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 Athol, Massachusetts

is authorized to discharge from the facility located at

Athol Wastewater Treatment Plant
Jones Street
Athol, MA 01000

to receiving water named

Millers 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 June 30, 2008.

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 5th day of January, 2021

/S/Signature On File

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 Millers 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[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Rolling Average Effluent Flow[5]	1.75 MGD[5]	---	---	Continuous	Recorder
Effluent Flow[5]	Report MGD	---	Report MGD	Continuous	Recorder
BOD_5	30 mg/L 438 lb/day	45 mg/L 657 lb/day	Report mg/L	1/week	Composite
BOD_5 Removal	≥ 85 %	---	---	---	Calculation
TSS	30 mg/L 438 lb/day	45 mg/L 657 lb/day	Report mg/L	1/week	Composite
TSS Removal	≥ 85 %	---	---	---	Calculation
pH Range[6]	6.5 - 8.3 S.U.			1/day	Grab
Escherichia coli[7] (April 1 – October 31)	126 cfu/100 mL	---	409 cfu/100 mL	1/week	Grab
Dissolved Oxygen (April 1 - October 31)	≥ 6.0 mg/L			1/day	Grab
Total Kjeldahl Nitrogen[8]	Report mg/L	---	Report mg/L	1/month	Composite
Nitrate + Nitrite[8]	Report mg/L	---	Report mg/L	1/month	Composite
Rolling Average Total Nitrogen[8]	146 lb/day	---	---	1/month	Composite
Total Nitrogen[8]	Report mg/L	---	Report mg/L	1/month	Composite
Total Phosphorus (April 1 – October 31)	0.52 mg/L	---	Report mg/L	1/week	Composite
Total Phosphorus (November 1 – March 31)	1.0 mg/L	---	Report mg/L	1/week	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Total Aluminum[9]	87 µg/L	---	Report µg/L	1/month	Composite
Total Copper	18.7 µg/L	---	28.4 µg/L	1/month	Composite
Total Lead[10]	0.4 µg/L	---	Report µg/L	1/month	Composite
Perfluorohexanesulfonic acid (PFHxS)[11]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[11]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[11]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[11]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA)[11]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[11]	---	---	Report ng/L	1/quarter	Composite
Whole Effluent Toxicity (WET) Testing[13,14]					
LC_{50}	---	---	≥ 100 %	1/quarter	Composite
C-NOEC	---	---	≥ 10 %	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[16]	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
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[15]	---	---	Report mg/L	1/quarter	Grab
pH[17]	---	---	Report S.U.	1/quarter	Grab
Temperature[17]	---	---	Report °C	1/quarter	Grab
Total Phosphorus[18] (April 1 – October 31)	---	---	Report mg/L	1/month	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
BOD_5	Report mg/L	---	---	2/month	Composite
TSS	Report mg/L	---	---	2/month	Composite
Perfluorohexanesulfonic acid (PFHxS)[11]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[11]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[11]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[11]	---	---	Report ng/L	1/quarter	Composite

Perfluorooctanoic acid (PFOA)[11]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[11]	---	---	Report ng/L	1/quarter	Composite

Sludge Characteristic	**Reporting Requirements**			**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
Perfluorohexanesulfonic acid (PFHxS)[12]	---	---	Report ng/g	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[12]	---	---	Report ng/g	1/quarter	Composite
Perfluorononanoic acid (PFNA)[12]	---	---	Report ng/g	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[12]	---	---	Report ng/g	1/quarter	Composite
Perfluorooctanoic acid (PFOA)[12]	---	---	Report ng/g	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[12]	---	---	Report ng/g	1/quarter	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 CFR Part 136.

2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of "0" to all non-detects for that reporting period and report the average of all the results.

4. A "grab" sample is an individual sample collected in a period of less than 15 minutes.

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

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

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

7. The 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.

8. 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

   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 eleven months.

   For nitrogen optimization requirements, see Part I.G.1.

9. For the aluminum compliance schedule, see Part I.G.2.

10. Lead analysis must be completed using a test method in 40 CFR Part 136 that achieves a minimum level no greater than 0.5 µg/L. The compliance level shall be 0.5 µg/L. The limit shall become effective in accordance with the compliance schedule found at Part I.G.3.

11. Report in nanograms per liter (ng/L). This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter beginning at least 6 months after EPA notifies the Permittee that a multi-lab validated method for wastewater is available.

12. Report in nanograms per liter (ng/L). This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter beginning at least 6 months after EPA notifies the Permittee that a multi-lab validated method for biosolids is available.

13. The Permittee shall conduct acute toxicity tests (LC_{50}) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in **Attachment A and B** of this permit. LC_{50} and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid,

Ceriodaphnia dubia, only. Toxicity test samples shall be collected and tests completed during the same weeks each time of calendar quarters ending March 31, June 30, September 30, and December 31. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.

14. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A and B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.

15. 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.

16. 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.

17. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

18. See Part I.G.4 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 pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

4. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.

5. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.

6. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.

7. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

8. The Permittee must provide adequate notice to EPA-Region 1 and the State of the following:

    a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Part 301 or Part 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 CFR Part 122 Appendix A as amended) discharging process water; and

    b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

    c. For purposes of this paragraph, adequate notice shall include information on:

        i. The quantity and quality of effluent introduced into the POTW; and
        ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

9. Pollutants introduced into the POTW by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources,

including sanitary sewer overflows (SSOs), are not authorized by this permit in accordance with Part II.D.1.e.(1) (24-hour reporting). See Part I.H below for reporting requirements.

2. Starting December 21, 2020, the Permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge, except SSOs that do not impact a surface water or the public, on a publicly available website, and it shall remain on the website for a minimum of 12 months. Such notification shall include the location and description of the discharge; estimated volume; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue.

3. Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at https://www.mass.gov/how-to/sanitary-sewer-overflowbypassbackup-notification.

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance (O&M) of the sewer system shall be in compliance with the Standard Conditions of Part II and the following terms and conditions. The Permittee 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. Preventive 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

   Within 30 months of the effective date of this permit, the Permittee shall prepare a map of the sewer collection system it owns. The map shall be on a street map of the community, with

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

a. All sanitary sewer lines and related manholes;

b. All combined sewer lines, related manholes, and catch basins;

c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);

d. All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;

e. All pump stations and force mains;

f. The wastewater treatment facility(ies);

g. All surface waters (labeled);

h. Other major appurtenances such as inverted siphons and air release valves;

i. A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;

j. The scale and a north arrow; and

k. The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

5. Collection System O&M Plan

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

a. Within six (6) months of the effective date of the permit, the Permittee shall submit to EPA and the State:

(1) A description of the collection system management goals, staffing, information management, and legal authorities;
(2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
(3) A schedule for the development and implementation of the full Collection System O&M Plan including the elements in paragraphs b.1. through b.8. below.

b. The full Collection System O&M Plan shall be completed, implemented and submitted to EPA and the State within twenty-four (24) months from the effective date of this permit. The Plan shall include:

(1) The required submittal from paragraph 5.a. above, updated to reflect current information;
(2) A preventive maintenance and monitoring program for the collection system;
(3) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
(4) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
(5) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;
(6) A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts;
(7) An educational public outreach program for all aspects of I/I control, particularly private inflow; and
(8) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

6. Annual Reporting Requirement

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

a. A description of the staffing levels maintained during the year;

b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;

c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;

d. A map with areas identified for investigation/action in the coming year;

e. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit; and

f. If the average annual flow in the previous calendar year exceeded 80 percent of the facility's 1.75 MGD design flow (1.4 MGD), or there have been capacity related overflows, the report shall include:

(1) Plans for further potential flow increases describing how the Permittee will maintain compliance with the flow limit and all other effluent limitations and conditions; and
(2) A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.

D. ALTERNATE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the Permittee 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 CFR § 403.6 and 40 CFR 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.

   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 CFR § 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 CFR § 403.8(f)(6)).

2. 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 CFR § 403.6 and 40 CFR 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.

3. Beginning the first full calendar quarter at least 6 months after EPA has notified the Permittee that a multi-lab validated method for wastewater is available, the Permittee shall commence annual sampling of the following types of industrial discharges into the POTW:

   - Platers/Metal Finishers
   - Paper and Packaging Manufacturers
   - Tanneries and Leather/Fabric/Carpet Treaters
   - Manufacturers of Parts with Polytetrafluoroethylene (PTFE) or teflon type coatings (i.e. bearings)
   - Landfill Leachate
   - Centralized Waste Treaters
   - Contaminated Sites

- Fire Fighting Training Facilities

Sampling shall be for the following PFAS chemicals:

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

The Industrial discharges sampled and the sampling results shall be summarized and submitted to EPA and copied to the state as an electronic attachment to the March discharge monitoring report due April 15th of the calendar year following the testing.

F. SLUDGE CONDITIONS

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 CFR Part 503, which prescribe "Standards for the Use or Disposal of Sewage Sludge" pursuant to § 405(d) of the CWA, 33 U.S.C. § 1345(d).

2. If both state and federal requirements apply to the Permittee's sludge use and/or disposal practices, the Permittee shall comply with the more stringent of the applicable requirements.

3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge use or disposal practices:

   a. Land application - the use of sewage sludge to condition or fertilize the soil

   b. Surface disposal - the placement of sewage sludge in a sludge only landfill

   c. Sewage sludge incineration in a sludge only incinerator

4. The requirements of 40 CFR Part 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 CFR § 503.4. These requirements also do not apply to facilities which do not use or dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g., lagoons, reed beds), or are otherwise excluded under 40 CFR § 503.6.

5. The 40 CFR Part 503 requirements include the following elements:

   a. General requirements

   b. Pollutant limitations

c. Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)

d. Management practices

e. Record keeping

f. Monitoring

g. Reporting

Which of the 40 CFR Part 503 requirements apply to the Permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 Guidance document, "EPA Region 1 - NPDES Permit Sludge Compliance Guidance" (November 4, 1999), may be used by the Permittee to assist it in determining the applicable requirements.[1]

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

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

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

7. Under 40 CFR § 503.9(r), the Permittee is a "person who prepares sewage sludge" because it "is … the person who generates sewage sludge during the treatment of domestic sewage in a treatment works …." If the Permittee contracts with *another* "person who prepares sewage sludge" under 40 CFR § 503.9(r) – i.e., with "a person who derives a material from sewage sludge" – for use or disposal of the sludge, then compliance with Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the Permittee does not engage a "person who prepares sewage sludge," as defined in 40 CFR § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR § 503.7. If the ultimate use or disposal method is land application, the Permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 CFR § 503 Subpart B.

8. The Permittee shall submit an annual report containing the information specified in the 40 CFR Part 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by February 19 (see also "EPA Region 1 - NPDES Permit Sludge Compliance

[1] 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

Guidance"). Reports shall be submitted electronically using EPA's Electronic Reporting tool ("NeT") (see "Reporting Requirements" section below).

G. SPECIAL CONDITIONS

1. Total Nitrogen

   a. The Permittee shall continue to optimize the treatment facility operations relative to total nitrogen ("TN") removal through measures such as continued ammonia removal, maximization of solids retention time while maintaining compliance with BOD_5 and TSS limits, and/or other operational changes designed to enhance the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen.

   b. The Permittee shall submit an annual report to EPA and the MassDEP by February 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.

2. Aluminum Compliance Schedule

   a. The effluent limit for total aluminum shall be subject to a schedule of compliance whereby the limit takes effect three years after the effective date of the permit. For the period starting on the effective date of this permit and ending three (3) years after the effective date, the Permittee shall report the monthly average and daily maximum aluminum concentration on the monthly DMR. After this initial three (3) year period, the Permittee shall comply with the monthly average total aluminum limit of 87 µg/L ("final aluminum effluent limit"). The Permittee shall submit an annual report due by January 15th of each of the first three (3) years of the permit that will detail its progress towards meeting the final aluminum effluent limit.

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

aluminum discharge to cause or contribute to a violation of the newly approved aluminum criteria.[2]

3. Lead Compliance Schedule

The total recoverable lead limit will become effective 24 months from the effective date of the permit. For the period starting on the effective date of this permit and ending 24 months after the effective date, the Permittee shall report the monthly average and daily maximum lead concentration on the monthly DMR. The Permittee shall evaluate the ability of the existing treatment facilities, with small capital improvements, to achieve the monthly average lead limitation of 0.4 µg/L (the approved analytical methods have a minimum level of 0.5 µg/L; therefore, 0.5 µg/L will be the compliance level).

a. The Permittee shall submit a status report 12 months from the effective date of the permit

b. The Permittee shall submit a final report 24 months from the effective date of the permit that summarizes the evaluation and includes a determination of whether the existing facility is capable of reliably achieving these effluent limitations. The evaluation shall include an analysis of optimization of plant performance, including potential chemical dosing and an analysis of potential source reductions from industrial wastewater, septage, and Athol's drinking water supply.

c. The Permittee shall implement the findings of the final report in order to optimize lead removal and comply with the lead limit.

If the Permittee determines that it is unable to comply without a facility upgrade, then the Permittee may request an enforcement order that allows for an extension of the compliance schedule to accommodate that upgrade.

4. Phosphorus Ambient Monitoring

Beginning in the month of April in the first odd numbered year following permit issuance, that occurs six or more months after permit issuance, and during odd numbered years thereafter, the Permittee shall collect monthly samples from the receiving water at a location upstream of the facility and analyze the samples for total phosphorus. 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 MassDEP at least three months prior to the first planned sampling date as part of a Quality Assurance Project Plan (QAPP) for review and MassDEP approval. The QAPP shall be submitted in accordance with Part I.H.2. and Part I.H.6.

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[2] The final effluent limit of 87 µg/L for aluminum may be modified prior to the end of the three-year compliance schedule if warranted by the new criteria and a reasonable potential analysis and consistent with anti-degradation requirements. Such a modification would not trigger anti-backsliding prohibitions, as reflected in CWA 402 § (o) and 40 CFR § 122.44(l), provided that such modification is finalized before the final limit takes effect.

For the years that monitoring is not required, the Permittee shall report NODI code "9" (conditional monitoring not required).

H. REPORTING REQUIREMENTS

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

1. Submittal of DMRs Using NetDMR

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

2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. *See* Part I.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; and
(6) Report received from existing industrial user.

b. These reports, information, and requests shall be submitted to EPA WD electronically at 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

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

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

An electronic copy of the QAPP described in Part I.G.5. shall be submitted to Suzanne Flint (suzanne.flint@mass.gov) in the Massachusetts Department of Environmental Protection Watershed Planning Program.

Also see Part I.I for State 401 certification reporting requirements.

7. Verbal Reports and Verbal Notifications

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

   b. Verbal reports and verbal notifications shall be made to:

EPA ECAD at 617-918-1510
and

MassDEP Emergency Response at 888-304-1133

I. STATE 401 CERTIFICATION CONDITIONS

Pursuant to 314 CMR 3.11(2)(a)(6), and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife:

1. If EPA's multi-lab validated method for wastewater has not been made available to the public on EPA's Clean Water Act methods program website[3] by two years from the effective date of this Final Permit, the Permittee shall conduct monitoring of the influent, effluent (outfall 001) and sludge for PFAS compounds as detailed in the tables below using a method specified by MassDEP. If EPA's multi-lab validated method is not available by 20 months after the effective date of this Final Permit, the Permittee shall contact MassDEP (massdep.npdes@mass.gov) for guidance on an appropriate analytical method.

Influent and Effluent (Outfall 001)

Parameter	Units	Measurement Frequency	Sample Type
Perfluorohexanesulfonic acid (PFHxS)	ng/L	Quarterly[4]	24-hour Composite
Perfluoroheptanoic acid (PFHpA)	ng/L	Quarterly	24-hour Composite
Perfluorononanoic acid (PFNA)	ng/L	Quarterly	24-hour Composite
Perfluorooctanesulfonic acid (PFOS)	ng/L	Quarterly	24-hour Composite
Perfluorooctanoic acid (PFOA)	ng/L	Quarterly	24-hour Composite
Perfluorodecanoic acid (PFDA)	ng/L	Quarterly	24-hour Composite

Sludge

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

2. Beginning 6 months after EPA has notified the Permittee that a multi-lab validated method for wastewater is available, or two years from the effective date of the 2020 Federal NPDES permit,

[3] *See* https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods.

[4] Quarters are defined as January through March, April through June, July through September, and October through December. For each calendar year, samples shall be taken during the same month of each quarter and shall be taken three months apart (e.g., an example sampling schedule could be February, May, August, and November).

whichever is earlier, the permittee shall commence annual monitoring of all Significant Industrial Users[5,6] discharging into the POTW. Monitoring shall be in accordance with the table below. If EPA has not issued a validated test method by twenty (20) months after the effective date of this Final Permit, the permittee shall contact MassDEP (massdep.npdes@mass.gov) for guidance on an appropriate analytical method. Monitoring results shall be reported to MassDEP electronically (massdep.npdes@mass.gov) within 30 days after they are received.

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

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

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

ATTACHMENT A

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

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

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^{o}C.

IV. DILUTION WATER

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

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

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

and

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

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

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

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

V. TEST CONDITIONS

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

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS[1]

1.	Test type	Static, non-renewal
2.	Temperature (^{o}C)	20 $\pm$ 1^{o}C or 25 $\pm$ 1^{o}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 Selenastrum to newly released organisms while holding prior to initiating test
12.	Aeration	None
13.	Dilution water[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} 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	$\geq$ 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

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[1]

1.	Test Type	Static, non-renewal
2.	Temperature (^{o}C)	20 $\pm$ 1 ^{o} C or 25 $\pm$ 1^{o}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[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} 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	$\geq$ 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

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.

Parameter	Effluent	Receiving Water	ML (mg/l)
Hardness[1]	x	x	0.5
Total Residual Chlorine (TRC)[2, 3]	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^{o} C.

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

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

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

IV. DILUTION WATER

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

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

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

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

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

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

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

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

and

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

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

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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

V.1. Use of Reference Toxicity Testing

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

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

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

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

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

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. ≥3 standard deviations for IC25 values and ≥ 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.

Parameter	Effluent	Receiving Water	ML (mg/l)
Hardness[1, 4]	x	x	0.5
Total Residual Chlorine (TRC)[2, 3, 4]	x		0.02
Alkalinity[4]	x	x	2.0
pH[4]	x	x	--
Specific Conductance[4]	x	x	--
Total Solids[6]	x		--
Total Dissolved Solids[6]	x		--
Ammonia[4]	x	x	0.1
Total Organic Carbon[6]	x	x	0.5
Total Metals[5]			
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 that 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

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)[1]

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[1] Updated July 17, 2018 to fix typographical errors.

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

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

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

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

(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

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

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.

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

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

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

"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 96-483and 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

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

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_{50} means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 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

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).

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

(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

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

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.

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_2	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^3/day	Cubic meters per day
DO	Dissolved oxygen

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_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	"Whole effluent toxicity"
ZID	Zone of Initial Dilution

RESPONSE TO COMMENTS
NPDES PERMIT NO. MA0100005
ATHOL WASTEWATER TREATMENT PLANT
ATHOL, MASSACHUSETTS

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

In accordance with the provisions of 40 Code of Federal Regulations (CFR) § 124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit No. MA0100005 ("Draft Permit"). The Response to Comments explains and supports EPA's determinations that form the basis of the Final Permit. From July 16, 2020 through August 14, 2020, EPA solicited public comments on the Draft Permit.

EPA received comments from:

- Athol Department of Public Works dated August 11, 2020
- Connecticut Department of Energy and Environmental Protection (CTDEEP), dated August 10, 2020
- Springfield Water and Sewer Commission dated August 14, 2020
- Massachusetts Water Works Association dated August 13, 2020
- Connecticut River Conservancy dated August 14, 2020
- Massachusetts Coalition for Water Resources Stewardship dated August 14, 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 a reopening of the public comment period. EPA does, however, make certain clarifications and changes in response to comments. These are explained in this document and reflected in the Final Permit. Below, EPA provides a summary of the changes made in the Final Permit. The analyses underlying these changes are contained in the responses to individual comments that follow.

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

A copy of the Final Permit may be also obtained by writing or calling Robin Johnson, USEPA, 5 Post Office Square, Suite 100 (Mail Code: 06-4), Boston, MA 02109-3912; Telephone: (617) 918-1045; Email johnson.robin@epa.gov.

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Appendix A – General Response to Comments on Long Island Sound ("LIS") NPDES Out-Of-Basin Total Nitrogen Permitting Approach

I. Summary of Changes to the Final Permit

1. In Part I.A.1., the average monthly and maximum daily total copper limits were corrected to 18.7 µg/L average monthly limit and 28.4 µg/L maximum daily limit. The values were reversed in the Draft Permit due to a typographical error.

2. Section I.G.1 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 7.

3. Part I.A.1, footnotes 11 and 12 and Part I.E.3 have been revised to specify that the PFAS monitoring and reporting requirements take effect the first full calendar quarter beginning at least 6 months after EPA has notified the Permittee that an EPA approved method is available. See Response 24.

II. Responses to Comments

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

A. Comments from Dick Kilhart, Assistant Superintendent, Athol Department of Public Works, on August 11, 2020

Comment 1

Aluminum limit will be 87 ug/l. Our current level is 106 ug/l and the receiving waters of the Millers River are currently at 130 ug/l.

Reason: It will be difficult to meet this new level with the additional PAC used to remove phosphorus due to the cannabis growing facilities recently permitted by the State of Massachusetts.

Response 1

EPA recognizes the challenges municipalities face in balancing ongoing 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, pursuant to 40 C.F.R. § 122.44(d), to impose permit limits to ensure that water quality standards are met.

EPA notes the final aluminum effluent limit is based on current Massachusetts, EPA approved, aluminum criteria to protect freshwater aquatic life. EPA is aware of ongoing efforts by MassDEP to revise the Massachusetts aluminum criteria based, at least in part, on the most recent EPA aluminum criteria recommendations. EPA expects the new state criteria to be submitted for EPA approval within the coming months. Therefore, the Draft Permit included Section I.G.2 that stated:

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

To clarify, if new state criteria are approved by EPA before the effective date of the final aluminum effluent limit, the Permittee may apply for a permit modification as described in this provision. Therefore, the aluminum limit and schedule of compliance remain the same in the Final Permit.

Comment 2

Lead limit will be reduced to .4 ug/l. Our current level/average is .31 ug/l and the receiving waters of the Millers River are currently at .7 ug/l.

Response 2

EPA appreciates the concern and interest in seeing all upstream facilities treated the same. EPA is obligated pursuant to 40 C.F.R.§ 122.44(d) to include any effluent limit in a permit that is necessary to comply with water quality standards (WQS). Therefore, in order to ensure compliance with the state water quality criterion for lead, all NPDES permitted industrial dischargers upstream of the Athol WWTF will be evaluated similarly to Athol. These discharges will be evaluated to determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criterion for lead. If there is reasonable potential to violate water quality standards, then pursuant to 40 C.F.R. § 122.44(d) an effluent limitation is "necessary," and EPA is obligated to include a limit for the facility in their permit.
As with Athol, EPA evaluates site-specific effluent and ambient data to determine the need for effluent limits at each facility, including all upstream dischargers. EPA is aware of L.S. Starrett discharging upstream of Athol. Their permit (*i.e.*, NPDES permit number MA0001350) includes a lead limit based on site specific data and they have been in compliance with this limit. When their permit is reissued, EPA will conduct another analysis of this discharger based on all available data and adjust the limit if necessary to protect water quality standards.

If the commenter is referring to other industrial sources, such as industrial discharges to groundwater or residual groundwater contamination, EPA recommends contacting MassDEP for more information or to alert them to unregulated sources of lead that may be causing or contributing to a violation of water quality standards.

B. Comments from Jennifer Perry, Director, Water Planning and Management Division, Bureau of Land Protection and Water Reuse, CTDEEP, on August 10, 2020

Comment 3

The Connecticut Department of Energy and Environmental Protection (CTDEEP) is providing comment on the draft NPDES permit for the Athol wastewater treatment plant (WWTP) referenced above. The draft permit authorizes discharges of treated wastewater to the Millers 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 3

EPA acknowledges that there is uncertainty regarding to the actual load of nitrogen being discharged in 1998. In developing its approach to nitrogen effluent limits in the Connecticut River watershed, along with 2004-2005 estimate, referenced by the commenter, EPA considered the scientific papers published after the completion of the TMDL that cast doubt on the 1998 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 LIS from Connecticut and contributing areas to the north for October 1998 to September 2009.[1] 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

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

published by Moore and others in 2011.[2] The SPARROW model estimated that 1,776.7 metric tons per year (MT/yr) (or annual average 10,820 lb/day) of total nitrogen was discharged to the Connecticut River from Massachusetts, New Hampshire and Vermont in 2002.[3] 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.[4],[5] 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.[6]

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 Athol as proposed in the Draft Permit.

Comment 4

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

[2] 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

[3] 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.

[4] Moore (2011), page 968.

[5] 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.

[6] Maupin (2011), page 954.

attention. A study of nitrogen loading trends to LIS from New England states found that approximately 50% of the nitrogen load to LIS comes from areas north of Connecticut (Mullaney and Schwarz, 2013). This study was based on 10 years (1999-2009) of data and compared computed nitrogen loads from four gaging stations located along the Connecticut-Massachusetts border to the total nitrogen load computed from gages (and estimates) within Connecticut. 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 4

EPA acknowledges this comment.

Comment 5

CTDEEP notes that the draft Athol permit includes a total nitrogen limit in pounds per day based on the twelve month rolling average. This total nitrogen limit of 146 pounds per day significantly exceeds the annual average loading of 51 pounds per day determined using 2014-2018 data. It has been assumed that this permit limit will not result in an increase of total nitrogen above the target TMDL 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

Response 5

EPA acknowledges that the nitrogen limit of 146 lb/day is well above Athol's 2014-2018 annual average load. However, EPA is adopting a systematic permitting approach that includes continued optimization with effluent limits that provides assurance that long term loads will not increase. The permit allocates the current TN load so that: the aggregate out-of-basin TN load does not increase; effluent limits are annual average mass-based; consistent with the assumptions of the TMDL, no individual facility is left with an effluent limit that is not achievable using readily available treatment technology at the facility's design flow; and smaller facilities can achieve their limits through optimization. Under this systematic permitting approach, nitrogen effluent limits and/or optimization will be pursued for all facilities in the LIS watershed with design flow greater than 100,000 gpd. This aggregate, gross-level approach is appropriate given the large number of facilities whose discharges contribute to TN loading into LIS and the geographic expanse in which they are situated.

Comment 6

The draft permit contains a condition for the WWTP to continue to optimize facility operations in order to improve nitrogen removal performance. Such optimization techniques include but are not limited to continued ammonia removal, maximization of solids retention, and continued compliance with BOD5 and TSS limits. We concur with this condition and would like to see a requirement for the permittee to incorporate additional nitrogen reduction methods specifically, in the event of a increased flow and subsequent nitrogen loads.

Response 6

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

> The Permittee shall continue to optimize the treatment facility operations relative to total nitrogen ("TN") removal through measures such as continued ammonia removal, maximization of solids retention time while maintaining compliance with BOD_5 and TSS limits, and/or other operational changes designed to enhance the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen.

Thus, EPA agrees with CTDEEP 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 7

Also specified with the optimization study, is a condition for the WWTP to provide an annual report that documents the nitrogen removal optimization activities, the nitrogen load discharged from the facility, and a review of nitrogen loading trends 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 7

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.1 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 8

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 8

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.

See Appendix A General Response.

C. Comments from Joshua Schimmel, Executive Director, Springfield Water and Sewer Commission, on August 14, 2020

Comment 9

The Springfield Water and Sewer Commission ("SWSC") appreciates the opportunity to submit comments with respect to the draft NPDES Permit No.MA0100005 (the "Draft Permit"). Notably, the Draft Permit includes a rolling annual average mass loading of 146 lbs/day for TN, and nitrogen "optimization" requirements. For the reasons stated below, SWSC requests that EPA remove, or provide legal justification for, the numeric limit for TN in the Draft Permit and remove the optimization requirements as well as address other comments provided herein.

A. Background Regarding Nitrogen Limits

The Athol WWTP discharges to the Millers River, which flows into the Connecticut River, which eventually flows into the Long Island Sound ("LIS"). Athol WWTP's current permit requires monthly monitoring for total Kjeldahl nitrogen, nitrate nitrogen and nitrite nitrogen, the sum of which provide the TN concentration. According to concentration and monthly average flow data cited in the Fact Sheet, the annual average total nitrogen loading discharged from the Athol WWTP ranged from 39 to 76 lbs/day in 2014 to 2018 and averaged 51 lbs/day.

Response 9

EPA acknowledges the comment and responds to specific comments below and in Appendix A General Response.

Comment 10

<u>LIS TMDL for the Connecticut River</u>
EPA states in the Permit Fact Sheet that the nitrogen-driven eutrophication impacts in the LIS are driving the proposed reductions in nitrogen in Massachusetts plants. The New York State Department of Environmental Conservation and the Connecticut Department of Energy and Environmental Protection ("CT DEEP") developed a total maximum daily load ("TMDL") to address low dissolved oxygen levels in the LIS and determined that nitrogen is the primary limiting nutrient for this condition, and as such should be controlled. Controlling nitrogen would

also benefit "other eutrophication-related impairments…"[1]. In accordance with the Clean Water Act, the LIS TMDL set individual waste load allocations ("WLAs") for in-basin point sources, and a single, aggregate WLA for out-of-basin point sources. Those out-of-basis sources include wastewater treatment facilities in Massachusetts, Vermont, and New Hampshire discharging into the Connecticut, Housatonic, and Thames Rivers. For out-of-basin sources, the LIS TMDL requires a 25% aggregate reduction in the TN loading baseline established during the promulgation of the LIS TMDL.

