentration limits and the design flow of the Facility.

The DMR data from the review period shows that there have been no violations of TSS mass limits.

Calculations of maximum allowable loads for average monthly, average weekly, and daily maximum TSS are based on the following equation:

$$L = C_d * Q_d * 8.345$$

Where:

L = Maximum allowable load in lb/day

$C_d$  = Maximum allowable effluent concentration for reporting period in mg/L  
(reporting periods are average monthly and average weekly)

$Q_d$  = Annual average design flow of Facility

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

Limits:

Average Monthly: 30 mg/L \* 1.5 MGD \* 8.345 = 375 lb/day

Average Weekly: 45 mg/L \* 1.5 MGD \* 8.345 = 563 lb/day

Daily Maximum: 50 mg/L \* 1.5 MGD \* 8.345 = 626 lb/day

The mass-based limits from the 2009 permit are carried forward, as is the sampling frequency of twice 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), and (b)(3), the 2009 Permit requires that the 30-day average percent removal for BOD<sub>5</sub> and TSS be not less than 85%. The DMR data during the review period shows that BOD<sub>5</sub> and TSS removal percentages averaged 99% and 99%, respectively. There were no violations of the 85% removal requirement for BOD<sub>5</sub> or TSS during that period.

The requirement to achieve 85% BOD<sub>5</sub> and TSS removal has been carried forward into the Draft Permit.

### 5.1.5 pH

The hydrogen ion concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units (S.U.). Solutions with pH 7.0 S.U. are neutral, while those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic. Discharges with pH values markedly different from the receiving water pH can have a

detrimental effect on the environment. Sudden pH changes can kill aquatic life. pH can also have an indirect effect on the toxicity of other pollutants in the water.

Consistent with the requirements of New Hampshire's WQS at RSA 485-A:8 II, "The pH for said (Class B) waters shall be 6.5 to 8.0 except when due to natural causes." The monitoring frequency is once per day. The DMR data during the review period show that there have been no violations of the pH limitations.

The pH requirements in the 2009 Permit are carried forward into the Draft Permit as there has been no change in the WQSs with regards to pH. The limitations are based on CWA 301(b)(1)(C) and 40 C.F.R. § 122.44(d).

### **5.1.6 Bacteria**

The 2009 Permit includes effluent limits for bacteria using *Escherichia coli* (*E. coli*) bacteria as the indicator bacteria to protect recreational uses. NH WQS at Env-Wq 1700, Appendix E requires a monthly geometric mean of 126 *E. coli* /100 ml and a maximum daily limit of 406 *E. coli*/100 ml. The DMR data during the review period show no violations.

The Draft Permit proposes maintaining the effluent limits for bacteria in the 2009 Permit. The *E. coli* limits are a monthly geometric mean of 126 *E. coli*/100 mL and a maximum daily limit of 406 *E. coli*/100 mL. The sampling frequency for *E. coli* is 3 times per week. These limits and sampling frequency are the same as in the 2009 Permit.

### **5.1.7 Total Residual Chlorine**

The Permittee uses chlorine disinfection as a backup in case the UV disinfection system fails or has to be taken off-line for maintenance. The 2009 Permit includes effluent limitations for total residual chlorine (TRC) of 68 ug/L (monthly average) and 117 ug/L (maximum daily). The DMR data during the review period show that the backup chlorine system was not used, and therefore there have been no violations of the TRC limitations.

The TRC permit limits are based on the New Hampshire Code of Administrative Rules, Env-Wq 1703.21 and Table 1703.1. These 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 \* 6.3 = 69 ug/L (average monthly)

Acute criteria \* dilution factor = Acute limit  
19 ug/L \* 6.3 = 120 ug/L (maximum daily)

These calculated values are slightly higher than the limits in the 2010 permit. However, due to anti-backsliding regulations found at CWA §§ 402(o) and 303(d)(4) and 40 C.F.R. § 122.44(1),

the limits of 68 µg/L (chronic) and 117 µg/L (acute) are carried forward in the Draft Permit with a sampling frequency of once per day, when the system is in use.

### 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 2009 Permit does not include ammonia limits, but the Permittee was required to monitor and report effluent ammonia on a monthly basis. This data is presented in Appendix A and shows the median concentration for the warm weather period (May 1 through October 31) is 1.3 mg/L and for the cold weather period (November 1 through April 30) is 0.06 mg/L. The Permittee also reported effluent and ambient ammonia concentrations on a quarterly basis as part of the Whole Effluent Toxicity (WET) testing. Ambient data, taken upstream of the Littleton outfall in the Ammonoosuc River, is presented in Appendix A and shows non-detectable for all but one sample, which shows a warm weather result (May 1 through October 31) of 0.13 mg/L.

The freshwater ammonia criteria in the NH WQS (Env-Wq 1703.25 & 1703.26) are dependent on pH and temperature and the acute criterion is also dependent on whether Salmonids are present in the receiving water.

In determining whether the discharge has the reasonable potential to cause or contribute to excursions above the instream water quality criteria for ammonia, EPA used the mass balance equation presented in Appendix B for both warm and cold weather conditions to project the ammonia concentration downstream of the discharge. If there is reasonable potential, this mass balance equation is also used to determine the limit that is required in the permit.

To determine the applicable ammonia criteria, EPA assumes a warm weather temperature of 25° C and a cold weather temperature of 5° C. EPA used the ambient pH monitoring shown in Appendix A, which indicates that the median pH is 7.0 S.U. Additionally, the Ammonoosuc River in the vicinity of the Littleton WWTP discharge is within Essential Fish Habitat (EFH) for Atlantic salmon (*Salmo salar*), so EPA has assumed that salmonids could be present in the receiving waters.

Based on the information and assumptions described above, Appendix B presents the applicable ammonia criteria, the details of the mass balance equation, the reasonable potential determination, and, if necessary, the limits required in the Draft Permit. As shown, there is reasonable potential, so the Draft Permit proposes a new warm weather ammonia limit of 9.0 mg/L as a monthly average limit applicable from May 1 through October 31 and a cold-weather reporting requirement applicable from November 1 through April 30. 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 freshwater ecosystems and nitrogen in marine or estuarine ecosystems. Thus, for this facility which discharges into a freshwater that also contributes to the nitrogen load in Long Island Sound, both phosphorus and nitrogen are the nutrients of concern in the discussion below.

### 5.1.9.1 Nitrogen

The Littleton WWTP discharges to the Ammonoosuc River, which drains to Long Island Sound via the Connecticut River. In December 2000, the Connecticut Department of Energy and Environmental Protection (“CT DEEP”) and New York State Department of Environmental Conservation (“NYSDEC”) completed a Total Maximum Daily Load (“TMDL”) for addressing nitrogen-driven eutrophication impacts in Long Island Sound. The TMDL included a Waste Load Allocation (“WLA”) for point sources and a Load Allocation (“LA”) for non-point sources. The point source WLA for out-of-basin sources (Massachusetts, New Hampshire, and Vermont point sources discharging to the Connecticut, Housatonic, and Thames River watersheds) requires an aggregate 25% reduction from the baseline total nitrogen loading estimated in the TMDL.

The 1998 baseline out-of-basin total nitrogen point source loadings estimated for the Connecticut, Housatonic, and Thames River watersheds were 21,672 lb/day, 3,286 lb/day, and 1,253 lb/day, respectively (*see* Table 3: Estimated Point Source Nitrogen Loadings to the Connecticut, Housatonic, and Thames Rivers Watersheds below). The estimated point source total nitrogen loadings for the Connecticut, Housatonic, and Thames Rivers for 2013-2018 are summarized in Appendix C.

**Table 3: Estimated Out-of-Basin Point Source Nitrogen Loadings to the Connecticut, Housatonic, and Thames Rivers Watersheds**

Basin	1998 Baseline Loading <sup>8</sup> lb/day	TMDL WLA <sup>9</sup> lb/day	Maximum Loading, 2014-2018, lb/day <sup>10</sup>
Connecticut River	21,672	16,254	12,120 <sup>11</sup>
Housatonic River	3,286	2,464	1,707 <sup>12</sup>
Thames River	1,253	939	677 <sup>13</sup>
Totals	26,211	19,657	14,504

<sup>8</sup> Estimated loading from TMDL, (see Appendix 3 to CT DEP “Report on Nitrogen Loads to Long Island Sound”, April 1998)

<sup>9</sup> Reduction of 25% from baseline loading

<sup>10</sup> Estimated loading from 2013-2018 Discharge Monitoring Report data

<sup>11</sup> Highest load from the Connecticut River occurred in 2014

<sup>12</sup> Highest load from the Housatonic River occurred in 2018

<sup>13</sup> Highest load from the Thames River occurred in 2014

As can be seen in Table 3, the TMDL target of a 25% aggregate reduction from the 1998 baseline loadings is currently being met, and the overall loading from MA, NH and VT wastewater treatment plants discharging to the Connecticut River watershed is about 11% below the TMDL wasteload allocation. Overall the loadings from MA, NH, and VT are about 15% below the TMDL wasteload allocation. The 2007 Permit did not require nitrogen monitoring. While substantial TN out-of-basin load reductions have occurred at some facilities by means of optimization requirements alone, concerns raised in recent public comments by the downstream state (Connecticut) and concerned citizens<sup>14</sup> have highlighted the need for clearly enforceable, numeric, loading-based effluent limits to ensure that the annual aggregate nitrogen loading from out-of-basin point sources are consistent with the TMDL WLA of 19,657 lb/day and to ensure that current reductions in loading do not increase, given the continued impairment status of LIS. After further review of the federal and state requirements, EPA agrees with the concerns raised by the downstream state and the public. As discussed in Section 2 of this Fact Sheet, statutory and regulatory requirements regarding the development of water quality-based effluent limits include provisions to ensure implementation of any available WLAs<sup>15</sup>, provisions to prevent further degradation of receiving waters that are already impaired<sup>16</sup> and consideration of applicable water quality requirements of downstream states<sup>17</sup>.

The optimization requirements included, in many out-of-basin permits issued in the LIS watershed since 2007, have resulted in nitrogen reductions by means of utilizing the available equipment to minimize discharges of nitrogen. However, these requirements by themselves are not enforceable effluent limits that would prevent further increases in nitrogen due to population growth or new industrial dischargers. Enforceable effluent limits will ensure that as communities experience new residential, commercial and industrial growth, the nitrogen load from their POTWs do not cause or contribute to further degradation of LIS.

Therefore, EPA intends to include total nitrogen rolling annual average mass-based loading limits (in lb/day) and requirements to optimize current treatment systems to minimize the effluent nitrogen in all permits issued to wastewater treatment plants with design flow greater than or equal to one (1.5) MGD that discharge to the LIS watershed in New Hampshire.

Table 4 summarizes the approach to update TN requirements for this and future permits in the LIS watershed in New Hampshire. EPA is also working with the States of Massachusetts and Vermont to ensure that comparable requirements are included in NPDES permits issued in those states and this is the first NH permit which will adopt this approach.

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<sup>14</sup> Connecticut Department of Energy and Environmental Protection letters to EPA dated February 7, 2018 and April 27, 2018; Connecticut Fund for the Environment letter to EPA dated February 7, 2018; and Connecticut River Conservancy letter to EPA dated February 18, 2018.

<sup>15</sup> See 40 C.F.R. §122.44(d)(1)(vii)(B)

<sup>16</sup> See 40 C.F.R. § 122.44(d)(1)(vii)(B), 40 C.F.R. § 131.12(a)(1), and 314 CMR 4.04(1)

<sup>17</sup> See 40 C.F.R. § 122.44(d)(4) and CWA section 401(a)(2)

**Table 4 - Annual Average Total Nitrogen Limits for New Hampshire WWTP Dischargers to the Long Island Sound Watershed**

Facility Design Flow, $Q_D$ (MGD)	Number of Facilities	Annual Average TN Limit (lb/day)
$Q_D > 6$	0	$Q_D$ (MGD) * 8 mg/L * 8.345 + optimize
$1.5 \leq Q_D \leq 6$	5	$Q_D$ (MGD) * 10 mg/L * 8.345 + optimize
$0.1 \leq Q_D < 1.5$	14	Optimize
$Q_D < 0.1$	6	TN monitoring only

The optimization condition in the Draft Permit requires the permittee to optimize the removal of nitrogen, and to describe previous and ongoing optimization efforts. Facilities not currently engaged in optimization efforts will also be required to implement optimization measures, so that the aggregate 25% reduction is maintained or increased.

The permit requires implementation of optimization methods to ensure that the facility is operated in such a way that discharges of total nitrogen are minimized. The permit requires annual reports to be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies and track trends relative to previous years.