For purposes of the Draft Permit, the LIS TMDL affects only discharges to the Millers River which drains into the Connecticut River, as the Athol WWTP does not discharge to the Housatonic or Thames Rivers. As shown on Table 2 of the Fact Sheet, EPA calculated the LIS TMDL baseline for TN loadings in the Connecticut River at 21,672 lbs/day. EPA determined that the 25% reduction target from the baseline equals 16,254 lbs/day. That target remains unchanged, as the LIS TMDL is still effective and has not been modified or redeveloped. While EPA has further calculated the maximum loading to the Connecticut River during the period of 2013 to 2017, to be 14,395 lbs/day, this can be viewed as a beneficial marker to assess progress toward the TMDL goal, but does not, in and of itself, modify the TMDL WLA of 19,657 lbs/day for all out-basin sources, for which the Connecticut River equitable share is 16,254 lbs/day.

The Connecticut River has achieved nearly a 34% reduction in TN loadings. Indeed, as can be seen from Table 2 of the Fact Sheet, the overall loading from Massachusetts, New Hampshire, and Vermont wastewater treatment plants discharging to the Long Island Sound is approximately 36% below the baseline for TN loadings.

Despite the fact the Connecticut River watershed, as well as the summation of all out-of-basin discharges, have exceeded the 25% TMDL target by nearly 40%, EPA has established a load-based TN effluent limitation in the Draft Permit which is not derived from the TMDL WLA. EPA received letters from commenters urging EPA to establish enforceable limitations for out-of-basin dischargers because TN loads may increase in the future. In response, EPA incorporated a TN load-based effluent limit in this Draft Permit Fact Sheet, at p. 21, n.12. These brief comments were in fact limited substance and did not provide any data, scientific evidence, or facts to substantiate the load based effluent in this and other draft NPDES permits recently issued in the LIS out of basin watersheds of Massachusetts.

This requirement is simply not legally valid. EPA has no statutory or regulatory authority to impose limits that are more stringent than the WLA for the out-of-basin dischargers requires.

[1] A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound. December 2000. p.9

Response 10

See Appendix A General Response overall and particularly Section III. EPA's methodology for establishing TN limitations for out-of-basin POTWs in Massachusetts has been challenged in the United States Environmental Appeals Board, where the case is now pending. EPA's Response to the Petition was filed on December 11, 2020, and EPA

incorporates that filing, inclusive of attachments (*e.g.*, Exhibit S, Response to the Comments), as it relates to TN herein.[7]

Comment 11

LIS TMDL Relationship to Proposed Effluent Limits

Section 303(d) of the CWA requires states to develop a TMDL for waterbodies containing water quality limited segments. 33 U.S.C. § 1313(d), (e). The TMDL first estimates the assimilative capacity of the waterbody relative to a particular pollutant. The TMDL then allocates that assimilative capacity among point, "waste load allocations" (WLAs), and non-point pollutant sources, "load allocations" (LAs), taking into account natural background levels and a margin of safety. 40. C.F.R. § 130.7. Permitting authorities then develop limits for point sources that are consistent with the WLAs for each point source. *Id.*

SWSC understands that EPA's objective is to achieve greater nitrogen reductions in order to address the hypoxia and eutrophication related issues afflicting the LIS. However, the CWA requires that permitting authorities implement the requirements of any TMDL, and in the case of the LIS, base limitations for out-of-basin point sources, like the Athol WWTP, on the 25% aggregate reduction from the TN baseline. In support of the effluent limits contained in the Draft Permit, EPA broadly references the statutory and regulatory requirements authorizing the development of WQBELs, which include provisions to ensure implementation of any available WLAs to prevent further degradation of receiving waters that are already impaired. This authority alone, however, does not justify the imposition of numeric limits. As noted above, the overall loading from Massachusetts, New Hampshire, and Vermont wastewater treatment plants discharging to the Long Island Sound is approximately 36% below the TMDL baseline, despite the fact that many plants, like the Athol WWTP, have no numeric limits for TN. EPA identifies no statutory or regulatory justification for applying a numeric limit to the Athol WWTP in light of the fact that the WLA is already being met by a significant margin without such a numeric limit.

Further, EPA has identified no legal basis for the 10 mg/L concentration, upon which the 146 lbs/day limit in the Draft Permit is based. EPA merely presented its tiered approach to TN requirements for Massachusetts facilities based on design flow without any justification for the tiered concentrations. In other words, EPA has identified no rational relation between the tiered concentrations and the WLAs for the Housatonic, Connecticut, and Thames Rivers, which out-of-basin point sources consistently achieve by a wide margin. Accordingly, the CWA does not authorize the imposition of the proposed 146 lbs/day limit based on an arbitrary concentration that is wholly disconnected from achieving the WLA for the Connecticut River.

B. Proposed Permit Requirements Relating to Nitrogen

The Draft Permit currently contains a numeric limit of 146 lbs/day for TN. This bears no relation to the TMDL's WLA for out-of-basin point sources of a 25% aggregate TN load reduction. Given the fact that the out-of-basin point sources, including those that discharge to the

[7] https://yosemite.epa.gov/OA/EAB_WEB_Docket.nsf/Filings%20By%20Appeal%20Number/11443A888232A1C88525863B006D4491/$File/Springfield%20Response%20to%20Petition_Final_12_11_2020.pdf

Connecticut River, have exceeded the reduction target by a large margin to meet the WLA, EPA has no basis to include a mass-based limit for TN in the Town of Athol's permit based upon the arbitrary choice of a concentration value. Additionally, if EPA determines that a limit for TN is necessary despite past achievement of the WLA, EPA needs to present an inclusive process whereby all out-of-basin point source discharges can be assigned an equitable share of the allowable load, taking into consideration plant upgrades since the baseline calculation, design flows, and allowance for facilities that accept combined wastewater flows. A piece-meal approach to WLA assignment, or modifying the adopted TMDL WLA as this permit does, is inconsistent with the LIS TMDL.

Response 11

See Appendix A General Response.

Comment 12

Mass-Loading Limit for TN

In setting the numeric limit in the Draft Permit, EPA appears to have considered the total annual aggregate nitrogen loadings from out-of-basin point sources discharging to the Connecticut, Thames, and Housatonic Rivers.

EPA itself estimates that the maximum nitrogen loadings for the Connecticut River from 2013 to 2017 was 14,395 lbs/day, which is approximately 11% below the 16,254 lbs/day target for the equitable distribution of the WLA for the Connecticut River. Fact Sheet, at p. 20, Table 2. This achievement benchmark measurement that EPA calculated clearly shows the TMDL WLA goal has been achieved in the Connecticut River. Plainly, the CWA does not authorize EPA to require the permittee to achieve, maintain, or surpass a 34% reduction from the baseline established by the LIS TMDL. Rather, the LIS TMDL established, through proper rulemaking procedure, a 25% aggregate reduction of TN, from the out-of-basin sources, of which a 16,254 lbs/day target is the equitable distribution for the Connecticut River. The allocated TMDL for out of basin NPDES permittees has been and continues to be met. EPA lacks the statutory and regulatory authority to impose WQBELs on the basis of an arbitrarily chosen concentration limit, on the basis of an arbitrary data set (2013-2017) and that clearly conflicts with the adopted TMDL WLA. Furthermore, EPA is only applying numeric limits to NPDES permittees that exceed certain design flows (see below). EPA provides no justification or scientific data that would suggest that impacts of TN are related to the size of a plant. EPA is creating an inequitable and arbitrary distribution of how TN is being included in draft NPDES Permits, how it is going to be enforced, and who is going to be paying for TN reductions. Equitable distribution of appropriate WLA in other examples has led to creative and beneficial programs such as pollutant trading scenarios. We request EPA to provide an explanation as to why not all TN is considered to contribute to compliance with the existing TMDL or as part of the current permitting approach for all of the out of basin permittees.

Facility Design Flow, Q_D (MGD)	Number of Facilities	Annual Average TN Limit (lb/day)
$Q_D \geq 10$	4	Q_D (MGD) * 5 mg/L * 8.345 + optimize
$5 < Q_D < 10$	5	Q_D (MGD) * 8 mg/L * 8.345 + optimize
$1 \leq Q_D \leq 5$	20	Q_D (MGD) * 10 mg/L * 8.345 + optimize
$0.1 \leq Q_D < 1$	17	Optimize
$Q_D < 0.1$	8	TN monitoring only

If EPA does include numeric limits "to ensure implementation of any available WLA," those limits actually should reflect the 16,254 lbs/day Connecticut River share of the TMDL WLA. Here, however, the 146 lbs/day limit appears to be based on a concentration limit of 10 mg/L, which has no relation to the TMDL. Again, EPA has failed to identify how it established the numeric limit to meet the TMDL WLA, which requires only 25% reduction from the 21,672 lbs/day baseline. In this instance, no mass-based limit is necessary to meet the TMDL WLA. TMDL.

Response 12

See Appendix A General Response overall and particularly Section I.

Comment 13

Lack of Adequate Statement of Basis in the Fact Sheet
EPA has not provided an adequate statement of basis in the Fact Sheet for the TN effluent limitation. The Fact Sheet provides:

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 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 for 19,657 lb/day and to ensure that current reductions in loading do not increase, given the continued impairment status of the LIS.

EPA also references:

- The implementation of WLAs pursuant to 40 CFR 122.44(d)(1)(vii)(B);
- Provisions to prevent further degradation (see Fact Sheet, at p. 21, n.14); and
- The consideration of water quality standards of downstream states (see Fact Sheet, at p. 21, n.15).

While EPA has cited various sections of the statute and rules, EPA has failed to provide an explanation regarding how each of these citations support the imposition of a TN limit in the Draft Permit.

We address each of these regulatory citations below:

- 40 CFR 122.44(d)(1)(vii)(B) provides that an effluent limitation shall be consistent with an assigned WLA. Because the WLA for out-of-basin dischargers is already being achieved, this provision does not provide support for the imposition of effluent limitations. Further, the development of a new WLA using an arbitrary data set, as EPA has done in this draft permit, is not consistent with the existing TMDL.
- The Federal regulation at 40 CFR 131.12(a)(1), and the corresponding MA state regulation, 314 CMR 4.04(1), merely require that existing instream water uses and the level of water quality necessary to protect existing uses shall be maintained and protected.

  EPA approved the LIS TMDL, which established WLAs necessary to protect and maintain the downstream water quality in the LIS, and that WLA has been achieved. Accordingly, these rules do not provide support for the imposition of effluent limitations based upon the arbitrary assignment of a concentration value translated in a load limit.
- 40 CFR 122.44(d)(4) references CWA Section 401(a)2, which provides that if a discharge in one state will affect the waters of a downstream state, EPA must notify the downstream state.

  Additionally, if the downstream state requests a hearing on the permit, and the hearing officer determines that the discharge affects the water quality of a downstream state will be affected, the permitting authority must issue the permit in a way that protects downstream water quality.

  Again, the LIS TMDL already addresses this issue by establishing individual WLAs for in-basin discharges and a single, aggregate WLA for out-of-basin dischargers that protects water quality and addresses downstream impairment.

If EPA and Connecticut believe the existing TMDL is not adequate to protect water quality, the regulators should consider a scientifically based solution, inclusive of all affected dischargers. SWSC objects to the imposition of an effluent limitation based upon the request of a third party, without a technical or regulatory basis. The appropriate update to the TMDL (as is required by the TMDL process) should be led by EPA and should follow statutory requirements including public comment.

Response 13

See Appendix A General Response.

The permitting authority is only required to "*briefly* set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit," and, when applicable, include "*[a] brief summary* of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions and appropriate supporting references to the administrative record." 40 CFR § 124.8(a), (b)(4).

EPA's description of the TN effluent limitation, including its technical derivation and the reason for converting it into an enforceable limit, was proportional to the importance of the issue involved and the degree of controversy surrounding it. The commenter does not identify how its ability to raise issues or arguments was adversely affected. To the

contrary, the commenter was fully apprised of the relevant issues, as evidenced by the voluminous, detailed and cogent comments on the draft.

EPA disagrees that there are not enough data to include a TN limit and disagrees that the TMDL needs to be revised prior to including numeric effluent limits. The Final Permit is supported by relevant data. See the General Response in Appendix A. EPA sees no reason why the Final Permit would eliminate opportunities for innovative and regional solutions to any issue. EPA further addresses these issues in responding to the commenter's additional comments below.

In all permitting actions, EPA uses the best information reasonably available at the time permit issuance and encourages the collection of new data and development and refinement of analytical tools to assess those data. The decision to revise the TMDL, should cause exist to do so, lies in the first instance with the States rather EPA. Upon submission of any revised TMDL by the States, EPA will review it and approve, or disapprove it. Given the enormous size and complexity of the watershed, any such revision would entail a very significant commitment of technical, legal and administrative resources over an extended period time. There have been efforts over the past decade or more to revisit, reassess and possibly refine certain aspects of the TMDL, and the States, impacted municipalities like the City of Springfield, and other stakeholders are to varying degrees pursuing these measures. EPA encourages these initiatives, while recognizing the immense complexity associated with coordinating and building consensus among the five States and dozens of communities implicated by the LIS TMDL. In the meantime, consistent with its obligations under the CWA, which require permits to be revisited at regular intervals and permit effluent limitations to be written based on the best information reasonably available at the time of permit issuance, EPA must proceed with reasonable dispatch to address nitrogen pollution in these ecologically critical—and impaired—waters, and not forestall such efforts in anticipation of newer data, analysis or regulatory determinations that may or may not materialize. To that end, EPA has relied on new data collected since the TMDL as well as studies that have been done to analyze fate and transport of nitrogen in the Connecticut River, new analyses of point sources loadings as well as ongoing assessment of the Long Island Sound, as described in section III of the General Response.

Comment 14

LIS TMDL Out-of-Basin Targets Met

The TMDL 25% target reduction for TN loading from out-of-basin dischargers has been met and substantially exceeded. EPA has not provided a basis in this Fact Sheet to support further reductions. Specifically, EPA has failed to provide the following information:

- EPA appears to have imposed a TN limitation based upon the concerns of commenters but provided no technical and legal basis for requiring a discharger-specific TN loading.
- Indicators, analyses, or other site-specific studies to support EPA's determination that 54% of Massachusetts treatment plants in the LIS watershed should have a TN limit and 46% of discharges should not have a TN limit despite the fact that the TMDL target has already been achieved.

- The regulatory basis for the determination that 146 lbs/day is the appropriate load for the Athol WWTP when integrated into an aggregate reduction spread across a three-state region.

Absent such information, the Fact Sheet lacks a basis and background for the imposition of a TN loading for Athol.

Response 14

EPA disagrees with these comments. See Appendix A General Response.

Comment 15

Basis for Calculations of 2013–2017 Loads
Table 2 of the Fact Sheet states that the maximum loading from 2013 to 2017 across Connecticut, Housatonic, and Thames Rivers is 16,689 lbs/day.

EPA has not provided the data, analysis, or justification for the 16,689 lbs/day assignment. Accordingly, SWSC asks that EPA provide the following:

- The data used to calculate the maximum loading for each of the rivers,
- The justification used to estimate loadings for WWTPs that do not monitor for TN,
- The rationale for assigning an aggregate load for the three rivers, by choosing the highest load from the individual rivers based on different years,
- The rationale for choosing to measure loads from 2013 – 2017, and
- Explanation of whether these loads are calculated as weekly average, monthly average, annual average, rolling annual average, or some other calculation.

Response 15

EPA provides the following response.

- EPA summarized the 2013-2018 estimated annual loadings for each facility in Appendix C to the Fact Sheet, including 5-year averages for 2013-2017 and 2014-2018. The data was extracted from EPA's publicly available database of DMR data (see https://echo.epa.gov/).
- Although TN monitoring requirements are included in permits for nearly all the facilities, not all facilities have been monitoring effluent TN since 2013. Therefore, Appendix C to the Fact Sheet includes the assumptions used to estimate facilities loadings for years where no data were available.
- In estimating maximum loading, EPA intended to characterize the plausible maximum current condition in order to compare it to the plausible worst-case scenario under the permitting approach proposed in the fact sheet. Although the highest loads from the individual rivers did not occur in the same year from 2013-2017, it is plausible that they could in future years and are therefore a reasonable estimate of current maximum loadings.

- EPA initiated development of the new approach and began working with MassDEP to develop the new approach in 2018 and used the most recent five years of data to characterize current effluent loadings, as is recommended in EPA guidance and has been the practice at EPA Region 1 for more than 20 years.
- The loads analyzed for each facility were 12-month averages for each calendar year. These were calculated as the average of the monthly average loadings for each year. In a few cases, monthly average effluent flow data was not available for some or all years. In those cases, the average of the monthly average total nitrogen concentration for that year was used with the annual average effluent flow (reported rolling 12-month flow reported for December of that year) to estimate the loading for that year.

Comment 16

Concentrations for TN

Table 3 of the Draft Permit includes the tiered concentrations that EPA intends to apply to Massachusetts dischargers, based on facility design flow. Specifically, EPA proposes annual average total nitrogen mass loading limits for Massachusetts dischargers based on 5 mg/L, 8 mg/L, and 10 mg/L at design flow. The Draft Permit, again, provides no justification for such concentrations and fails to describe how the concentrations are related in any way to the WLAs for the Connecticut, Housatonic, and Thames Rivers. The Draft Permit provides only the following explanation for the tiered concentrations:

> Therefore, EPA intends to include a total nitrogen rolling annual average mass based loading limit (in lb/day) and a requirement 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) MGD that discharge to the LIS watershed in Massachusetts. Table 3 summarizes the approach to update TN requirements for this and future permits in the LIS watershed in Massachusetts.

Figure 1 below compares the existing effluent TN concentration, EPA's proposed limit based on actual annual average daily flow, and a limit based on design flow as EPA has done in this draft permit, for Massachusetts POTWs with design flow greater than 1.0 MGD. Figure 1 shows that most of the Massachusetts POTWs with actual annual average daily flow greater than 2.0 MGD will NOT be able to meet the proposed limits, and will require costly plant upgrades to meet the proposed effluent limits. EPA must provide a scientific basis for requiring such limits, which will cause impacted communities unwarranted economic hardship.

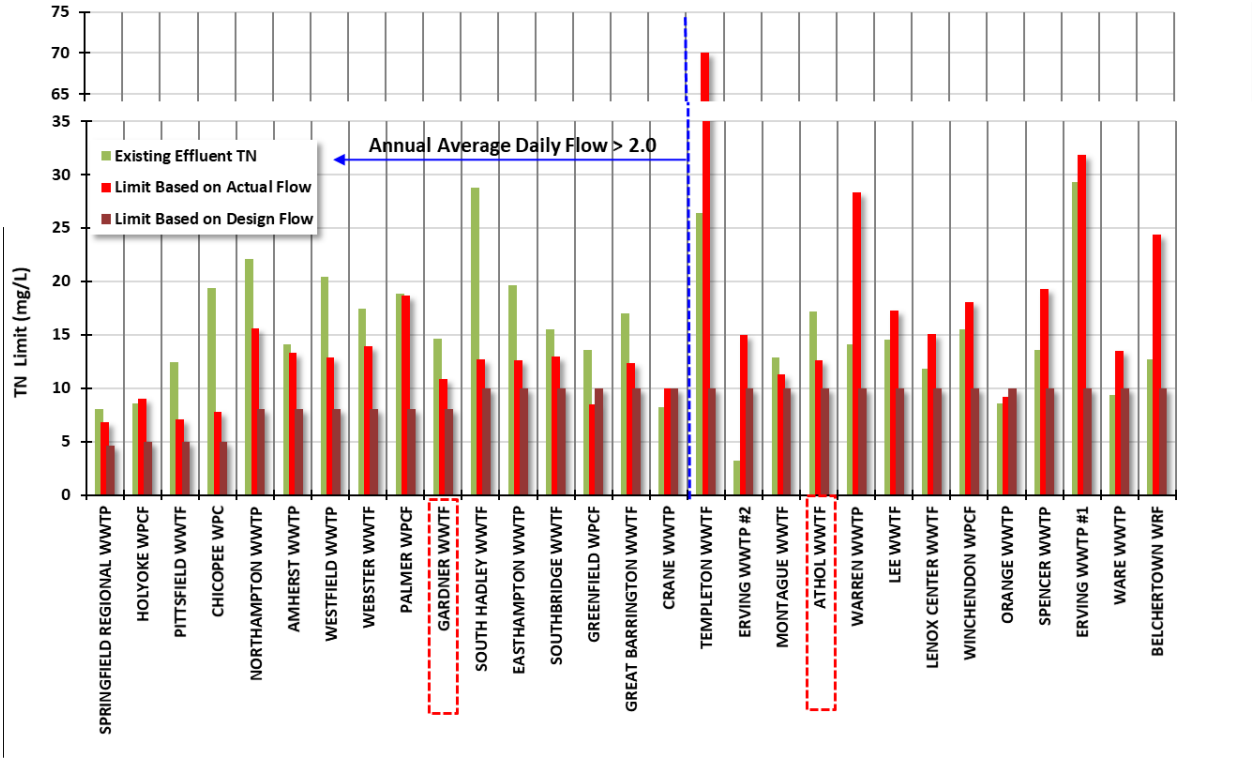

Figure 1. Comparison of Existing Plant Effluent TN Concentration with EPA Proposed Limits Based on Currently Annual Average Daily Flow and Design Average Daily Flow.

Accordingly, we request that EPA consider and address the following:

- What study has EPA based these concentration assignments on?
- How will these concentration assignments, in isolation of the TMDL, impact the LIS?
- What is the basis for concentration assignments that vary among the size of the treatment plant?
- What are the current levels of treatment at these facilities and what is the economic and social impacts of requiring upgrades?
- What specific environmental gains in terms of ambient water quality in the LIS are these concentrations projected to have?
- What is the balance of the environmental benefit versus the social and economic cost?
- Are these concentration values applicable to industrial dischargers as well?
- What is the basis used to determine that is it appropriate for 29 WWTF's in Massachusetts to have TN effluent limitations, while 25 other WWTF's should have no limit?

Absent further demonstration that the tiered concentrations are derived from the TMDL and are necessary to ensure the implementation of an available and approved WLA, the tiered concentrations—like the mass-based limits derived thereof—appear wholly unrelated to the LIS TMDL nitrogen targets. As discussed above, the current levels of TN loadings achieved a nearly 34% reduction from baseline loadings in the Connecticut River, which is well above the reduction required by the TMDL. Accordingly, EPA should revise the Draft Permit to maintain the current "report only" requirements and eliminate the mass-based limit for TN. If EPA seeks to impose an effluent limit for TN, it must operate within its statutory and regulatory authority to

develop limits utilizing the currently approved TMDL WLA of 19,657 lbs/day for the out-of-basin dischargers.

Response 16

EPA imposes effluent limitations in permits necessary to ensure compliance with applicable water quality standards, in accordance with Section 301(b)(1)(C) of the Act. In so doing, EPA is guided by the regulatory standards set out in regulations governing the NPDES program, and implementing Sections 301 and 402 of the Act. Certain of the commenter's queries imply that EPA must demonstrate cause-and-effect, or that the precise water quality effluent limitation will lead to a specific in-stream effect. But EPA must make permitting decisions against a backdrop of scientific uncertainty and select effluent limitations from a reasonable spectrum of available values, in order to effectuate a gross reduction in pollutant loading. Some (e.g., social and economic costs) may, of course, have more relevance in certain other related contexts, such as Use Attainability Analyses, compliance schedules and enforcement actions. Water quality-based effluent limitations are, on the other hand, established irrespective of cost or technological achievability.

In response to the specific, bulleted questions:

- As described in the General Response (see Section I), in developing an approach to setting effluent limits for out-of-basin discharges to LIS, EPA identified a set of objectives, and then developed an approach to meeting those objectives. Thus far, the commenter has not provided any information that recommends an alternative approach to ensuring, with effluent limits, that the TMDL out-of-basin load is met and that overall loading to the TMDL does not increase.

- The effluent limits provide a cap to ensure that out-of-basin discharges to LIS do not contribute to further impairment of Long Island Sound.

- The effluent limits intended for the Massachusetts out-of-basin discharges are loading based limits expressed in lb/day. These were based on each facility's design flow concentrations that can be achieved through existing system optimization, for smaller facilities (design flow 1 to 10 MGD), and through readily available treatment technologies, for larger facilities (design flow greater than 10 MGD). EPA acknowledges that there are some facilities, particularly the four facilities with design flow greater than 10 MGD, that may need to make substantial investments, either soon after their next permit is issued, or in the future, if and when their annual average flows approach their facility design flow. If that occurs, there are flexibilities included in the Clean Water Act, such as compliance schedules, that can be used to mitigate the social and economic impact to the community.

- The current level of treatment at these facilities varies as some facilities have implemented system optimization programs to reduce total nitrogen in their effluent to a greater degree than others. Appendix C to the Fact Sheet summarizes the current annual total nitrogen loading from each facility from 2013 through

2018. Additional information is available through EPA's publicly available online data base at https://echo.epa.gov/.

- As stated in the General Response, Section I, the overall objective of the approach to developing effluent limits for out-of-basin dischargers is to ensure that the current load does not increase through implementation of enforceable effluent limits for the largest portion of the out-of-basin point source load. However, depending on the success of the collective efforts of facilities to implement new and ongoing point source optimization efforts, total nitrogen levels may be reduced further as a result of this approach resulting in continued improvement in water quality in LIS

- EPA has not conducted a quantitative cost-benefit-analysis for the implementation of the TN effluent limit in this NPDES permit as it is not a criterion for water quality-based effluent limit derivation.

- With regard to industrial dischargers, EPA expects to continue to include optimization requirements for industrial facilities with flows greater than 0.1 MGD. Optimization requirements are already included in recently issued permits for industrial discharges. See, for example, permits MA0003697 for Barnhardt Manufacturing Company or MA0040207 for Chang Farms.

- EPA expects to include mass-based TN effluent limits for Massachusetts facilities with design flow greater than 1 MGD in the LIS watershed since they contribute a large part of the total design flow (94% of the total Massachusetts POTW design flow to LIS).

See Appendix A General Response.

Comment 17

Optimization

EPA requires that the Athol WWTP implement "optimization methods to ensure that the facility is operated in such a way that discharges of total nitrogen are minimized." Fact Sheet, at p. 23. Further, certain provisions of the CWA authorize EPA to require certain control measures and proper operation and maintenance, but the statutory scheme does not authorize EPA to prescribe how a plant operator must achieve those requirements as contemplated in the Draft Permit requiring an evaluation of alternative methods of operating "to optimize the removal of nitrogen." See Draft Permit, at p. 16. Here, "optimization" is not an applicable control measure or operation and maintenance requirement deriving from any statutory or regulatory CWA authority.

Even if the CWA authorized the imposition of an optimization requirement, the requirement as described in the Draft Permit is impermissibly vague. EPA has promulgated under the CWA no rule, issued guidance, nor defined what constitutes "optimization." The Draft Permit includes a non-exhaustive list of optimization methods to be evaluated but lacks specificity as to what types of operational changes may be required. Absent a clear statutory or regulatory directive

regarding optimization, permittees will have no opportunity to meaningfully comply with the requirement. For example, permittees have no guidance regarding whether or not evaluation of alternative methods to optimize the removal of nitrogen will require additional expenditures for operation and maintenance or capital improvements. Additionally, even if the Athol WWTP meets the Draft Permit's average annual TN loading requirement, the optimization requirement will still expose the permittee to liability in the form of potential permit violations or lawsuits from third-parties alleging that the permittee nonetheless failed to achieve some amorphous level of "optimization."

Ultimately, EPA has not identified, and the permittee is not aware of, any statutory or justification authority for the "optimization" requirement. The requirement is both impermissibly vague and exceeds EPA's authority where the out-of-basin point sources, including the Connecticut River, are already achieving the WLA as required by the LIS TMDL.

Response 17

EPA disagrees with the commenter's assertions that the special condition to optimize facility operation to minimize the discharge of nitrogen is not a permissible requirement. The authority to require such special condition effluent limitations in addition to or in lieu of a numeric concentration or load based effluent limitations is contained in Sections 301 and 402 of the Act, and rationally related to carrying out the purposes of the Act, in this case to reasonably minimize pollutant loading to an impaired water body through operational adjustments. *See* 40 C.F.R. § 122.44(k)(4). To be clear, EPA is not dictating specific operational controls through this permit condition and is leaving that to the discretion of the treatment plant operator, just as a proper operation and maintenance condition is applied. As explained above, EPA has broad authority to condition NPDES permits. The optimization requirement is consistent with the definition of effluent limitation in both the Clean Water Act and its implementing regulations, cited below (emphasis added).

CWA § 502(11):

> The term "effluent limitation" means **any restriction** established by a State or the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources.

40 C.F.R. § 122.2:

> *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.

"Special conditions" are defined in EPA's NPDES Permit Writer's Manual as those which

> "supplement numeric effluent limitations and require the permittee to undertake activities designed to reduce the overall quantity of pollutants being discharged to

waters of the United States, to reduce the potential for discharges of pollutants, or to collect information that could be used in determining future permit requirements." (*NPDES Permit Writers' Manual, Chapter 9,* USEPA September 2010 [EPA833-K-10-001]).

EPA is also authorized to include narrative, as well as numeric, effluent limitations in the permit. As the optimization requirement supplements the TN annual average load limit and is designed to reduce the overall quantity of nitrogen being discharged, it clearly fits within this definition. EPA disagrees that the permit provision is vague; it adequately apprises the regulated entity of its obligations pursuant to the permit. To optimize means to make something as good or effective as possible, so includes both an endpoint, as well as feasibility or practicability component. As further guidance to implement this provision, consistent with the foregoing definition, EPA will typically consider whether the requirements of Part I.G.3 were completed when assessing optimization plans. These include whether:

- the optimization evaluation report was completed and submitted;
- the optimization evaluation report included recommended operational changes to minimize the discharge of total nitrogen;
- the recommendations have been implemented or are on a clear schedule to be implemented; and
- operational changes are documented annually and any increases occurring in total nitrogen discharge are explained.

More generally, the lack of specificity in the requirement is intended to afford the permittee with the latitude to develop the optimization strategy that best meets the configuration and operation of the facility.