In addition to the rolling annual average total nitrogen effluent limit and optimization requirements, the Draft Permit includes daily maximum, weekly average, and average monthly reporting requirements for total nitrogen (TN), total Kjeldahl nitrogen (TKN), and total nitrite/nitrate nitrogen ( $\text{NO}_2/\text{NO}_3$ ).

Since the design flow for the facility is in the range of between 1.5 to 6 MGD, the annual loading TN limit calculated for the Draft Permit and following the approach outlined above is:

$$1.5 \text{ MGD} * 10 \text{ mg/L} * 8.345 = \mathbf{125 \text{ lb/day}}$$

The effluent limit is a rolling annual average based on the average of the current monthly average and the monthly average of the previous 11 months.

### Future Nitrogen Limits

The new nitrogen annual loading limit in this Draft Permit is intended to meet the requirements of the 2001 LIS TMDL which was developed to address hypoxic conditions in the bottom waters of LIS<sup>18</sup>. In December 2015, EPA signed a letter detailing a post-TMDL EPA nitrogen reduction strategy for waters in the LIS watershed. The strategy recognizes that more work may need to be done to reduce nitrogen levels, further improve DO conditions, and attain other related water quality standards in LIS, particularly in coastal embayments and the estuarine portions of rivers that flow into the Sound. EPA is working to establish nitrogen thresholds for Western LIS and several coastal embayments, including for the mouth of the Connecticut River. Documents regarding the EPA Nitrogen Reduction Strategy are available for public review on EPA's Long Island Sound website (<http://longislandsoundstudy.net/issues-actions/water-quality/nitrogen-strategy/>). Upon completion of establishing thresholds, allocations of total nitrogen loadings may

<sup>18</sup> For more information see <http://longislandsoundstudy.net/about/our-mission/management-plan/hypoxia/>

be lowered if further reductions are necessary. If reductions are needed for the Littleton discharge, a lower water quality-based effluent limit will be added in a future permit action. If so, EPA anticipates exploring possible trading approaches for nitrogen loading in the New Hampshire portion of the Connecticut River watershed.

Although not a permit requirement, it is recommended that any facilities planning that might be conducted for this facility consider alternatives for further enhancing nitrogen reduction beyond the requirements in this permit.

### 5.1.9.2 Phosphorus

While phosphorus is an essential nutrient for the growth of aquatic plants, it can stimulate rapid plant growth in freshwater ecosystems when it is present in high quantities. The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by: 1) increasing oxygen demand within the water body to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter; 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 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.

The 2009 Permit does not include any phosphorus monitoring or reporting requirements. However, the permit renewal application did include an average daily value of 2.4 mg/L and a daily maximum of 2.89 mg/L of phosphorus. These results were based on three samples.

The New Hampshire Surface Water Quality Regulations contain a narrative criterion, which limits phosphorus to the level that will not impair a water body's designated use. Specifically, Env-Wq 1703.14(b) states that, "Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring." Env-Wq 1703.14(c), further states that, "Existing discharges containing either phosphorus or nitrogen which encourage cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards." Cultural eutrophication is defined in Env-Wq 1702.15 as, "... the human-induced addition of wastes that contain nutrients to surface waters. resulting in excessive plant growth or a decrease in dissolved oxygen, or both."

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. For this segment of the Ammonoosuc River, 0.09 mg/L would apply downstream of the discharge, as New Hampshire regulations require 10% of the assimilative capacity be reserved in addition to the EPA standards.

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. Littleton is located within Ecoregion VIII, Nutrient Poor Largely Glaciated Upper Midwest and Northeast. 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 VIII (EPA 2001) is 10 µg/L (0.010 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 Ammonoosuc River is unusually susceptible to eutrophication impacts, so that the 100 µg/L threshold appears sufficient in this receiving water. EPA is not aware of evidence of factors that are reducing eutrophic response in the Ammonoosuc River downstream of the discharge.

Elevated concentration of chlorophyll a, excessive algal and macrophyte growth, and low levels of dissolved oxygen are all effects of nutrient enrichment. The relationship between these factors and high in-stream total phosphorus concentrations is well documented in scientific literature, including guidance developed by EPA to address nutrient over-enrichment (Nutrient Criteria Technical Guidance Manual – Rivers and Streams, EPA July 2000 [EPA-822-B-00-002]).

EPA is not aware of any available recent upstream phosphorus data for this location. In the absence of recent upstream data, the upstream concentration will be assumed to be zero for this analysis. However, the Draft Permit will include an ambient monitoring requirement to ensure that current ambient phosphorus data are available to use in the reassessment of the total phosphorus effluent in the next permitting cycle.<sup>19</sup>

In determining whether the discharge has the reasonable potential to cause or contribute to excursions above the instream water quality criteria for phosphorus, EPA used the mass balance equation presented in Appendix B to project the phosphorus concentration downstream of the discharge. If there is reasonable potential, this mass balance equation is also used to determine the limit that is required in the permit.

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<sup>19</sup> EPA notes that this ambient data will be used in the next permit reissuance and will likely result in a more stringent effluent limit. The Permittee should plan for this possibility in its upgrade to achieve the limit set forth in this permit reissuance.



Based on the calculation in Appendix B, it was determined that the downstream concentration would be 340 µg/L under critical conditions. Since this exceeds the instream target of 90 µg/L, the Draft Permit proposes a water quality-based average monthly effluent limit. According to Appendix B, this limit would be 0.63 mg/L. However, EPA also calculated a mass-based limit that could be applied in lieu of a concentration-based limit. The numeric mass-based limit is determined based on the following equations:

$$Q_E C_E + Q_S C_S = Q_D C_D \times (0.90)$$

and

$$M_E = Q_E C_E \times 8.345$$

Substituting ( $Q_D C_D$ ) with ( $M_E/8.345$ ) in the first equation and solving for  $M_E$  results in:

$$M_E = (Q_D C_D \times (0.90) - Q_S C_S) \times 8.345$$

where:

- $M_E$  = mass-based phosphorus limit
- $Q_E$  = effluent flow in MGD (lowest monthly average effluent flow = 0.395 MGD)
- $C_E$  = effluent phosphorus concentration in mg/L
- $Q_S$  = upstream 7Q10 flow (14 cfs = 9.04 MGD)
- $C_S$  = upstream river phosphorus concentration (0.0 mg/L)
- $Q_D$  = downstream flow (9.44 MGD)
- $C_D$  = downstream river phosphorus concentration (Gold Book target = 0.100 mg/L)
- 0.90 = factor to reserve 10% assimilative capacity
- 8.345 = factor to convert from MGD \* mg/L to lb/day

Solving for  $M_E$  gives the maximum allowable mass the facility may discharge without violating water quality standards. This allowable discharge is 7.1 lb/day which is equivalent to 2.15 mg/L at the facility's lowest monthly average effluent flow of 0.395 MGD, or 1.35 mg/L at the median flow of 0.629 MGD, or 0.57 mg/L at the design flow of 1.5 MGD. In comparison, the potential concentration-based limit of 0.63 mg/L would be more stringent at effluent flows below 1.35 MGD and the potential mass-based effluent limit of 7.1 lb/day would be more stringent at effluent flows above 1.35 MGD.

Therefore, the Draft Permit contains a mass-based limit of 7.1 lb/day, applicable from April 1 through October 31. However, EPA is soliciting comments regarding whether the application of a concentration-based limit of 0.63 mg/L in lieu of the mass-based limit of 7.1 lb/day would be preferable.

In any case, since the Treatment Facility will be unable to achieve the newly established phosphorus effluent limit without changes to the treatment process, the Draft Permit proposes a schedule of compliance. A schedule of compliance to achieve 7.1 lb/day is detailed in Part I.G.2 of the Draft Permit.

Schedules of compliance to meet water quality based effluent limits may be included in permits only when the state's water quality standards clearly authorize such schedules and where the limits are established to meet a water quality standard that is either newly adopted, revised, or interpreted after July 1, 1977. New Hampshire regulations for schedules of compliance in NPDES Permits can be found at Env-Wq 1701.03. Finally, the permitting authority must make a reasonable determination that a schedule of compliance is "appropriate" and that the schedule proposed requires compliance "as soon as possible." *See* 40 CFR §122.47(a), §122.47(a)(1).

### **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 and/or to evaluate whether any existing limits in the 2009 Permit for these metals continue to be protective, given the updated upstream hydrologic and chemical characteristics of the receiving water. The 2009 Permit included effluent limits for copper and lead. A summary of recent metals compliance and monitoring results 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.

The criteria for cadmium, copper, lead, nickel and zinc are hardness-dependent using the equations in NH Env Wq-1703. The estimated hardness of the Ammonoosuc 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. A default hardness value of 20 mg/L is used in the calculations.

New Hampshire aluminum criteria are not hardness dependent and should be applied in terms of acid-soluble aluminum (*See* Table 1703-1, Note S). However, without site-specific data showing the fraction of downstream aluminum in the acid-soluble form, EPA assumes that the ratio of acid soluble to total recoverable aluminum is 1:1.

### 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, EPA uses the mass balance equation presented in Appendix B to project the concentration downstream of the discharge and, if applicable, to determine the limit required in the permit.

For any metal with an existing limit in the 2009 Permit, a reasonable potential determination is not applicable, so the table indicates “N/A” for reasonable potential. In such cases, the same mass balance equation is used to determine if a more stringent limit would be required to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration ( $C_d$ ) allowable to meet WQS based on current conditions. However, if the mass balance indicates that a less stringent effluent concentration ( $C_d$ ) would meet WQS under current conditions, a case-by-case analysis must be done to determine if backsliding is allowable based on the exceptions found at 40 CFR § 122.44(l)(2)(i).

The results of this analysis for each metal are presented in Appendix B. As shown in Appendix B, the Draft Permit must include limits for copper, lead and zinc. The Draft Permit proposes a more stringent chronic (monthly average) copper limit of 9.5 µg/L, a more stringent acute (daily maximum) copper limit of 14 µg/L, a more stringent chronic (monthly average) lead limit of 2.6 µg/L, a more stringent acute (daily maximum) lead limit of 67 µg/L, and acute (daily maximum) and chronic (monthly average) zinc limits of 152 µg/L.

Since the Treatment Facility may be unable to achieve these limits upon the effective date of the permit, the Draft Permit proposes schedules of compliance, detailed in Parts I.G.4, I.G.5 and I.G.6 of the Draft Permit.

Schedules of compliance to meet water quality based effluent limits may be included in permits only when the state’s water quality standards clearly authorize such schedules and where the limits are established to meet a water quality standard that is either newly adopted, revised, or interpreted after July 1, 1977. New Hampshire regulations for schedules of compliance in NPDES Permits can be found at Env-Wq 1701.03. Finally, the permitting authority must make a reasonable determination that a schedule of compliance is “appropriate” and that the schedule proposed requires compliance “as soon as possible.” *See* 40 CFR §122.47(a), §122.47(a)(1).

### 5.1.11 Whole Effluent Toxicity

CWA §§ 402(a)(2) and 308(a) provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Whole effluent toxicity (WET) testing is conducted to ensure that the additivity, antagonism, synergism and persistence of the pollutants in the discharge do not cause toxicity, even when the pollutants are present at low concentrations in the effluent. The inclusion of WET requirements in the Draft Permit will assure that the Facility does

not discharge combinations of pollutants into the receiving water in amounts that would be toxic to aquatic life or human health.

In addition, under CWA § 301(b)(1)(C), discharges are subject to effluent limitations based on WQSs. Under CWA §§ 301, 303 and 402, EPA and the States may establish toxicity-based limitations to implement the narrative water quality criteria calling for “no toxics in toxic amounts”. *See also* 40 C.F.R. § 122.44(d)(1). New Hampshire statute and regulations state that, “all surface waters shall be free from toxic substances or chemical constituents in concentrations or combination that injure or are inimical to plants, animals, humans, or aquatic life....” (N.H. RSA 485-A:8, VI and the N.H. Code of Administrative Rules, PART Env-Wq 1703.21(a)(1)). 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, reasonable potential may exist for this discharge to cause or contribute to an exceedance of the “no toxics in toxic amounts” narrative water quality standard.

In accordance with current EPA guidance, 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>. Discharges having a dilution factor less than 10 require acute and chronic toxicity testing four times per year for two species. Additionally, for discharges with dilution factors less than 10, the C-NOEC effluent limit should be greater than or equal to the receiving water concentration and the LC<sub>50</sub> limit should be greater than or equal to 100%.

The chronic and acute WET limits in the 2009 Permit are C-NOEC greater than or equal to 16.3% and LC<sub>50</sub> greater than or equal to 100%, respectively, using the daphnid (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*) as the test species. The Facility has consistently met these limits (Appendix A).