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

Comment 18

No Adequate Opportunity for Public Comment

During development of a TMDL, the public is provided an opportunity to comment on the development of individual WLAs, the distribution of WLAs, the allocation of the WLA versus load allocation (LA), and the economic impacts of the overall TMDL plan to attain water quality in the impaired waterbody segment.

During development and public notice of the LIS TMDL, EPA presented the public with a TMDL that provided for the overall attainment (and associated economic impacts) of the water quality criteria through (1) assigned WLAs to in-basin dischargers and (2) aggregate load target reductions from out-of-basin dischargers.

In this Draft Permit, EPA has effectively assigned an out-of-basin WLA to an individual discharger and provided public comment in isolation of the overall TMDL attainment plan, in isolation of all other out-of-basin dischargers, and in isolation of all other in-basin WLAs and LAs. By limiting public comment to an isolated WLA developed outside the TMDL process that should be applied on a basin-wide level, EPA has prevented the public from effectively evaluating the overall impacts of this action on the TMDL's overarching strategy to attain water quality goals. EPA is effectively undertaking a water shed based rule making without following the required process.

Response 18

See Appendix A General Response Section III.

Comment 19

Failure to Account for Reductions in Non-Point Source Loading
Due to the implementation of MS4 municipal stormwater permits, the many new and varied requirements for CSO communities, and the implementation of related TMDLs for stormwater and nutrients across the LIS sound watershed, a number of projects now exist that address nutrient reduction from non-point sources.

EPA has failed to provide, or even discuss, the resulting estimated reductions in nutrients (both phosphorus and nitrogen) loading. States, towns and authorities have implemented green infrastructure options, improved stormwater BMPs, or provided other means for nutrient reductions resulting from improved stormwater management across the five-state region. EPA has failed to acknowledge and account for these reductions in determining the WLAs for POTWs.

Response 19

EPA agrees that there has been some progress towards reducing nutrient loading from nonpoint sources and urban stormwater. However, these efforts, have lagged well behind non-stormwater point source load reductions. Declines in agriculture and atmospheric nitrogen deposition along with decreased discharges from upstream WWTPs have decreased flow-normalized nutrient loads from the major rivers draining to Long Island Sound from 1974 to 2013 and from 2001 to 2013.[8] While overall streamflow increased by 8% at most monitoring sites over the entire study period, primarily in the summer, total nitrogen decreased by 24% over the entire period and almost half of that from 2001-2013.[9] A different study using SPARROW modeling found a similar decrease in total nitrogen of 10.4% in LIS tributaries from 2002 to 2011.[10]

[8] Mullaney, J. R. Nutrient, *Organic Carbon, and Chloride Concentrations and Loads in Selected Long Island Sound Tributaries: Four Decades of Change Following the Passage of the Federal Clean Water Act*; United States Geological Survey: 2016; p 11.
[9] Ibid.
[10] Detenbeck, N. E.; You, M.; Torre, D., Recent Changes in Nitrogen Sources and Load Components to Estuaries of the Contiguous United States. *Estuaries and Coasts* 2019, 42, 2096–2113

However, other smaller sources of nitrogen such as lawn fertilizer and septic systems may be steady or increasing. In the CT and NY portions of the watershed, turf and grass areas increased 24% from 1985 to 2015 and make up 8.2% of the total area. The developed area increased by 17% in the same period to 21% of the total and forest areas decreased from around 57% to 53% of land area.[11,12] Additionally, while the LIS watershed area in NY State is small, septic systems are widespread on the Northshore of Long Island, particularly in Suffolk County, and to date have not been subject to nitrogen management.

Comment 20

The LIS TMDL, dated December 2000, has not been revised or revisited in nearly 20 years. This is in direct contradiction to the TMDL itself, which states in Section F:

"A critical component of phased implementation is the reassessment of management goals and actions based on new information. The LISS Phase III Actions for Hypoxia Management also contains commitments to formally evaluate the 58.5 percent reduction target every five years…"

The TMDL goes on to identify specific items to be reassessed which include:

- The progress and cost of implementation, including a reevaluation of the knee-of-the-curve analysis used to establish the Phase III nitrogen reduction targets;
- Refined information on the ecosystem response to nitrogen reduction;
- The results of peer reviewed modeling; and
- Research on the impacts of hypoxia to living resources and their habitats.

The LIS TMDL also requires that:

As identified in the TMDL schedule (Table 11), New York and Connecticut will review and revise the TMDL based on this assessment by August 2003. Reassessment of the DO criteria, and the goals of the TMDL is particularly significant in consideration of the following:

- Significant progress toward attaining the DO water quality standard have already been obtained. As per the LIS Year in Review (2017), the average peak area of waters with "unhealthy" DO is less than half of the pre-TMDL levels. The area of water with less than 3 mg/L of DO in 2015 and 2017 were the second and third smallest recorded in the past 31 years of monitoring. In addition, there have been no open waters below 1 mg/L DO in seven of the eight past years. As a result of nitrogen reduction efforts, there are 45 million fewer pounds of nitrogen discharged annually to the Sound from human sources (a 59% reduction).[2]

[11] Arnold, C.; Wilson, E.; Hurd, J.; Civco, D., 30 Years of Land Cover Change in Connecticut, USA: A Case Study of Long-term Research, Dissemination of Results, and Their Use in Land Use Planning and Natural Resource Conservation. *Land* 2020, 9, (8).
[12] Long Island Sound Watershed Land Cover Statistics. http://clear.uconn.edu/projects/landscape/LIS/stats.htm#top (August 18, 2020),

- The water quality results from the Connecticut River embayment sampling from 2017 are remarkable. Nitrate is well under natural background levels for streams (max observed = 0.36 mg/L). Ammonia is non-detect. TN is therefore also less than typical natural background levels (max = 0.61 mg/L). Total phosphorus and Ortho Phosphorus are also near detection levels and very low (max observed = 0.056 and 0.037 mg/L, respectively). There is little quality gradient from sampling location CTR01 to sampling location CTR07. Whatever nutrient loads are delivered to the Connecticut River, they are removed to background levels by the time the river reaches the estuary.

Water quality results from the Connecticut River could be indicative of the Housatonic River watershed as well, and a detailed assessment of this river would be beneficial. Such information is useful for determining the overall impact of TN from out-of-basin WWTPs, and whether other impacts such as stormwater, need to be further assessed.

[2] Newsletter of the Long Island Sound Study, Spring 2018). http://longislandsoundstudy.net/wpcontent/uploads/2018/05/2017YearinReview_03-singles-second-printing-14-aug-18.pdf

Response 20

EPA agrees that nitrogen reductions have occurred in the LIS watershed and that water quality improvements have been observed. However, the water body continues to be impaired for nitrogen. Therefore, capping the out-of-basin load is warranted. Also see Appendix A General Response and Response 13.

Comment 21

Summary of Comments on TN Loading Limit

The SWSC continues to have considerable concerns with EPAs decision not to include the out-of basin community in its strategy development as well as EPA's failure not to require the collection of new, relevant data in determining both the out-of-basin nitrogen impacts on LIS and the effectiveness of nutrient reduction programs in New York and Connecticut. Still, SWSC believes that an equitable distribution of loads among the out-of-basin dischargers can be achieved. The SWSC fully supports the LIS initiative in its clean water efforts and has proposed additional financial support to gather data and make informed decisions to that effect, and we reaffirm that commitment. However, to successfully implement NPDES conditions that will meaningfully reduce TN discharges, EPA must provide a scientific basis for permit conditions and limitations that considers all out-of-basin discharges.

To that end, SWSC requests that EPA develop annual average TN loading values that:

- Reflect advances WWTPs have made for TN removal since the LIS TMDL 1998 baseline;
- Allow for reasonable growth in the sewer service area up to the design flow of the affected plant;
- Allow for a reasonable trading scenario for economic efficiency; and
- Establish TN "goals" rather than enforceable limitations to allow for appropriate permit adjustments in the future without anti-backsliding issues.

- Utilize the existing, approved TMDL WLA of 19,657 or provide an opportunity to revise the TMDL based on new information.

Specifically, SWSC requests that EPA eliminate the concentration-based mass numeric limit and remove the optimization requirements. EPA has identified no basis for including a mass limit based upon arbitrary tiered concentration values. If EPA requires a mass-based limit, EPA must revise the arbitrary concentration-based mass limit included in the Draft Permit in favor of a limit that actually reflects the 25% reduction target required by the LIS TMDL. Additionally, SWSC requests that EPA establish the basis for its determination that 25 of 54 MA WWTPs in the LIS Watershed require no TN loading goal while 29 require enforceable limits.

Specifically, the adopted LIS TMDL supports a WLA of 19,657 lbs/day for out-of-basin dischargers, with an equitable share of 16,254 for the Connecticut River. EPA has not provided the technical rational or regulatory authority to modify the TMDL WLA through an individual NPDES permit. EPA has failed to demonstrate the authority to re-calculate the adopted WLA through the arbitrary choice of a concentration limit and the arbitrary choice of a data set.

We urge EPA to provide for a collaborative effort to determine the appropriate distribution of the approved WLA, or to provide the technical and regulatory avenue to revise this WLA.

Response 21

See Appendix A General Response.

Comment 22

Numeric Limit on Effluent Flow

The Draft Permit contains a numeric limit on effluent flow. Understanding that this limit was in the previous permit, we believe that the limit is not authorized by the CWA or by EPA's NPDES regulations. In the Fact Sheet, EPA lays out a number of arguments as to why this limit is within its authority, but none of those claims has any support in the law or rules. Here are the claims raised by EPA, and the reasons why they are not correct:

1) EPA says that "sewage treatment plant discharge" is a "pollutant" and therefore subject to regulation under the CWA. While there are pollutants in a POTW discharge, that is not the issue here. EPA is trying to impose a limit on the amount of water discharged, regardless of whether any pollutants are present. That claim has already been rejected by a Federal court, which specifically held that "stormwater runoff is not a pollutant." Virginia Dep't of Transp. v. U.S. E.P.A., No. 1:12-CV-775, 2013 WL 53741 (E.D. Va. Jan. 3, 2013) (copy attached). That court ruled that trying to regulate water, as a surrogate for a regulable pollutant, is not authorized. The same principle would apply here.

2) EPA also claims that it has authority to impose limits on flow because it uses effluent flow to determine if limits are needed, and to calculate limits themselves. The Agency states that it "may ensure the validity of its 'worst-case' wastewater effluent flow assumptions through imposition of permit conditions for effluent flow." However, the authority that EPA cites for that proposition provides no support at all. Those authorities – in the regulations and other cases – simply hold that EPA can consider "dilution of the effluent" and effluent flow levels in assessing

"reasonable potential." While that is true, that does not mean that EPA can therefore impose limits on flow. It simply means what it says: that EPA can consider effluent flow in making effluent limit decisions.

3) The Agency also makes a general argument that a limit on effluent flow is within its authority to "condition a permit to carry out the objectives of the Act," and is "consistent with the overall structure and purposes of the CWA." But obviously, that authority must operate within some confines, and those are the confines established by EPA's own regulations. If the regulations do not give EPA the authority to issue flow limits – which they do not – then EPA cannot do so.

4) Finally, EPA tries to argue that it can impose flow limits because they are needed to ensure that the permittee properly operates and maintains its system, minimizes infiltration and inflow (I/I), and mitigates the potential for sanitary sewer overflows. There is no basis for this argument. As EPA itself recognizes, the Draft Permit already contains specific provisions that require proper operation and maintenance, require development of an I/I program, and impose a duty to mitigate. These provisions are routinely imposed in permits, and there is no reason to believe that the permittee will not comply with them, or that the requirements imposed in those provisions are not adequate to address the issues that they are focused on.

For all of these reasons, the proposed flow limits are not authorized by the CWA or EPA's NPDES regulations, and they should be removed before the Draft Permit is finalized.

Response 22

The Environmental Appeals Board has held that EPA has the authority under the Act to impose limits on wastewater effluent flow. *In re City of Lowell,* 18 E.A.D. 115, 154-160 (E.A.B. 2020).

EPA Region 1 has included limits on the wastewater effluent flow from POTWs, based on the design capacity of the facility, throughout Massachusetts (96 facilities since 1984, 13 of which include CSOs, including the 2008 NPDES Permit issued to Athol) and increasingly in New Hampshire (13 facilities since 2005). Moreover, States and other EPA Regions have issued over 3750 NPDES permits (92 facilities with CSOs) to POTWs with similar limits in other parts of the country.

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

40 C.F.R. §§ 122.41(d) and (e) require the permittee to (1) "take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the

environment," and (2) "at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit." The design capacity-based wastewater effluent flow limit is authorized by section 402(a)(2) and appropriate in order to assure that Athol operates its facility to comply with its permit's technology- and water quality-based effluent limitations.

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

The commenter unfairly contends that EPA sought to limit wastewater effluent flow from the facility on the basis that flow, or quantity of water, was a "pollutant" whose discharge could be regulated under the Act. This is not the case. Establishing water quality-based effluent limitations that are sufficiently protective to meet in-stream water quality criteria requires EPA to account for both *wastewater effluent* and receiving water flows, as EPA explained in the Fact Sheet. Conditions imposed by EPA to limit wastewater effluent flows from the facility for the permit term are designed to assure that the facility's pollutant discharges do not result in excursions above in-stream water quality criteria, in accordance with section 301(b)(1)(C) of the Act and implementing regulations. 40 C.F.R. §§ 122.4(d), 122.44(d)(1), 122.44(d)(1)(vii)(A), 122.44(d)(5). Most trenchantly, 40 C.F.R. § 122.4(d) prohibits issuance of an NPDES permit "[w]hen the imposition of conditions cannot ensure [emphasis added] compliance with the applicable water quality requirements of all affected States." Section 122.44(d)(1) is similarly broad in scope and obligates the Region to include in NPDES permits "any requirements…necessary to: (1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality." "Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve the statutory mandates of Section 301 and 402. *Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992). Under CWA section 402, EPA may issue NPDES permits "for the discharge of any pollutant, or combination of pollutants" if the permit conditions assure that the discharge complies with certain requirements, including those of section 301 of the CWA. The Act defines "pollutant" to mean, inter alia, "municipal . . . waste[]" and "sewage…discharged into water." CWA § 502(6). EPA has implemented Sections 301(b)(1)(C) and 402 of the Act through numerous regulations, which specify when the Region must include specific permit conditions, water quality-based effluent limitations or other requirements in NPDES permits. The wastewater effluent flow limit is a condition designed to ensure that WQS will be met. More specifically, EPA based both its reasonable potential calculations and its permit effluent limitations for individual pollutants on a presumed maximum wastewater effluent discharge from the facility. Without an effluent flow limit, the assumptions in those reasonable potential calculations may not be valid. EPA's reasonable potential regulations require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," 40 C.F.R. §

122.44(d)(1)(ii), which is a function of both the wastewater effluent flow and receiving water flow. EPA guidance directs that this reasonable potential analysis be based on critical conditions. EPA, accordingly, is authorized to carry out its reasonable potential analysis by presuming that a plant is operating at its design flow during critical instream conditions (*i.e.*, 7Q10) when assessing reasonable potential.[13]

The commenter's citation to *Virginia Department of Transportation* is not relevant to this proceeding. That case concerned EPA's approval of TMDLs under Section 303 of the Act, not the development of reasonable effluent limitations under separate and distinct authority governing the NPDES permitting process—Sections 301, 402 and implementing regulations.

As noted in the comment, the flow limit does not represent a change from the prior permit. For the reasons described above, EPA has maintained the flow limit in the Final Permit.

Comment 23

PFAS

The proposed draft NPDES permit includes monitoring and reporting requirements for Per- and polyfluoroalkyl substances (PFAS) including the followings:

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

The Draft Permit requires quarterly monitoring PFAS in WWTP influent, effluent and sludge. EPA states that the purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality based effluent limits on a facility-specific basis.

This monitoring requirement is very concerning for the following reasons:

a) Massachusetts water quality standards do not include numeric criteria for PFAS. EPA factsheet cited Massachusetts narrative criterion for toxic substances at 314 CMR 4.05(5)(e) as "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife." However, neither MassDEP nor EPA have established toxicity risk level of PFAS in the surface water for human, aquatic life or wildlife.

[13] USEPA, 2010, National Pollutant Discharge Elimination System (NPDES) Permit Writers' Manual, EPA-833-K-10-001, p. 6-17

Even if Massachusetts passes a revision to 310 CMR 22.00: Drinking Water Regulation that set a new PFAS Maximum Contaminant Level (MCL) of 20 ppt (ng/L) for the sum of the concentrations of six PFAS compounds, we believe that requiring monitoring of PFAS is premature at this time.

b) Unnecessary testing requirement for influent, effluent and sludge as well as significant industrial dischargers. As EPA has failed to identify PFAS that would cause or contribute to an impairment, the Town does not understand how these additional expenditures to test PFAS in influent, effluent and sludge is warranted. If EPA is still determined to understand the impact of PFAS on the receiving water, it should be done through an ambient water quality study and effluent data as well as non-point sampling.

Testing influent, sludge and significant industrial dischargers is not necessary for the purposes stated in factsheet section 5.1.11. This is also evident in the state permit that only requires testing of WWTP effluent, and not influent and sludge. MassDEP draft permit Factsheet Supplement specifically limited testing of PFAS for residual land applied in Massachusetts. As such, MassDEP only requires testing of PFAS for holders of Approval of Suitability (AOS) which classifies residuals for different uses based on the chemical quality and treatment to reduce pathogens. The Town/City is not an AOS holder and currently is not using land application for sludge disposal. Therefore, it is not required to test PFAS in sludge.

c) Prepare for a future PFAS limits that may be included in subsequent NPDES permits: This reason for EPA needing to require monitoring of PFAS for the facility is particularly concerning as science of PFAS in the environment and its impacts to humans, aquatic life or wildlife is still evolving. Therefore, it is against the purposes of CWA to impose of any numeric limitations before EPA provides clear, precise, and scientifically sound criteria of PFAS that would be toxic to humans, aquatic life or wildlife.

Response 23

EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES Permits. *See, e.g.,* CWA § 308. Imposing such requirements does not necessitate a determination of reasonable potential. EPA notes that the Draft Permit does not establish PFAS limitations and EPA agrees that further evaluation is necessary before requiring permit limits to protect designated uses related to toxicity due to PFAS contamination.

The commenter has misunderstood the MassDEP Draft Permit for Athol. The MassDEP Draft Permit incorporates all of the PFAS monitoring requirements in the EPA Draft Permit and supplements them with additional requirements that commence before EPA's approved analytical method for PFAS is available. By incorporating all of EPA's PFAS monitoring requirements in their permit MassDEP has professed support for monitoring influent, effluent and sludge. EPA is requiring PFAS monitoring in the influent, effluent, sludge and for significant industrial users in order to characterize the sources and fate of PFAS within the treatment process.

As discussed in the Fact Sheet, the purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this facility and to inform

future permitting decisions. These may include whether there is reasonable potential to cause or contribute to a violation of the Massachusetts water quality standards; if there is, whether to apply numeric effluent limits or pollutant minimization practices, or some combination. The expectation underlying this requirement is that by the time the permit is reissued, the uncertainties raised by the commenter regarding the evolving science will have been answered through the efforts of EPA, MassDEP and others. In the meantime, the monitoring provisions do not take effect until the first full calendar quarter beginning at least 6 months after EPA notifies the Permittee that a multi-lab validated method is available. See Response 24. Therefore, the monitoring requirements will remain in the Final Permit.

Comment 24

d) Approved standard testing method: In the Draft Permit, EPA imposes sampling requirements for PFAS compounds in wastewater and sludge. EPA has not yet approved any analytical methods for PFAS in those media. Therefore, EPA provides a compliance schedule, so that the testing requirements do not apply until "6 months after EPA's multi-lab validated method for wastewater and biosolids is made available to the public on EPA's CWA methods program websites." This requirement is problematic, because it is not tied to actual formal EPA approval of the analytical methods. The act of EPA making a method "available to the public" on its website is not sufficient to make that method legally enforceable. The Agency needs to issue a formal proposal to approve the method under 40 CFR 136, take public comments, and then make a considered decision as to whether that method should be approved as having met all of the requirements of 40 CFR 136. Until that process has been completed, the Agency cannot require the permittee to start monitoring, using an unapproved method. The Agency tries to justify this requirement by citing to a provision in its regulations that allows EPA to require monitoring using a method specified in the permit. That provision applies when the agency actually specifies a specific method in the permit. It does not apply here, where the draft permit does not specify a particular method, because no method exists that is ready to require in permits. EPA cannot, after the permit is issued, mention a method on its website and then claim that the method was somehow incorporated in the permit that was issued earlier period. To address this problem, EPA should simply amend the draft permit to clarify that the PFAS testing requirements will not become effective until after EPA has formally approved applicable test methods under 40 CFR 136.

Response 24

EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES Permits. *See, e.g.,* CWA § 308. EPA notes that the permit requires monitoring for PFAS using a method that will be approved for use in the future. Incorporation into 40 CFR Part 136 is not required in order for it to be applied into a permit.[14]

EPA does agree, however that it is burdensome for the Permittee to rely on checking a web site in order to know when a permit requirement takes effect. Therefore, the effective

[14] EPA NPDES Permit Writer's Manual, Section 8.3, September 2010, available at https://www.epa.gov/sites/production/files/2015-09/documents/pwm_chapt_08.pdf

date of the PFAS monitoring and reporting requirements has been revised to occur in the first full calendar quarter beginning at least 6 months after EPA notifies the Permittee that a multi-lab validated method is available.

Comment 25

Alternate Power Source
EPA requires alternate power source(s) sufficient to operate the portion of the publicly owned treatment works it owns and operates however, EPA did not include any explanation of what alternate power sources are in what portion of the plant requires an alternate power source(s).

SWSC requests EPA to define alternative power sources to at least include redundant connections to the electric grid backup power generator or any other sources of power that are different from the power source for normal operation. SWSC also requests EPA to further define the portions of the plant that needs the alternative power source which would allow plant operation under emergency basis to power the critical unit slash equipment that would enable the plant to avoid flooding or damage to the process equipment. The Springfield Water and Sewer Commission appreciates the opportunity to submit its comments to EPA and MassDEP regarding draft Permit number MA0100005. Please contact me with any questions concerning the issues and recommendations contained in these comments.

Response 25

EPA has authority under 40 CFR § 122.41(e) to impose conditions related to the proper operation and maintenance of the treatment plant, and EPA has determined that an alternate power source sufficient to comply with the terms and conditions of the permit is necessary in order to protect the environment and public health during potential extended power outages. To clarify, back-up power does not require the POTW to operate in exactly the same manner as under normal circumstances but does require sufficient power to comply with all terms and conditions (including all effluent limitations) of the permit. See Part II.B.1.

Further, EPA notes that this is not a new requirement for the Town, as it was required in their 2008 permit.

For further guidance on preparing for such events, see the website below.

https://www.epa.gov/sites/production/files/2016-03/documents/160212-powerresilienceguide508.pdf

D. Comments from the Andrea Donlon, River Steward, Connecticut River Conservancy, on August 14, 2020

Comment 26

I have reviewed the draft NPDES permit and Fact Sheet, and MassDEP's supplemental Fact Sheet on behalf of the CT River Conservancy.

We do not have any substantial comments on the permit as drafted.

CRC supports EPA's approach to establishing enforceable TN loading limits at each facility. We support the new limits for Al and Cu, and we also support EPA's and DEP's approach to new testing of effluent for PFAS compounds.

Response 26

EPA acknowledges the comment and notes that the PFAS monitoring, aluminum limits, and copper limits are included in the Final Permit.

E. Comments from Jennifer Pederson, Executive Director, Massachusetts Water Works Association, on August 13, 2020

Comment 27

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

Response 27

EPA acknowledges the comment and a more detailed response to the commenter's concerns are provided below.

Comment 28

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

EPA Headquarters issued a new methodology for looking at Aluminum criteria which Massachusetts is working on incorporating into their Water Quality Standards. This is even acknowledged in the Fact Sheet, "EPA is aware of ongoing efforts by MassDEP to soon revise the Massachusetts aluminum criteria based, at least in part, on forthcoming new EPA aluminum criteria recommendations which are expected to be finalized within the coming months. …EPA's draft aluminum criteria recommendations indicate that the new aluminum criteria recommendations may be higher than the current recommendations. …EPA reasonably expects

its (MassDEPs) new criteria may also be higher." We are concerned that EPA Region 1 is moving forward with issuing any permits with Aluminum criteria given the fact that Massachusetts intends to very shortly update its Water Quality Standards to incorporate the new national guidance. While we appreciate EPA has provided an opportunity for Athol to amend the permit within three years if Massachusetts adopts the new criteria, we believe it is premature to include the criteria.

For the above reasons, we ask that EPA strike the numeric criteria for Aluminum from this permit and change it to a monitoring requirement until the state updates its surface water quality standards.

Response 28

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

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

The total aluminum limits in the Draft and Final Permits are water quality-based that reflect Massachusetts Water Quality Standards. The State's regulation at 314 CMR Section 4.05(5)(e) uses the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002 as a basis for allowable receiving water concentrations not enumerated in previous sections of the chapter. According to the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002, the acute and chronic criteria for Aluminum in a fresh water body are 87 µg/L and 750 µg/L currently.

EPA is obligated pursuant to 40 C.F.R.§ 122.44(d) to include any effluent limit in a permit that is necessary to comply with the water quality standards (WQS) that are in effect at the time the permit is issued. If there is a reasonable potential to violate water quality standards, then pursuant to 40 C.F.R. § 122.44(d) an effluent limitation is "necessary," and EPA is obligated to include a limit in the permit. EPA does not forestall permit issuance, pending development, submission and approval of revised WQS, particularly where, as here, the previous permit has long since expired. To do so would subject the permitting process to significant delay and uncertainty, since there is no way to predict the level at which any new criteria will be established, and when such criteria will become effective. The criteria development process often takes many years. The Massachusetts' WQS now in effect require that EPA base effluent limitations for metals on the criteria published in the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002, unless site-specific criteria are established or MassDEP determines that natural background concentrations are higher than the criteria

(314 CMR § 4.05(5)(e)). MassDEP has not issued site-specific aluminum criteria for the Millers River or determined that natural background concentrations are higher than the current aluminum criteria.

Therefore, the aluminum limit and compliance schedule will remain in the Final Permit.

F. Comments from Philip D. Guerin, President & Chairman, Massachusetts Coalition for Water Resources Stewardship, on August 14, 2020

Comment 29

Aluminum

The proposed total aluminum limit of 87 ug/l is significantly lower than the discharge limit that would be calculated using the draft Massachusetts Surface Water Quality Standard (SWQS) for aluminum in the Millers River basin. The Aluminum Compliance Schedule provided in Part I.G.2 allows for three years for Massachusetts to formally adopt these new SWQS. However, as the new Massachusetts SWQS is known, and the appropriate limit on total aluminum would be higher than the draft permit allows, this limit should be stayed, or set as monitoring (report only), until the new standards are in place. At that time, the appropriate limit can be set. As this is a new aluminum limit, the placement of this limit will place an undue (and environmentally un-necessary) burden on the WWTP and the community. This is particularly true as better, basin-specific information is currently available.

Response 29

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

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

The total aluminum limit in the Draft Permit is water quality-based that reflects Massachusetts Water Quality Standards. The State's regulation at 314 CMR Section 4.05(e) uses the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002 as a basis for allowable receiving water concentrations not enumerated in previous sections of the chapter. According to the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002, the acute and chronic criteria for total aluminum in freshwater are 87 µg/L and 750 µg/L currently.

EPA is obligated pursuant to 40 CFR § 122.44(d) to include any effluent limit in a permit that is necessary to comply with the water quality standards (WQS) that are in effect at the time the permit is issued. If there is a reasonable potential to violate water quality standards, then pursuant to 40 CFR § 122.44(d) an effluent limitation is "necessary," and

EPA is obligated to include a limit in the permit. EPA does not forestall permit issuance, pending development, submission and approval of revised WQS, particularly where, as here, the previous permit has long since expired. To do so would subject the permitting process to significant delay and uncertainty, since there is no way to predict the level at which any new criteria will be established, and when such criteria will become effective. The criteria development process often takes many years. The Massachusetts' WQS now in effect require that EPA base effluent limitations for metals on the criteria published in the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002, unless site-specific criteria are established or MassDEP determines that natural background concentrations are higher than the criteria (314 CMR § 4.05(5)(e)). MassDEP has not issued site-specific aluminum criteria for the Otter River or determined that natural background concentrations are higher than the current aluminum criteria.

Therefore, the aluminum limit and compliance schedule are necessary and will remain in the Final Permit.

See Response 1.

Comment 30

Further, if the aluminum limit is not stayed, the compliance schedule should be extended recognizing the now lengthy and continuing impacts on Massachusetts Department of Environmental Protection (DEP) staff and operations due to the COVID-19 pandemic.

Response 30

Despite the impacts due to the COVID-19 pandemic, EPA expects MassDEP to adopt the new aluminum criteria in a timely manner. Therefore, EPA expects the compliance schedule to allow sufficient time for this change and it has not been modified in the Final Permit.

See Response 1.

Comment 31

Part 1, Section B.2 requires, as of December 21, 2020, a public notification on a website within 24 hours of discovery of any unauthorized discharges, other than sanitary sewer overflows that do not impact a surface water or the public. This requirement is excessive. The range of unauthorized discharges requiring public notification should be limited to those with significant public health or environmental consequences. Factors like season, temperature, river flows, recreational activities and many others need to be considered before needlessly alarming the public and diverting staff and resources to sending notifications. Residents will quickly become deaf to frequent messages about insults to the river and will then not be listening when a real and necessary warning is sent. Let the POTW report to MassDEP and allow for a discussion as to whether a public notification is needed on a case by case basis.