The dilution factor (DF) for the discharge has been updated with more recent information and has changed relative to the 2009 Permit. In keeping with the policy that the C-NOEC effluent limit should be greater than or equal to the receiving water concentration, the limit would be calculated as  $100/DF = 100/6.3 = 15.9\%$  effluent. However, since this limit is less stringent than the C-NOEC limit in the 2009 permit, the limit of 16.3% effluent is carried forward in the Draft Permit based on anti-backsliding regulations found at CWA §§ 402(o) and 303(d)(4) and 40 C.F.R. § 122.44(l).

Based on the potential for toxicity, the state narrative water quality criterion, and in accordance with EPA national and regional policy and 40 C.F.R. § 122.44(d), the Draft Permit includes an LC<sub>50</sub> limit greater than or equal to 100% and a C-NOEC limit of greater than or equal to 16.3%. The test organisms will be the daphnid (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*) and the testing frequency will remain once per quarter.

Toxicity testing must be performed in accordance with the updated EPA Region 1 WET test procedures and protocols specified in Attachments A, *Freshwater Acute Toxicity Test Procedure and Protocol* (February 2011) and Attachment B, *Freshwater Chronic Toxicity Test Procedure and Protocol* (March 2013) of the Draft Permit.

In addition, EPA's 2018 *National Recommended Water Quality Criteria* for aluminum are calculated based on water chemistry parameters that include dissolved organic carbon (DOC), hardness and pH. Since aluminum monitoring is required as part of each WET test, an accompanying new testing and reporting requirement for DOC, in conjunction with each WET test, is warranted in order to assess potential impacts of aluminum in the receiving water.

## **5.2 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.

## **5.3 Infiltration/Inflow (I/I)**

Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes, or deteriorated joints. Inflow is extraneous flow entering the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow, reducing the capacity and the efficiency of the treatment works and may cause bypasses to secondary treatment. It greatly increases the potential for sanitary sewer overflows (SSOs) in separate systems, and combined sewer overflows (CSOs) in combined systems.

The Draft Permit includes a requirement for the Permittee to control infiltration and inflow (I/I) within the sewer collections system it owns and operates. The Permittee shall develop an I/I removal program commensurate with the severity of I/I in the collection system. This program may be scaled down in sections of the collection system that have minimal I/I.

## **5.4 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 compliance with permit conditions. The requirements at 40 C.F.R. § 122.41(d) impose a 'duty to mitigate,' which requires the permittee to "take all reasonable steps to minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment. EPA maintains that an I/I removal program is an integral component of ensuring permit compliance with the requirements of the permit under the provisions at 40 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.

## **5.5 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.

## **6.0 Federal Permitting Requirements**

### **6.1 Endangered Species Act**

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority and imposes requirements on Federal agencies regarding endangered or threatened species of fish, wildlife, or plants (listed species) and any habitat of such species that has been designated as critical under the ESA (a “critical habitat”).

Section 7(a)(2) of the ESA requires every federal agency, in consultation with and with the assistance of the Secretary of Interior, to ensure that any action it authorizes, funds or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) administers Section 7 consultations for marine and anadromous species.

The Federal action being considered in this case is EPA’s proposed NPDES permit for the Facility’s discharges of pollutants. The Draft Permit is intended to replace the 2009 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 vicinity of the Littleton WWTP and the Ammonoosuc River to determine if EPA’s proposed NPDES permit could potentially impact any such listed species. Based on the information available, EPA has determined that two protected species under the jurisdiction of USFWS may

be present in the vicinity of the Facility. These species are the threatened northern long-eared bat (*Myotis septentrionalis*) and the Canada lynx (*Lynx canadensis*).<sup>20</sup>

According to the USFWS, the threatened northern long-eared bat occurs “statewide” in New Hampshire. It is found in “winter – mines and caves, summer – wide variety of forested habitats”. This species is not aquatic, so the Facility 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-eared bat. Therefore, the proposed permit action is deemed to have no impact on this listed species.

According to the USFWS, the distribution of the Canada lynx in North America is closely associated with the distribution of North American boreal forest. This is not an aquatic species. Therefore, the proposed permit action will have no direct or indirect effect on this listed species. A review of the marine and anadromous protected species shows there are no known federally listed threatened or endangered species or their critical habitat under the jurisdiction of NOAA Fisheries within the vicinity of the Littleton discharge.<sup>21</sup> Therefore, ESA consultation with NOAA Fisheries will not be required for this discharge.

EPA finds that adoption of the proposed permit will have no effect on any threatened or endangered species or its critical habitat and consultation with NOAA Fisheries or USFWS under Section 7 of the ESA is not required.

At the beginning of the public comment period, EPA notified USFWS and NOAA Fisheries Protected Resources Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

## 6.2 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (*see* 16 U.S.C. § 1801 *et seq.*, 1998), EPA is required to consult with NOAA Fisheries if EPA’s action or proposed actions that it funds, permits, or undertakes, “may adversely impact any essential fish habitat.” 16 U.S.C. § 1855(b).

The Amendments broadly define “essential fish habitat” (EFH) as: “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” 16 U.S.C. § 1802(10). “Adverse impact” means any impact that reduces the quality and/or quantity of EFH 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species’ fecundity), or site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

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<sup>20</sup> See §7 resources for USFWS at <https://ecos.fws.gov/ipac/>.

<sup>21</sup> See <https://www.fisheries.noaa.gov/resource/map/greater-atlantic-region-esa-section-7-mapper>

The Atlantic salmon (*Salmo salar*) is the only managed species with designated EFH in the Ammonoosuc River. The Ammonoosuc River is classified as a cold-water fishery, and is considered by the New Hampshire Fish and Game Department to be some of the best nursery habitat for Atlantic salmon in the Connecticut River Watershed.

EPA has determined that the Draft Permit has been conditioned in such a way so as to minimize any adverse impacts to EFH for the following reasons:

- This Draft 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 Ammonoosuc River, so no life stages of Atlantic salmon are vulnerable to impingement or entrainment from this Facility.
- The Draft Permit prohibits the discharge from violating state water quality standards.
- Total suspended solids, biochemical oxygen demand, total residual chlorine, fecal coliform, total phosphorus, total nitrogen, ammonia-nitrogen and pH are regulated by the Draft Permit to meet water quality standards.
- The Draft Permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts.
- The Draft Permit requires quarterly toxicity testing to ensure that the discharge does not present toxicity problems.
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life.
- The numeric limits for lead are more stringent than the 2009 Permit and require sampling twice per month.
- The numeric limits for copper are more stringent than the 2009 Permit and require sampling twice per month.

EPA believes that the conditions and limitations contained within the Draft Permit adequately protects all aquatic life, including those with designated EFH 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, NOAA Fisheries will be contacted and an EFH consultation will be re-initiated.

At the beginning of the public comment period, EPA notified NOAA Fisheries Habitat Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

In addition to this Fact Sheet and the Draft Permit, information to support EPA's finding was included in a letter under separate cover and sent to the NOAA Fisheries Habitat Division during the public comment period.

## **7.0 Public Comments, Hearing Requests and Permit Appeals**

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to:



Doug MacLean  
EPA Region 1  
5 Post Office Square, Suite 100 (06-4)  
Boston, MA 02109-3912  
Telephone: (617) 918-1608  
Email: [maclean.douglas@epa.gov](mailto:maclean.douglas@epa.gov)

Prior to the close of the public comment period, any person, may submit a written request to EPA and the State Agency for a public hearing to consider the Draft Permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments in a Response to Comments document attached to the Final Permit and make these responses available to the public at EPA's Boston office and on EPA's website.

Following the close of the comment period, and after any public hearings, if such hearings are held, 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 submitted written comments or requested notice. Within 30 days after EPA serves notice of the issuance of the Final Permit decision, an appeal of the federal NPDES permit may be commenced by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 C.F.R. § 124.19.

## 8.0 Administrative Record

The administrative record on which this Draft Permit is based may be accessed at EPA's Boston office by appointment, Monday through Friday, excluding holidays from Doug MacLean, EPA Region 1, 5 Post Office Square, Suite-100 (06-4), Boston, MA 02109-3912 or via email to [maclean.douglas@epa.gov](mailto:maclean.douglas@epa.gov).

June 2020

\_\_\_\_\_  
Date

\_\_\_\_\_  
Ken Moraff, Director  
Water Division  
U.S. Environmental Protection Agency

**Figure 1: Littleton WWTP Location Map**

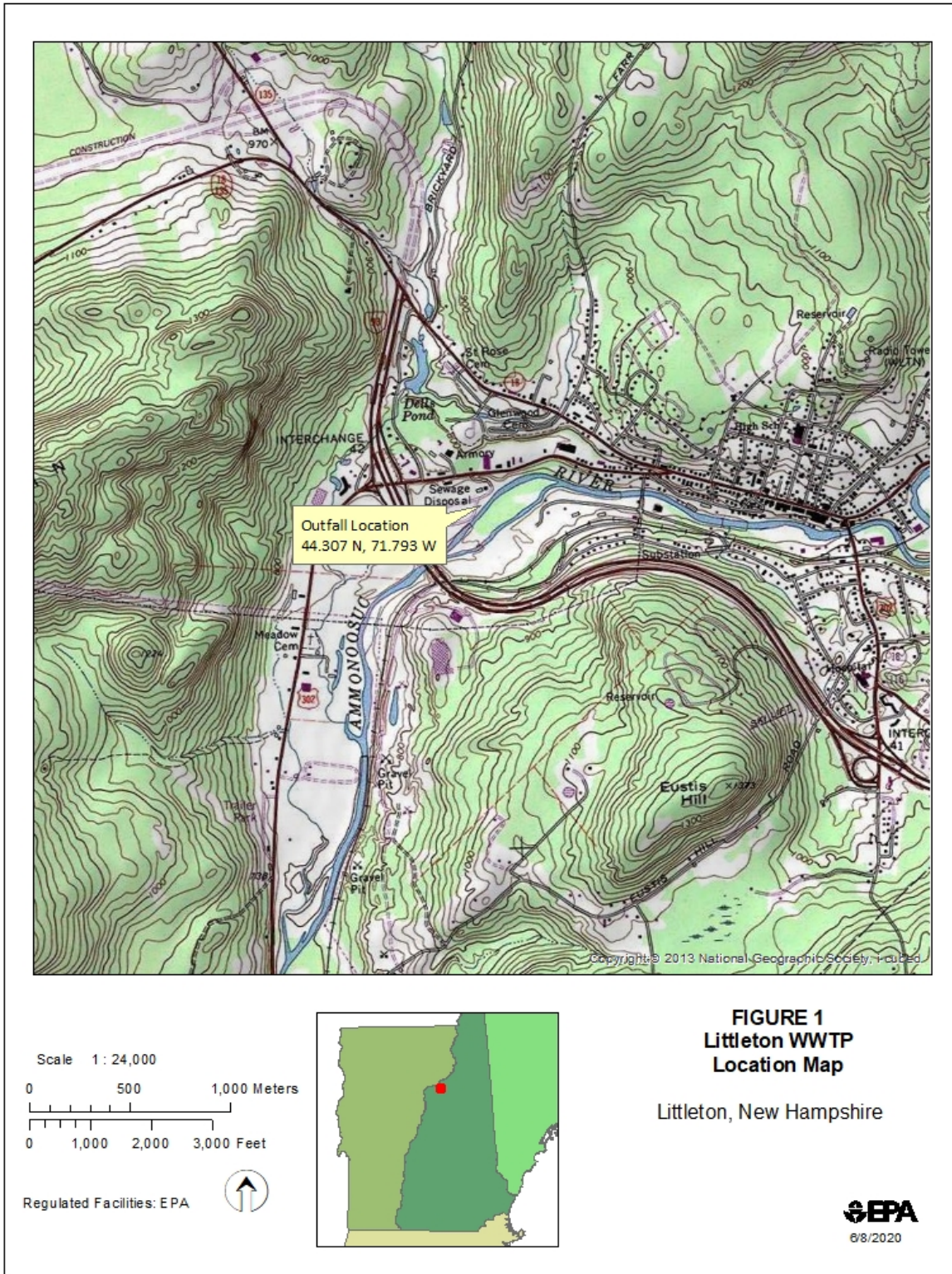
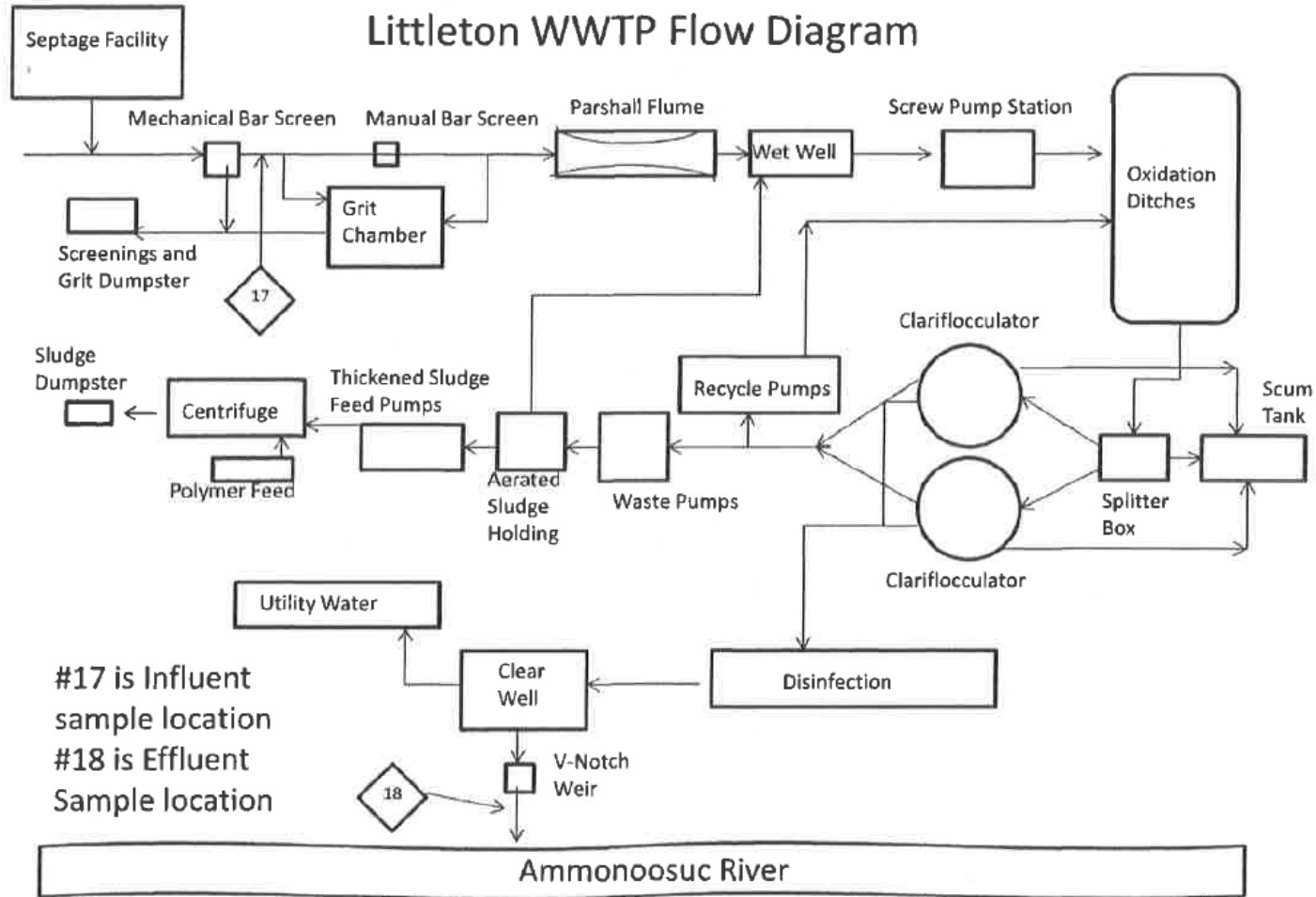


Figure 2: Littleton WWTP Flow Diagram



## Effluent - Outfall 001

Parameter	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5	BOD5
	Monthly Ave	Daily Max	Monthly Ave	Weekly Ave	Monthly Ave	Weekly Ave	Daily Max	Daily Max
Units	MGD	MGD	lb/d	lb/d	mg/L	mg/L	lb/d	mg/L
Effluent Limit	Report	Report	375	563	30	45	626	50
Minimum	0.395	0.537	5.8	0.395	1.1	1.2	7.5	1.4
Maximum	1.227	2.653	29	1.227	5.9	8	94.2	8.6
Median	0.6285	1.069	14.9	0.6285	2.35	3	21.9	3.7
No. of Violations	N/A	N/A	0	0	0	0	0	0
2/28/2015	0.461	0.537	14.9	15.7	3.7	4	17.3	4.2
3/31/2015	0.56	0.971	17.7	19.9	4	4.6	22.1	4.6
4/30/2015	1.059	1.359	24.1	34.8	2.8	3.4	45.2	4.2
5/31/2015	0.682	0.951	17.1	19.6	3	3.6	22.8	4
6/30/2015	1.041	1.7	18	20.7	2	2.3	22.3	2.4
7/31/2015	0.738	1.173	11.1	18.1	1.8	2.5	16.9	3.6
8/31/2015	0.594	0.807	10.2	13	1.9	2.3	16.8	3
9/30/2015	0.625	2.653	18.2	20.2	3	5	55.3	5.6
10/31/2015	0.658	1.201	9	33.3	1.7	2.7	20.3	3.7
11/30/2015	0.559	0.711	6.2	6.9	1.4	1.6	7.5	1.7
12/31/2015	0.785	1.069	14.5	18.6	2.2	2.6	20.8	3
1/31/2016	0.628	0.912	13.8	15	2.7	3	15.5	3.1
2/29/2016	0.747	1.793	29	54.4	4.1	5.6	94.2	8.3
3/31/2016	0.922	1.256	17.5	19.7	2.3	2.8	21.6	2.9
4/30/2016	0.845	1.187	17.4	20.3	2.4	2.8	28	3.8
5/31/2016	0.761	0.985	14.9	16	2.3	2.7	19.6	2.8
6/30/2016	0.624	0.811	10.5	15.4	1.9	3.1	15.7	3.2
7/31/2016	0.676	0.992	13.1	17.6	2.6	3.8	19.7	4
8/31/2016	0.51	0.725	12.5	16.5	3.2	4.7	19.1	5.4
9/30/2016	0.414	0.541	7.5	11.9	2.3	3.7	12	3.7
10/31/2016	0.395	0.658	8.7	13.4	2.8	4.1	19.3	6.2
11/30/2016	0.497	0.792	9	10.9	2.1	2.6	18.9	4.3
12/31/2016	0.515	0.773	7.7	15	1.8	2.9	10.4	2.2
1/31/2017	0.532	0.727	8.5	9.4	1.8	2	11.5	2.3
2/28/2017	0.656	1.896	10.5	14.7	2.2	2.7	18.4	2.9
3/31/2017	0.722	1.437	17.6	27.6	2.6	3.5	28.9	3.5
4/30/2017	0.959	1.556	15.1	21.5	1.8	2.1	24.9	2.5
5/31/2017	0.898	1.314	21.5	24.2	2.8	3	34.8	4.6
6/30/2017	0.8	1.642	20.6	32	3.3	4.9	37.6	5.2
7/31/2017	0.809	2.019	17.2	19.8	2.8	4.1	21.9	4.5
8/31/2017	0.544	0.756	21	38.3	4.7	6.6	45.4	7.2
9/30/2017	0.523	0.708	20.4	26.7	4.6	6	33.2	6.6

## Effluent - Outfall 001

Parameter	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5	BOD5
	Monthly Ave	Daily Max	Monthly Ave	Weekly Ave	Monthly Ave	Weekly Ave	Daily Max	Daily Max
Units	MGD	MGD	lb/d	lb/d	mg/L	mg/L	lb/d	mg/L
Effluent Limit	Report	Report	375	563	30	45	626	50
10/31/2017	0.578	1.604	20.6	51.9	4	8	57.2	8.6
11/30/2017	0.65	1.069	15	17.7	2.9	3.9	21.9	4
12/31/2017	0.499	0.642	16.3	20.7	3.8	4.2	25.3	4.8
1/31/2018	0.791	2.356	18.3	28.6	3.1	4.1	36.9	4.5
2/28/2018	0.626	1.165	13.8	16.9	2.3	2.3	21.9	3
3/31/2018	0.767	1.26	20.4	25.5	3.4	3.8	25.9	4.1
4/30/2018	1.018	1.693	21.9	35.7	2.6	2.9	43	3.1
5/31/2018	0.777	1.388	23.9	30.3	3.7	4.1	31.3	5.7
6/30/2018	0.488	0.834	23	25.9	5.9	6	27.3	6.6
7/31/2018	0.453	0.65	18.1	22.8	4.8	5.3	26.6	6
8/31/2018	0.554	1.19	13.7	18.2	3.1	5	26	5.4
9/30/2018	0.432	0.549	8.8	12	2.3	3.6	13.6	3.8
10/31/2018	0.482	0.628	6.6	12.7	1.6	2.6	16.6	3.3
11/30/2018	0.62	0.975	5.8	7.7	1.1	1.2	9.3	1.4
12/31/2018	0.623	1.126	6.6	8.1	1.5	1.8	9.1	1.8
1/31/2019	0.547	1.495	7.6	9.1	1.8	2	9.8	2.1
2/28/2019	0.587	1.137	7.8	9.3	1.7	1.9	10.5	2.3
3/31/2019	0.695	1.957	10.7	11.6	2.3	3	12.2	3.3
4/30/2019	1.227	1.91	17.2	23.9	1.7	2.1	26.6	2.1
5/31/2019	1.036	1.911	16.2	22	1.9	2.6	23.3	2.9
6/30/2019	0.886	1.443	16.3	19.4	2.1	2.4	27.4	3
7/31/2019	0.564	0.863	8.2	13.6	1.7	2.3	16.8	2.9
8/31/2019	0.427	0.537	12.9	18.8	3.6	5.1	24.6	5.5
9/30/2019	0.448	0.823	17.7	25.8	4.8	5.7	28.5	6.6
10/31/2019	0.639	1.116	19.1	35.5	3.4	5.9	39.9	6.3
11/30/2019	0.629	0.882	9	14.3	1.7	2.2	16.1	2.2
12/31/2019	0.652	1.022	9.7	14	1.7	2.1	16.7	2.3
1/31/2020	0.629	0.978	9.1	11.8	1.8	2.1	12.5	2.3

## Effluent - Outfall 001

Parameter	BOD5	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave Min	Monthly Ave	Weekly Ave	Monthly Ave	Weekly Ave	Daily Max	Daily Max	Monthly Ave Min
Units	%	lb/d	lb/d	mg/L	mg/L	lb/d	mg/L	%
Effluent Limit	85	375	563	30	45	626	50	85
Minimum	97.9	6.1	0.537	1	1.8	8.7	1.6	96.7
Maximum	99.6	43.6	2.653	7.1	17.8	146	22	99.7
Median	99.05	21.95	1.069	3.7	5.25	35.2	5.8	98.5
No. of Violations	0	0	0	0	0	0	0	0
2/28/2015	98.6	21.6	26	5.5	6.6	29.5	7.6	97
3/31/2015	98.3	28.5	30.3	6.5	7.3	36	8	96.7
4/30/2015	98.2	43.6	48.1	5.4	7.7	66	9.3	97.4
5/31/2015	98.5	21	30	3.6	4.5	25.2	4.6	98.5
6/30/2015	99	28.9	34.6	3.1	4	52.8	5.3	98.9
7/31/2015	99.3	21.4	27.9	3.3	3.6	35.2	4.6	98.8
8/31/2015	99.3	13.9	19.1	2.6	3.2	17.5	3	99
9/30/2015	98.9	36.8	35.9	5.3	8.9	146	9	97.6
10/31/2015	99.2	18	91.5	3.5	5.6	32.9	6	97.9
11/30/2015	99.4	14.1	19.6	3.1	4.3	21.9	4.6	98.6
12/31/2015	98.8	24.7	34.9	3.7	5.3	44.5	6	97.3
1/31/2016	98.6	24	36.7	4.8	7	45.5	8.6	97.4
2/29/2016	97.9	26.7	34	4.5	5.7	43.1	6.3	97.4
3/31/2016	98.3	22.3	25.9	2.9	3.7	33.9	4.3	98.1
4/30/2016	98.4	27.3	30	3.8	4.1	37.9	5.6	98.2
5/31/2016	99	27.9	39.9	4.2	5.7	60.2	8.3	98
6/30/2016	99.3	10.3	13.5	1.9	2.7	22.6	4.6	99.3
7/31/2016	99.1	17.8	32.1	3.5	6.2	32.9	6.3	98.9
8/31/2016	98.7	15.3	18.5	3.8	5.2	23.5	5.6	98.6
9/30/2016	99.2	9.5	14.1	2.9	4.3	17.7	5.3	99
10/31/2016	99.2	16.6	39	5.2	11.3	47	13.3	98.1
11/30/2016	99.3	13.9	17.3	3.3	4.7	31.9	6.3	98.7
12/31/2016	99.3	8.2	27	1.9	5.2	13.6	3	99.2
1/31/2017	99.1	12.1	12.8	2.6	3.2	16.2	3.3	98.5
2/28/2017	99.1	16.4	21.2	3.5	4.8	27.2	5.3	98.2
3/31/2017	98.5	30.7	47.6	4.6	6.5	55.1	7.3	97.4
4/30/2017	99.1	24.4	31.7	2.9	4	35.8	3.6	98.9
5/31/2017	98.8	30.6	40.5	3.9	5	41.9	5.3	98.2
6/30/2017	98.7	34.8	46.7	5.8	8.3	50.3	8.3	97.4
7/31/2017	98.7	35	40.6	5.6	6.7	48.1	8	97.2
8/31/2017	98.3	32	77.6	6.9	13.3	96.5	15.3	97.4
9/30/2017	98.6	25.5	32.7	5.8	7.3	35.2	8	98.1