Response 31

EPA has authority under the CWA to impose conditions related to the proper operation and maintenance of the treatment plant, and an SSO may be the result of an operation and maintenance malfunction within the collection system. However, EPA agrees it is not necessary to post every SSO on a public website since there are instances when an SSO does not impact a receiving water or the public. An example may be a low volume SSO at a manhole cover.

However, EPA does consider it a necessary protection of public health to notify the public of unauthorized discharges to surface waters that the public may be planning to use, as specified in the Draft Permit. EPA is not aware of an objective methodology (as opposed to the subjective determination of the POTW operator) that could be used in a timely manner to characterize a "significant" public health or environmental consequence in contrast to one that is insignificant and the commenter has not offered any such recommendation. Therefore, the suggestion to screen out some of the SSOs is impractical.

The comment also suggests that the public will become "deaf" to these notifications. EPA notes that there has been broad public concern over discharges of raw sewage into receiving waters and EPA finds that the public being notified of such discharges is unlikely to result in their being inured to them.

Comment 32

The requirement in Part 1, D to have alternate power sources available to operate the portion of the treatment works owned and operated by the permittee should be further limited. Alternate power sources should only be required that would maintain operation of the key and basic components of the treatment train of the POTW and to assure the facility is protected from damage. That would assure screening, primary settling and disinfection is taking place during the brief period when power is lost. It is an extremely rare occurrence that power outages continue for days. Even in those events, the loss of nutrient removal and even parts of secondary treatment for a few days is not a catastrophic event. Backup generators to power the entire plant is an extremely expensive provision that is not cost effective.

Response 32

See Response 25.

Comment 33

The Fact Sheet describing the need for Total Nitrogen reductions through "optimization" is bewildering. EPA states that the Long Island Sound TMDL establishes a waste load allocation for the combined POTW discharges in MA, VT and NH. EPA further states that the established TMDL waste load allocation has been achieved with current TN loading from the three states well below the legally established limit. Despite having met the limit, the POTWs in this drainage area are now subject to further nitrogen load reductions through optimization of existing facilities or upgrades where needed. This approach flies in the face of the Clean Water Act and makes a mockery of the TMDL process. If Long Island Sound remains impaired due to

nitrogen but the loading from states north of Connecticut have met their collective requirement, then either the TMDL and the science behind Long Island Sound are amiss or the nitrogen loading causing the impairment is coming from elsewhere, namely Connecticut and/or New York. If, as stated in the Fact Sheet, the concern is that this permittee could have future growth that leads to increased loading, then put provisions in this permit that limit future loading during the permit term so that it does not exceed the achieved aggregate TMDL limit.

Response 33

See Appendix A General Response.

Comment 34

MCWRS has great concern for the decision by EPA and DEP to include monitoring and reporting of PFAS compounds at this time. We recognize the relevance of the issue related to the PFAS family of compounds. However, the state of regulatory controls for these substances at both the federal and state level is developing slowly, as is the science related to how these substances impact the environment. The recent regulation of these substances in drinking water have heightened the awareness of these compounds. The limited scientific knowledge combined with the heightened awareness (and commensurate public concern) make the situation ripe for misunderstanding and unintended consequences.

In particular, the current biosolids processing and disposal within the public wastewater treatment industry is dominated by private hauling, processing and disposal. Concerns on the biosolids disposal side related to the PFAS compounds have already begun to impact solids disposal, and particularly beneficial reuse of biosolids. The industry is not currently prepared to deal with the discontinuation of current biosolids processing and disposal methods. There is much work to do before the industry is ready to regulate these compounds on the municipal wastewater industry side.

As a minimum, the following steps should be completed before monitoring or limits are included in NPDES discharge permits.

1. EPA and DEP should regulate the use of the subject PFAS compounds in all consumer products. This should include eliminating these compounds from consumer goods and industrial processes, and enforcing these regulations. This crucial action alone will be the most effective method of controlling PFAS compounds in our environment.

2. EPA and DEP should provide funding and complete a series of studies to understand the impacts of possible PFAS disposal regulations on the wastewater treatment industry. This should include identifying safe and reasonable solids disposal methods for solids that are found to have PFAS compounds present – including both low levels and higher levels of such compounds.

3. EPA and DEP should then provide industry guidance to ensure that no discontinuation of service will be experienced by treatment works due to the discovery of PFAS compounds in solids or effluent.

4. EPA and DEP should develop and establish a funding program to assist communities in providing any necessary response to the discovery of PFAS compounds in the wastewater, effluent or solids.

5. During the time that these above steps are being taken, EPA and DEP can also advance to understanding of the impacts of these compounds on the environment. In this way, more well-informed permitting can be completed.

At this time, EPA should remove all of the PFAS monitoring requirements from the permit. When the proper other actions have been completed, as described above, these requirements can be imposed on all permittees by combined action of EPA and DEP.

If EPA refuses to remove the PFAS monitoring requirements from the permit, then the implementation timing requirements (included in notes 11 and 12, and other places) should be modified to require the completion of the above steps prior to the requirements becoming effective.

The proposed permit should be modified per our request, so as to provide environmental protections while simultaneously giving communities a path forward to managing these challenging compounds with the proper regulatory support. The communities regulated by these permits work diligently to protect the environment through effective treatment practices. It is our hope that EPA Region 1 will remain flexible and supportive of communities as they persevere through these ongoing challenges.

Response 34

EPA agrees that the concern regarding PFAS is a much broader issue than the scope of this NPDES permit and EPA is taking steps to address it, as outlined in EPA's 2019 PFAS Action Plan and the 2020 PFAS Action Plan Update[15]. As suggested in the comment, much work still needs to be done beyond the scope of this permit related to studying the impact to the environment, the impact to human health, and addressing source control of PFAS compounds. As discussed in the Fact Sheet, the purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions. Additionally, the collection of PFAS data from a variety of dischargers, including POTWs, will inform many of the steps proposed by the commenter above. The expectation underlying this requirement is that by the time the permit is reissued, many of the questions raised by the commenter will have been answered through the efforts of EPA, MassDEP and others. In the meantime, the monitoring provisions do not take effect until the first full calendar quarter beginning at least 6 months after EPA notifies the Permittee that a multi-lab validated method for wastewater is available. See Response 24. The monitoring requirements will remain in the Final Permit.

[15] Available at https://www.epa.gov/pfas/epas-pfas-action-plan.

APPENDIX A

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

Numerous comments were received regarding the new total nitrogen ("TN") effluent limits. This General Nitrogen Response ("General Response") provides a comprehensive explanation of the overall approach EPA has adopted to address TN effluent limitations for out-of-basin POTWs discharging to Long Island Sound, taking into account the Clean Water Act (CWA or "the Act"), implementing regulations, case law and varied technical and policy considerations. It addresses the comments received regarding the new TN effluent limits and is referenced in many of the responses to those specific comments.

While this permitting approach governs the application of TN effluent limits in the specific permit here and allows EPA to place those limits within a wider frame of reference in order to explain their derivation, EPA underscores that NPDES permits are adjudicated on a case-by-case, permit-specific basis. The limits imposed here, in other words, do not set a precedent for other permittees, and do not bind the Region, or other regulated entities, in future permit proceedings, which will be adjudicated based on their own administrative records.

I. Introduction and Description of Permitting Approach[1]

EPA has adopted a systemic, state-by-state approach to reduce out-of-basin loading of nitrogen pollution into Long Island Sound from POTW point sources in Massachusetts, New Hampshire, and Vermont, through the coordinated issuance of individual NPDES permits ("Out-of-Basin Permitting Approach"). These out-of-basin facilities have not been assigned waste load allocations ("WLAs") under the Long Island Sound Total Maximum Daily Load[2] ("TMDL") approved by EPA in 2001. The task of allocating nitrogen loads among these facilities in a manner that ensures compliance with water quality standards, as required under Section 301 of

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

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

the Act, falls to EPA. That EPA would implement any necessary reductions through the issuance and oversight of NPDES permits was expressly assumed by the TMDL. Uncontested on the record before EPA in this permit proceeding are two facts: first, that significant amounts of nitrogen from out-of-basin facilities are discharged to the LIS watershed (as much as 6 million pounds per year, based on the sum of the maximum annual discharge from each out-of-basin discharger from 2013 to 2017), and, second, that ongoing nitrogen-driven water quality impairments exist in LIS.

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

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

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

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

- First, EPA *identified* the existing aggregate load from all contributing facilities in a given state.

- Second, because Long Island Sound is already nitrogen impaired and failing to achieve applicable water quality standards,[3] EPA *capped* that load to avoid contributing to further impairments and fully protect existing uses.

- Third, EPA *allocated* the load according to a water quality-related consideration rationally related to achieving water quality standards in Long Island Sound and carrying out the objectives of the Act.

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

- EPA estimated the current maximum out-of-basin annual point source load using data for the five years prior to the year of the Draft Permit, consistent with Region 1's ordinary practice of using the most recent five years of data in the derivation of effluent limits for permits, which is in accordance with the recommendation in EPA guidance to use three to five years and, by use of the longer timeframe, is intended to more fully capture a representative data set[4] (see estimate of recent effluent loadings appended to the Fact Sheet);

- It prioritized effluent limits for major POTW facilities with design flow greater than 1 MGD, consistent with the definition of major facility in 40 CFR §122.2;[5]

- It developed mass-based rolling annual average TN effluent limits based on design flow (consistent with 40 CFR § 122.45(b)(1)) and effluent concentrations that can achieved by means of currently available nitrogen removal technology for all facilities and the design flow for each facility, where effluent limit (lb/day) = Concentration (mg/L) x Design Flow (MGD) x 8.345;

- For POTW facilities with design flow less than 10 MGD, EPA based limits on concentrations that can typically be achieved through optimization, with more aggressive optimization expected for facilities with design flow greater than 5 MGD; and,

- For the four POTW facilities with design flow greater than 10 MGD (which together comprise more than half of the total Massachusetts load to LIS), EPA based limits on concentrations achievable through optimization or upgrades.

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

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[3] CTDEEP, Interstate Environmental Commission, EPA, *2019 Long Island Sound Hypoxia Season Review*, available at: http://www.iec-nynjct.org/sites/default/files/2020-07/FINAL_LISound-Hypoxia-2019-Combined-Report_april2020.pdf

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

[5] *NPDES Permit Writer's Manual*, EPA-833-K-10-001, September 2010, page 2-17, available at: https://www.epa.gov/sites/production/files/2015-09/documents/pwm_2010.pdf

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

The basis for establishing mass-based effluent limits using facility design flow and 5, 8 and 10 mg/L as total nitrogen concentrations that facilities can meet by means of optimization or, for the four largest facilities, readily available treatment technology, meets the legal requirements of the CWA, as described in this General Response, section III, but was derived in order to balance the burden of treatment with the four largest facilities (currently generating approximately 51 to 58 % of the Massachusetts out-of-basin load) required to meet 5 mg/L concentration at design flow, and the remaining facilities with effluent limits that can be achieved through system optimization. In tiering the facilities, EPA considered the relative magnitude of flows from these facilities and observed that there was a significant divide between the four largest facilities and the remaining facilities (67 MGD for Springfield, 17.5 MGD for Holyoke, 17 MGD for Pittsfield and 15 MGD for Chicopee compared to 8.6 MGD for North Hampton). The four largest facilities contribute 53% of the design flow for the out-of-basin watershed. EPA also observed that three of these facilities are on the main stem of the Connecticut River and Pittsfield is on the mainstem of the Housatonic, so there is little or no attenuation of nitrogen. All of these factors, in EPA's technical judgment, warranted the further additional assurance of meeting water quality standards provided by a more stringent numeric cap in loading that may necessitate a facility upgrade, as opposed to limits achievable through optimization only. (EPA also notes that the four larger facilities will be able to spread the cost of any upgrade over a much larger user base).

While both 8 mg/L and 10 mg/L are within the range of total nitrogen concentrations achievable through low cost system modification,[6] EPA chose the next cut off at 5 MGD partly on the assumption POTWs of greater than that size are likely to already possess the technical capability, operator sophistication and administrative capacity needed to achieve more stringent effluent limitations via optimization requirements. (To this point, EPA took notice of the fact that the 5 MGD threshold has some regulatory significance under EPA's regulations implementing the NPDES program, specifically pretreatment, where EPA determined that facilities of that size are significantly large enough to require a pretreatment program). EPA, of course, also took into

[6] EPA, *Case Studies on Implementing Low-Cost Modifications to Improve Nutrient Reduction at Wastewater Treatment Plants*, EPA-841-R-15-004, August 2015, page 32.

account the relatively large magnitude of the loads associated with these facilities. Finally, EPA also took note of the fact that these facilities, though not serving communities as large as Springfield, Holyoke, Pittsfield and Chicopee, still have considerable ability to spread costs over user bases of considerable size.

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

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

Thus, in arriving at its tiering determination, EPA considered a series of technical and environmental factors within its expertise, and also took into account equitable considerations. EPA acknowledges that the chosen tiers are not the only way to divide the out-of-basin TN allocations, but was not presented with any alternatives that capped the existing load based on design flow through the imposition of enforceable permit limits. For example, EPA considered, and rejected, the option to apply a limit based on 8 mg/L effluent limit for all facilities with design flow greater than 1 MGD (at their respective design flows) because that would result in an increase in the current loading and place a greater burden on facilities that service relatively small communities. The combined design flow for the 29 MA POTW facilities with design flow greater than 1 MGD is 196 MGD. Of this combined design flow, 60%, or 117 MGD consists of the design flow for the four largest POTWs. Under the selected permitting approach, the proportion of the permitted load from the four largest facilities will be 60% of the combined permitted load for all 29 MA facilities, consistent with the proportion of design flow. If all POTWs with design flow over 1 MGD had a concentration-based limit of 8 mg/L (or a load based limit based on 8 mg/L and design flow), the proportion of the permitted load coming from the four largest facilities would increase from 60% of the total permitted load to 90%, shifting the burden of treatment significantly from larger to smaller facilities. In addition, the total permitted TN loading from those 29 facilities would increase from 8,100 lb/day under the chosen approach to 8,600 lb/day.

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

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

A. National Pollutant Discharge Elimination System Permits Generally

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

Massachusetts, Connecticut and New York. *See* CWA §§ 301(b)(1)(C), 401(a)(1)-(2); 40 CFR §§ 122.4(d), .44(d)(1).

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

B. Impaired Waters and Total Maximum Daily Load

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

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

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

In addition to TMDLs, the furthering of impairment is prohibited by the antidegradation provisions of State water quality standards. One of the principal objectives of the CWA,

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

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

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

C. The Relationship Between NPDES Permitting and TMDLs

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

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

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

> Regulations implementing the NPDES permitting program specifically contemplate that permit issuers will establish numeric permit limits when there is no TMDL or wasteload allocation. Subsection (vii) requires the permitting authority to "ensure" that effluent limits are consistent with "any *available* wasteload allocation." 40 CFR §

122.44(d)(1)(vii) (emphasis added). By using the phrase "any available," the regulations expressly recognize that a TMDL or wasteload allocation may not be available. This reading of the regulation is compelled by the Agency's interpretation set forth in the preamble to 40 CFR § 122.44(d)(1), which expressly outlines the relationship between subsections (vi) governing the setting of limits based on narrative criteria and (vii), which requires consistency with "any available" waste load allocation or TMDL:

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

54 Fed. Reg. 23,868, 23,878 (June 2, 1989) (emphases added). This formal Agency interpretation set forth in the preamble at the time the regulation was promulgated expresses the Agency's expectation that, while wasteload allocations may not uniformly be available, effluent limits must be established without waiting for a TMDL or wasteload allocation.

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

EPA, in addition, has the discretion to deviate from a wasteload allocation in a TMDL, if such a departure is warranted by the record. Significantly, WLAs are not permit limits *per se*; rather they still require translation into permit limits (*i.e.*, WQBELs). While section 122.44(d)(1)(vii) prescribes minimum requirements for developing WQBELs, it does not prescribe detailed procedures for their development. Permit limits need not be identical to the wasteload allocation established by the TMDL. *See In re City of Homedale Wastewater Treatment Plant*, 16 E.A.D. 421, 432 (EAB 2014) (upholding as "consistent with the assumptions and requirements of the…TMDL" permitting authority's decision to include monthly and weekly average effluent limits for phosphorus, rather than daily maximum contained in applicable TMDL). Rather, permit issuers have flexibility to determine appropriate effluent limits for permits within the parameters of the statutory and regulatory scheme. *See* 54 Fed. Reg. 23,868, 23,879 (June 2, 1989) (clarifying in preamble to 40 CFR § 122.44 that, in not imposing detailed procedures for establishing permit limits, EPA intended to "give[] the permitting authority the flexibility to

determine the appropriate procedures for developing water quality-based effluent limits"). Accordingly, the Board has rejected the argument that the EPA permit writer, in calculating permit limits for a wastewater treatment plant, erred by using a facility's current, known design flow in developing effluent limits, rather than higher flow rate referenced in the TMDL. *In re City of Moscow*, 10 E.A.D. 135, 146-48 (EAB 2001). Thus, "TMDLs are by definition maximum limits; permit-specific limits like those at hand, which are more conservative than the TMDL maxima, are not inconsistent with those maxima, or the WLA upon which they are based." *City of Moscow*, 10 E.A.D. at146-48. *See also City of Taunton v. EPA*, 895 F.3d 120, 139-40 (1st Cir. 2018) (upholding Agency's decision to establish necessary permit limits to comply with water quality standards based on available information at the time of permit reissuance (citing *Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 26 (1st Cir. 2012), *cert. denied*, 569 U.S. 972 (2013))), *cert. denied*, 139 S. Ct.___ (Feb. 19, 2019)).

Additionally, neither the CWA nor its implementing regulations provide a basis for concluding that a permitting authority cannot derive a limit based on *both* a TMDL *and* the relevant water quality standard if there is a record justification to warrant that approach. *In re City of Ruidoso Downs*, 17 E.A.D. 697, 733 (EAB 2019), *appeal docketed sub nom. Rio Hondo Land & Cattle Co. v. EPA*, No. 19-9531 (10th Cir. May 23, 2019); *see also* NPDES Surface Water Toxics Control Program, 54 Fed. Reg. 23,868, 23,879 (June 2, 1989) (incorporating language into the regulations that requires water quality-based effluent limits to be derived from water quality standards because that "is the only reliable method for developing water quality-based effluent limits that protect aquatic life and human health"). To be sure, Sections 301 and 303 have different purposes; each represents a distinct aspect of the CWA statutory scheme that is implemented under a separate set of regulatory authorities. *Compare* 40 CFR § 122.44 (containing NPDES permitting regulations) *with* 40 CFR § 130.7 (containing CWA section 303(d) and TMDL regulations). *See In re City of Taunton Dep't of Pub. Works*, 17 E.A.D. 105, 142-144 (EAB 2016), aff'd, 895 F.3d 120, 136 (1st Cir. 2018), cert. denied, 139 S. Ct. ___ (Feb. 19, 2019) (explaining distinction between CWA § 303(d) listing process and the NPDES permitting process, and observing that, "The 303(d) listing process represents a statutory *response* to water pollution" while "NPDES permitting under CWA section 301 applies to individual discharges and represents a more *preventative* component of the regulatory scheme in that, under section 301, no discharge is allowed except in accordance with a permit.") (emphasis in original). But TMDLs, wasteload allocations developed from TMDLs, and water quality-based effluent limits in permits share a common foundation in that all are required to take into account and assure that relevant water quality standards will be met. This conclusion is reflected in the applicable NPDES regulation at 40 CFR § 122.44(d)(1)(vii)(A)-(B):

> (vii) When developing water quality-based effluent limits under this paragraph the permitting authority shall ensure that:
>
> > (A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards; *and* [emphasis added]
> >
> > (B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and

> requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7.

These two provisions are not to be read in isolation; rather, as indicated by the word "and," these requirements must be read in conjunction with one another. This is in in keeping with other provisions of the NPDES regulations implementing the NPDES program and CWA § 301, including 40 CFR 122.4(a) ("No permit may be issued…[w]hen the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or promulgations promulgated under CWA'); 122.44(d)(4) (requiring NPDES permits to include "any requirements in addition to or more stringent than promulgated effluent limitation guidelines or standards under sections 301…of the CWA necessary to…[c]onform to applicable water quality requirements under section 401(a)(2) of CWA when the discharge affects a State other than the certifying State") and 122.44(d)(5) (requiring NPDES to "Incorporate any more stringent limitations, treatment standards, or schedule of compliance requirements established under Federal or State Law or regulations in accordance with section 301(b)(1)(C) of the CWA"). *See also* NPDES Surface Water Toxics Control Program, 54 Fed. Reg. 23,868, 23,879 (June 2, 1989) (incorporating language into the regulations that requires water quality-based effluent limits to be derived from water quality standards because that "is the only reliable method for developing water quality-based effluent limits that protect aquatic life and human health"). *See City of Taunton v. EPA*, 895 F.3d 120, 139-40 (1st Cir. 2018) (upholding EPA's decision to establish necessary permit limits to comply with water quality standards based on available information (citing *Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 26 (1st Cir. 2012), *cert. denied*, 569 U.S. 972 (2013).

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

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

Although the facility's discharge has not been assigned a specific WLA, it is still subject to the assumptions incorporated into the LIS TMDL under Section 303 of the Act, and implementing regulations, as well as compliance with applicable water quality standards under Section 301 of the Act. The nitrogen load limit in the permit is necessary to meet federal regulations at 40 CFR § 122.44(d)(1)(vii)(A), which as explained require that effluent limits be consistent the

assumptions and requirements of any available approved wasteload allocation, and 40 CFR § 122.44(d)(1)(vii)(B), which require compliance with state water quality standards. In its 2001 LIS TMDL approval letter and attached review memo, EPA acknowledged the TMDL assumption that a 25% reduction of the out-of-basin point source load was a reasonable, necessary condition for approving the LIS TMDL. It committed to using its NPDES authorities to implement this reduction. EPA discussed the out-of-basin nitrogen loads as follows:

> The TMDL identifies wasteload allocations for out-of-basin nitrogen loads (i.e., tributary loads) that would be achieved through the implementation of Phase IV reduction targets. Specifically, the Phase IV targets include a 25 percent reduction in point source nitrogen loads, based on the clear role that these sources have on water quality in Long Island Sound.
>
> As discussed above, EPA is not approving the out-of-basin nitrogen reductions as formal allocations but rather as reasonable assumptions on which the in-basin reductions are based. In this case, the states' estimated 25 percent reduction in nitrogen loads from point sources (primarily POTWs) is reasonable because this level of reduction has been demonstrated as feasible through Biological Nutrient Removal (BNR) retrofits of existing facilities. These low-cost retrofits were implemented at numerous Connecticut POTWs during Phase II of the Long Island Sound nitrogen reduction program. The reductions achieved by these retrofits support the predicted 25 percent reduction by out-of-basin sources. EPA believes that these estimates of future reductions make sense. Moreover, as discussed in the Reasonable Assurance section below, EPA is prepared to use its authorities when issuing NPDES permits to dischargers in Massachusetts and New Hampshire, and in overseeing permit issuance in Vermont, to translate the nitrogen reductions into facility specific requirements in order to achieve the overall 25 percent reduction level. EPA has already begun to include nitrogen monitoring requirements in Massachusetts permits.

Review Memo Section 5.B (page 13, emphasis added).[7] Therefore, EPA's approval of the 2000 TMDL included a commitment on EPA's part to use its NPDES permitting and oversight authorities to reasonably assure that the assumption regarding out-of-basin load reductions identified in the TMDL would occur, consistent with the regulatory requirements. In this and other documents, EPA refers to that commitment as the out-of-basin WLA, consistent with the language in the TMDL.

The annual loading effluent limit is consistent with the assumptions used to derive the WLA for both in-basin and out-of-basin dischargers in the LIS TMDL, because the maximum estimated total out-of-basin point source load is assured to be less than the out-of-basin WLA assumed by the 2000 TMDL. As TN increases may be driven by population increases (the estimated

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

wastewater TN loading is 10 pounds per person per year[8]), TN effluent limits are necessary to assure that the aggregate out-of-basin loading is not exceeded due to population. EPA anticipates that forthcoming out-of-basin permits in Massachusetts will include average annual loading nitrogen limits for facilities with design flow greater than 1 MGD, along with TN optimization requirements in all permits for dischargers greater than 100,000 gpd, and monitoring for all dischargers, in order to assure that TN loadings will be not increase over time to levels that exceed the WLA assumption in the TMDL.

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

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

> As long as narrative criteria are permissible…and must be enforced through limitations in particular permits, a permit writer will inevitably have some discretion in applying the criteria to a particular case. The general language of narrative criteria can only take the permit writer so far in her task. Of course, that does not mean that the language of a narrative criterion does not cabin the permit writer's authority at all; rather, it is an acknowledgement that the writer will have to engage in some kind of interpretation to determine what chemical-specific numeric criteria—and thus what effluent limitations—are most consistent with the state's intent as evinced in its generic standard.

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

> Where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:
>
> > (A) Establish effluent limits using a calculated numeric water quality criterion [emphasis added] for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use.

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

See also Upper Blackstone Water Pollution Abatement Dist. v. United States EPA, 690 F.3d at 23. Because both Connecticut and New York employ narrative water quality criteria for the relevant pollutants, EPA relied in the first instance on the TMDL (a sophisticated and resource-intensive modeling and technical effort representing the input of five states and EPA) as a translation of these criteria under 40 CFR § 122.44(d)(1)(vi), and supplemented that reliance with an analysis of subsequent water quality monitoring data and other information related to LIS nutrient-driven impairments.[9]

As the Board and First Circuit have held, EPA has a significant amount of flexibility within the bounds of the CWA in determining whether a particular discharge has a reasonable potential to cause an excursion above a water quality criterion. *In re City of Taunton Dep't of Pub. Works*, 17 E.A.D. 105, 144 (EAB 2016), aff'd, 895 F.3d 120, 136 (1st Cir. 2018), cert. denied, 139 S. Ct. ___ (Feb. 19, 2019)*; Upper Blackstone Water Pollution Abatement Dist. v. U.S. Envtl. Prot. Agency*, 14 E.A.D. 577, aff'd, 690 F.3d 9 (1st Cir. 2012), cert. denied, 133 S. Ct. 2382 (2013); *In re Town of Newmarket*, 16 E.A.D. 18 (EAB 2013); *In re City of Attleboro Wastewater Treatment Plant*, 14 E.A.D. 398 (EAB 2009). The requirement to impose a permit limit is triggered by a finding that the facility may discharge a pollutant at a level that "contributes" to or has the "reasonable potential" to cause a water quality standard violation. *Upper Blackstone*, 14 E.A.D. at 599 & n.29; *see also* 40 CFR § 122.44(d). To establish a "reasonable potential" the permitting authority must show some level of certainty greater than a mere possibility in the technical judgment of the permitting authority. *Upper Blackstone*, 14 E.A.D. at 599 n.29 (explaining that "'[r]easonable potential' requires some degree of certainty greater than a mere possibility, but it leaves to the permit writer's scientific and technical judgment how much certainty is necessary"). Additionally, the reasonable potential analysis must be based on "worst-case" effluent conditions. *Id*. at 599. Thus, as explained previously, this analysis requires "a precautionary approach when determining whether the permit must contain a water quality-based effluent limit for a particular pollutant," rather than "certainty of an existing causal link between a specific discharge and a particular violation of water quality standards" *Id*.

Although nitrogen driven impairments in LIS have been reduced, they have not been eliminated, and remain significant. In EPA's technical and scientific judgment, the current quantity of nitrogen in LIS exceeds the narrative and numeric nutrient-related criteria applicable to LIS, and existing uses are not being protected, based on analyses of water quality data and information in the administrative record.[10] The out-of-basin loads, whose magnitude is described above, necessarily contribute, or have the reasonable potential to contribute, to these violations. Designated uses for the marine waters of Long Island Sound (Class SA) include "habitat for marine fish, other aquatic life and wildlife." *See* RCSA § 22a-426-(f) and (g). Connecticut's WQS protect those uses from excessive nutrient pollution by means of the following narrative criteria: "The loading of nutrients, principally phosphorus and nitrogen, to any surface water

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

[10] *See* e.g. Long Island Sound Report Card 2018, at https://www.ctenvironment.org/wp content/uploads/2018/09/ReportCard2018-BestView.pdf

body shall not exceed that which supports maintenance or attainment of designated uses." Although there have been significant reductions in the size of the hypoxic zone in LIS due largely to in-basin point source TN reductions, LIS continues to be impaired.[11] As noted, it is undisputed that significant amounts of nitrogen from out-of-basin facilities are discharged to the LIS watershed (as much as 6 million pounds per year, based on the sum of the maximum annual discharge from each out-of-basin discharger from 2013 to 2017).

Since the LIS TMDL was approved by EPA in 2001, the study of water quality conditions in LIS and the nitrogen loadings that contribute to hypoxia and other impairments there has continued. Annual monitoring of hypoxia and dissolved oxygen conditions in Long Island continues, as most recently documented in the *2019 Long Island Sound Hypoxia Season Review*[12] which notes that while the area of hypoxia has been reduced, water quality standards have not yet been met.[13]

In 2015, the Long Island Sound Study (LISS)[14] updated its Long Island Sound Comprehensive Conservation and Management Plan (CCMP)[15] which sets watershed targets, implementation actions to meet those targets, and monitoring strategies. One of the objectives of the CCMP is to improve water quality by further reducing nitrogen pollution from sources that are more distant from the Sound,[16] such as wastewater treatment plants in Massachusetts.