## Effluent - Outfall 001

Parameter	BOD5	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave Min	Monthly Ave	Weekly Ave	Monthly Ave	Weekly Ave	Daily Max	Daily Max	Monthly Ave Min
Units	%	lb/d	lb/d	mg/L	mg/L	lb/d	mg/L	%
Effluent Limit	85	375	563	30	45	626	50	85
10/31/2017	99	28.4	48.8	5.9	7.5	59.9	9	99.1
11/30/2017	99.3	24.5	35.6	4.6	5.6	45.4	6.6	98.8
12/31/2017	98.9	23.7	26.3	5.6	6.7	33.7	8	98.4
1/31/2018	98.8	22.8	42.2	3.9	6.5	62.8	6.6	98.3
2/28/2018	99	19.8	19.4	3.7	4.7	27.2	5	98.5
3/31/2018	98.6	31.6	46.7	5.2	6.5	50.4	7	97.7
4/30/2018	99.1	41.2	68.4	4.8	5.6	77.7	5.6	98.4
5/31/2018	98.8	34.3	66.8	4.7	6.2	72.9	6.3	98.5
6/30/2018	98.6	26.3	35.7	6.8	9.2	39.8	10	98.5
7/31/2018	98.7	27	34.4	7.1	8	38.3	9.3	98.4
8/31/2018	99.2	22.5	65.4	5.5	17.8	73.2	20	98.3
9/30/2018	99.4	11	19	2.8	5	21.1	5.3	99.3
10/31/2018	99.6	6.2	9.6	1.5	2.5	14.1	3.6	99.7
11/30/2018	99.4	8.1	9.5	1.5	1.8	13.7	2.6	99.5
12/31/2018	99.4	6.1	8.5	1.4	2	8.7	2.6	99.5
1/31/2019	99.2	7.1	7.5	1.7	2	10.4	2.6	99.3
2/28/2019	99.3	11.6	17.4	2.4	2.8	24.9	4	99.2
3/31/2019	99.1	14	21.3	2.8	3.5	24.3	4	98.7
4/30/2019	99.3	15.9	19	1.6	1.8	27.6	2.6	99.4
5/31/2019	99.4	26.2	48.2	3.2	5.8	66.6	8.3	99
6/30/2019	99.1	7.3	15.8	1	1.8	12	1.6	99.7
7/31/2019	99.5	11.1	14.7	2.4	3.7	18.3	4	99.3
8/31/2019	99	24.3	54.6	7	16.2	71	22	98.4
9/30/2019	98.3	24.7	31	7	10.2	37.3	10.3	98.2
10/31/2019	98.6	21.5	32.3	3.8	5.3	33.6	6	98.9
11/30/2019	99.4	15.1	30.8	2.7	4.7	38.9	5.6	99.1
12/31/2019	99.3	13	24.8	2.4	4	32.6	5	99.2
1/31/2020	99.4	10.3	14.4	2	2.8	19.7	3	99.3

## Effluent - Outfall 001

Parameter	pH	pH	E. coli	E. coli	TRC	TRC	Ammonia	Ammonia
	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave
Units	SU	SU	CFU/100mL	CFU/100mL	ug/L	ug/L	lb/d	mg/L
Effluent Limit	6.5	8	126	406	68	117	Report	Report
Minimum	6.5	6.7	1.4	4.1	No Data	No Data	0	0
Maximum	7.1	7.7	86.2	387.3	No Data	No Data	88.9	24
Median	6.65	7.1	10.95	45.25	No Data	No Data	0.75	0.1
No. of Violations	0	0	0	0	No Data	No Data	N/A	N/A
2/28/2015	6.5	6.9	11.5	63.7	NODI: 9	NODI: 9	36.1	9.75
3/31/2015	6.5	7.1	2.7	11	NODI: 9	NODI: 9	48.5	11
4/30/2015	6.5	6.9	3.6	15.2	NODI: 9	NODI: 9	19.7	1.8
5/31/2015	6.6	7.1	3	13.4	NODI: 9	NODI: 9	52.2	9.9
6/30/2015	6.7	7.1	6.6	104.6	NODI: 9	NODI: 9	69.8	7
7/31/2015	6.6	7	10.8	146.7	NODI: 9	NODI: 9	0.4	0.1
8/31/2015	6.7	7.1	11.8	38.8	NODI: 9	NODI: 9	2	0.4
9/30/2015	6.7	7.1	18	47.4	NODI: 9	NODI: 9	31.9	8.7
10/31/2015	6.7	6.9	9.9	36.8	NODI: 9	NODI: 9	0.4	0.1
11/30/2015	6.7	7	2.6	9.7	NODI: 9	NODI: 9	0.2	0.05
12/31/2015	6.6	6.8	7.2	62	NODI: 9	NODI: 9	0	0
1/31/2016	6.6	6.9	1.4	4.1	NODI: 9	NODI: 9	0	0
2/29/2016	6.6	6.9	13.5	165	NODI: 9	NODI: 9	0	0
3/31/2016	6.6	6.7	9.2	98.8	NODI: 9	NODI: 9	0	0
4/30/2016	6.6	6.8	1.4	4.1	NODI: 9	NODI: 9	0.5	0.07
5/31/2016	6.6	6.9	1.8	7.5	NODI: 9	NODI: 9	0.9	0.1
6/30/2016	6.7	6.9	2.1	6.3	NODI: 9	NODI: 9	0.4	0.07
7/31/2016	6.8	7	6	32.7	NODI: 9	NODI: 9	0.8	0.12
8/31/2016	6.9	7.2	28.3	76.8	NODI: 9	NODI: 9	50.2	14
9/30/2016	6.9	7.1	11.1	35.9	NODI: 9	NODI: 9	0.2	0.1
10/31/2016	6.8	7.7	12.4	218.7	NODI: 9	NODI: 9	0.2	0.1
11/30/2016	6.8	7.5	9.4	44.8	NODI: 9	NODI: 9	0	0
12/31/2016	6.7	7	3.2	39.3	NODI: 9	NODI: 9	0	0
1/31/2017	6.6	6.9	20.1	37.3	NODI: 9	NODI: 9	0.2	0.1
2/28/2017	6.6	6.9	10.4	34.5	NODI: 9	NODI: 9	1.2	0.2
3/31/2017	6.6	6.9	21	45.7	NODI: 9	NODI: 9	0	0
4/30/2017	6.7	6.9	5.2	19.7	NODI: 9	NODI: 9	4.2	0.4
5/31/2017	6.6	6.9	60.6	248.1	NODI: 9	NODI: 9	0.8	0.1
6/30/2017	6.6	7.3	40.7	148.3	NODI: 9	NODI: 9	0	0
7/31/2017	6.8	7.3	32.3	78.4	NODI: 9	NODI: 9	37	5.9
8/31/2017	7.1	7.4	20.5	95.9	NODI: 9	NODI: 9	44	8.4
9/30/2017	6.8	7.3	23.4	69.1	NODI: 9	NODI: 9	38.7	7.7



## Effluent - Outfall 001

Parameter	pH	pH	E. coli	E. coli	TRC	TRC	Ammonia	Ammonia
	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave
Units	SU	SU	CFU/100mL	CFU/100mL	ug/L	ug/L	lb/d	mg/L
Effluent Limit	6.5	8	126	406	68	117	Report	Report
10/31/2017	6.7	7	33.2	135.4	NODI: 9	NODI: 9	0.7	0.2
11/30/2017	6.7	7.1	18.5	29.4	NODI: 9	NODI: 9	0	0
12/31/2017	6.7	7.1	7.9	46.4	NODI: 9	NODI: 9	0.3	0.1
1/31/2018	6.5	7.1	7	41.4	NODI: 9	NODI: 9	0.3	0.1
2/28/2018	6.6	7.1	6.3	37.3	NODI: 9	NODI: 9	0.5	0.1
3/31/2018	6.6	7	12.2	126.6	NODI: 9	NODI: 9	0	0
4/30/2018	6.5	6.9	31.6	133.1	NODI: 9	NODI: 9	0	0
5/31/2018	6.6	7.2	30.6	57.6	NODI: 9	NODI: 9	15	1.9
6/30/2018	7	7.4	34.1	57.6	NODI: 9	NODI: 9	82.6	22
7/31/2018	7.1	7.4	86.2	387.3	NODI: 9	NODI: 9	88.9	24
8/31/2018	6.6	7.3	9.6	42.8	NODI: 9	NODI: 9	6.8	1.6
9/30/2018	6.8	7.1	9.2	28.7	NODI: 9	NODI: 9	16.4	4.2
10/31/2018	6.8	7.2	5.1	13.1	NODI: 9	NODI: 9	3.6	1
11/30/2018	6.8	7	8.6	20.1	NODI: 9	NODI: 9	0	0
12/31/2018	6.8	7	7.1	28.7	NODI: 9	NODI: 9	0	0
1/31/2019	6.6	7	8.6	20.1	NODI: 9	NODI: 9	0.2	0.1
2/28/2019	6.6	6.8	6.4	30.9	NODI: 9	NODI: 9	0	0
3/31/2019	6.6	6.9	6.7	21.3	NODI: 9	NODI: 9	4.9	1.3
4/30/2019	6.6	7.3	11.1	29.4	NODI: 9	NODI: 9	1.3	0.1
5/31/2019	6.7	7.4	77.7	325.5	NODI: 9	NODI: 9	0.8	0.1
6/30/2019	6.6	7.1	50.7	84.2	NODI: 9	NODI: 9	4.1	0.3
7/31/2019	6.9	7.3	30	167	NODI: 9	NODI: 9	0.5	0.1
8/31/2019	6.8	7.3	79.4	272.3	NODI: 9	NODI: 9	16.1	4.5
9/30/2019	7	7.5	16.5	133.4	NODI: 9	NODI: 9	46.1	14.1
10/31/2019	6.6	7.4	13.5	53.7	NODI: 9	NODI: 9	48.4	5.2
11/30/2019	6.8	7	18.6	74.9	NODI: 9	NODI: 9	0.3	0.1
12/31/2019	6.6	7.1	19	118.7	NODI: 9	NODI: 9	33.8	5.5
1/31/2020	6.6	7	8.8	29.8	NODI: 9	NODI: 9	0	0

## Effluent - Outfall 001

Parameter	Ammonia	Ammonia	TKN	TKN	Nitrate	Nitrate	Nitrite	Nitrite
	Daily Max	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	lb/d	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	0	0
Maximum	88.9	24	25	25	9.2	9.2	0	0
Median	0.75	0.1	1.5	1.5	1.95	1.95	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/28/2015	42.8	12	8.3	8.3	1.5	1.5	0	0
3/31/2015	48.5	11	13	13	0.8	0.8	0	0
4/30/2015	19.7	1.8	3.1	3.1	0.7	0.7	0	0
5/31/2015	64.3	13	8.5	8.5	0	0	0	0
6/30/2015	69.8	7	8.4	8.4	0	0	0	0
7/31/2015	0.4	0.1	1.3	1.3	0	0	0	0
8/31/2015	4.7	1	2.1	2.1	0	0	0	0
9/30/2015	31.9	8.7	11	11	0	0	0	0
10/31/2015	0.4	0.1	1.5	1.5	3	3	0	0
11/30/2015	0.2	0.05	0	0	3.3	3.3	0	0
12/31/2015	0	0	1.4	1.4	4.5	4.5	0	0
1/31/2016	0	0	0	0	3.7	3.7	0	0
2/29/2016	0	0	1.1	1.1	2.3	2.3	0	0
3/31/2016	0	0	1.1	1.1	4.6	4.6	0	0
4/30/2016	0.5	0.07	1.4	1.4	5.6	5.6	0	0
5/31/2016	0.9	0.2	1.5	1.5	2.9	2.9	0	0
6/30/2016	0.4	0.07	1	1	0	0	0	0
7/31/2016	0.8	0.12	1.4	1.4	0	0	0	0
8/31/2016	50.2	14	17	17	0	0	0	0
9/30/2016	0.2	0.1	1.7	1.7	0	0	0	0
10/31/2016	0.2	0.1	1.2	1.2	0	0	0	0
11/30/2016	0	0	1.4	1.4	2.3	2.3	0	0
12/31/2016	0	0	1	1	1.2	1.2	0	0
1/31/2017	0.2	0.1	1.2	1.2	5.9	5.9	0	0
2/28/2017	2.2	0.4	1.4	1.4	2.1	2.1	0	0
3/31/2017	0	0	1.5	1.5	2.9	2.9	0	0
4/30/2017	4.2	0.4	1.1	1.1	2.9	2.9	0	0
5/31/2017	0.8	0.1	1	1	0	0	0	0
6/30/2017	0	0	7.2	7.2	0	0	0	0
7/31/2017	37	5.9	6.9	6.9	0	0	0	0
8/31/2017	77.4	14	17	17	0	0	0	0
9/30/2017	38.7	7.7	9.5	9.5	0	0	0	0