A study published in 2008 used both measurements and mass-balance modeling to evaluate the potential for nitrogen attenuation in the main stem of the Connecticut River in April and August 2005. One of the reaches studied was a 55 km stretch of the Connecticut River in Massachusetts. The study found no nitrogen loss in that reach either in April or August, most likely due to the depth and higher velocities in the main stem of the river compared to the shallower, slower tributaries where previous models and studies had demonstrated varying degrees of nitrogen attenuation.[17]

In addition, subsequent studies refined the understanding of out-of-basin baseline nitrogen loading which suggest lower out-of-basin baseline point source loading to the Connecticut River than the 21,672 lb/day assumed in the 2000 TMDL. In 2013, the United States Geological Survey (USGS) published an estimation of the total nitrogen load to Long Island Sound from Connecticut and contributing areas to the north for October 1998 to September 2009.[18] Available

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[11] Long Island Sound Study, *A Healthier Long Island Sound: Nitrogen Pollution*, 2019, page 2.
[12] CTDEEP, Interstate Environmental Commission, EPA, *2019 Long Island Sound Hypoxia Season Review*, available at: http://www.iec-nynjct.org/sites/default/files/2020-07/FINAL_LISound-Hypoxia-2019-Combined-Report_april2020.pdf
[13] *2019 Long Island Sound Hypoxia Season Review* (page 13)
[14] The Long Island Sound Study (LISS) is a bi-state partnership, formed by EPA, New York and Connecticut in 1985, consisting of federal and state agencies, user groups, concerned organizations, and individuals dedicated to restoring and protecting the Long Island Sound. For more information see https://longislandsoundstudy.net/
[15] LISS, Long Island Sound Comprehensive Conservation and Management Plan 2015 Returning the Urban Sea to Abundance (CCMP), 2015.
[16] CCMP, page 19.
[17] Smith, Thor E., et al, *Nitrogen Attenuation in the Connecticut River, Northeastern USA; A Comparison of Mass Balance and N_2 Production Modeling Approaches, Biogeochemistry*, Mar., 2008, Vol. 87, No. 3 (Mar., 2008), pp. 311-323
[18] 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

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[19]. The SPARROW model estimated that 1,776.7 metric tons per year (MT/yr) (or annual average 10,820 lb/day) of total nitrogen was discharged to the Connecticut River from Massachusetts, New Hampshire and Vermont in 2002[20]. 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.[21,22] 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.[23]

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

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[19] 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

[20] 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.

[21] Moore (2011), page 968.

[22] 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.

[23] Maupin (2011), page 954.

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

> Existing and designated uses such as propagation of fish, shellfish and wildlife, recreation, public water supply, and agriculture, industrial use and navigation, and the water quality necessary for their protection is to be maintained and protected.[24]

As the Massachusetts point source dischargers are substantially upstream of the impaired receiving water EPA is applying an effluent limitation consistent with antidegradation requirements by capping the aggregate loading of nitrogen to the Long Island Sound from Massachusetts dischargers, to prevent further degradation of the receiving waters that would result from increased loading from the Springfield facility, given that nitrogen-driven cultural eutrophication, and the deleterious effects on existing and designated uses that attend this process, is still underway in LIS. This allows EPA to ensure that the nitrogen limits are applied fairly and in a technologically feasible manner while ensuring that antidegradation provisions of Connecticut's water quality standards are being met.

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

[24] Connecticut DEEP, 2011, Connecticut Water Quality Standards, page 2. Available at: https://portal.ct.gov/-/media/DEEP/water/water_quality_standards/wqsfinaladopted22511pdf.pdf.

will be adjusted as necessary in future permit cycles. This review and potential tightening of the conditions in NPDES permits is a basic feature of the CWA.

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

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

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

Several commenters argue that compliance with the nitrogen reductions assumed by the LIS TMDL preclude the imposition of further nitrogen controls on the facility, or rely on the closely-related proposition that EPA must await the development and approval of new, facility-specific WLAs for the out-of-basin POTWs prior to imposing effluent limitations, even if there is evidence of ongoing water quality impairments in the receiving waters (a fact not disputed on the permit record). These positions, however, are unfounded, as the Environmental Appeals Board and United States Court of Appeals for the First Circuit have repeatedly and unambiguously held that EPA need *not* await development of an EPA-approved, facility-specific WLA, or collection of new water quality data or creation of new models, in order to independently develop and impose a water quality-based effluent limitation stringent enough to satisfy CWA § 301 at the time of permit reissuance. *See City of Taunton v. U.S. Envtl. Prot. Agency,* 895 F.3d 120 (1st Cir. 2018), cert. denied, 139 S. CT. 120 (2019); *Upper Blackstone Water Pollution Abatement Dist. v. U.S. Envtl. Prot. Agency,* 690 F.3d 9 (1st Cir. 2012), cert. denied, 133 S. Ct. 2382 (2013).

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

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

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

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

recent data and information, given the structure of Section 301 and 402; in objecting to a proposed benchmark, the commenter states, "It does not represent the most recent data available to the Agency at the time of permit renewal.")

C. The optimization requirement is not vague and is within EPA's authority

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

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

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

EPA disagrees that the optimization is vague. Optimization has been defined, for example, as the process of identifying the most efficient or highest quality outcome, given current constraints, by maximizing positive factors and minimizing negative factors. A permittee applying this or other definition in common usage would not be at risk of arbitrary enforcement. Rather, this condition gives a person of ordinary intelligence a reasonable opportunity to know what is prohibited and comply with the requirement by considering objective factors, so that they may act accordingly. The operators of the facility, as evidenced their comments, have a deep and nuanced expertise in nutrient removal capabilities and constraints of the plant, and of the factors that impact plant performance.

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

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

Certain commenters suggest that *voluntary* reductions by the out-of-basin dischargers are sufficient to ensure compliance with applicable water quality standards under Section 301 of the

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

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

Some commenters argued that more data and modeling is necessary before determining whether further nitrogen controls from out-basin-dischargers would be necessary and, if so, the precise extent of those reductions. While there will always be an irreducible amount of uncertainty given the varied sources of nitrogen loading into LIS and the size and complexity of that water body, EPA is nevertheless obligated to exercise its scientific expertise and apply its technical judgment based on the information it has at the time of permit reissuance, which under the Act is called for at regular intervals not to exceed five years. *See Upper Blackstone*, 690 F.3d at 22 ("[N]either the CWA nor EPA regulations permit the EPA to delay issuance of a new permit indefinitely until better science can be developed, even where there is some uncertainty in the existing data."); *Ethyl Corp. v. EPA*, 541 F.2d 1, 28 (D.C.Cir.1976) (en banc) ("[R]ecognizing ... the developing nature of [the field].... [t]he [EPA] Administrator may apply his expertise to draw conclusions from suspected, but not completely substantiated, relationships between facts, from trends among facts, from theoretical projections from imperfect data, from probative preliminary data not yet certifiable as 'fact,' and the like."). But here, once again, what remains certain and undisputed on the record before EPA is the fact that large amounts of nitrogen from out-of-basin dischargers contribute to ongoing nitrogen water quality impairments in LIS. *Miami–Dade County v. EPA*, 529 F.3d 1049, 1065 (11th Cir.2008) (holding that the "EPA is compelled to exercise its judgment in the face of scientific uncertainty unless that uncertainty is so profound that it precludes any reasoned judgment"). In light of this fact and applicable case law construing the Act, EPA is more than entitled under the Act to proceed with the imposition of reasonable permit effluent limits, designed to achieve gross reductions, on the out-of-basin dischargers.

F. There has been sufficient opportunity for public comment

Finally, contrary to several commenters' assertions, the permitting approach underlying this proceeding has been subject to a very significant degree of public process, input and scrutiny.

MassDEP and EPA held two public meetings for Massachusetts permittees in the Long Island Sound watershed to explain the approach on June 7, 2019 in Springfield, MA and on June 21, 2019 in Greenfield, MA. EPA has received substantial public comments regarding proposed numeric TN effluent limits as a result of extended (60 days) public notice for the 2018 Draft Permit for Springfield Water and Sewer Commission and regarding numeric effluent limits. Doubling the time for comment required by regulations governing the permit issuance was reasonable, especially given that the permit is long expired, water quality impairments are ongoing (and tend to intensify over time when nutrient inputs continue unabated), and Springfield is a large contributor of nitrogen to LIS.

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 Athol, Massachusetts

is authorized to discharge from the facility located at

Athol Wastewater Treatment Plant
Jones Street
Athol, MA 01000

to receiving water named

Millers 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.[1]

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 June 30, 2008.

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

_____

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

[1] Pursuant to 40 Code of Federal Regulations (CFR) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, the permit will become effective upon the date of signature. Procedures for appealing EPA's Final Permit decision may be found at 40 CFR § 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 Millers 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[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Rolling Average Effluent Flow[5]	1.75 MGD[5]	---	---	Continuous	Recorder
Effluent Flow[5]	Report MGD	---	Report MGD	Continuous	Recorder
BOD_5	30 mg/L 438 lb/day	45 mg/L 657 lb/day	Report mg/L	1/week	Composite
BOD_5 Removal	≥ 85 %	---	---	---	Calculation
TSS	30 mg/L 438 lb/day	45 mg/L 657 lb/day	Report mg/L	1/week	Composite
TSS Removal	≥ 85 %	---	---	---	Calculation
pH Range[6]	6.5 - 8.3 S.U.			1/day	Grab
Escherichia coli[7] (April 1 – October 31)	126 cfu/100 mL	---	409 cfu/100 mL	1/week	Grab
Dissolved Oxygen (April 1 - October 31)	≥ 6.0 mg/L			1/day	Grab
Total Kjeldahl Nitrogen[8]	Report mg/L	---	Report mg/L	1/month	Composite
Nitrate + Nitrite[8]	Report mg/L	---	Report mg/L	1/month	Composite
Rolling Average Total Nitrogen[8]	146 lb/day	---	---	1/month	Composite
Total Nitrogen[8]	Report mg/L	---	Report mg/L	1/month	Composite
Total Phosphorus (April 1 – October 31)	0.52 mg/L	---	Report mg/L	1/week	Composite
Total Phosphorus (November 1 – March 31)	1.0 mg/L	---	Report mg/L	1/week	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Total Aluminum[9]	87 µg/L	---	Report µg/L	1/month	Composite
Total Copper	28.4 µg/L	---	18.7 µg/L	1/month	Composite
Total Lead[10]	0.4 µg/L	---	Report µg/L	1/month	Composite
Perfluorohexanesulfonic acid (PFHxS)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Whole Effluent Toxicity (WET) Testing[13,14]					
LC_{50}	---	---	≥ 100 %	1/quarter	Composite
C-NOEC	---	---	≥ 10 %	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[16]	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
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[15]	---	---	Report mg/L	1/quarter	Grab
pH[17]	---	---	Report S.U.	1/quarter	Grab
Temperature[17]	---	---	Report °C	1/quarter	Grab
Total Phosphorus[18] (April 1 – October 31)	---	---	Report mg/L	1/month	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
BOD_5	Report mg/L	---	---	2/month	Composite
TSS	Report mg/L	---	---	2/month	Composite
Perfluorohexanesulfonic acid (PFHxS)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[11,12]	---	---	Report ng/L	1/quarter	Composite

Perfluorooctanoic acid (PFOA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[11,12]	---	---	Report ng/L	1/quarter	Composite

Sludge Characteristic	**Reporting Requirements**			**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
Perfluorohexanesulfonic acid (PFHxS)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA)[11,12]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[11,12]	---	---	Report ng/L	1/quarter	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 CFR Part 136.

2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of "0" to all non-detects for that reporting period and report the average of all the results.

4. A "grab" sample is an individual sample collected in a period of less than 15 minutes.

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

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

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

7. The 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.

8. 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

   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 eleven months.

   For nitrogen optimization requirements, see Part I.G.1.

9. For the aluminum compliance schedule, see Part I.G.2.

10. Lead analysis must be completed using a test method in 40 CFR Part 136 that achieves a minimum level no greater than 0.5 µg/L. The compliance level shall be 0.5 µg/L. The limit shall become effective in accordance with the compliance schedule found at Part I.G.3.

11. This reporting requirement for the listed PFAS parameters takes effect 6 months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website. See https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods.

12. This reporting requirement for the listed PFAS parameters takes effect 6 months after EPA's multi-lab validated method for biosolids is made available to the public on EPA's CWA methods program website. See https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-biosolids and https://www.epa.gov/cwa-methods.

13. The Permittee shall conduct acute toxicity tests (LC_{50}) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols

specified in **Attachment A and B** of this permit. LC_{50} and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, only. Toxicity test samples shall be collected and tests completed during the same weeks each time of calendar quarters ending March 31, June 30, September 30, and December 31. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.

14. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A and B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.

15. 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.

16. 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.

17. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

18. See Part I.G.4 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 pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to

form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

4. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.

5. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.

6. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.

7. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

8. The Permittee must provide adequate notice to EPA-Region 1 and the State of the following:

   a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Part 301 or Part 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 CFR Part 122 Appendix A as amended) discharging process water; and

   b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

   c. For purposes of this paragraph, adequate notice shall include information on:

      i. The quantity and quality of effluent introduced into the POTW; and
      ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

9. Pollutants introduced into the POTW by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

B. UNAUTHORIZED DISCHARGES

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

2. Starting December 21, 2020, the Permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge, except SSOs that do not impact a surface water or the public, on a publicly available website, and it shall remain on the website

for a minimum of 12 months. Such notification shall include the location and description of the discharge; estimated volume; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue.

3. Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at https://www.mass.gov/how-to/sanitary-sewer-overflowbypassbackup-notification.

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance (O&M) of the sewer system shall be in compliance with the Standard Conditions of Part II and the following terms and conditions. The Permittee 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. Preventive 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

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

a. All sanitary sewer lines and related manholes;

b. All combined sewer lines, related manholes, and catch basins;

c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);

d. All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;

e. All pump stations and force mains;

f. The wastewater treatment facility(ies);

g. All surface waters (labeled);

h. Other major appurtenances such as inverted siphons and air release valves;

i. A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;

j. The scale and a north arrow; and

k. The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

5. Collection System O&M Plan

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

a. Within six (6) months of the effective date of the permit, the Permittee shall submit to EPA and the State:

(1) A description of the collection system management goals, staffing, information management, and legal authorities;
(2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
(3) A schedule for the development and implementation of the full Collection System O&M Plan including the elements in paragraphs b.1. through b.8. below.

b. The full Collection System O&M Plan shall be completed, implemented and submitted to EPA and the State within twenty-four (24) months from the effective date of this permit. The Plan shall include:

(1) The required submittal from paragraph 5.a. above, updated to reflect current information;
(2) A preventive maintenance and monitoring program for the collection system;

(3) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
(4) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
(5) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;
(6) A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts;
(7) An educational public outreach program for all aspects of I/I control, particularly private inflow; and
(8) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

6. Annual Reporting Requirement

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

a. A description of the staffing levels maintained during the year;

b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;

c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;

d. A map with areas identified for investigation/action in the coming year;

e. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit; and

f. If the average annual flow in the previous calendar year exceeded 80 percent of the facility's 1.75 MGD design flow (1.4 MGD), or there have been capacity related overflows, the report shall include:

(1) Plans for further potential flow increases describing how the Permittee will maintain compliance with the flow limit and all other effluent limitations and conditions; and

(2) A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.

D. ALTERNATE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the Permittee 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 CFR § 403.6 and 40 CFR 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 CFR § 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 CFR § 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 CFR § 403.6 and 40 CFR 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.

4. Beginning 6 months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website (See https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods) the Permittee shall commence annual sampling of the following types of industrial discharges into the POTW:

   - Platers/Metal Finishers
   - Paper and Packaging Manufacturers
   - Tanneries and Leather/Fabric/Carpet Treaters
   - Manufacturers of Parts with Polytetrafluroethlylene (PTFE) or teflon type coatings (i.e. bearings)
   - Landfill Leachate
   - Centralized Waste Treaters
   - Contaminated Sites

- Fire Fighting Training Facilities

Sampling shall be for the following PFAS chemicals:

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

The Industrial discharges sampled and the sampling results shall be summarized and submitted to EPA and copied to the state as an electronic attachment to the March discharge monitoring report due April 15th of the calendar year following the testing.

F. SLUDGE CONDITIONS

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 CFR Part 503, which prescribe "Standards for the Use or Disposal of Sewage Sludge" pursuant to § 405(d) of the CWA, 33 U.S.C. § 1345(d).

2. If both state and federal requirements apply to the Permittee's sludge use and/or disposal practices, the Permittee shall comply with the more stringent of the applicable requirements.

3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge use or disposal practices:

   Land application - the use of sewage sludge to condition or fertilize the soil

   Surface disposal - the placement of sewage sludge in a sludge only landfill

   Sewage sludge incineration in a sludge only incinerator

4. The requirements of 40 CFR Part 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 CFR § 503.4. These requirements also do not apply to facilities which do not use or dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g., lagoons, reed beds), or are otherwise excluded under 40 CFR § 503.6.

5. The 40 CFR Part 503 requirements include the following elements:

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

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

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

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

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

6. Under 40 CFR § 503.9(r), the Permittee is a "person who prepares sewage sludge" because it "is … the person who generates sewage sludge during the treatment of domestic sewage in a treatment works …." If the Permittee contracts with *another* "person who prepares sewage sludge" under 40 CFR § 503.9(r) – i.e., with "a person who derives a material from sewage sludge" – for use or disposal of the sludge, then compliance with Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the Permittee does not engage a "person who prepares sewage sludge," as defined in 40 CFR § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR § 503.7. If the ultimate use or disposal method is land application, the

[2] 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

Permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 CFR § 503 Subpart B.

7. The Permittee shall submit an annual report containing the information specified in the 40 CFR Part 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by February 19 (see also "EPA Region 1 - NPDES Permit Sludge Compliance Guidance"). Reports shall be submitted electronically using EPA's Electronic Reporting tool ("NeT") (see "Reporting Requirements" section below).

G. SPECIAL CONDITIONS

1. Total Nitrogen

The Permittee shall continue to optimize the treatment facility operations relative to total nitrogen ("TN") removal through measures such as continued ammonia removal, maximization of solids retention time while maintaining compliance with BOD_5 and TSS limits, and/or other operational changes designed to enhance the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen.

The Permittee shall submit an annual report to EPA and the MassDEP 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.

2. Aluminum Compliance Schedule

The effluent limit for total aluminum shall be subject to a schedule of compliance whereby the limit takes effect three years after the effective date of the permit. For the period starting on the effective date of this permit and ending three (3) years after the effective date, the Permittee shall report the monthly average and daily maximum aluminum concentration on the monthly DMR. After this initial three (3) year period, the Permittee shall comply with the monthly average total aluminum limit of 87 µg/L ("final aluminum effluent limit"). The Permittee shall submit an annual report due by January 15th of each of the first three (3) years of the permit that will detail its progress towards meeting the final aluminum effluent limit.

If during the three-year period after the effective date of the permit, Massachusetts adopts revised aluminum criteria, then the Permittee may request a permit modification, pursuant to 40 CFR § 122.62(a)(3), for a further delay in the effective date of the final aluminum effluent limits. If new criteria are approved by EPA before the effective date of the final aluminum effluent limit, the Permittee may apply for a permit modification, pursuant to 40 CFR § 122.62(a)(3), to revise the time to meet the final aluminum effluent limit and/or for revisions to the permit based

on whether there is reasonable potential for the facility's aluminum discharge to cause or contribute to a violation of the newly approved aluminum criteria.[3]

3. Lead Compliance Schedule

The total recoverable lead limit will become effective 24 months from the effective date of the permit. For the period starting on the effective date of this permit and ending 24 months after the effective date, the Permittee shall report the monthly average and daily maximum lead concentration on the monthly DMR. The Permittee shall evaluate the ability of the existing treatment facilities, with small capital improvements, to achieve the monthly average lead limitation of 0.4 µg/L (the approved analytical methods have a minimum level of 0.5 µg/L; therefore, 0.5 µg/L will be the compliance level).

a. The Permittee shall submit a status report 12 months from the effective date of the permit

b. The Permittee shall submit a final report 24 months from the effective date of the permit that summarizes the evaluation and includes a determination of whether the existing facility is capable of reliably achieving these effluent limitations. The evaluation shall include an analysis of optimization of plant performance, including potential chemical dosing and an analysis of potential source reductions from industrial wastewater, septage, and Athol's drinking water supply.

c. The Permittee shall implement the findings of the final report in order to optimize lead removal and comply with the lead limit.

   If the Permittee determines that it is unable to comply without a facility upgrade, then the Permittee may request an enforcement order that allows for an extension of the compliance schedule to accommodate that upgrade.

4. Phosphorus Ambient Monitoring

   Beginning in the month of April in the first odd numbered year following permit issuance, that occurs six or more months after permit issuance, and during odd numbered years thereafter, the Permittee shall collect monthly samples from the receiving water at a location upstream of the facility and analyze the samples for total phosphorus. 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 MassDEP at least three months prior to the first planned sampling date as part of a Quality Assurance Project Plan (QAPP) for review and MassDEP approval. The QAPP shall be submitted in accordance with

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3 The final effluent limit of 87 µg/L for aluminum may be modified prior to the end of the three-year compliance schedule if warranted by the new criteria and a reasonable potential analysis and consistent with anti-degradation requirements. Such a modification would not trigger anti-backsliding prohibitions, as reflected in CWA 402 § (o) and 40 CFR § 122.44(l), provided that such modification is finalized before the final limit takes effect.

Part I.H.2. and Part I.H.6. For the years that monitoring is not required, the Permittee shall report NODI code "9" (conditional monitoring not required).

H. REPORTING REQUIREMENTS

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

1. Submittal of DMRs Using NetDMR

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

2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. *See* Part I.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; and
(6) Report received from existing industrial user.

b. These reports, information, and requests shall be submitted to EPA WD electronically at 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:

   b. 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/.

   c. 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

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

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

An electronic copy of the QAPP described in Part I.G.5. shall be submitted to Suzanne Flint (suzanne.flint@mass.gov) in the Massachusetts Department of Environmental Protection Watershed Planning Program.

7. Verbal Reports and Verbal Notifications

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

   b. Verbal reports and verbal notifications shall be made to:

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

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

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^{o}C.

IV. DILUTION WATER

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

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

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

and

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

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

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

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

V. TEST CONDITIONS

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

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS[1]

1.	Test type	Static, non-renewal
2.	Temperature (^{o}C)	20 $\pm$ 1^{o}C or 25 $\pm$ 1^{o}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 Selenastrum to newly released organisms while holding prior to initiating test
12.	Aeration	None
13.	Dilution water[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} 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	$\geq$ 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

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[1]

1.	Test Type	Static, non-renewal
2.	Temperature (^{o}C)	20 $\pm$ 1 ^{o} C or 25 $\pm$ 1^{o}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[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} 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	$\geq$ 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

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.

Parameter	Effluent	Receiving Water	ML (mg/l)
Hardness[1]	x	x	0.5
Total Residual Chlorine (TRC)[2, 3]	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.

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)[1]

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[1] Updated July 17, 2018 to fix typographical errors.

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

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

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

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

(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

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

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.

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

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

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

"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 96-483and 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

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

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_{50} means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 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

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).

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

(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

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

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.

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_2	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^3/day	Cubic meters per day
DO	Dissolved oxygen

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_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	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: MA0100005

PUBLIC NOTICE START AND END DATES: July 16, 2020 – August 14, 2020

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Athol
Department of Public Works
584 Main Street
Athol, MA 01331

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Athol Wastewater Treatment Plant
Jones Street
Athol, MA 01364

RECEIVING WATER AND CLASSIFICATION:

Millers River (MA35-04)
Connecticut River Watershed
Class B (Warm Water Fishery)

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1.0 Proposed Action

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

The permit currently in effect was issued on June 30, 2008 with an effective date of August 1, 2008 and expired on July 31, 2013 (the "2008 Permit"). The Permittee filed an application for permit reissuance with EPA dated January 10, 2013, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on March 29, 2013, the Facility's 2008 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA and the State conducted a site visit on January 15, 2020.

2.0 Statutory and Regulatory Authority

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

"Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve the statutory mandates of Section 301 and 402. *Arkansas v. Oklahoma,* 503 U.S. 91, 105 (1992). *See also* 40 CFR §§ 122.4(d), 122.44(d)(1), 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 CFR Parts 122, 125, 131.

2.1 Technology-Based Requirements

Technology-based limitations (TBELs), generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted. *See* CWA § 301(b). As a class, publicly owned treatment works (POTWs) must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 301(b)(1)(B). The performance level for POTWs is referred to as "secondary treatment." Secondary treatment is comprised of technology-based requirements

expressed in terms of biochemical oxygen demand (BOD_5), total suspended solids (TSS) and pH. *See* 40 CFR Part 133.

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

2.2 Water Quality-Based Requirements

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

2.2.1 Water Quality Standards

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the State. *See* CWA § 303 and 40 CFR § 131.10-12. Generally, WQSs consist of three parts: 1) the designated use or uses assigned for a water body or a segment of a water body; 2) numeric or narrative water quality criteria sufficient to protect the assigned designated use(s); and 3) antidegradation requirements to ensure that once a use is attained it will not be degraded and to protect high quality and National resource waters. *See* CWA § 303(c)(2)(A) and 40 CFR § 131.12. The applicable State WQSs can be found in 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00).

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

When permit effluent limitation(s) are necessary to ensure that the receiving water meets narrative water quality criteria, the permitting authority must establish effluent limits in one of the following three ways: 1) based on a "calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use," 2) based on a "case-by-case basis" using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant

information; or, 3) in certain circumstances, based on use of an indicator parameter. *See* 40 CFR § 122.44(d)(1)(vi)(A-C).

2.2.2 Antidegradation

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

Massachusetts' statewide antidegradation policy, entitled "Antidegradation Provisions" is found in the State's WQSs at 314 CMR 4.04. Massachusetts guidance for the implementation of this policy is in an associated document entitled "Implementation Procedure for the Anti-Degradation Provisions of the State Water Quality Standards," dated October 21, 2009. According to the policy, no lowering of water quality is allowed, except in accordance with the antidegradation policy, and all existing in-stream uses, and the level of water quality necessary to protect the existing uses, of a receiving water body must be maintained and protected.

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

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

The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. To meet this goal, the CWA requires states to develop information on the quality of their water resources and report this information to EPA, the U.S. Congress, and the public. To this end, EPA released guidance on November 19, 2001, for the preparation of an integrated "List of Waters" that could combine reporting elements of both § 305(b) and § 303(d) of the CWA. The integrated list format allows states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories: 1) unimpaired and not threatened for all designated uses; 2) unimpaired waters for some uses and not assessed for others; 3) insufficient information to make assessments for any uses; 4) impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) impaired or threatened for one or more uses and requiring a TMDL.

A TMDL is a planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL essentially provides a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from point sources and non-point sources, determines the maximum load of the pollutant that the water body can tolerate while still attaining WQSs for the designated uses, and allocates that load among to the various sources, including point source discharges, subject to NPDES permits. *See* 40 CFR § 130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation (WLA) for a NPDES permitted discharge, the effluent limitation in the permit must be "consistent with the assumptions and requirements of any available WLA". 40 CFR § 122.44(d)(1)(vii)(B).

2.2.4 Reasonable Potential

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

If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQSs, the permit must contain water quality-based effluent limitations (WQBELs) for that pollutant. *See* 40 CFR § 122.44(d)(1)(i).

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQSs or the State waives, or is deemed to have waivered, its right to certify. *See* 33 U.S.C. § 1341(a)(1). Regulations governing state certification are set forth in 40 CFR §§ 124.53 and 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

If the State believes that conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307 or 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 CFR Part 124.

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

It should be noted that under CWA § 401, EPA's duty to defer to considerations of state law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by state law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." 40 CFR § 124.55(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." *Id.* EPA regulations pertaining to permit limitations based upon WQS and State requirements are contained in 40 CFR §§ 122.4 (d) and 122.44(d).

2.3 Effluent Flow Requirements

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

Generally, EPA uses effluent flow both to determine whether an NPDES permit needs certain effluent limitations and to calculate the limitations themselves. EPA practice is to use effluent flow as a reasonable and important worst-case condition in EPA's reasonable potential and WQBEL calculations to ensure compliance with WQSs under § 301(b)(1)(C). Should the effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations may not be sufficiently protective (i.e. might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at the lower discharge flow may have reasonable potential at a higher flow due to the decreased dilution. In order to ensure that the assumptions underlying 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.[1] In this regard, the effluent flow limitation is a component of WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit is also necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

The limitation on wastewater effluent flow is within EPA's authority to condition a permit to carry out the objectives of the Act. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR

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

§§ 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 CFR § 122.41(e), the permittee is required to properly operate and maintain all facilities and systems of treatment and control. Operating the facilities wastewater treatment systems as designed includes operating within the facility's design wastewater effluent flow.

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

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

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

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

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 CFR §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the 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 CFR Part 122.

NPDES permits require that the approved analytical procedures found in 40 CFR Part 136 be used for sampling and analysis unless other procedures are explicitly specified. Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*.[2] This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 CFR § 122.21(e)(3) (completeness), 40 CFR § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 CFR § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

- The method minimum level[3] (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or

- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or

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

2.4.2 Reporting Requirements

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

[2] Fed. Reg. 49,001 (Aug 19, 2014).
[3] 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).

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

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 CFR Part 122.

2.6 Anti-backsliding

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

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2008 Permit unless specific conditions exist to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The location of the treatment plant and Outfall 001 to the Millers River are shown in Figure 1. The longitude and latitude of the outfall are 42º 35'10.3" N and 72º 14'33.2" W.

The Athol Wastewater Treatment Plant (WWTP) is a secondary wastewater treatment facility that is engaged in the collection and treatment of municipal wastewater. Currently, the Facility serves approximately 10,000 residents in the Town of Athol (about 90% of the town's population).

[4] https://netdmr.zendesk.com/hc/en-us/articles/209616266-EPA-Region-1-NetDMR-Information

The Facility has a design flow of 1.75 MGD, the annual average daily flow reported in the 2007 application was 1.086 MGD and the average for the last 5 years has been 0.860 MGD. The system is a separate system with no combined sewers. Wastewater is comprised of mostly domestic sewage with some commercial sewage and some septage. There are two categorical industrial users (CIUs) which discharge to the Athol WWTF: L.S. Starrett, a manufacturer of precision tools; and Filtrona, an extruder for medical tubing.

The Permittee does not have any major industries contributing industrial wastewater to the WWTP, and thus is not required to have a pretreatment program.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the permittee from October 2014 through September 2019 is provided in Appendix A of this Fact Sheet.

3.1.1 Treatment Process Description

The Athol Wastewater Treatment Plant (WWTP) is an activated sludge treatment plant. Influent enters the Facility and flows through a mechanical screen, bar screen, and grit chamber. The influent is then split into four (4) aeration basins, where activated sludge is introduced. Magnesium hydroxide is pumped into the aeration basins for pH control. Polyaluminum chloride is added to the wastewater just prior to the clarifiers for phosphorus removal. Flows are then split into two secondary clarifiers. Effluent from the secondary clarifiers is then disinfected by ultraviolet light and then flows into the Millers River. A flow diagram of the WWTP is shown in Figure 2.

Waste sludge is pumped from the clarifiers' return sludge lines to a sludge gravity thickener and polymers to aid in dewatering are added before it goes to settling tanks. The dried sludge is transported under contract with a private hauler for incineration. The average mass of sludge shipped for incineration in 2013 was 252.63 dry metric tons.

3.1.2 Collection System Description

The Athol WWTP is served by a separate sewer system. A separate sanitary sewer conveys domestic, industrial and commercial sewage, but not stormwater. It is part of a "two pipe system" consisting of separate sanitary sewers and storm sewers. The two systems have no interconnections; the sanitary sewer leads to the wastewater treatment plant and the storm sewers discharge to local waterbodies.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Athol WWTP discharges through Outfall 001 into Millers River, a tributary of the Connecticut River, within Segment MA34-04. This segment is 18.5 miles in length and travels from the South Royalston USGS Gage to the Erving Center WWTP in Erving, MA. The Millers River flows into the Connecticut River, which then flows to the Long Island Sound.

Millers River is classified as a Class B warm water fishery in the Massachusetts WQSs, 314 Code of Massachusetts Regulations ("CMR") 4.05(3)(b). The MA WQS at 314 CMR 4.05(3)(b) state that These waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment ("Treated Water Supply"). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.

Millers River is listed in the final *Massachusetts Year 2016 Integrated List of Waters* ("303(d) List") as a Category 5 "Waters Requiring a TMDL.[5] The pollutant requiring a TMDL is PCBs in fish tissue. To date no TMDL has been developed for this segment for any of the listed impairments..

According to the *Miller River Water Quality Assessment Report*[6], this water body segment is impaired for aquatic life and fish consumption, attaining uses for aesthetics, while designated uses for primary and secondary recreation have not been assessed. Millers River is included under the Massachusetts Department of Public Health statewide fish consumption advisory for freshwater fish for mercury.[7]

In 1975, MassDEP, then the Massachusetts Department of Environmental Quality Engineering (DEQE) published the Millers River Basin Water Quality Management Plan, which included a wasteload allocation (WLA) for the Athol WWTP. Given the limited assimilative capacity of the receiving waters, limits more stringent than secondary treatment requirements were required for the parameters in Table 1.

Table 1: Limits in 1975 MA DEQE Wasteload Allocation

Flow (MGD)	BOD_5 (mg/L)	TSS (mg/L)	Settleable Solids (mL/L)	Fecal Coliform (#/100 mL)	Total Coliform (#/100 mL)
2.25	30	30	0.1	200	1000

4.2 Ambient Data

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

[5] *Massachusetts Year 2016 Integrated List of Waters,* MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts, December 2019.
[6] Water Quality Assessment Report. MassDEP Division of Watershed Management, Worcester, Massachusetts; March 2004, Report Number 35-AC-1
[7] Freshwater Fish Consumption Advisory, Massachusetts Department of Public Health, Bureau of Environmental Health; https://www.mass.gov/lists/fish-consumption-advisories#advisories-

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[8]. 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, MA 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) *See* 314 CMR 4.03(3)(a).

MassDEP calculated the 7Q10 for the Millers 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 Millers River (Station Number 0116650 at Erving, Mass.[9]). EPA determined the estimated drainage area for the Facility using the USGS StreamStats for Massachusetts watershed delineation tool.[10] The dilution factor (DF) was calculated using the design flow (Q_d) and the critical flow in the receiving water upstream of the discharge (Q_s) as follows:

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

Where:

Q_s = 7Q10 in million gallons per day (MGD) = 20.5 MGD
Q_d = Design flow in MGD = 1.75 MGD

Therefore:

DF = (20.5 MGD + 1.75 MGD) / 1.75 MGD = 12.7

MA WQSs specify that "the Department will establish extreme hydrological conditions at which aquatic life criteria must be applied on a case-by-case basis. In all cases existing uses shall be protected and the selection shall not interfere with the attainment of designated uses". 314 CMR 4.03(3)(c). MassDEP determined that the dilution factor for the Facility is 12.7.

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

[8] EPA Permit Writer's Manual, Section 6.2.4
[9] USGS Webpage for Station 01166500; https://waterdata.usgs.gov/usa/nwis/uv?01166500
[10] USGS StreamStats for Massachusetts Interactive Map: http://water.usgs.gov/osw/streamstats.massachusetts.html

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 October 2014 to September 2019 (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)**. Reasonable Potential Analysis is included in Appendix B and results are discussed in the sections below.

5.1.1 Effluent Flow

The effluent flow limit in the 2008 Permit is 1.75 MGD, as a rolling annual average flow, based on the Facility's design flow. The DMR data during the review period shows that there have been no violations of the flow limit.

The Draft Permit continues the 1.75 MGD flow limit from the 2008 Permit. The Draft Permit requires that flow be measured continuously and that the rolling annual average flow, as well as the average monthly and maximum daily flow for each month be reported. The rolling annual average flow is calculated as the average of the flow for the reporting month and 11 previous months.

5.1.2 Biochemical Oxygen Demand (BOD_5)

5.1.2.1 BOD_5 Concentration Limits

The BOD_5 limits in the 2008 Permit were based on the secondary treatment standards in 40 CFR § 133.102; the average monthly limit is 30 mg/L and the average weekly limit is 45 mg/L. The DMR data during the review period shows that there have been no violations of BOD_5 concentration limits.

The Draft Permit proposes the same BOD_5 concentration limits as in the 2008 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains once per week.

5.1.2.2 BOD_5 Mass Limits

The mass-based limits of 438 lb/day (average monthly) and 657 lb/day (average weekly) were based on EPA's secondary treatment standards and the design flow of the Facility.

The DMR data from the review period shows that there have been no violations of BOD_5 mass limits.

The mass based BOD_5 limits have been calculated at the design flow of 1.75 MGD, as shown below.

BOD_5 Mass Loading Calculations:

> Calculations of maximum allowable loads for average monthly and average weekly BOD_5 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 = 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 * 1.75 MGD * 8.345 = 438 lb/day
Average Weekly: 45 mg/L * 1.75 MGD * 8.345 = 657 lb/day

The mass-based limits and sampling frequency of once per week are continued in the draft permit.

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 TSS limits in the 2008 Permit were based on the secondary treatment standards in 40 CFR § 133.102; the average monthly limit is 30 mg/L and the average weekly limit is 45 mg/L. The DMR data during the review period shows that there have been no violations of TSS concentration limits.

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

5.1.3.2 TSS Mass Limits

The mass-based limits of 438 lb/day (average monthly) and 657 lb/day (average weekly) were based on EPA's secondary treatment standards and the design flow of the Facility.

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

The mass based TSS limits have been calculated at the design flow of 1.75 MGD, as shown below.

TSS Mass Loading Calculations:

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

$$L = C_d * Q_d * 8.345$$

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

Winter Limits:
Average Monthly: 30 mg/L * 1.75 MGD * 8.345 = 438 lb/day
Average Weekly: 45 mg/L * 1.75 MGD * 8.345 = 657 lb/day

The mass-based limits and sampling frequency of once per week are continued in the draft permit.

5.1.4 Eighty-Five Percent (85%) BOD_5 and TSS Removal Requirement

In accordance with the provisions of 40 CFR § 133.102(a)(3), and (b)(3), the 2008 Permit requires that the 30-day average percent removal for BOD_5 and TSS be not less than 85%. The DMR data during the review period shows that the median BOD_5 and TSS removal percentages are 99% and 99%, respectively. There were no violations of the 85% removal requirement for BOD_5 or TSS during that period.

The requirement to achieve 85% BOD_5 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 Massachusetts WQS at 314 CMR 4.05(3)(b)(3), the Permit requires that the pH of the effluent is not less than 6.5 or greater than 8.3 standard units at any time. The monitoring frequency is once per day. The DMR data during the review period show that there have been no violations of the pH limitations.

The pH requirements in the 2008 Permit are carried forward into the Draft Permit as there has been no change in the WQSs with regards to pH. The limitations comply with CWA 301(b)(1)(C) and 40 CFR § 122.44(d).

5.1.6 Bacteria

The 2008 Permit includes seasonal (April 1 – October 31) effluent limitations for bacteria using both fecal coliform bacteria and *Escherichia coli* (*E. coli*) as the indicator species with the following limits:

Fecal Coliform: 200 cfu/100mL (monthly avg), 400 cfu/100mL (daily max)

E. coli: 126 cfu/100mL (monthly avg), 409 cfu/100mL (daily max)

These limits were based on the applicable WQS at the time the permit was issued, and new E. Coli limits. The fecal coliform limits were only effective for one year from the effective date of the 2008 permit and expired in 2009. The E. Coli limits became effective after one year from the effective date of the 2008 permit and have been in effect since 2009. There were no violations during the review period.

Consistent with Massachusetts' current bacteria criteria at 314 CMR 4.05 (3)(b) 4.b, which were approved by EPA on September 19, 2007, the bacteria limits proposed in the Draft Permit are 126 colonies E. coli/100 mL as a geometric mean and 409 colonies E. coli/100 mL maximum daily value (this is the 90% distribution of the geometric mean of 126 colonies/100 ml[11]). The bacteria limits apply during warm months (April 1 – October 31) and the monitoring frequency is once per week. Due to the change in the Massachusetts bacteria criteria, there are no effluent limits or monitoring requirements for fecal coliform in the Draft Permit. The transition from fecal coliform to *E. coli* bacteria testing was addressed in the 2008 Permit.

5.1.7 Dissolved Oxygen

The 2008 Permit includes a dissolved oxygen (DO) minimum limit of 6.0 mg/L. This requirement assures that dissolved oxygen levels remain above the state water quality standard of 6.0 mg/L, particularly during low flow periods.

[11] MassDEP, "Draft 6/25/2007 Guidance on Implementation of Proposed Primary Contact Recreation Bacteria in Massachusetts Surface Water Quality Standards, 314 CMR 4.00," 2007, p. 11, Table 2.

The DMR data during the review period show that there have been no violations of the DO limitation.

As there have been no changes to the dissolved oxygen water quality standards, the Draft Permit carries forward the dissolved oxygen limit of 6.0 mg/L.

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 2008 Permit does not include ammonia limits, but the Permittee was required to monitor and report effluent ammonia on the monthly DMR and both effluent and ambient ammonia concentrations on a quarterly basis as part of the Whole Effluent Toxicity (WET) testing. Ambient data, taken upstream of the Athol outfall in the Millers River, is presented in Appendix A and shows that ammonia was detected once at a concentration of 0.12 mg/L, and the rest of the dates it was not detected, with a detection level of 0.1 mg/L.

The ammonia criteria in EPA's *National Recommended Water Quality Criteria,* 2002 (EPA 822-R-02-047) document are included by reference in the Massachusetts WQS (*See* 314 CMR 4.05(5)(e)). The freshwater acute criterion is dependent on pH and the freshwater chronic criterion is dependent on pH, temperature and whether salmonids and/or early life stages of fish are present in the receiving water.

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

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 6.6 S.U. Because the Massachusetts Department of Fisheries and Wildlife stocks rainbow trout (a salmonid) in the Millers River near the outfall, EPA has assumed that salmonids are 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 no reasonable potential, so the Draft Permit does not require ammonia limits. Effluent and ambient monitoring for ammonia will continue to be required in the quarterly WET tests.

5.1.9 Nutrients

Nutrients are compounds containing nitrogen and phosphorus. Although nitrogen and

phosphorus are essential for plant growth, high concentrations of these nutrients can cause eutrophication, a condition in which aquatic plant and algal growth is excessive. Plant and algae respiration and decomposition reduces dissolved oxygen in the water, creating poor habitat for fish and other aquatic animals. Recent studies provide evidence that both phosphorus and nitrogen can play a role in the eutrophication of certain ecosystems. However, typically phosphorus is the limiting nutrient triggering eutrophication in fresh water ecosystems and nitrogen in marine or estuarine ecosystems. Thus, for this permit, both phosphorus and nitrogen are nutrients of concern evaluated below.

5.1.9.1 Total Nitrogen

The Athol WWTP discharges to the Millers River, which drains to the Connecticut River, and eventually to the Long Island Sound (LIS). 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 LIS. 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 2: Estimated Out-of-Basin Point Source Nitrogen Loadings to the Connecticut, Housatonic and Thames Rivers Watersheds below) including those from publicly and privately owned treatment works, or wastewater treatment plants (WWTPs), and industrial dischargers. Recent estimated point source maximum annual average total nitrogen loadings for the Connecticut, Housatonic, and Thames, Rivers, respectively are 14,395 lb/day, 1,628 lb/day, and 666 lb/day, based on 2013 through 2017 information and including all non-stormwater permitted dischargers in the watershed.

Table 2: Estimated Out-of-Basin Point Source Nitrogen Loads to the Connecticut, Housatonic and Thames River Watersheds

Basin	1998 Baseline Loading[1] (lb/day)	TMDL WLA[2] (lb/day)	Maximum Loading 2013 to 2017 (lb/day)[3]
Connecticut River	21,672	16,254	14,395[4]
Housatonic River	3,286	2,464	1,628[5]
Thames River	1,253	939	666[6]
Totals	**26,211**	**19,657**	**16,689**

[1] Estimated loading from TMDL, (see Appendix 3 to CT DEEP "Report on Nitrogen Loads to Long Island Sound," April 1998)
[2] Reduction of 25% from baseline loading
[3] Estimated loading from 2013-2017 Discharge Monitoring Report data
[4]Highest load from the Connecticut River occurred in 2013
[5]Highest load from the Housatonic River occurred in 2014
[6]Highest load from the Thames River occurred in 2015

As can be seen in Table 2, 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 2008 Permit required monthly monitoring for concentration and mass load of total nitrogen, total Kjeldahl nitrogen, total ammonia nitrogen, and nitrite + nitrate. Using the concentration and average monthly flow data, the calculated annual average total nitrogen loading from the Athol facility ranged from 39 to 76 lb/day from 2014 to 2018 and averaged 51 lb/day.

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[12] 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[13], provisions to prevent further degradation of receiving waters that are already impaired[14] and consideration of applicable water quality requirements of downstream states[15].

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 a total nitrogen rolling annual average mass-based loading limit (in lb/day) and a requirement 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) MGD that discharge to the LIS watershed in Massachusetts.

Rather than approach this complex permitting task on an ad hoc basis, EPA instead fashioned a systemic permitting approach designed to comprehensively regulate nitrogen loading from out-

[12] 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.
[13] *See* 40 CFR §122.44(d)(1)(vii)(B)
[14] *See* 40 CFR § 122.44(d)(1)(vii)(B), 40 CFR § 131.12(a)(1), and 314 CMR 4.04(1)
[15] *See* 40 CFR § 122.44(d)(4) and CWA section 401(a)(2)

of-basin nitrogen sources on a gross, basin-level scale. EPA addressed the existing TN loading to ensure achievement of the following overarching objectives:

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

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

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

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

- EPA estimated the current maximum out-of-basin annual point source load using data for the five years prior to the year of the Draft Permit, consistent with Region 1's ordinary practice of using the most recent five years of data in the derivation of effluent limits for permits, which is in accordance with the recommendation in EPA guidance to use three to five years and, by use of the longer timeframe, is intended to more fully capture a representative data set (see estimate of recent effluent loadings in Appendix C);
- It prioritized effluent limits for major POTW facilities with design flow greater than 1 MGD, consistent with the definition of major facility in 40 CFR § 122.2;
- It developed mass-based rolling annual average TN effluent limits based on design flow (consistent with 40 CFR § 122.45(b)(1)) and effluent concentrations that can achieved by means of currently available nitrogen removal technology for all facilities and the design flow for each facility, where effluent limit (lb/day) = Concentration (mg/L) x Design Flow (MGD) x 8.345;
- For POTW facilities with design flow less than 10 MGD, EPA based limits on concentrations that can typically be achieved through optimization, with more aggressive optimization expected for facilities with design flow greater than 5 MGD; and,

- For the four POTW facilities with design flow greater than 10 MGD (which together comprise more than half of the total Massachusetts load to LIS), EPA based limits on concentrations achievable through optimization or upgrades.

Table 3 summarizes the approach to update TN requirements for this and future permits in the LIS watershed in Massachusetts. EPA is also working with the States of New Hampshire and Vermont to ensure that comparable requirements are included in NPDES permits issued in those states.

Table 3: Annual Average Total Nitrogen Limits for Massachusetts WWTP Dischargers to the Long Island Sound Watershed

Facility Design Flow, Q_D (MGD)	Number of Facilities	Annual Average TN Limit (lb/day)
$Q_D \geq 10$	4	Q_D (MGD) * 5 mg/L * 8.345 + optimize
$5 < Q_D < 10$	5	Q_D (MGD) * 8 mg/L * 8.345 + optimize
$1 \leq Q_D \leq 5$	20	Q_D (MGD) * 10 mg/L * 8.345 + optimize
$0.1 \leq Q_D < 1$	17	Optimize
$Q_D < 0.1$	8	TN monitoring only

The optimization condition in the Draft Permit requires the Permittee to evaluate alternative methods of operating their treatment plant to optimize the removal of nitrogen, and to describe previous and ongoing optimization efforts. 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.

Specifically, the Draft Permit requires an evaluation of alternative methods of operating the existing wastewater treatment facility to control total nitrogen levels, including, but not limited to, operational changes designed to enhance nitrification (seasonal and year-round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management. This evaluation is required to be completed and submitted to EPA and MassDEP within one year of the effective date of the permit, along with a description of past and ongoing optimization efforts. The permit also requires implementation of optimization methods to ensure that the facility is operated in such a way that discharges of total nitrogen are minimized. The permit requires annual reports to be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies and track trends relative to previous years.

In addition to optimization requirements, the draft permit includes monthly monitoring and average monthly reporting requirements for total nitrogen (TN), total Kjeldahl nitrogen (TKN), and total nitrite/nitrate nitrogen (NO_2/NO_3).

Since the design flow for the facility (1.75 MGD) is in the range of 1 MGD $\leq Q_D \leq$ 5 MGD, the annual loading TN limit calculated for the Draft Permit is:

1.75 MGD * 10 mg/L * 8.345 = 146 lb/day

The effluent limit is a rolling annual average based on the average of the current average monthly and the average monthly of the previous 11 months. Because Athol's discharge during the review period has been in compliance with the proposed limit, the Draft Permit does not include a compliance schedule for total nitrogen.

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[16]. In December 2015, EPA signed a letter detailing a post-TMDL EPA nitrogen reduction strategy for waters in the LIS watershed. The strategy recognizes that more work may need to be done to reduce nitrogen levels, further improve DO conditions, and attain other related water quality standards in LIS, particularly in coastal embayments and the estuarine portions of rivers that flow into the Sound. EPA is working to establish nitrogen thresholds for Western LIS and several coastal embayments, including the Connecticut River. Documents regarding the EPA Nitrogen Reduction Strategy are available for public review on EPA's Long Island Sound website (http://longislandsoundstudy.net/issues-actions/water-quality/nitrogen-strategy/). Upon completion of establishing thresholds and assessing the water quality conditions of the estuarine waters of the Connecticut River, allocations of total nitrogen loadings may be lowered if further reductions are necessary. If reductions are needed for the Athol discharge, a lower water quality-based effluent limit will be added in a future permit action. If so, EPA anticipates exploring possible trading approaches for nitrogen loading in the Massachusetts portion of the Connecticut River watershed.

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; and 6) producing toxic cyanobacteria during certain algal blooms. Cultural (or accelerated) eutrophication is the term used to describe dense and excessive plant growth in a water body that results from nutrients entering the system as a result of human activities. Discharges from municipal and industrial wastewater treatment plants, agriculture runoff, and stormwater are examples of human-derived (i.e. anthropogenic) sources of nutrients in surface waters.

[16] For more information see http://longislandsoundstudy.net/about/our-mission/management-plan/hypoxia/

The 2008 Permit includes a average monthly effluent limit of 0.52 mg/L effective in the warm months (April 1 to October 31) and a average monthly effluent limit of 1.0 mg/L effective in the cold months (November 1 to March 31). Review of the monitoring data in the DMRs from 2014 to 2019, provided in Appendix A, shows that in the warm months the average monthly total phosphorus in the effluent averaged 0.33 mg/L (range 0.10 to 0.49 mg/L) and in the cold months, the average monthly total phosphorus averaged 0.53 mg/L (range 0.18 to 0.90 mg/L).

The MA WQS under 314 CMR 4.05(5)(c) requires that, unless naturally occurring, surface waters must be free from nutrients that cause or contribute to impairment of the existing or designated uses, and the concentration of phosphorus may not exceed site specific criteria develop in a TMDL. Nutrients are also prohibited in concentrations that would cause or contribute to cultural eutrophication.

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 Millers River, the 0.1 mg/L would apply downstream of the discharge.

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. Athol is located within Ecoregion XIV, Eastern Coastal Plains. The recommended total phosphorus criteria for this ecoregion, found in Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion XIV (EPA December 2000) is 31.25 µg/L (0.03125 mg/L).
EPA uses the effects-based Gold Book threshold as a general target applicable in free-flowing streams. As the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophication response to phosphorus inputs; in some waters more stringent phosphorus reductions may be needed, while in some others a higher total phosphorus threshold could be assimilated without inducing a eutrophic response. In this case, EPA is not aware of any evidence that the Millers 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 Millers 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]).

As the 2008 Permit already includes phosphorus limits, an analysis can be performed to determine whether the current limits continue to be protective of water quality standards during low-flow periods. Since there is no ambient sampling data on Athol's WET reports, an assumed ambient P concentration of 0.052 mg/L will be used[17].

Downstream Phosphorus Concentration
(April 1 – October 30)

$Q_D C_D = Q_E C_E + Q_S C_S$

Where

Q_D	=	Downstream flow	=	34.4 cfs ($Q_E + Q_S$)
Q_E	=	Effluent design flow	=	2.7 cfs
C_E	=	Effluent concentration	=	0.52 mg/L (current limit)
Q_S	=	Upstream flow	=	31.7 cfs (7Q10)
C_S	=	Upstream concentration	=	0.052 mg/L (average at MI08 in WQA)
C_D	=	Downstream concentration		

Solving for downstream concentration,

$C_D = (Q_E C_E + Q_S C_S) / Q_D$

$$C_D = \frac{(2.7 \text{ cfs} \times 0.52 \text{ mg/L}) + (31.7 \text{ cfs} \times 0.052 \text{ mg/L})}{34.4 \text{ cfs}}$$

C_D = 0.09 mg/L, which is less than 0.100 mg/L

Therefore, the current limits are protective of WQS. The Draft Permit carries forward the average monthly effluent limits of 0.52 mg/L for the warm months (April 1 – October 31) and 1.0 mg/L during the cold months (November 1-March 31). Additionally, an upstream total phosphorus monitoring requirement is proposed in the Draft Permit, to be performed every other year, once per month during the growing season, immediately upstream of Athol's outfall.

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 2008 Permit for these metals continue to be protective, given the updated upstream hydrologic and chemical characteristics of the receiving water. The 2008 Permit included effluent limits for copper and a monthly monitoring requirement for silver. A summary of recent metals compliance and monitoring results is provided in Appendix A.

5.1.10.1 Applicable Metals Criteria

[17] *Millers River Watershed 2000 Water Quality Assessment Report*, Mass DEP, reporting station MI08.

State water quality criteria for cadmium, copper, lead, nickel and zinc are established in terms of dissolved metals. However, many inorganic components of domestic wastewater, including metals, are in particulate form, and differences in the chemical composition between the effluent and the receiving water affects the partitioning of metals between the particulate and dissolved fractions as the effluent mixes with the receiving water, often resulting in a transition from the particulate to dissolved form (*The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (USEPA 1996 [EPA-823-B96-007])). Consequently, quantifying only the dissolved fraction of metals in the effluent prior to discharge may not accurately reflect the biologically-available portion of metals in the receiving water. Regulations at 40 CFR § 122.45(c) require, with limited exceptions, that effluent limits for metals in NPDES permits be expressed as total recoverable metals.

The criteria for cadmium, copper, lead, nickel and zinc are hardness-dependent using the equations in EPA's National Recommended Water Quality Criteria: 2002, which are incorporated into the Massachusetts WQS by reference. The estimated hardness of Millers River downstream of the treatment plant is calculated using the critical low flow (7Q10), the design flow of the treatment plant, and the median hardness for both the receiving water upstream of the discharge and the treatment plant effluent. Effluent and receiving water data are presented in Appendix A. Using the mass balance equation discussed in Appendix B, the resulting downstream hardness is 24.9 mg/L and the corresponding criteria are also presented in Appendix B.

Massachusetts aluminum criteria are not hardness-dependent and are expressed as total recoverable aluminum.

5.1.10.2 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 2008 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 aluminum, copper and lead. The chronic (average monthly) aluminum limit and chronic (average monthly) lead limit are newly established limits to meet WQS based on recent data. The maximum daily and average monthly copper limits are reduced relative to the 2008 Permit based on recent data. EPA notes that Athol's discharge has

been consistently below these revised copper limits during the review period, therefore a compliance schedule for copper has not been included in the Draft Permit.

EPA also analyzed the silver monitoring data from the review period and confirmed that there was not reasonable potential to exceed the water quality criterion for silver. Therefore, the monitoring requirement for silver has been removed from the Draft Permit.

Aluminum Compliance Schedule:
The final aluminum effluent limit is based on current Massachusetts, EPA approved, aluminum criteria to protect freshwater aquatic life. However, EPA is aware of ongoing efforts by MassDEP to soon revise the Massachusetts aluminum criteria based, at least in part, on new EPA aluminum criteria recommendations which are expected to be finalized within the coming months. For three years after the effective date of the permit, MassDEP will inform EPA at reasonable intervals of its progress on the development and promulgation of new aluminum criteria.

EPA's draft aluminum criteria recommendations indicate that the new aluminum criteria recommendations may be higher than the current recommendations. Because MassDEP has indicated to EPA that its planned revisions to its aluminum criteria will be based on EPA's recommended criteria, EPA reasonably expects its new criteria may also be higher. EPA has therefore determined that it is appropriate to include a schedule of compliance, pursuant to 40 CFR § 122.47, in the draft permit which provides the permittee with a 3-year period to achieve compliance with the final aluminum effluent limit. Additionally, the permittee may apply for a permit modification to allow additional time for compliance if Massachusetts has adopted new aluminum criteria but has not yet submitted the criteria to EPA for review or EPA has not yet acted on the new criteria. If new aluminum criteria are adopted by Massachusetts and approved by EPA, and before the final aluminum effluent limit goes into effect, the permittee may apply for a permit modification to amend the permit based on the new criteria. If warranted by the new criteria and a reasonable potential analysis, EPA may relax or remove the effluent limit to the extent consistent with anti-degradation requirements. Such a relaxation or removal would not trigger anti-backsliding requirements as those requirements do not apply to effluent limits which have yet to take effect pursuant to a schedule of compliance. *See American Iron and Steel Institute v. EPA*, 115 F.3d 979, 993 n.6 (D.C. Cir. 1997) ("EPA interprets § 402 to allow later relaxation of [an effluent limit] so long as the limit has yet become effective.")

Lead Compliance Schedule:
The Draft Permit includes a 24-month compliance schedule for the total lead limit. The Draft Permit also requires the Permittee to evaluate the ability of the existing treatment facilities, with small capital improvements, to achieve the average monthly lead limits. The Draft Permit requires the Permittee to submit a status report 12 months from the effective date of the permit and a final report 24 months from the effective date of the permit that summarize the evaluation and includes a determination of whether the existing facility is capable of reliably achieving the effluent limitation. The evaluation shall include an analysis of optimization of plant performance, including potential chemical dosing and an analysis of potential source reductions from industrial wastewater, septage, and Athol's drinking water supply.

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 CFR § 122.44(d)(1). The Massachusetts WQSs at 314 CMR 4.05(5)(e) state, "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife."

National studies conducted by 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 and State policy[18], 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_{50}.

The chronic and acute WET limits in the 2008 Permit are C-NOEC greater than or equal to 10% and LC_{50} greater than or equal to 100%, respectively, using the daphnid (*Ceriodaphnia dubia*) as the test species. The Facility has consistently met these limits (Appendix A).

MassDEP has indicated that since Athol has been previously approved for a reduction to one species and has demonstrated consistent compliance with the WET limits, the frequency of four times per year and the test organism from the 2008 Permit should be carried forward into the Draft Permit. Although the dilution factor has increased, the C-NOEC limit remains the same due to anti-backsliding regulations. Toxicity testing must be performed in accordance with the updated EPA Region 1 WET test procedures and protocols specified in Attachments A,

[18] *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters.* February 23, 1990.

Freshwater Acute Toxicity Test Procedure and Protocol (February 2011) and Attachment B, *Freshwater Chronic Toxicity Test Procedure and Protocol* (March 2013) of the Draft Permit.

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

5.1.12 Per- and polyfluoroalkyl substances (PFAS)

As explained at https://www.epa.gov/pfas, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects.[19] EPA is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

On January 27, 2020, Massachusetts DEP established an Office of Research and Standards Guideline (ORSG) level for drinking water that applies to the sum of the following PFAS[20,21]:

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

Based on the ORSG, MassDEP recommends that:

1. Consumers in sensitive subgroups (pregnant women, nursing mothers and infants) not consume water when the level of the six PFAS substances, individually or in combination, is above 20 ppt.