## Effluent - Outfall 001

Parameter	Ammonia	Ammonia	TKN	TKN	Nitrate	Nitrate	Nitrite	Nitrite
	Daily Max	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	lb/d	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
10/31/2017	0.7	0.2	1.4	1.4	0	0	0	0
11/30/2017	0	0	1	1	2.3	2.3	0	0
12/31/2017	0.3	0.1	1.6	1.6	3.5	3.5	0	0
1/31/2018	0.3	0.1	1.5	1.5	5.8	5.8	0	0
2/28/2018	0.5	0.05	1.2	1.2	3	3	0	0
3/31/2018	0	0	1.9	1.9	4.7	4.7	0	0
4/30/2018	0	0	1.6	1.6	3	3	0	0
5/31/2018	15	1.9	2.8	2.8	0	0	0	0
6/30/2018	82.6	22	23	23	0	0	0	0
7/31/2018	88.9	24	25	25	0	0	0	0
8/31/2018	6.8	1.6	3.6	3.6	9.2	9.2	0	0
9/30/2018	16.4	4.2	5.5	5.5	4.7	4.7	0	0
10/31/2018	3.6	1	1.6	1.6	6.9	6.9	0	0
11/30/2018	0	0	1.2	1.2	4.8	4.8	0	0
12/31/2018	0	0	1.1	1.1	3.6	3.6	0	0
1/31/2019	0.2	0.1	0.7	0.7	4.2	4.2	0	0
2/28/2019	0	0	1.8	1.8	3.5	3.5	0	0
3/31/2019	4.9	1.3	2.4	2.4	2.4	2.4	0	0
4/30/2019	1.3	0.1	1	1	2.8	2.8	0	0
5/31/2019	0.8	0.1	1	1	1.9	1.9	0	0
6/30/2019	7.5	0.3	1.7	1.7	0	0	0	0
7/31/2019	0.5	0.1	0.7	0.7	0	0	0	0
8/31/2019	16.1	4.5	4.9	4.9	0	0	0	0
9/30/2019	64.4	20	15	15	0	0	0	0
10/31/2019	48.4	5.2	7	7	0	0	0	0
11/30/2019	0.3	0.1	1	1	2	2	0	0
12/31/2019	33.8	5.5	6.9	6.9	0	0	0	0
1/31/2020	0	0	1.1	1.1	3.6	3.6	0	0

## Effluent - Outfall 001

Parameter	Copper	Copper	Lead	Lead
	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L
<b>Effluent Limit</b>	<b>17.3</b>	<b>24</b>	<b>3.3</b>	<b>87</b>
<b>Minimum</b>	<b>2.5</b>	<b>3</b>	<b>0</b>	<b>0</b>
<b>Maximum</b>	<b>22</b>	<b>27</b>	<b>10</b>	<b>10</b>
<b>Median</b>	<b>9.7</b>	<b>11</b>	<b>0</b>	<b>0</b>
<b>No. of Violations</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>0</b>
2/28/2015	10	11	1.3	2
3/31/2015	11.5	12	2	2
4/30/2015	5	6	0	0
5/31/2015	6.3	7	0.33	1
6/30/2015	4.5	5	0	0
7/31/2015	5	6	0	1
8/31/2015	10.3	12	1.3	2
9/30/2015	9.5	12	1.5	2
10/31/2015	13.5	14	0	0
11/30/2015	16	19	0	0
12/31/2015	13.5	14	0	0
1/31/2016	<b>20</b>	21	0	0
2/29/2016	<b>18</b>	<b>26</b>	0	0
3/31/2016	15	15	0	0
4/30/2016	12.5	13	0	0
5/31/2016	10	11	0.7	0.7
6/30/2016	4	5	0	0
7/31/2016	3	3	0	0
8/31/2016	7	7	0	0
9/30/2016	4.5	5	0	0
10/31/2016	2.5	3	0	0
11/30/2016	9	10	0.35	0.7
12/31/2016	9	11	0	0
1/31/2017	14	14	0	0
2/28/2017	12	13	0	0.7
3/31/2017	12.5	13	0	0
4/30/2017	11	12	0	0
5/31/2017	6.3	10	0	0.8
6/30/2017	3	3	0	0
7/31/2017	3	3	0	0
8/31/2017	3.8	4.3	0.5	1
9/30/2017	3	3	0	0

## Effluent - Outfall 001

Parameter	Copper	Copper	Lead	Lead
	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L
Effluent Limit	17.3	24	3.3	87
10/31/2017	6	7	1	1
11/30/2017	11	11	0	0
12/31/2017	10	10	0	0
1/31/2018	15	15	0	0
2/28/2018	20	25	0	0.4
3/31/2018	10.5	11	0	0
4/30/2018	9	10	0	0
5/31/2018	5.7	6	0	0
6/30/2018	4.2	4.6	0	0
7/31/2018	4.7	5	0	0
8/31/2018	11	16	0.7	0.7
9/30/2018	9.8	13	2.7	2.7
10/31/2018	11.5	12	0	0
11/30/2018	14	16	0	0
12/31/2018	22	27	10	10
1/31/2019	17	17	0	0
2/28/2019	18	19	0	0
3/31/2019	14	17	0	0
4/30/2019	7.2	7.8	0	0
5/31/2019	6.3	7.9	0	0
6/30/2019	5.3	8.5	0	0.4
7/31/2019	3.2	3.4	0	0
8/31/2019	3.4	3.5	1.1	1.1
9/30/2019	5.6	9	0	0.9
10/31/2019	4.2	4.6	0	0
11/30/2019	10.5	11	0	0
12/31/2019	9.6	12	0	0
1/31/2020	16.5	20	0	0

## WET Test Results (Effluent)

Parameter	LC50 Acute Ceriodaphnia	LC50 Acute Pimephales	C-NOEC Chronic Ceriodaphnia	C-NOEC Chronic Pimephales	Ammonia	Aluminum	Cadmium
	Daily Min	Daily Min	Daily Min	Daily Min	Daily Max	Daily Max	Daily Max
Units	%	%	%	%	mg/L	mg/L	mg/L
Effluent Limit	100	100	16.3	16.3	Report	Report	Report
Minimum	100	100	50	100	0	0.025	0
Maximum	100	100	100	100	20.2	0.061	0.0005
Median	100	100	100	100	0.405	0.0375	0
No. of Violations	0	0	0	0	N/A	N/A	N/A
3/31/2015	100	100	100	100	12	0.049	0.0005
6/30/2015	100	100	100	100	13	0.042	0
9/30/2015	100	100	100	100	1	0.04	0
12/31/2015	100	100	100	100	0	0.036	0
3/31/2016	100	100	100	100	0	0.034	0
6/30/2016	100	100	100	100	0.15	0.036	0
9/30/2016	100	100	100	100	4.5	0.039	0
12/31/2016	100	100	100	100	0	0.025	0.0001
3/31/2017	100	100	100	100	0.35	0.045	0.0001
6/30/2017	100	100	100	100	< 1	0.045	< 1
9/30/2017	100	100	100	100	8.6	0.047	0
12/31/2017	100	100	100	100	0	0.061	0
3/31/2018	100	100	50	100	< .01	0.029	< .0001
6/30/2018	100	100	100	100	12	0.03	< .0003
9/30/2018	100	100	100	100	14	0.034	0
12/31/2018	100	100	100	100	0	0.033	0.0001
3/31/2019	100	100	100	100	0	0.04	0
6/30/2019	100	100	100	100	7.1	0.029	0
9/30/2019	100	100	100	100	20.2	0.048	< 1
12/31/2019	100	100	100	100	0.46	0.026	0

## WET Test Results (Effluent)

Parameter	Copper	Lead	Nickel	Zinc	Hardness
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0.003	0	0	0.013	22
Maximum	26	0.002	0.002	0.14	100
Median	0.009	0.0007	0	0.074	61.5
No. of Violations	N/A	N/A	N/A	N/A	N/A
3/31/2015	0.011	0.002	0.002	0.084	45
6/30/2015	0.006	0.001	0	0.074	77
9/30/2015	0.007	0.001	0.002	0.095	56
12/31/2015	0.019	0	0	0.12	55
3/31/2016	26	0.001	0	0.074	56
6/30/2016	0.009	0.0007	0	0.078	50
9/30/2016	0.003	0.0007	0	0.039	51
12/31/2016	0.008	0.0007	0.0013	0.082	54
3/31/2017	0.012	0.0007	0	0.12	100
6/30/2017	0.01	0.0008	< 1	0.063	75
9/30/2017	0.0043	0.0005	0	0.013	22
12/31/2017	0.0064	0.0007	0.0012	0.031	56
3/31/2018	0.025	0.0004	0.0016	0.076	78
6/30/2018	0.0042	0.0007	< .001	0.057	68
9/30/2018	0.0041	0.0007	0	0.067	71
12/31/2018	0.019	0.0004	0	0.072	67
3/31/2019	0.019	0.0005	0	0.075	69
6/30/2019	0.0085	0.0005	0	0.059	92
9/30/2019	0.009	0.0009	0.0012	0.063	54
12/31/2019	0.013	0.0004	0	0.14	75

## WET Test Results (Ambient)

Parameter	pH	Ammonia	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Minimum	6.5	0	0.042	0	0	0	0	0.003
Maximum	7.8	0.13	0.48	0.0088	0.0087	0.013	0.0087	0.23
Median	6.9	Non-Detect	0.0625	Non-Detect	0.0004	Non-Detect	Non-Detect	0.00485
3/31/2015	-	-	-	-	-	-	-	-
6/30/2015	6.7	<.1	0.11	<.0005	0.006	0.001	<.002	0.074
9/30/2015	7.3	<.1	0.076	<.0005	0.007	0.001	<.002	0.005
12/31/2015	6.6	<.1	0.064	<.0005	<.002	<.0005	<.002	0.008
3/31/2016	-	-	-	-	-	-	-	-
6/30/2016	7.8	<.1	0.08	<.0005	<.002	<.0005	<.002	0.004
9/30/2016	7.0	<.1	0.48	<.0005	<.002	0.0013	<.002	0.008
12/31/2016	7.3	<.1	0.17	<.0001	0.0008	0.0004	<.001	0.0047
3/31/2017	-	-	-	-	-	-	-	-
6/30/2017	7.3	<.1	0.34	0.0088	0.0087	0.013	0.0087	0.23
9/30/2017	7.1	<.1	0.061	<.0001	0.0043	0.0005	<.001	0.003
12/31/2017	6.5	<.1	0.39	<.0001	0.0024	0.0013	<.001	0.017
3/31/2018	-	-	-	-	-	-	-	-
6/30/2018	6.7	<.1	0.16	<.0003	0.0008	<.0003	<.001	0.0072
9/30/2018	6.9	<.1	0.053	<.0003	0.0024	<.0003	<.001	0.0099
12/31/2018	-	-	-	-	-	-	-	-
3/31/2019	-	-	-	-	-	-	-	-
6/30/2019	6.8	<.1	0.19	<.0001	0.0012	0.0003	<.001	0.0062
9/30/2019	6.9	0.13	0.042	<.0003	0.001	<.0003	<.001	0.007
12/31/2019	-	-	-	-	-	-	-	-



## WET Test Results (Ambient)

Parameter	Hardness
	Daily Max
Units	mg/L
Minimum	7.3
Maximum	18
Median	9.1
3/31/2015	-
6/30/2015	8.8
9/30/2015	15
12/31/2015	16
3/31/2016	-
6/30/2016	11
9/30/2016	17
12/31/2016	13
3/31/2017	-
6/30/2017	9.4
9/30/2017	17
12/31/2017	7.3
3/31/2018	-
6/30/2018	8.1
9/30/2018	18
12/31/2018	-
3/31/2019	-
6/30/2019	10
9/30/2019	18
12/31/2019	-

A reasonable potential analysis is completed using a single set of critical conditions for flow and pollutant concentration that will ensure the protection of water quality standards. To determine the critical condition of the effluent, EPA projects an upper bound of the effluent concentration based on the observed monitoring data and a selected probability basis. EPA generally applies the quantitative approach found in Appendix E of EPA’s *Technical Support Document for Water Quality-based Toxics Control (TSD)*<sup>1</sup> to determine the upper bound of the effluent data. This methodology accounts for effluent variability based on the size of the dataset and the occurrence of non-detects (i.e., samples results in which a parameter is not detected above laboratory detection limits). For datasets of 10 or more samples, EPA uses the upper bound effluent concentration at the 95<sup>th</sup> percentile of the dataset. For datasets of less than 10 samples, EPA uses the maximum value of the dataset.