2. Public water suppliers take steps expeditiously to lower levels of the six PFAS individually or in combination, to below 20 ppt for all consumers.

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[19] EPA, *EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan,* EPA 823R18004, February 2019. Available at: https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf

[20] https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas

[21] https://www.mass.gov/doc/massdep-ors-guideline-for-pfas/download

In December 2019, MassDEP proposed revisions to 310 CMR 22.00: Drinking Water Regulation that would set a new PFAS Maximum Contaminant Level (MCL) of 20 ppt (ng/L) for the sum of the concentrations of six PFAS compounds, including all six compounds addressed by the ORSG (listed above).

Although the Massachusetts water quality standards do not include numeric criteria for PFAS, the Massachusetts narrative criterion for toxic substances at 314 CMR 4.05(5)(e) states:

> All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

The narrative criterion is further elaborated at 314 CMR 4.05(5)(e)2 which states:

> Human Health Risk Levels. Where EPA has not set human health risk levels for a toxic pollutant, the human health-based regulation of the toxic pollutant shall be in accordance with guidance issued by the Department of Environmental Protection's Office of Research and Standards. The Department's goal is to prevent all adverse health effects which may result from the ingestion, inhalation or dermal absorption of toxins attributable to waters during their reasonable use as designated in 314 CMR 4.00.

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the Draft Permit requires that the facility conduct quarterly influent, effluent and sludge sampling for PFAS chemicals and annual sampling of certain industrial users, six months after appropriate, multi-lab validated test methods are made available by EPA to the public.

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

> "SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act—
>
> (A) the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other

information as he may reasonably require;".

Since an EPA method for sampling and analyzing PFAS in wastewater and sludge is not currently available, the PFAS sampling requirement in the Draft Permit includes a compliance schedule which delays the effective date of this requirement until 6 months after EPA's multi-lab validated method for wastewater and biosolids is made available to the public on EPA's CWA methods program websites. For wastewater see https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods. For biosolids, see https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-biosolids. EPA expects these methods will be available by the end of 2021.This approach is consistent with 40 CFR § 122.44(i)(1)(iv)(B) which states that in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters.

5.2 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 though 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 CFR § 122.41(e), require the proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions. The requirements at 40 CFR § 122.41(d) impose a 'duty to mitigate,' which requires the permittee to "take all reasonable steps to minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment. EPA maintains that an I/I

removal program is an integral component of ensuring permit compliance with the requirements of the permit under the provisions at 40 CFR § 122.41(d) and (e).

General requirements for proper operation and maintenance, and mitigation have been included in Part II of the permit. Specific permit conditions have also been included in Part I.C. and I.D. of the Draft Permit. These requirements include mapping of the wastewater collection system, preparing and implementing a collection system operation and maintenance plan, reporting of unauthorized discharges including SSOs, maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration to separate sewer collection systems (combined systems are not subject to I/I requirements) to the extent necessary to prevent SSOs and I/I related effluent violations at the Wastewater Treatment Facility, and maintaining alternate power where necessary. These requirements are included to minimize the occurrence of permit violations that have a reasonable likelihood of adversely affecting human health or the environment.

Several of the requirements in the Draft Permit are not included in the 2008 Permit, including collection system mapping, and preparation of a collection system operation and maintenance plan. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the collection system and has included schedules in the Draft Permit for completing these requirements.

5.5 Compliance Schedules

Massachusetts regulations for schedules of compliance can be found at 314 CMR 3.11(10). 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), (a)(1).

5.6 Standard Conditions

The standard conditions of the permit are based on 40 CFR §122, Subparts A, C, and D and 40 CFR § 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

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

Section 7(a)(2) of the ESA requires every federal agency, in consultation with and with the assistance of the Secretary of Interior, to ensure that any action it authorizes, funds or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of

any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) administers Section 7 consultations for marine and anadromous species.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Facility's discharges of pollutants. The Draft Permit is intended to replace the 2008 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species and initiates consultation with the Services when required under § 7(a)(2) of the ESA.

EPA has reviewed the federal endangered or threatened species of fish, wildlife and plants in the vicinity of the Athol WWTP to determine if EPA's proposed NPDES permit could potentially impact any such listed species. One threatened species under the jurisdiction of the USFWS has been identified in the action area.[22] This listed species, the northern long-eared bat (*Myotis septentrionalis*), was identified as "statewide". According to the USFWS, the northern long-eared bat is found in "winter – mines and caves, summer – wide variety of forested habitats." This species is not aquatic, so the discharge will have no direct effect on this mammal. Further, the permit action is also expected to have no indirect effect on the species because it is not expected to impact insects, the primary prey of the northern long-eared bat. Therefore, the proposed permit action is deemed to have no impact on this listed species.

In addition, two anadromous fish species under the jurisdiction of NOAA Fisheries occur in Massachusetts waters, the shortnose sturgeon (*Acipenser brevirostrom*) and Atlantic sturgeon (*Acipenser oxyrinchus*), classified as threatened and/or endangered. EPA reviewed species information from relevant sources regarding the shortnose sturgeon. The Millers River, which is the receiving water of the Facility's discharge, joins the Connecticut River above the Turners Falls Dam. The base of the dam is the farthest upstream habitat for shortnose sturgeon in the mainstem of the Connecticut River, so this species is not able to enter the Millers River and is not found in the action area of the Facility. In addition, Atlantic sturgeon are not expected to be found above the Holyoke Dam on the Connecticut River, some 30 river miles downstream from the Turners Falls Dam.[23] Therefore, based on the expected normal distribution of these species, it is highly unlikely that they would be present in the vicinity of this discharge and the action area of the outfall.

Because no federally listed threatened or endangered species have been identified as occuring in the vicinity of this discharge and the action area of the Athol WWTP outfall, EPA finds that adoption of the proposed permit will have no effect on any threatened or endangered species or their critical habitat, and consultation with USFWS or NOAA Fisheries under Section 7 of the ESA is not required.

[22] See §7 resources for USFWS at https://ecos.fws.gov/ipac.
[23] See §7 resources for NOAA Fisheries at https://www.fisheries.noaa.gov/resource/map/greater-atlantic-region-esa-section-7-mapper

EPA will reevaluate the need for consultation with the services: (a) if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the consultation; or (c) if a new species is listed or critical habitat is designated that may be affected by the identified action.

6.2 Essential Fish Habitat

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

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

EPA has determined that Millers River is not covered by the EFH designation for riverine systems at latitude 41° 78' 51", longitude 70° 91' 56" as determined by the NOAA EFH Mapper.[24] EPA's review of available EFH information indicated that this water body, which is the receiving water for the Facility's discharge, is not designated EFH for any federally managed species. Therefore, consultation with NOAA Fisheries under the Magnuson-Stevens Fishery Conservation and Management Act is not required.

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:

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[24] NOAA EFH Mapper available at http://www.habitat.noaa.gov/protection/efh/efhmapper/

Prior to the close of the public comment period, any person, may submit a written request to EPA for a public hearing to consider the Draft Permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 CFR § 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 has submitted written comments or requested notice. The Final Permit is issued by EPA under federal law and constitutes a federal NPDES Permit issued by EPA pursuant to the Federal Clean Water Act, 33 U.S.C. §§ 1251 et *seq.* Within 30 days after EPA serves notice of the issuance of the Final Permit decision, an appeal of the federal NPDES permit may be commenced by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 CFR § 124.19.

8.0 Administrative Record

Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this workforce telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at the EPA Boston office. However, any documents relating to this draft can be requested from the individual listed above.

July 2020
Date

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

Figure 1: Location of the Athol WWTP

Scale 1 : 24,000

0 500 1,000 Meters

0 1,000 2,000 3,000 Feet

Regulated Facilities: EPA

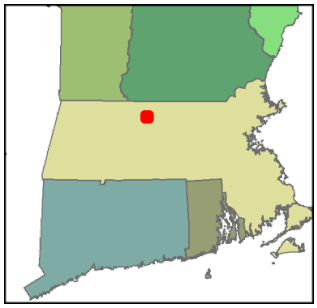
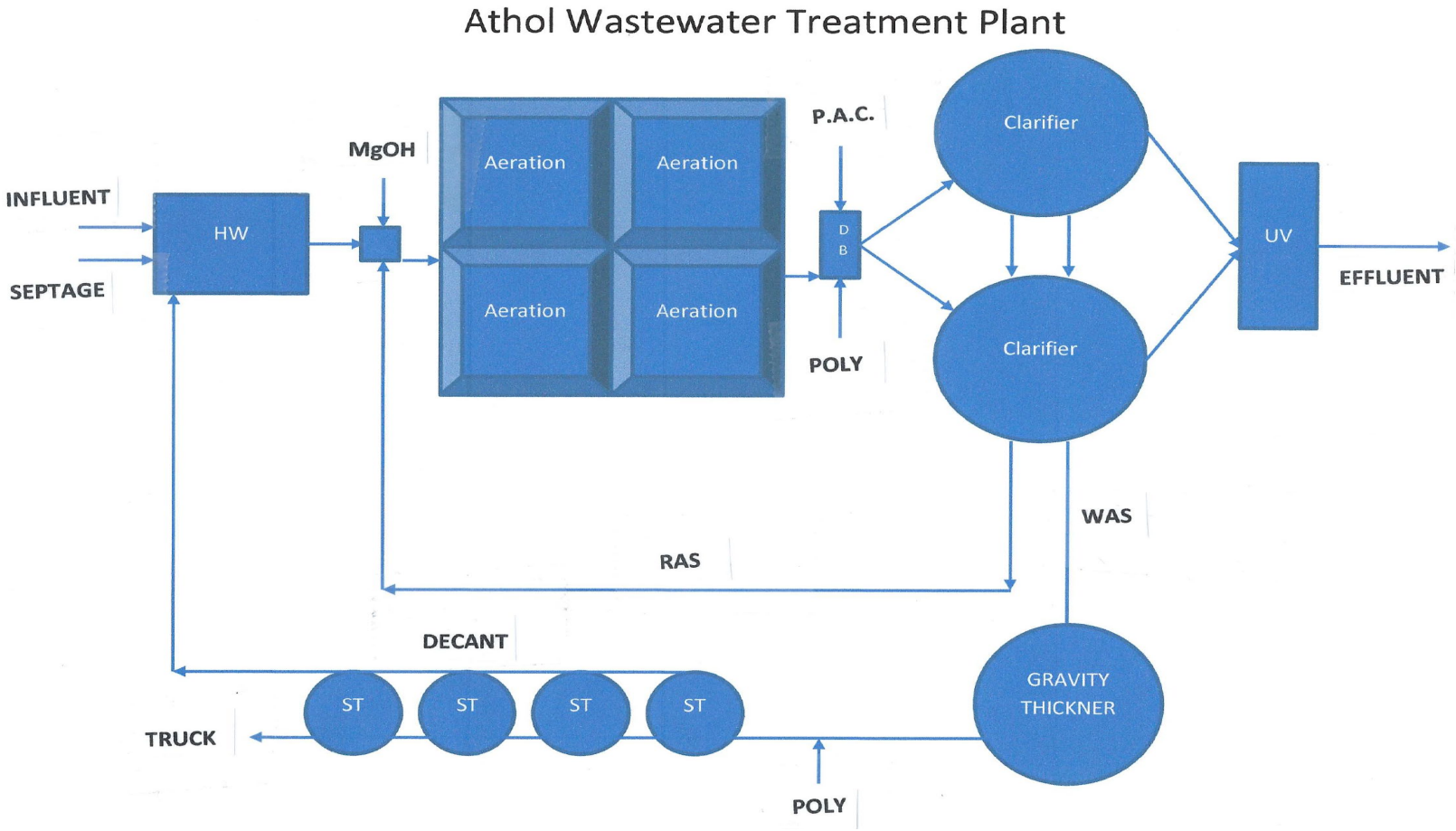


FIGURE 1
Athol WWTP
Location Map

Athol, Massachusetts

EPA
1/6/2020

Figure 2: Athol WWTP Flow Diagram



Outfall - Monitoring Location - 001

Parameter	Flow	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5
	Annual Rolling Ave	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max
Units	**MGD**	**MGD**	**MGD**	**lb/d**	**mg/L**	**lb/d**	**mg/L**	**mg/L**
Effluent Limit	**1.75**	**Report**	**Report**	**438**	**30**	**657**	**45**	**Report**
Minimum	**0.362**	**0.404**	**0.362**	**5.12**	**1.57**	**6.38**	**1.83**	**1.83**
Maximum	**1.507**	**6.116**	**2.031**	**56.22**	**5.12**	**103.96**	**15**	**10.89**
Median	**0.8385**	**1.341**	**0.7945**	**16.005**	**2.47**	**21.175**	**3.265**	**3.265**
No. of Violations	**0**	**N/A**	**N/A**	**0**	**0**	**0**	**0**	**N/A**
10/31/2014	0.86	1.972	0.695	13	2.05	18.96	2.95	2.95
11/30/2014	0.873	1.243	0.618	15.4	3	15.4	3	3
12/31/2014	0.926	2.441	1.272	36	3	72	15	3.5
1/31/2015	0.92	1.341	0.887	23	3.11	35.54	4.71	4.71
2/28/2015	0.914	0.735	0.629	12.06	2.3	14.16	2.7	2.7
3/31/2015	0.904	1.97	0.818	17	2.5	19	2.8	2.8
4/30/2015	0.854	1.851	1.368	28.5	2.5	39	3.5	3.5
5/31/2015	0.362	0.901	0.646	14	2.6	16	3.1	3.1
6/30/2015	0.806	1.63	0.617	11.3	2.2	12.3	2.4	2.4
7/31/2015	0.786	2.693	0.657	10.4	1.9	13.1	2.4	2.4
8/31/2015	0.765	1.341	0.457	8	2.1	11	2.8	2.8
9/30/2015	0.759	1.74	0.441	8.4	2.3	12.8	3.5	3.5
10/31/2015	0.741	0.919	0.483	7	1.8	8	2.1	2.1
11/30/2015	0.73	1.07	0.485	8	2	9.7	2.4	2.4
12/31/2015	0.676	1.45	0.618	12.8	2.5	21.1	4.1	4.1
1/31/2016	0.658	0.948	0.679	18.1	3.2	20.8	3.9	3.9
2/29/2016	0.675	1.805	0.833	20	2.9	25	3.6	3.6
3/31/2016	0.688	1.216	0.972	41.5	5.12	71.6	8.84	8.84
4/30/2016	0.643	1.051	0.832	12.4	1.8	15.2	2.2	2.2
5/31/2016	0.637	0.664	0.573	8.12	1.63	15.72	2.9	2.9
6/30/2016	0.622	0.541	0.438	8.26	2.33	17.75	5.57	5.57
7/31/2016	0.597	0.404	0.538	6.9	2.36	8.03	2.72	2.72
8/31/2016	0.379	0.464	0.591	6.73	2.14	10.15	3.38	3.38
9/30/2016	0.585	0.565	0.369	5.12	1.68	6.38	1.83	1.83
10/31/2016	0.581	0.545	0.437	5.37	1.57	6.78	2.24	2.24
11/30/2016	0.58	0.684	0.477	7.03	1.76	8.44	2.1	2.1
12/31/2016	0.583	0.872	0.653	12.55	2.31	17.71	2.87	2.87
1/31/2017	0.592	0.934	0.782	28.58	4.07	43.78	6.14	6.14
2/28/2017	0.589	1.527	0.794	19.51	3.29	29.14	4.48	4.48
3/31/2017	0.579	1.27	0.855	18.96	2.61	26.98	4.8	4.8

Outfall - Monitoring Location - 001

Parameter	Flow	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5
	Annual Rolling Ave	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max
Units	MGD	MGD	MGD	lb/d	mg/L	lb/d	mg/L	mg/L
Effluent Limit	1.75	Report	Report	438	30	657	45	Report
4/30/2017	0.627	2.302	1.408	31.5	2.92	49.73	6.11	6.11
5/31/2017	0.678	1.644	1.188	28.95	2.94	55.32	4.37	4.37
6/30/2017	0.73	1.909	1.054	25.94	2.64	47.29	2.97	2.97
7/31/2017	0.753	0.8	0.635	12.92	2.47	17.62	3.48	3.48
8/31/2017	0.768	0.702	0.565	9.07	1.99	11.98	2.65	2.65
9/30/2017	0.782	0.703	0.54	14.1	2.99	27.27	5.58	5.58
10/31/2017	0.823	3.497	0.927	9.94	1.94	13.53	3.34	3.34
11/30/2017	0.867	2.785	1.007	16.97	1.94	26.48	2.66	2.66
12/31/2017	0.872	0.785	0.872	23.13	3.81	26.97	4.5	4.5
1/31/2018	0.952	6.116	1.74	25.64	2.43	40.23	3.45	3.45
2/28/2018	1.002	1.868	1.398	29.87	2.47	36.85	2.67	2.67
3/31/2018	1.039	2.034	1.301	26.09	2.35	32.97	2.52	2.52
4/30/2018	1.025	1.637	1.238	29.15	2.77	33.2	3.7	3.7
5/31/2018	1.003	1.186	0.925	16.61	2.07	32.1	3.33	3.33
6/30/2018	0.972	1.421	0.68	9.83	1.78	10.73	2.03	2.03
7/31/2018	0.986	1.168	0.809	13.93	2.17	17.95	2.68	2.68
8/31/2018	1.109	5.322	2.031	44.35	2.46	103.96	3.65	3.65
9/30/2018	1.33	2.85	1.174	37.37	2.745	58.95	3.54	3.54
10/31/2018	1.185	1.527	1.054	24.36	2.69	36.04	2.99	2.99
11/30/2018	1.255	2.69	1.846	56.22	3.65	92.58	4.35	4.35
12/31/2018	1.299	2.01	1.299	35.51	3.26	48.61	3.55	3.55
1/31/2019	1.252	2.306	1.177	38.07	4.67	68.39	10.89	10.89
2/28/2019	1.216	1.599	0.965	36.44	4.93	48.57	5.43	5.43
3/31/2019	1.216	1.057	0.795	30.78	5.02	38.56	6.32	6.32
4/30/2019	1.507	3.151	1.197	22.06	2.11	31.77	2.57	2.57
5/31/2019	1.215	1.98	1.14	26.77	2.8	31.54	3.42	3.42
6/30/2019	1.219	1.27	0.734	13.95	2.22	15.56	2.5	2.5
7/31/2019	1.198	0.964	0.562	13.06	2.52	21.25	3.13	3.13
8/31/2019	1.07	0.596	0.488	10.51	2.46	11.6	2.85	2.85
9/30/2019	0.989	0.438	0.362	7.49	2.52	8.86	3.2	3.2

Outfall - Monitoring Location - 001

Parameter	BOD5	TSS	TSS	TSS	TSS	TSS	pH
	Monthly Ave Min	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave Min	Minimum
Units	%	lb/d	mg/L	lb/d	mg/L	mg/L	%	SU
Effluent Limit	85	438	30	657	45	Report	85	6.5
Minimum	96	2.77	0.9	4.32	1.4	1.4	94.7	6.5
Maximum	99.6	74.99	10.4	251.2	40	40	99.7	7.05
Median	99	14.67	2.1	22.695	3.225	3.225	99	6.7
No. of Violations	0	0	0	0	0	N/A	0	0
10/31/2014	98.8	7.6	1.2	13.45	2.2	2.2	99.5	6.74
11/30/2014	98	9.7	1.9	14.4	2.8	2.8	99	6.9
12/31/2014	96	26	2	50	3.7	3.7	98	6.51
1/31/2015	97	15.5	2.1	27.9	3.7	3.7	98	6.57
2/28/2015	98	11.5	2.2	18.3	3.5	3.5	99	6.7
3/31/2015	98	20	3	27	4	4	99	6.7
4/30/2015	97	36.5	3.2	46	4.1	4.1	96	6.5
5/31/2015	98	22	4.1	51	8.3	8.3	98	6.51
6/30/2015	98	6.4	1.25	7.7	1.5	1.5	99	6.7
7/31/2015	99	10.9	2	14.7	2.7	2.7	99	6.7
8/31/2015	99	4.5	1.2	6	3	3	99	6.8
9/30/2015	99	3.7	1.025	5	1.4	1.4	99	6.53
10/31/2015	99	5.6	1.4	8.8	2.2	2.2	99	6.52
11/30/2015	99	7	1.9	10	2.7	2.7	99	6.7
12/31/2015	99	8.7	1.7	9.7	1.9	1.9	99	6.7
1/31/2016	98	11.3	2	13.3	2.5	2.5	99	6.8
2/29/2016	99	13	2	15	2.3	2.3	99	6.5
3/31/2016	96	30	3.7	43	5.4	5.4	98	6.7
4/30/2016	99	8.3	1.2	13.2	1.9	1.9	99	6.8
5/31/2016	99.3	8.14	1.7	11.93	2.2	2.2	99.2	6.7
6/30/2016	99.2	7.05	1.86	9.63	2.4	2.4	99.3	6.8
7/31/2016	99.3	6.1	2.36	10.78	3.6	3.6	99.4	6.78
8/31/2016	99.3	6.73	1.9	13.47	3.8	3.8	99.5	6.86
9/30/2016	99.5	2.77	0.9	4.32	1.4	1.4	99.7	6.78
10/31/2016	99.6	4.78	1.4	6.66	2.2	2.2	99.6	6.86
11/30/2016	99.5	7.87	2	11.56	2.9	2.9	99.4	6.92
12/31/2016	99.1	14.37	2.62	21.6	3.8	3.8	99.1	6.71
1/31/2017	98.7	47.23	6.75	119.08	16.7	16.7	97.8	6.75
2/28/2017	99.2	22.51	3.85	30.19	5.3	5.3	98.9	6.65
3/31/2017	99	27.13	3.6	31.48	5.6	5.6	98.3	6.76

Outfall - Monitoring Location - 001

Parameter	BOD5	TSS	TSS	TSS	TSS	TSS	pH
	Monthly Ave Min	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave Min	Minimum
Units	%	lb/d	mg/L	lb/d	mg/L	mg/L	%	SU
Effluent Limit	85	438	30	657	45	Report	85	6.5
4/30/2017	98.5	21.96	1.7	35	1.9	1.9	99.2	6.6
5/31/2017	99.1	15.54	1.75	22.47	2.9	2.9	99.5	6.7
6/30/2017	98.9	19.43	2.1	38.21	2.4	2.4	99.4	6.94
7/31/2017	99.1	8.6	2.2	23.29	4.6	4.6	99.3	7.05
8/31/2017	99.3	10.18	2.2	14.46	3.2	3.2	99.3	6.85
9/30/2017	99.2	8.49	1.8	10.11	2.3	2.3	99.5	6.74
10/31/2017	99.4	12	2.1	23.29	2.4	2.4	99.5	6.65
11/30/2017	99.2	19.23	1.8	44.13	2.3	2.3	99.2	6.83
12/31/2017	98.8	26.2	4.4	30.99	5.7	5.7	98.4	6.58
1/31/2018	99.2	44.83	4.7	65.6	9	9	98.3	6.66
2/28/2018	99	43.05	3.5	78.04	6.4	6.4	98.5	6.61
3/31/2018	98.9	35.82	3.2	65.66	4.7	4.7	98.5	6.61
4/30/2018	99.2	30.31	2.8	44.73	4.4	4.4	99.2	6.58
5/31/2018	99.4	14.97	1.9	21.29	2.5	2.5	99.4	6.7
6/30/2018	99.5	10.99	2	13.4	2.6	2.6	99.4	6.7
7/31/2018	99.3	10.49	1.6	13.32	1.9	1.9	99.5	6.73
8/31/2018	98.4	52.17	2.5	133.86	4.7	4.7	98.8	6.6
9/30/2018	98.1	32.19	1.975	80.81	3.4	3.4	98.2	6.7
10/31/2018	98.5	17.17	2	22.92	2.6	2.6	99	6.77
11/30/2018	97.3	72.91	4.76	103.68	5.9	5.9	94.9	6.65
12/31/2018	98.3	36.37	3.2	62.02	3.8	3.8	98.3	6.74
1/31/2019	98.3	74.99	10.4	251.2	40	40	94.7	6.7
2/28/2019	97.1	29.48	4.4	61.76	10.2	10.2	96.9	6.74
3/31/2019	98.1	24.01	3.78	34.86	5	5	98.7	6.72
4/30/2019	99.1	30.96	2.9	52.37	3.8	3.8	98.7	6.66
5/31/2019	98.6	27.23	3.06	43.26	6.5	6.5	98.5	6.75
6/30/2019	99.2	16.33	2.6	18.64	3.1	3.1	99.3	6.6
7/31/2019	99.1	10.32	2.13	14.57	3.25	3.25	99.4	6.83
8/31/2019	98.8	12.44	2.86	26.43	5.6	5.6	97.8	6.82
9/30/2019	99.3	4.69	1.6	6.12	1.9	1.9	99.6	6.78

Outfall - Monitoring Location - 001

Parameter	pH	E. coli	E. coli	TRC	TRC	DO	Ammonia	Ammonia
	Maximum	Daily Max	MO GEOMX	Monthly Ave	Daily Max	Minimum	Monthly Ave	Monthly Ave
Units	SU	CFU/100mL	CFU/100mL	mg/L	mg/L	mg/L	lb/d	mg/L
Effluent Limit	8.3	409	126	Report	Report	6	Report	Report
Minimum	6.9	1	1	No Data	No Data	6.01	0	0
Maximum	7.81	15	6.34	No Data	No Data	9	47.59	9
Median	7.305	4	2	No Data	No Data	6.485	Non-Detect	Non-Detect
No. of Violations	0	0	0	N/A	N/A	0	N/A	N/A
10/31/2014	7.29	5	5	NODI: C	NODI: C	6.43	0.46	0.1
11/30/2014	7.4					6.9	0.5	0.1
12/31/2014	7.1					6.75	0.85	0.1
1/31/2015	7.57					7	0.75	0.1
2/28/2015	7.18					6.12	0.5	0.1
3/31/2015	7.4					9	< .6	< .1
4/30/2015	6.9	6	2	NODI: C	NODI: C	6.5	4.9	0.4
5/31/2015	7.2	4	1.7	NODI: C	NODI: C	6.08	0.5	0.1
6/30/2015	7.3	1.9	1.9	NODI: C	NODI: C	6.2	0.5	0.1
7/31/2015	7.6	6	3.4	NODI: C	NODI: C	6.2	0.5	0.1
8/31/2015	7.4	4	4	NODI: C	NODI: C	6.2	0.3	0.1
9/30/2015	7.2	10	3.7	NODI: C	NODI: C	7.2	0.3	0.1
10/31/2015	7.68	3	1	NODI: C	NODI: C	6.1	0.4	0.1
11/30/2015	7.2					6.1	0.4	0.1
12/31/2015	7.6					6.1	< .5	< .1
1/31/2016	7.8					6.1	< .5	< .1
2/29/2016	7.8					6.1	< .6	< .1
3/31/2016	7.6					6.1	< .8	< .1
4/30/2016	7.6	14	3	NODI: C	NODI: C	6.1	24	3.5
5/31/2016	7	2	1.19	NODI: C	NODI: C	6.12	< .54	< .1
6/30/2016	7.73	4	2.05	NODI: C	NODI: C	6.18	< .4	< .1
7/31/2016	7.46	5	2.11	NODI: C	NODI: C	6.04	< .31	< .1
8/31/2016	7.57	9	6.34	NODI: C	NODI: C	6.77	< .3	< .1
9/30/2016	7.66	15	4.21	NODI: C	NODI: C	6.74	< .3	< .1
10/31/2016	7.62	4	1.68	NODI: C	NODI: C	6.54	0.3	0.1
11/30/2016	7.5					6.24	< .42	< .1
12/31/2016	7.48					6.64	< .52	< .1
1/31/2017	7.18					7.27	0.73	0.1
2/28/2017	7.14					6.47	< .61	< .1
3/31/2017	7.34					6.82	< 1.05	< .1

Outfall - Monitoring Location - 001

Parameter	pH	E. coli	E. coli	TRC	TRC	DO	Ammonia	Ammonia
	Maximum	Daily Max	MO GEOMX	Monthly Ave	Daily Max	Minimum	Monthly Ave	Monthly Ave
Units	SU	CFU/100mL	CFU/100mL	mg/L	mg/L	mg/L	lb/d	mg/L
Effluent Limit	8.3	409	126	Report	Report	6	Report	Report
4/30/2017	7.22	1	1	NODI: C	NODI: C	6.3	< 1.59	< .1
5/31/2017	7.28	1	1	NODI: C	NODI: C	6.81	< .77	< .1
6/30/2017	7.51	3	1.25	NODI: C	NODI: C	7.33	< 1.04	< .1
7/31/2017	7.81	9	2.91	NODI: C	NODI: C	6.61	< .58	< .1
8/31/2017	7.59	14	2.5	NODI: C	NODI: C	7.61	0.4	0.1
9/30/2017	7.13	4	2	NODI: C	NODI: C	6.98	< .54	< .1
10/31/2017	7.18	4	1.86	NODI: C	NODI: C	6.85	< .38	< .1
11/30/2017	7.3					6.46	< 2.32	< .1
12/31/2017	7.23					6.34	< .65	< .1
1/31/2018	7.1					7.11	1.25	0.2
2/28/2018	7.13					6.98	9.66	0.7
3/31/2018	7.06					6.28	< 1.38	< .1
4/30/2018	7.2	1	1	NODI: C	NODI: C	6.68	2.03	0.2
5/31/2018	7.26	2	1.52	NODI: C	NODI: C	7.24	< .96	< .1
6/30/2018	7.51	3	2.21	NODI: C	NODI: C	6.53	< .58	< .1
7/31/2018	7.48	5	2.51	NODI: C	NODI: C	6.34	0.65	0.1
8/31/2018	7.7	7	3	NODI: C	NODI: C	6.08	< .81	< .1
9/30/2018	7.36	4	2	NODI: C	NODI: C	6.08	< .72	< .1
10/31/2018	7.04	2	2	NODI: C	NODI: C	6.3	< 1.27	< .1
11/30/2018	7.44					6.01	2.2	0.3
12/31/2018	7.4					6.01	1.23	0.1
1/31/2019	7.16					7.81	1.04	0.1
2/28/2019	7.25					6.32	7.19	0.8
3/31/2019	7.26					6.67	47.59	9
4/30/2019	7.04	12	1.86	NODI: C	NODI: C	7.76	1.44	0.2
5/31/2019	7.21	4	1.52	NODI: C	NODI: C	7.74	11.56	0.7
6/30/2019	7.28	4	1.68	NODI: C	NODI: C	6.77	< .81	< .81
7/31/2019	7.31	7	3.35	NODI: C	NODI: C	6.11	< .46	< .1
8/31/2019	7.3	11	6.3	NODI: C	NODI: C	7.17	0.47	0.1
9/30/2019	7.35	2	1.68	NODI: C	NODI: C	6.78	< .34	< .1