EPA uses the calculated upper bound of the effluent data, along with a concentration representative of the parameter in the receiving water, the critical effluent flow, and the critical upstream flow to project the downstream concentration after complete mixing using the following simple mass-balance equation:-

$$C_s Q_s + C_e Q_e = C_d Q_d$$

Where:

- C<sub>s</sub> = upstream concentration (median value of available ambient data)
- Q<sub>s</sub> = upstream flow (7Q10 flow upstream of the outfall)
- C<sub>e</sub> = effluent concentration (95<sup>th</sup> percentile or maximum of effluent concentration)
- Q<sub>e</sub> = effluent flow of the facility (design flow)
- C<sub>d</sub> = downstream concentration
- Q<sub>d</sub> = downstream flow (Q<sub>s</sub> + Q<sub>e</sub>)

Solving for the downstream concentration results in:

$$C_d = \frac{C_s Q_s + C_e Q_e}{Q_d}$$

When both the downstream concentration (C<sub>d</sub>) and the effluent concentration (C<sub>e</sub>) exceed the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above the water quality standard. *See* 40 C.F.R. § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must

**Appendix B – Reasonable Potential and Limits Calculations**

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contain WQBELs for the parameter. *See* 40 C.F.R. § 122.44(d)(1)(iii). Limits are calculated by using the criterion as the downstream concentration ( $C_d$ ) and rearranging the mass balance equation to solve for the effluent concentration ( $C_e$ ). The table below presents the reasonable potential calculations and, if applicable, the calculation of the limits required in the permit. Refer to the pollutant-specific section of the Fact Sheet for a detailed discussion of these calculations, any assumptions that were made and the resulting permit requirements.

Pollutant	$Q_s$	$C_s$ <sup>1</sup>	$Q_e$	$C_e$ <sup>2</sup>		$Q_d$	$C_d$		Criteria		Reasonable Potential		Limits			
	cfs	mg/L	cfs	Acute (mg/L)	Chronic (mg/L)	cfs	Acute (mg/L)	Chronic (mg/L)	Acute (mg/L)	Chronic (mg/L)	$C_e$ & $C_d$ > Acute Criteria	$C_e$ & $C_d$ > Chronic Criteria	Acute (mg/L)	Chronic (mg/L)		
Ammonia (Warm)	14.00	0.0	2.32	34.4	34.4	16.32	4.9	4.9	10.8	1.3	N	Y	N/A	9.0		
Ammonia (Cold)		0.0		4.1	4.1		0.6	0.6	23.5	4.1	N	N	N/A	N/A		
Phosphorus		0.0		N/A	2.40		N/A	0.34	N/A	0.090	N/A	Y	N/A	0.63		
		$\mu\text{g/L}$		$\mu\text{g/L}$	$\mu\text{g/L}$		$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$			$\mu\text{g/L}$	$\mu\text{g/L}$
Aluminum		110.0		54.9	54.9		102.2	102.2	675	78.3	N	N	N/A	N/A		
Cadmium		0.0		0.3	0.3		0.0	0.0	0.4	0.2	N	N	N/A	N/A		
Copper		0.9		24.0	17.3		4.2	3.2	2.8	2.1	N/A	N/A	14	9.5		
Lead		0.0		87.0	3.3		12.4	0.5	9.5	0.4	N/A	N/A	67	2.6		
Nickel		0.0		1.9	1.9		0.3	0.3	108.2	12.0	N	N	N/A	N/A		
Zinc		7.0		157.4	157.4		28.4	28.4	27.6	27.6	Y	Y	151.6	151.6		

<sup>1</sup>Median concentration for the receiving water just upstream of the facility’s discharge taken from the WET testing data during the review period (see Appendix A).

<sup>2</sup>Values represent the 95<sup>th</sup> percentile (for  $n \geq 10$ ) or maximum (for  $n < 10$ ) concentrations from the DMR data and/or WET testing data during the review period (see Appendix A). If the metal already has a limit (for either acute or chronic conditions), the value represents the existing limit.

APPENDIX C

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of Massachusetts Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 Average Load (lb/day)	2015 Average Load (lb/day)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2014-2018 Avg Load (lb/year)
<b>Total Massachusetts Out-of-Basin Load</b>			<b>262</b>	<b>146</b>	<b>11,528</b>	<b>11,215</b>	<b>9,767</b>	<b>10,557</b>	<b>10,631</b>	<b>10,740</b>
<b>Total Massachusetts Connecticut River Load</b>			<b>179.6</b>	<b>98</b>	<b>9,184</b>	<b>8,945</b>	<b>7,695</b>	<b>8,390</b>	<b>8,341</b>	<b>8,511</b>
MA0101613	SPRINGFIELD REGIONAL WTP	POTW	67.00	36.26	2,303	2,377	1,643	1,953	1,684	1,992
MA0101508	CHICOPEE WPC	POTW	15.50	7.83	2,220	2,092	1,854	1,872	1,895	1,987
MA0101630	HOLYOKE WPCF	POTW	17.50	8.05	584	644	687	747	593	651
MA0101214	GREENFIELD WPCF	POTW	3.20	3.23	436	467	460	386	482	446
MA0100994	GARDNER WWTF	POTW	5.00	2.89	413	470	377	455	404	424
MA0101818	NORTHAMPTON WWTP	POTW	8.60	3.85	489	412	355	393	453	420
MA0100218	AMHERST WWTP	POTW	7.10	3.76	456	411	335	342	377	384
MA0100455	SOUTH HADLEY WWTF	POTW	4.20	2.37	393	325	288	364	315	337
MA0101478	EASTHAMPTON WWTP	POTW	3.80	3.44	202	186	262	329	639	324
MA0101800	WESTFIELD WWTP	POTW	6.10	2.88	276	225	221	189	211	224
MA0110264	AUSTRALIS AQUACULTURE, LLC	IND	0.30	0.13	149	138	116	107	74	117
MA0101168	PALMER WPCF	POTW	5.60	1.47	142	92	84	100	125	109
MA0100137	MONTAGUE WWTF	POTW	1.80	0.84	107	78	55	215	78	107
MA0100099	HADLEY WWTP	POTW	0.54	0.38	73	76	65	109	67	78
MA0100889	WARE WWTP	POTW	1.00	0.55	62	89	87	72	78	77
MA0101257	ORANGE WWTP	POTW	1.10	0.98	72	62	58	91	91	75
MA0003697	BARNHARDT MANUFACTURING	IND	0.89	0.33	58	78	49	54	96	67
MA0103152	BARRE WWTF	POTW	0.30	0.19	77	81	50	50	49	61
MA0101567	WARREN WWTP	POTW	1.50	0.26	45	42	124	38	55	61
MA0000469	SEAMAN PAPER OF MASSACHUSETTS	IND	1.10	0.83	26	97	53	62	46	57
MA0100005	ATHOL WWTF	POTW	1.75	0.79	76	56	40	39	44	51
MA0101061	NORTH BROOKFIELD WWTP	POTW	0.62	0.32	62	51	40	47	50	50
MA0110043	MCLAUGHLIN STATE TROUT HATCHERY	IND	7.50	7.12	39	44	43	41	37	41
MA0100919	SPENCER WWTP	POTW	1.08	0.35	28	33	31	29	71	38

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of Massachusetts Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 Average Load (lb/day)	2015 Average Load (lb/day)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2014-2018 Avg Load (lb/year)
MA0100862	WINCHENDON WPCF	POTW	1.10	0.50	25	33	29	48	40	35
MA0101290	HATFIELD WWTF	POTW	0.50	0.17	51	37	28	28	27	34
MA0101052	ERVING WWTP #2	POTW	2.70	1.78	35	38	38	33	25	34
MA0100340	TEMPLETON WWTF	POTW	2.80	0.27	19	35	18	21	35	26
MAG580004	SOUTH DEERFIELD WWTP	POTW	0.85	0.37	15	33	18	18	27	22
MA0040207	CHANG FARMS INC	IND	0.65	0.22	22	15	34	20	20	22
MA0110035	MCLAUGHLIN/SUNDERLAND STATE FISH HATCHERY	IND	2.10	2.16	25	22	19	20	25	22
MA0102148	BELCHERTOWN WRF	POTW	1.00	0.36	61	13	11	11	5.6	20
MAG580002	SHELBURNE WWTF	POTW	0.25	0.16	15	13	17	17	21	17
MAG580005	SUNDERLAND WWTF	POTW	0.50	0.17	20	12	13	10	9.3	13
MAG580001	OLD DEERFIELD WWTP	POTW	0.25	0.068	13	14	13	12	12	13
MA0110051	MCLAUGHLIN/BITZER STATE TROUT HATCHERY	IND	1.43	1.70	23	12	12	8.2	8.2	13
MA0032573	NORTHFIELD MT HERMON SCHOOL WWTP	POTW	0.45	0.072	22	7.6	15	10	10	13
MA0100102	HARDWICK WPCF	POTW	0.23	0.12	8.2	5.9	13	4.3	17	10
MA0100200	NORTHFIELD WWTF	POTW	0.28	0.080	3.8	6.8	6.5	10	14	8.1
MA0101516	ERVING WWTP #1	POTW	1.02	0.14	7.2	6.1	3.7	10	7.5	6.9
MA0102776	ERVING WWTP #3	POTW	0.010	0.0049	6.1	2.9	6.9	8.0	7.5	6.3
MA0102431	HARDWICK WWTP	POTW	0.040	0.016	7.4	1.5	11	6.9	2.3	5.9
MAG580003	CHARLEMONT WWTF	POTW	0.050	0.016	7.5	4.2	4.8	4.8	4.8	5.2
MA0101265	HUNTINGTON WWTP	POTW	0.20	0.067	4.6	4.1	5.6	4.3	5.2	4.7
MA0100188	MONROE WWTF	POTW	0.020	0.013	<u>1.4</u>	1.4	1.2	2.3	1.7	1.6
MA0000272	PAN AM RAILWAYS YARD	IND	0.015	0.011	0.06	0.13	0.12	0.47	0.18	0.19
MA0001350	LS STARRETT PRECISION TOOLS	IND	0.025	0.014	0.03	0.0	0.08	0.07	0.04	0.05
MA0100161	ROYALSTON WWTP	POTW	0.039	0.01298	<u>0.9</u>	0.49	0.43	0.49	0.60	0.59
<b>Total Massachusetts Housatonic Load</b>			<b>29.4</b>	<b>18</b>	<b>1,667</b>	<b>1,605</b>	<b>1,509</b>	<b>1,612</b>	<b>1,707</b>	<b>1,626</b>
MA0101681	PITTSFIELD WWTF	POTW	17.00	10.55	1,179	1,176	1,145	1,245	1,319	1,213
MA0000671	CRANE WWTP	POTW	3.10	3.07	155	142	108	116	107	126

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of Massachusetts Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 Average Load (lb/day)	2015 Average Load (lb/day)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2014-2018 Avg Load (lb/year)
MA0101524	GREAT BARRINGTON WWTF	POTW	3.20	0.97	110	120	100	99	124	111
MA0100935	LENOX CENTER WWTF	POTW	1.19	0.61	49	67	59	71	78	65
MA0001848	ONYX SPECIALTY PAPERS INC - WILLOW MILL	IND	1.10	0.94	51	39	44	33	22	38
MA0005011	PAPERLOGIC TURNERS FALLS MILL(6)	IND	0.70	0.73	85	17	12	6.5	Term	30
MA0100153	LEE WWTF	POTW	1.25	0.64	18	17	14	15	35	20
MA0101087	STOCKBRIDGE WWTP	POTW	0.30	0.15	10	15	16	13	10	13
MA0103110	WEST STOCKBRIDGE WWTF	POTW	0.076	0.014	<u>5.3</u>	<u>3.8</u>	4.3	5.0	3.7	4.4
MA0001716	MEADWESTVACO CUSTOM PAPERS LAUREL MILL	IND	1.5	0.34	4.3	7.9	5.7	7.2	7.8	6.6
<b>Total Massachusetts Thames River Load</b>			<b>11.8</b>	<b>6</b>	<b>677</b>	<b>666</b>	<b>564</b>	<b>556</b>	<b>583</b>	<b>609</b>
MA0100439	WEBSTER WWTF	POTW	6.00	2.97	389	393	328	292	344	349
MA0100901	SOUTHBRIDGE WWTF	POTW	3.77	1.97	<u>178</u>	149	154	151	130	152
MA0101141	CHARLTON WWTF	POTW	0.45	0.21	40	75	41	68	70	59
MA0100421	STURBRIDGE WPCF	POTW	0.75	0.51	44	21	18	19	20	24
MA0101796	LEICESTER WATER SUPPLY WWTF	POTW	0.35	0.19	24	27	22	26	19	24
MA0100170	OXFORD ROCHDALE WWTP	POTW	0.50	0.24	2.4	1.0	0.23	0.57	0.49	0.9

NOTES:

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- 2) The loads represent annual totals, based on annual daily average flow and daily average nitrogen concentration.
- 3) Term = Permit was terminated in that year
- 4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of New Hampshire Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 Average Load (lb/day)	2015 Average Load (lb/day)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2014-2018 Avg Load (lb/day)
<b>Total New Hampshire Out-of-Basin Load</b>			<b>31.5</b>	<b>18.6</b>	<b>1,662</b>	<b>1,457</b>	<b>1,370</b>	<b>1,555</b>	<b>1,154</b>	<b>1,440</b>
NH0000621	BERLIN STATE FISH HATCHERY	IND	6.1	6.30	8.8	13	13	15	8.7	12
NH0000744	NH DES (TWIN MTN STATE FISH HATCHERY)	IND	1.0	0.78	2.0	5.8	6.2	5.5	5.1	4.9
NH0100099	HANOVER WWTF	POTW	2.3	1.30	<u>341</u>	<u>341</u>	313	350	361	341
NH0100145	LANCASTER WWTF	POTW	1.2	0.79	84	78	45	72	63	68
NH0100153	LITTLETON WWTP	POTW	1.5	0.69	32	36	24	31	45	34
NH0100200	NEWPORT WWTF	POTW	1.3	0.59	97	63	80	80	79	80
NH0100366	LEBANON WWTF	POTW	3.2	1.49	<u>136</u>	<u>136</u>	132	127	152	137
NH0100382	HINSDALE WWTP	POTW	0.3	0.19	<u>18</u>	17	11	20	16	16
NH0100510	WHITEFIELD WWTF	POTW	0.2	0.08	35	22	15	18	24	23
NH0100544	SUNAPEE WWTF	POTW	0.6	0.40	<u>32</u>	<u>32</u>	<u>32</u>	50	33	35
NH0100765	CHARLESTOWN WWTP	POTW	1.1	0.28	22	13	12	19	22	17
NH0100790	KEENE WWTF	POTW	6.0	2.89	<u>533</u>	<u>397</u>	<u>394</u>	<u>452</u>	<u>40</u>	363
NH0101052	TROY WWTF	POTW	0.3	0.08	23	15	12	13	25	18
NH0101150	WEST SWANZEY WWTP	POTW	0.2	0.07	6.1	6.4	7.8	7.8	15	8.7
NH0101168	MERIDEN VILLAGE WATER DISTRICT	POTW	0.1	0.03	0.53	2.5	1.4	2.9	1.3	1.7
NH0101257	CLAREMONT WWTF	POTW	3.9	1.51	<u>161</u>	<u>161</u>	<u>161</u>	163	146	158
NH0101392	BETHLEHEM VILLAGE WWTP (1)	POTW	0.3	0.21	25	26	25	29	25	26
NHG580226	GROVETON WWTP	POTW	0.4	0.12	18	13	10	12	14	13
NHG580315	COLEBROOK WWTP	POTW	0.5	0.22	26	23	21	31	31	26
NHG580391	CHESHIRE COUNTY MAPLEWOOD NURSING HOME	POTW	0.040	0.02	2.1	1.6	1.3	1.5	1.3	1.5
NHG580404	WINCHESTER WWTP	POTW	0.28	0.14	6.1	11	3.9	13	8.3	8.3
NHG580421	LISBON WWTF	POTW	0.3	0.12	26	23	19	17	17	20
NHG580536	STRATFORD VILLAGE SYSTEM	POTW	0.1	0.01	2.2	1.9	3.9	2.5	2.8	2.7
NHG580978	WOODSVILLE WWTF	POTW	0.3	0.19	22	15	19	19	13	18
NHG581206	NORTHUMBERLAND VILLAGE WPCF	POTW	0.1	0.04	2.7	3.3	3.5	2.6	3.1	3.0
NHG581214	STRATFORD-MILL HOUSE	POTW	0.0	0.01	1.4	1.5	2.2	1.8	2.3	1.8
NHG581249	LANCASTER GRANGE WWTP	POTW	0.0	0.00	0.45	0.53	0.45	0.49	0.44	0.47

NOTES:

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- 3) Term = Permit was terminated in that year
- 4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of Vermont Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 load (lb/day)	2015 load (lb/day)	2016 load (lb/day)	2017 load (lb/day)	2018 load (lb/day)	2014-2018 Avg Load (lb/day)
<b>Total Vermont Out-of-Basin Load</b>			<b>18.3</b>	<b>7.8</b>	<b>1,273</b>	<b>1,255</b>	<b>1,146</b>	<b>1,221</b>	<b>1,421</b>	<b>1,263</b>
VT0000019	WEIDMANN ELECTRICAL TECHNOLOGY INC	IND	0.25	0.15	2.4	1.4	1.4	1.2	1.7	1.6
VT0000108	PUTNEY PAPER COMPANY MILL & LAGOONS	IND	0.28	0.16	22	26	20	22	17	22
VT0000248	FIBERMARK	IND	2.00	1.06	117	82	89	106	92	97
VT0100013	BELLOWS FALLS WWTF	POTW	1.40	0.44	136	136	136	102	179	138
VT0100048	BETHEL	POTW	0.13	0.06	10.4	4.0	2.4	6.5	3.5	5.4
VT0100064	BRATTLEBORO WWTF	POTW	3.01	1.27	487	487	446	501	421	469
VT0100081	CHESTER MTP	POTW	0.19	0.16	16	5.0	4.5	5.6	7.6	7.6
VT0100145	LUDLOW WWTF	POTW	0.71	0.37	35	27	35	41	42	36
VT0100277	PUTNEY	POTW	0.09	0.05	16	16	11	16	21	16
VT0100285	RANDOLPH	POTW	0.41	0.17	23	23	21	20	28	23
VT0100374	SPRINGFIELD WWTF	POTW	2.20	0.98	133	133	133	120	130	130
VT0100447	WINDSOR-WESTON HEIGHTS	POTW	0.02	0.01	0.40	0.53	1.2	0.88	1.0	0.8
VT0100579	ST JOHNSBURY	POTW	1.60	0.83	34	23	13	24	146	48
VT0100595	LYNDON WWTP	POTW	0.76	0.15	21	21	16	24	21	20
VT0100625	CANAAN MTP	POTW	0.19	0.10	17	15	16	19	17	17
VT0100633	DANVILLE WPCF	POTW	0.07	0.03	2.9	3.5	7.6	4.4	4.3	4.5
VT0100706	WILMINGTON WWTP	POTW	0.15	0.08	3.8	15.9	10.0	4.7	17.2	10
VT0100731	READSBORO WPC	POTW	0.76	0.04	3.6	3.2	2.8	3.8	4.0	3.5
VT0100749	S. WOODSTOCK WWTF	POTW	0.06	0.01	1.9	1.9	0.7	1.2	3.9	1.9
VT0100757	WOODSTOCK WWTP	POTW	0.46	0.22	25	23	24	26	22	24
VT0100765	WOODSTOCK - TAFTSVILLE	POTW	0.02	0.00	0.32	0.24	0.20	0.55	0.87	0.44
VT0100803	BRADFORD WPCP	POTW	0.15	0.08	9.1	9.1	7.7	9.4	8.5	8.8
VT0100846	BRIDGEWATER WWTF	POTW	0.05	0.01	1.1	0.91	1.0	1.1	1.1	1.1
VT0100854	ROYALTON WWTF	POTW	0.08	0.02	5.2	4.6	4.7	7.7	5.0	5.4
VT0100862	CAVENDISH WWTF	POTW	0.16	0.06	15	10	9	11	15	12
VT0100919	WINDSOR WWTF	POTW	1.13	0.25	69	69	66	65	71	68
VT0100943	CHELSEA WWTF	POTW	0.07	0.02	8.2	8.2	4.8	8.9	9.9	8.0
VT0100951	RYEGATE FIRE DEPARTMENT .#2	POTW	0.01	0.00	0.55	1.1	1.9	2.1	0.76	1.3
VT0100978	HARTFORD - QUECHEE	POTW	0.31	0.22	24	53	12	12	10	22
VT0101010	HARTFORD WWTF	POTW	1.23	0.61	11	31	30	34	89	39
VT0101044	WHITINGHAM(JACKSONVILLE)	POTW	0.06	0.02	3.2	3.5	3.4	2.8	3.1	3.2
VT0101061	LUNENBURG FIRE DISTRICT #2	POTW	0.09	0.06	7.6	6.9	5.6	3.2	7.8	6.2
VT0101109	WHITINGHAM	POTW	0.02	0.01	1.2	1.4	1.5	1.2	3.0	1.7
VT0101141	SHERBURNE WPCF	POTW	0.31	0.08	8.9	8.3	7.7	10	16	10

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NEW HAMPSHIRE DEPARTMENT OF  
ENVIRONMENTAL SERVICES  
WATER DIVISION  
P.O. BOX 95  
CONCORD, NEW HAMPSHIRE 03302-0095

U.S. ENVIRONMENTAL PROTECTION  
AGENCY-REGION 1  
WATER DIVISION  
5 POST OFFICE SQUARE  
BOSTON, MASSACHUSETTS 02109

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE  
UNITED STATES UNDER SECTION 402 OF THE CLEAN WATER ACT ("CWA" or THE  
"ACT"), AS AMENDED, AND STATE CERTIFICATION UNDER SECTION 401 OF THE  
ACT, AND ISSUANCE OF A STATE SURFACE WATER PERMIT UNDER NH RSA 485-  
A:13, I(a).

PUBLIC NOTICE PERIOD: June 19, 2020 – July 18, 2020

PERMIT NUMBER: **NH0100153**

PUBLIC NOTICE NUMBER: NH-014-20

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Littleton, NH  
126 Main Street, Suite 200  
Littleton, NH 03561

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Littleton Wastewater Treatment Plant  
323 Meadow Street  
Littleton, NH 03561

RECEIVING WATER: Ammonoosuc River, Class B

PREPARATION OF THE DRAFT PERMIT AND CWA § 401 CERTIFICATION:

The U.S. Environmental Protection Agency (EPA) and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) have cooperated in the development of a draft permit for the Littleton Wastewater Treatment Plant, which discharges treated domestic and commercial wastewater. Sludge from this facility is dried and then shipped off-site to a landfill. The effluent limits and permit conditions imposed have been drafted to assure compliance with the CWA and State water quality standards in Chapter 485-A of the New Hampshire Statutes: Water Pollution and Waste Disposal, and the New Hampshire Surface Water Quality Regulations, Env-Wq 1700 et seq. In addition, EPA has requested that the State certify the draft permit pursuant to Section 401 of the CWA and NHDES has determined that the draft permit, with any additional state conditions included in the state certification, assures compliance with

Sections 208(e), 301, 302, 303, 306 and 307 of the CWA and with State water quality requirements.

INFORMATION ABOUT THE DRAFT PERMIT:

The draft permit and explanatory fact sheet may be obtained at no cost at [http://www.epa.gov/region1/npdes/draft\\_permits\\_listing\\_nh.html](http://www.epa.gov/region1/npdes/draft_permits_listing_nh.html) or by contacting:

Douglas MacLean  
U.S. Environmental Protection Agency – Region 1  
5 Post Office Square, Suite 100 (06-4)  
Boston, MA 02109-3912  
Telephone: (617) 918-1608  
Maclean.douglas@epa.gov

The administrative record containing all documents relating to this draft permit including all data submitted by the applicant may be inspected at the EPA Boston office by appointment, Monday through Friday, except holidays and during facility closures due to COVID-19. All data submitted by the applicant are available as part of the administrative record.

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

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 **July 18, 2020**, to the EPA contact and address or email address listed above. Any person, prior to such date, may submit a request in writing to EPA and NHDES for a public hearing to consider this draft permit and CWA § 401 certification. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice if the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

THOMAS E. O'DONOVAN, DIRECTOR  
WATER DIVISION  
NEW HAMPSHIRE DEPARTMENT OF  
ENVIRONMENTAL SERVICES

KEN MORAFF, DIRECTOR  
WATER DIVISION  
UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY – REGION I