Outfall - Monitoring Location - 001

Parameter	Ammonia	TKN	TKN	TKN	TN	TN	TN
	Maximum	Monthly Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Daily Max
Units	mg/L	lb/d	mg/L	mg/L	lb/d	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	6.8	1.33	1.33
Maximum	9	43.36	8.2	8.2	149.58	76.2	19.14
Median	0.05	0.5	0.1	0.1	54.825	8.165	8.165
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/31/2014	0.1	0.46	0.1	0.1	76.2	76.2	16.2
11/30/2014	0.1	0.5	0.1	0.1	72.1	14	14
12/31/2014	0.1	0.85	0.1	0.1	113	13.3	13.3
1/31/2015	0.1	0.75	0.1	0.1	91.3	13.5	13.5
2/28/2015	0.1	0.5	0.1	0.1	60	11.6	11.6
3/31/2015	< .1	< .6	< .1	< .1	98	14.4	14.4
4/30/2015	0.4	1.2	0.1	0.1	114	9.2	9.2
5/31/2015	0.1	0.5	0.1	0.1	70	13	13
6/30/2015	0.1	0.5	0.1	0.1	65.8	12.8	12.8
7/31/2015	0.1	0.5	0.1	0.1	24.6	4.5	4.5
8/31/2015	0.1	0.3	0.1	0.1	40	10.6	10.6
9/30/2015	0.1	0.3	0.1	0.1	32.6	8.87	8.87
10/31/2015	0.1	0.4	0.1	0.1	30.5	7.59	7.59
11/30/2015	0.1	0.4	0.1	0.1	44	10.9	10.9
12/31/2015	< .1	< .5	< .1	< .1	6.8	1.33	1.33
1/31/2016	< .1	< .5	< .1	< .1	44.3	8.25	8.25
2/29/2016	< .1	< .6	< .1	< .1	121	17.5	17.5
3/31/2016	< .1	8.9	1.1	1.1	44.5	5.5	5.5
4/30/2016	3.5	43	6.2	6.2	86	12.5	12.5
5/31/2016	< .1	2.71	0.5	0.5	43.58	8.04	8.04
6/30/2016	< .1	< .4	< .1	< .1	11.08	2.78	2.78
7/31/2016	< .1	< .31	< .1	< .1	24.75	8.02	8.02
8/31/2016	< .1	< .3	< .1	< .1	20.49	6.73	6.73
9/30/2016	< .1	< .3	< .1	< .1	23.38	7.7	7.7
10/31/2016	0.1	0.91	0.3	0.3	28.49	9.01	9.01
11/30/2016	< .1	< .42	< .1	< .1	25.8	6.09	6.09
12/31/2016	< .1	2.08	0.4	0.4	25.2	4.85	4.85
1/31/2017	0.1	3.66	0.5	0.5	47.76	6.53	6.53
2/28/2017	< .1	10.38	1.7	1.7	59.64	9.77	9.77
3/31/2017	< .1	3.14	0.3	0.3	89.14	8.53	8.53

Outfall - Monitoring Location - 001

Parameter	Ammonia	TKN	TKN	TKN	TN	TN	TN
	Maximum	Monthly Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Daily Max
Units	mg/L	lb/d	mg/L	mg/L	lb/d	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report
4/30/2017	0.1	8	0.5	0.5	98.52	6.2	6.2
5/31/2017	< .1	< .77	< .1	< .1	92.97	12	12
6/30/2017	< .1	1.54	0.148	0.148	58.25	5.59	5.59
7/31/2017	< .1	< .58	< .1	< .1	48.69	8.4	8.4
8/31/2017	0.1	1.7	0.4	0.4	46.2	11.1	11.1
9/30/2017	< .1	< .54	< .1	< .1	58.27	10.7	10.7
10/31/2017	< .1	< .38	< .1	< .1	35.95	9.35	9.35
11/30/2017	< .1	< 2.32	< .1	< .1	149.58	6.44	6.44
12/31/2017	< .1	0.65	0.1	0.1	52.9	8.08	8.08
1/31/2018	0.2	1.88	0.3	0.3	52.81	8.42	8.42
2/28/2018	0.7	19.32	1.4	1.4	118.98	8.62	8.62
3/31/2018	< .1	4.14	0.3	0.3	79.5	5.76	5.76
4/30/2018	0.2	3.05	0.3	0.3	44.12	4.34	4.34
5/31/2018	< .1	2.89	0.3	0.3	82.72	8.58	8.58
6/30/2018	< .1	< .58	< .1	< .1	57.12	9.84	9.84
7/31/2018	0.1	< .65	< .1	< .1	28.83	4.46	4.46
8/31/2018	< .1	1.62	0.2	0.2	60.93	7.54	7.54
9/30/2018	< .1	< .72	< .1	< .1	42.42	5.86	5.86
10/31/2018	< .1	< 1.27	< .1	< .1	75.65	5.94	5.94
11/30/2018	0.3	8.06	1.1	1.1	28.66	3.91	3.91
12/31/2018	0.1	7.4	0.6	0.6	75.19	6.1	6.1
1/31/2019	0.1	3.13	0.3	0.3	61.5	5.89	5.89
2/28/2019	0.8	4.49	0.5	0.5	42.58	4.74	4.74
3/31/2019	9	43.36	8.2	8.2	101.2	19.14	19.14
4/30/2019	0.2	3.61	0.5	0.5	45.07	6.24	6.24
5/31/2019	0.7	6.61	0.4	0.4	62.59	3.79	3.79
6/30/2019	< .1	< .81	< .1	< .1	56.75	7	7
7/31/2019	< .1	< .46	< .1	< .1	66.03	14.5	14.5
8/31/2019	0.1	< .47	< .1	< .1	29.46	6.24	6.24
9/30/2019	< .1	< .34	< .1	< .1	28.96	8.51	8.51

Outfall - Monitoring Location - 001

Parameter	Nitrite+Nitrate	Nitrite+Nitrate	Nitrite+Nitrate	TP	TP	TP	Copper
	Monthly Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Daily Max	Monthly Ave
Units	lb/d	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L
Effluent Limit	Report	Report	Report	0.52	1	Report	28
Minimum	0.5	0.1	0.1	0.1	0.18	0.19	0
Maximum	144.94	75.6	17.5	0.49	0.9	1.8	20
Median	44.2	7.565	7.565	0.32	0.53	0.655	7
No. of Violations	N/A	N/A	N/A	0	0	N/A	0
10/31/2014	75.6	75.6	16.2	0.46		0.65	8
11/30/2014	72.1	14	14		0.9	1.5	9
12/31/2014	113	13.3	13.3		0.57	0.88	9
1/31/2015	1	13.5	13.5		0.67	1.23	14
2/28/2015	59	11.4	11.4		0.8	1.15	10
3/31/2015	96	14.2	14.2		0.68	0.95	10
4/30/2015	113.6	9.16	9.16	0.48		0.62	8
5/31/2015	0.5	0.1	0.1	0.45		0.92	10
6/30/2015	65.8	12.8	12.8	0.34		0.43	6
7/31/2015	24.6	4.5	4.5	0.49		0.9	8
8/31/2015	40.6	10.6	10.6	0.45		0.63	10
9/30/2015	32.6	8.87	8.87	0.31		0.59	15
10/31/2015	30.4	7.59	7.59	0.4		0.86	10
11/30/2015	44	10.9	10.9		0.7	1.8	13
12/31/2015	6.8	1.33	1.33		0.44	1.37	10
1/31/2016	44.3	8.25	8.25		0.53	1.04	17
2/29/2016	121	17.5	17.5		0.41	0.99	20
3/31/2016	35.6	4.4	4.4		0.37	1.1	< 5
4/30/2016	19	2.8	2.8	0.18		0.46	< 5
5/31/2016	40.87	7.54	7.54	0.48		1.12	< 5
6/30/2016	11.08	2.78	2.78	0.34		0.68	8
7/31/2016	24.75	8.02	8.02	0.49		0.92	8
8/31/2016	20.49	6.73	6.73	0.16		0.23	< 5
9/30/2016	23.38	7.7	7.7	0.1		0.19	7
10/31/2016	27.28	9.01	9.01	0.27		0.56	< 5
11/30/2016	24.95	5.89	5.89		0.67	1.4	7
12/31/2016	22.6	4.35	4.35		0.66	1.15	7
1/31/2017	43.37	5.93	5.93		0.18	0.25	< 5
2/28/2017	48.66	7.97	7.97		0.6	0.77	8
3/31/2017	84.96	8.13	8.13		0.27	0.5	< 5

Outfall - Monitoring Location - 001

Parameter	Nitrite+Nitrate	Nitrite+Nitrate	Nitrite+Nitrate	TP	TP	TP	Copper
	Monthly Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Daily Max	Monthly Ave
Units	lb/d	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L
Effluent Limit	Report	Report	Report	0.52	1	Report	28
4/30/2017	88.92	5.6	5.6	0.17		0.32	5.22
5/31/2017	91.42	11.8	11.8	0.29		0.6	8.91
6/30/2017	55.67	5.34	5.34	0.45		0.96	5.2
7/31/2017	47.53	8.2	8.2	0.23		0.68	11
8/31/2017	44.1	10.6	10.6	0.29		0.43	7
9/30/2017	57.18	10.5	10.5	0.21		0.28	9
10/31/2017	35.18	9.15	9.15	0.32		0.76	< 5
11/30/2017	144.94	6.24	6.24		0.37	0.62	< 5
12/31/2017	51.59	7.88	7.88		0.85	1.06	6
1/31/2018	49.67	7.92	7.92		0.44	1.23	10
2/28/2018	89.99	6.52	6.52		0.21	0.3	11
3/31/2018	73.98	5.36	5.36		0.37	0.51	< 5
4/30/2018	39.04	3.84	3.84	0.26		0.53	< 5
5/31/2018	78.86	8.18	8.18	0.41		0.68	< 5
6/30/2018	55.96	9.64	9.64	0.36		0.47	7
7/31/2018	27.53	4.26	4.26	0.14		0.2	11
8/31/2018	58.51	7.24	7.24	0.47		0.63	8
9/30/2018	40.97	5.66	5.66	0.18		0.24	5
10/31/2018	73.1	5.74	5.74	0.29		0.42	< 5
11/30/2018	18.4	2.51	2.51		0.38	0.65	14
12/31/2018	66.56	5.4	5.4		0.56	0.66	6
1/31/2019	57.32	5.49	5.49		0.66	1.23	< 5
2/28/2019	30.9	3.4	3.4		0.53	0.88	< 5
3/31/2019	10.26	1.94	1.94		0.34	0.45	16
4/30/2019	40.01	5.54	5.54	0.26		0.64	14
5/31/2019	44.42	2.69	2.69	0.35		0.7	2
6/30/2019	55.12	6.8	6.8	0.28		0.4	3
7/31/2019	65.12	14.3	14.3	0.29		0.58	3
8/31/2019	28.51	6.04	6.04	0.48		1.13	5
9/30/2019	28.28	8.31	8.31	0.48		0.61	6

Outfall - Monitoring Location - 001

Parameter	Copper	Phosphate, dissolved / orthophosphate (as P)	Phosphate, dissolved / orthophosphate (as P)	Silver, total (as Ag)
	Daily Max	Monthly Ave	Daily Max	Daily Max
Units	ug/L	mg/L	mg/L	ug/L
Effluent Limit	38	Report	Report	Report
Minimum	0	0.1	0.17	0
Maximum	30	0.9	1.7	1
Median	7	0.47	0.86	Non-Detect
No. of Violations	0	N/A	N/A	N/A
10/31/2014	8			1
11/30/2014	9	0.9	1.4	1
12/31/2014	9	0.49	0.81	1
1/31/2015	14	0.57	1.1	1
2/28/2015	10	0.68	1.06	1
3/31/2015	10	0.59	0.86	< 1
4/30/2015	8			1
5/31/2015	10			1
6/30/2015	6			1
7/31/2015	8			1
8/31/2015	10			1
9/30/2015	15			1
10/31/2015	10			1
11/30/2015	13	0.6	1.7	1
12/31/2015	10	0.31	0.99	< 1
1/31/2016	30	0.48	1.01	< 5
2/29/2016	20	0.39	0.94	< 5
3/31/2016	< 5	0.33	1.08	< 1
4/30/2016	< 5			< 1
5/31/2016	< 5			< 1
6/30/2016	8			< 1
7/31/2016	8			< 1
8/31/2016	< 5			< 1
9/30/2016	7			< 1
10/31/2016	< 5			< 1
11/30/2016	7	0.61	1.31	< 1
12/31/2016	7	0.6	1.07	< 1.2
1/31/2017	< 5	0.1	0.21	< 1
2/28/2017	8	0.48	0.64	< 1
3/31/2017	< 5	0.18	0.42	< 1

Outfall - Monitoring Location - 001

Parameter	Copper	Phosphate, dissolved / orthophosphate (as P)	Phosphate, dissolved / orthophosphate (as P)	Silver, total (as Ag)
	Daily Max	Monthly Ave	Daily Max	Daily Max
Units	ug/L	mg/L	mg/L	ug/L
Effluent Limit	38	Report	Report	Report
4/30/2017	5.22			< 1.25
5/31/2017	8.91			< 1.25
6/30/2017	5.2			< 1.25
7/31/2017	11			< 1
8/31/2017	7			< 1
9/30/2017	9			< 2
10/31/2017	< 5			< 1
11/30/2017	< 5	0.31	0.56	< 1
12/31/2017	6	0.7	0.92	< 1
1/31/2018	10	0.27	0.74	< 1
2/28/2018	11	0.13	0.17	< 1
3/31/2018	< 5	0.29	0.46	< 1
4/30/2018	< 5			< 1
5/31/2018	< 5			< 1
6/30/2018	7			< 1
7/31/2018	11			< 1
8/31/2018	8			< 1
9/30/2018	5			< 1
10/31/2018	< 5			< 1
11/30/2018	14	0.26	0.41	< 1
12/31/2018	6	0.47	0.6	< 1
1/31/2019	< 5	0.52	1	< 1
2/28/2019	< 5	0.38	0.65	< 1
3/31/2019	16	0.23	0.23	< 1
4/30/2019	14			< 5
5/31/2019	2			< .1
6/30/2019	3			< .1
7/31/2019	3			< .1
8/31/2019	5			< .1
9/30/2019	6			< .1

Outfall - Monitoring Location - 001

Parameter	LC50 Acute Ceriodaphnia	Noel Static 7-Day Chronic Ceriodaphnia	Ammonia	Aluminum	Cadmium	Calcium	Copper	Lead
	Monthly Ave Min	Monthly Ave Min						
Units	%	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	100	10	Report	Report	Report	Report	Report	Report
Minimum	<100	6.25	Non-Detect	0.054	Non-Detect	16.1	0.0029	Non-Detect
Maximum	100	100	2.6	0.28	Non-Detect	24.9	0.011	0.0005
Median	100	100	Non-Detect	0.11	Non-Detect	20.4	0.0057	Non-Detect
No. of Violations	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Oct-14	100	50	<.1	0.1	<.0005	19	0.005	<.0005
Jan-15	100	100	<.1	0.041	<.0005	16	0.017	<.0005
Apr-15	100	100	0.17	0.15	<.0005	26	0.009	<.0005
Jul-15	100	100	<.1	0.088	<.0005	22	0.005	<.0005
Oct-15	100	100	<.1	0.14	<.0005	21	0.009	<.0005
Jan-16	100	100	1.2	0.11	<.0005	20	0.005	<.0005
Apr-16	100	100	2.6	0.067	<.0005	23	0.003	<.0005
Jul-16	100	100	<.1	0.099	<.0005	20.1	0.008	0.0005
Oct-16	100	100	<.1	0.1	<.0001	21	0.0076	0.0005
Jan-17	100	100	<.1	0.11	<.0003	24	0.0031	<.0003
Apr-17	100	100	<.1	0.11	<.0003	24.9	0.0035	<.0003
Jul-17	100	100	<.1	0.15	<.0003	20.5	0.0087	0.0003
Oct-17	100	100	<.1	0.15	<.0003	19.5	0.0084	0.0005
Jan-18	100	100	<.1	0.28	<.0001	20.1	0.0057	0.0003
Apr-18	100	100	<.1	0.14	<.0003	22.2	0.0029	<.0003
Jul-18	100	50	<.1	0.13	<.0003	20.4	0.011	0.0003
Oct-18	100	100	<.1	0.054	<.0003	16.1	0.0061	<.0003
Jan-19	100	100	<.1	0.093	<.0001	20	0.0047	0.0004
Apr-19	100	100	<.1	0.093	<.0001	22.5	0.0039	0.0002
Jul-19	100	100	<.1	0.13	<.0003	20.4	0.011	0.0003

Outfall - Monitoring Location - 001

Parameter	Magnesium	Nickel	Zinc	Hardness
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**
Minimum	**4.08**	**Non-Detect**	**0.03**	**64**
Maximum	**24.5**	**0.012**	**0.099**	**160**
Median	**12.3**	**0.002**	**0.042**	**100**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**
Oct-14	21	0.007	0.019	150
Jan-15	11	0.002	0.034	97
Apr-15	6.3	0.003	0.036	96
Jul-15	23	0.009	0.027	160
Oct-15	9.9	0.01	0.07	95
Jan-16	16	<.002	0.042	130
Apr-16	7.3	0.004	0.038	79
Jul-16	5.13	<.002	0.046	74
Oct-16	20.6	0.002	0.052	150
Jan-17	12.3	0.0016	0.039	110
Apr-17	9.02	0.012	0.099	100
Jul-17	13.1	0.0042	0.046	100
Oct-17	4.08	0.0016	0.057	64
Jan-18	24.5	0.0012	0.042	160
Apr-18	16.7	0.0013	0.035	120
Jul-18	11.8	0.0023	0.046	100
Oct-18	9.07	<.001	0.03	80
Jan-19	15.2	0.0014	0.037	120
Apr-19	13.9	0.0014	0.035	120
Jul-19	11.8	0.0023	0.046	100

Receiving Water - Monitoring Location - Ambient

Parameter	Ammonia	Aluminum	Cadmium	Calcium	Copper	Lead	Magnesium	Nickel
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	Ambient	Ambient	Ambient	Ambient	Ambient	Ambient	Ambient	Ambient
Minimum	Non-Detect	0.045	Non-Detect	3.27	0.001	0.0003	0.68	Non-Detect
Maximum	0.12	0.2	Non-Detect	12	0.0058	0.0025	1.62	0.05
Median	Non-Detect	0.12	Non-Detect	5.31	0.0013	0.0008	0.88	Non-Detect
Oct-14	<.1	0.22	<.0005	3	<.002	0.001	0.82	<.002
Jan-15	<.1	0.13	<.0005	2.7	<.002	0.0006	0.69	<.002
Apr-15	<.1	0.13	<.0005	3	<.002	0.0005	0.66	<.002
Jul-15	<.1	0.15	<.0005	2.8	<.002	0.0006	0.63	<.002
Oct-15	<.1	0.16	<.0005	5.2	<.002	0.001	0.82	<.002
Jan-16	<.1	0.18	<.0005	4	<.002	0.0008	0.8	<.002
Apr-16	<.1	0.12	<.0005	4	0.001	<.0005	0.78	<.002
Jul-16	<.1	0.045	<.0005	12	0.001	0.0005	1.62	<.002
Oct-16	<.1	0.057	<.0001	7.56	0.0016	0.0008	1.24	<.001
Jan-17	<.1	0.16	<.0001	5.31	0.0014	0.0007	1.18	<.001
Apr-17	<.1	0.15	<.0001	3.29	0.0011	0.0005	0.73	<.001
Jul-17	<.1	0.12	<.0001	7.2	0.0033	0.0015	1.16	0.001
Oct-17	<.1	0.056	<.0001	9.46	0.0016	0.001	1.33	<.001
Jan-18	0.12	0.15	<.0001	6.66	0.0011	0.0007	1.2	<.001
Apr-18	<.1	0.14	<.0003	3.8	0.0013	0.0004	0.87	0.0013
Jul-18	<.1	0.12	<.0003	6.19	0.0015	0.0014	1.08	0.001
Oct-18	<.1	0.18	<.0001	3.77	0.001	0.0008	0.72	<.001
Jan-19	<.1	0.11	<.0001	3.27	0.0012	0.0003	0.68	<.001
Apr-19	<.1	0.1	<.0001	3.36	0.0058	0.0025	0.7	0.05
Jul-19	<.1	0.2	<.0001	5.43	0.0025	0.002	0.88	0.0012

Receiving Water - Monitoring Location - Ambient

Parameter	Zinc	Hardness	pH
Units	mg/L	mg/L	SU
	Ambient	Ambient	Ambient
Minimum	0.004	11	6.1
Maximum	0.075	37	7.3
Median	0.0092	18	6.7
Oct-14	0.006	10	6.1
Jan-15	0.006	11	7.1
Apr-15	0.006	11	6.1
Jul-15	0.007	12	6.4
Oct-15	0.007	17	6.6
Jan-16	0.01	15	6.7
Apr-16	0.007	14	6.4
Jul-16	0.004	37	6.9
Oct-16	0.0045	25	7.0
Jan-17	0.012	19	6.1
Apr-17	0.0095	11	6.6
Jul-17	0.0083	21	6.9
Oct-17	0.0048	29	7.1
Jan-18	0.011	22	6.5
Apr-18	0.012	13	7.3
Jul-18	0.0079	20	6.9
Oct-18	0.0064	13	6.5
Jan-19	0.036	11	6.4
Apr-19	0.075	12	6.4
Jul-19	0.0092	18	6.8

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)[1] 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 95th 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_s = upstream concentration (median value of available ambient data)
Q_s = upstream flow (7Q10 flow upstream of the outfall)
C_e = effluent concentration (95th percentile or maximum of effluent concentration)
Q_e = effluent flow of the facility (design flow)
C_d = downstream concentration
Q_d = downstream flow ($Q_s + Q_e$)

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_d) and the effluent concentration (C_e) 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

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 [1]	Q_e	C_e [2]		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)		0.0		0.6	0.6		0.0	0.0	31.3	3.3	N	N	N/A	N/A
Ammonia (Cold)		0.0		0.7	0.7		0.1	0.1	31.3	6.6	N	N	N/A	N/A
		µg/L		µg/L	µg/L		µg/L	µg/L	µg/L	µg/L			µg/L	µg/L
Aluminum		135.0		211.9	211.9		141.0	141.0	750	87	N	**Y**	N/A	**87.0**
Cadmium	31.72	0.0	2.71	0.0	0.0	34.43	0.0	0.0	0.4	0.1	N	N	N/A	N/A
Copper		1.1		38.0	28.0		4.0	3.2	3.3	2.5	N/A	N/A	**28.4**	**18.7**
Lead		0.8		0.5	0.5		0.7	0.7	11.4	0.4	N	**Y**	N/A	**0.4**
Nickel		0.0		9.6	9.6		0.8	0.8	126.4	14.1	N	N	N/A	N/A
Zinc		7.5		72.8	72.8		12.6	12.6	32.2	32.2	N	N	N/A	N/A

[1] 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).

[2] Values represent the 95th 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)
Total Massachusetts Out-of-Basin Load			**262**	**146**	**11,528**	**11,215**	**9,767**	**10,557**	**10,631**	**10,740**
Total Massachusetts Connecticut River Load			**179.6**	**98**	**9,184**	**8,945**	**7,695**	**8,390**	**8,341**	**8,511**
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	*1.4*	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	*0.9*	0.49	0.43	0.49	0.60	0.59
Total Massachusetts Housatonic Load			**29.4**	**18**	**1,667**	**1,605**	**1,509**	**1,612**	**1,707**	**1,626**
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 WWWTF	POTW	0.076	0.014	*5.3*	*3.8*	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
Total Massachusetts Thames River Load			**11.8**	**6**	**677**	**666**	**564**	**556**	**583**	**609**
MA0100439	WEBSTER WWTF	POTW	6.00	2.97	389	393	328	292	344	349
MA0100901	SOUTHBRIDGE WWTF	POTW	3.77	1.97	*178*	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:

1) italics = estimated load based on average conc & flow from other years, or if no data for any years, assumed concentration of 19.6 mg/L.

2) The loads represent annual totals, based on annual daily average flow and daily average nitrogen concentration.

3) Term = Permit was terminated in that year

4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.

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)
Total New Hampshire Out-of-Basin Load			**31.5**	**18.6**	**1,662**	**1,457**	**1,370**	**1,555**	**1,154**	**1,440**
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	*341*	*341*	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	*136*	*136*	132	127	152	137
NH0100382	HINSDALE WWTP	POTW	0.3	0.19	*18*	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	*32*	*32*	*32*	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	*533*	*397*	*394*	*452*	40	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	*161*	*161*	*161*	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:

1) italics = estimated load based on average conc & flow from other years, or if no data for any years, assumed concentration of 19.6 mg/L.

2) The loads represent annual totals, based on annual daily average flow and daily average nitrogen concentration.

3) Term = Permit was terminated in that year

4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.

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)
	Total Vermont Out-of-Basin Load		**18.3**	**7.8**	**1,273**	**1,255**	**1,146**	**1,221**	**1,421**	**1,263**
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

NOTES:

1) italics = estimated load based on average conc & flow from other years, or if no data for any years, assumed concentration of 19.6 mg/L.

2) The loads represent annual totals, based on annual daily average flow and daily average nitrogen concentration.

3) Term = Permit was terminated in that year

4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION 1 (EPA)
WATER DIVISION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (MASSDEP)
COMMONWEALTH OF MASSACHUSETTS
1 WINTER STREET
BOSTON, MASSACHUSETTS 02108

EPA PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE UNITED STATES UNDER SECTION 402 OF THE CLEAN WATER ACT (CWA), AS AMENDED, AND MASSDEP PUBLIC NOTICE OF EPA REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE CWA.

PUBLIC NOTICE PERIOD: **July 16, 2020 – August 14, 2020**

PERMIT NUMBER: **MA0100005**

PUBLIC NOTICE NUMBER: **MA-016-20**

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Athol
Department of Public Works
584 Main Street
Athol, MA 01331

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Athol Wastewater Treatment Plant
Jones Street, Athol, MA 01364

RECEIVING WATER AND CLASSIFICATION:

Millers River (Class B)

PREPARATION OF THE DRAFT PERMIT AND EPA REQUEST FOR CWA § 401 CERTIFICATION:

EPA is issuing for public notice and comment the Draft NPDES Permit for the Athol WWTP, which discharges treated domestic and industrial wastewater. Sludge from this facility is transported to the Fitchburg East WWTF, Cranston, RI WPCF or the Naugatuck, CT WWTF for incineration. The effluent limits and permit conditions imposed have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at 314 CMR 4.00. MassDEP cooperated with EPA in the development of the Draft NPDES Permit. MassDEP retains independent authority under State law to issue a separate Surface Water Discharge Permit for the discharge, not the subject of this notice, under the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53.

In addition, EPA has requested that MassDEP grant or deny certification of this Draft Permit pursuant to Section 401 of the CWA and implementing regulations. Under federal regulations governing the NPDES program at 40 Code of Federal Regulations (CFR) § 124.53(e), state certification shall contain conditions that are necessary to assure compliance with the applicable provisions of CWA sections 208(e), 301, 302, 303, 306, and 307 and with appropriate requirements of State law, including any conditions more stringent than those in the Draft Permit that MassDEP finds necessary to meet these requirements. In addition, MassDEP may provide a statement of the extent to which each condition of the Draft Permit can be made

less stringent without violating the requirements of State law.

INFORMATION ABOUT THE DRAFT PERMIT:

The Draft Permit and explanatory Fact Sheet may be obtained at no cost at https://www.epa.gov/npdes-permits/massachusetts-draft-individual-npdes-permits or by contacting:

Robin Johnson
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1045
Johnson.Robin@epa.gov

Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this workforce telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at the EPA Boston office. However, any documents relating to this Draft Permit can be requested from the individual listed above.

PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARINGS:

All persons, including applicants, who believe any condition of this Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by **August 14, 2020,** which is the close of the public comment period. Comments, including those pertaining to EPA's request for CWA § 401 certification, should be submitted to the EPA contact at the address or email listed above. Upon the close of the public comment period, EPA will make all comments available to MassDEP.

Any person, prior to the close of the public comment period, may submit a request in writing to EPA for a public hearing on the Draft Permit under 40 CFR § 124.10. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice if the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on this Draft Permit, the Regional Administrator will respond to all significant comments and make the responses available to the public.

Due to the COVID-19 National Emergency, if comments are submitted in hard copy form, please also email a copy to the EPA contact above.

FINAL PERMIT DECISION:

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

KEN MORAFF, DIRECTOR
WATER DIVISION
UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY – REGION 1

LEALDON LANGLEY, DIRECTOR
DIVISION OF WATERSHED MGMT
MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION