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 Newport, New Hampshire

is authorized to discharge from the facility located at

Newport Wastewater Treatment Facility
20 Putnam Road
Newport, NH 03773

to receiving water named

Sugar 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 April 18, 2007.

This permit consists of **Part I** including the cover page; **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 (C.F.R.) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, the permit will become effective upon the date of signature. Procedures for appealing EPA's Permit decision may be found at 40 C.F.R. § 124.19.

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PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent through Outfall Serial Number 001 to the Sugar 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]
Effluent Flow[5]	1.3 MGD Rolling Annual Average	---	---	Continuous	Recorder
Effluent Flow	Report MGD	---	Report MGD	Continuous	Recorder
BOD_5	30 mg/L 325 lb/day	45 mg/L 488 lb/day	50 mg/L 542 lb/day	1/week	Grab
BOD_5 Removal	≥ 85 %	---	---	---	---
TSS	30 mg/L 325 lb/day	45 mg/L 488 lb/day	50 mg/L 542 lb/day	1/week	Grab
TSS Removal	≥ 85 %	---	---	---	---
pH Range[6]	6.5 - 8.0 S.U.			1/day	Grab
Escherichia coli[7]	126 E. coli/100 mL	---	406 E. coli/100 mL	2/week	Grab
Ammonia Nitrogen (May 1 – October 31)	6.4 mg/L Report lb/day	---	Report mg/L	1/week	Grab
Ammonia Nitrogen (November 1 - April 30)	24.3 mg/L Report lb/day	---	Report mg/L	1/week	Grab
Total Nitrogen[8]	Report mg/L Report lb/day	---	Report mg/L	1/week	Grab
Total Kjeldahl Nitrogen[8]	Report mg/L	---	Report mg/L	1/week	Grab
Total Nitrate+Nitrite[8]	Report mg/L	---	Report mg/L	1/week	Grab

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Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Total Phosphorus (April 1 - October 31st)	5.2 lb/day Report mg/L	---	Report lb/day Report mg/L	1/week	Grab
Total Phosphorus (November 1st - March 31st)	1 mg/L Report lb/day	---	Report mg/L Report lb/day	1/week	Grab
Interim requirement (first 36 month from the effective date) Total Recoverable Aluminum[9]	Report µg/L	---	Report µg/L	2/Month	Grab
Total Recoverable Aluminum[9]	87 µg/L	---	Report µg/L	2/Month	Grab
Total Recoverable Copper	13.2 µg/L	---	17.2 µg/L	2/Month	Grab
Total Recoverable Lead	2.3 µg/L	---	Report µg/L	2/Month	Grab
Whole Effluent Toxicity (WET) Testing[10,11]					
LC_{50}	---	---	≥ 100 %	1/quarter	Grab
C-NOEC	---	---	≥ 17.8 %	1/quarter	Grab
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	---	---	Report mg/L	1/quarter	Grab

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Ambient Characteristic[12]	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly[4]	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[5]
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	---	---	Report mg/L	1/quarter	Grab
pH[13]	---	---	Report S.U.	1/quarter	Grab
Temperature[13]	---	---	Report °C	1/quarter	Grab
Total Phosphorus[14] (April 1 – October 31)	---	---	Report mg/L	1/month	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly[4]	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[5]
BOD_5	Report mg/L	---	---	2/month	Composite
TSS	Report mg/L	---	---	2/month	Composite

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Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and the State of any additional testing above that required herein, if testing is in accordance with 40 C.F.R. § 136.

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

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

4. A grab sample is an individual sample collected in a period of less than 15 minutes. Each composite sample will consist of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.

5. The limit is a rolling annual average. The value will be calculated and reported as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months.

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). See Part I.G.1. below for a provision to modify the pH range.

7. The monthly average limit for *E. coli* is expressed as a geometric mean.

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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.

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

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

9. Please see section G.1 for special conditions related to Aluminum.

10. 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*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected and tests completed during the same weeks each time of calendar quarters ending March 31st, June 30th, September 30th, and December 31st. 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.

11. 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.

12. 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.

13. 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.

14. See Part G.4 Special Conditions

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Part I.A. continued.

2. The discharge shall not cause a violation of the water quality standards of the receiving water.

3. The discharge shall be free from substances in kind or quantity that settle to form harmful benthic deposits; float as foam, debris, scum or other visible substances; produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated uses; result in the dominance of nuisance species; or interfere with recreational activities.

4. Tainting substances shall not be present in the discharge in concentrations that individually or in combination are detectable by taste and odor tests performed on the edible portions of aquatic organisms.

5. The discharge shall not result in toxic substances or chemical constituents in concentrations or combinations in the receiving water that injure or are inimical to plants, animals, humans or aquatic life; or persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in edible portions of fish, shellfish, other aquatic life, or wildlife that might consume aquatic life.

6. The discharge shall not result in benthic deposits that have a detrimental impact on the benthic community. The discharge shall not result in oil and grease, color, slicks, odors, or surface floating solids that would impair any existing or designated uses in the receiving water.

7. The discharge shall not result in an exceedance of the naturally occurring turbidity in the receiving water by more than 10 NTUs.

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

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

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

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

      (1) The quantity and quality of effluent introduced into the POTW; and

      (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

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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 and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this permit (24-hour reporting). See Part I.H below for reporting requirements.

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance (O&M) of the sewer system shall be in compliance with the Standard Conditions of Part II and the following terms and conditions. The Permittee is required to 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 (see page 1 of this permit for the effective date). The map shall be on a street map of the community, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current

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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:

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(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 1.3 MGD design flow (1.04 MGD), or there have been capacity related overflows, the report shall include:

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(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 Categorical Industrial User (IU) subject to Categorical Pretreatment Standards under 40 C.F.R. § 403.6 and 40 C.F.R. Chapter I, Subchapter N (§§ 405-415, 417-430, 432, 447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended) who commences discharge to the POTW 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 POTW (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 POTW; or is designated as such by the Control Authority as defined in 40 C.F.R. § 403.3(f)) on the basis that the industrial user has a reasonable potential to adversely affect the wastewater treatment facility's operation, or for violating any pretreatment standard or requirement (in accordance with 40 C.F.R. § 403.8(f)(6)).

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 C.F.R. § 403.6 and 40 C.F.R. Chapter I, Subchapter N (§§ 405-415, 417-430, 432-447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended), or from a Significant Industrial User, the Permittee shall forward the originals of these reports within ninety (90) days of their receipt to EPA and copy the State.

F. SLUDGE CONDITIONS

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

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

3. The requirements and technical standards of 40 C.F.R. § 503 apply to the following sludge use or disposal practices:

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a. Land application - the use of sewage sludge to condition or fertilize the soil
b. Surface disposal - the placement of sewage sludge in a sludge only landfill
c. Sewage sludge incineration in a sludge only incinerator

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

5. The 40 C.F.R. § 503 requirements include the following elements:

   - General requirements
   - Pollutant limitations
   - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
   - Management practices
   - Record keeping
   - Monitoring
   - Reporting

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

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

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

   Sampling of the sewage sludge shall use the procedures detailed in 40 C.F.R. § 503.8.

7. Under 40 C.F.R. § 503.9(r), the Permittee is a "person who prepares sewage sludge" because it "is … the person who generates sewage sludge during the treatment of domestic sewage in a treatment works …." If the Permittee contracts with *another* "person who prepares sewage sludge" under 40 C.F.R. § 503.9(r) – i.e., with "a person who derives a material from sewage sludge" – for use or disposal of the sludge, then compliance with § 503 requirements is the responsibility of the contractor engaged for that purpose. If the Permittee does not engage a

[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

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"person who prepares sewage sludge," as defined in 40 C.F.R. § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in § 503 are met. 40 C.F.R. § 503.7. If the ultimate use or disposal method is land application, the Permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 C.F.R. § 503 Subpart B.

8. Compliance with the requirements of this permit or 40 C.F.R. § 503 shall not eliminate or modify the need to comply with applicable requirements under RSA 485-A and Env-Wq 800, New Hampshire Sludge Management Rules.

G. SPECIAL CONDITIONS

1. Aluminum

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

At a minimum, the permittee shall include the following:

a. An evaluation of all potentially significant sources of aluminum in the sewer system and alternatives for minimizing these sources.

b. An evaluation of alternative modes of operation at the wastewater treatment facility in order to reduce the effluent levels of aluminum.

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

[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 ad consistent with antidegradation requirements. Such a modification would not trigger anti-backsliding prohibitions, as reflected in CWA 402 § (o) and 40 C.F.R. § 122.44(l).

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

3. Total Nitrogen

    a. Within **one year of the effective date of the permit**, the permittee shall complete an evaluation of alternative methods of operating the existing wastewater treatment facility to optimize the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen and submit a report to EPA and NHDES documenting this evaluation and presenting a description of recommended operational changes. The methods to be evaluated include, but are 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 report may be combined with the permittee's annual nitrogen report under Part I.G.2.b, if both reports are submitted to EPA and NHDES by February 1st.

    b. The permittee shall also submit an annual report to EPA and the NHDES, by February 1st 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 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.

4. Seasonal Ambient Total Phosphorus Sampling

5. Beginning the first 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. Sampling shall be conducted on any calendar day following at least 72 hours with less than 0.1 inches of cumulative rainfall. A sampling plan shall be submitted to EPA and the State at least three months prior to the first planned sampling date as part of a Quality Assurance Project Plan for review and State approval. For the years that monitoring is not required, the Permittee shall report NODI code "9" (conditional monitoring not required).

H. REPORTING REQUIREMENTS

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

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1. Submittal of DMRs Using NetDMR

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

2. Submittal of Reports as NetDMR Attachments

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

3. Submittal of 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") found on the internet at https://www.epa.gov/compliance/npdes-ereporting.

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) Request for change in WET testing requirement; and
      (5) Report on unacceptable dilution water / request for alternative dilution water for WET testing.
      (6) Report of new industrial user commencing discharge
      (7) Report received from existing industrial user

   b. These reports, information, and requests shall be submitted to EPA/OEP 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:

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(1) Prior to 21 December 2020, written notifications required under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows (SSOs). Starting on 21 December 2020, such notifications must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

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

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

6. State Reporting

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

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

7. Verbal Reports and Verbal Notifications

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's Office of Environmental Stewardship at:

617-918-1510

c. Verbal reports and verbal notifications shall also be made to the Permittee's assigned NPDES inspector at NHDES –WD at:

603-271-2985

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I. STATE PERMIT CONDITIONS

1. The Permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485-A:12).

2. This NPDES discharge permit is issued by EPA under federal and state law. Upon final issuance by EPA, the New Hampshire Department of Environmental Services-Water Division (NHDES-WD) may adopt this permit, including all terms and conditions, as a state permit pursuant to RSA 485-A:13.

3. EPA shall have the right to enforce the terms and conditions of this permit pursuant to federal law and NHDES-WD shall have the right to enforce the permit pursuant to state law, if the permit is adopted. Any modification, suspension, or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of the permit as issued by the other agency.

4. Pursuant to New Hampshire Statute RSA 485-A13,I(c), any person responsible for a bypass or upset at a *wastewater facility* shall give immediate notice of a bypass or upset to all public or privately owned water systems drawing water from the same receiving water and located within 20 miles downstream of the point of discharge regardless of whether or not it is on the same receiving water or on another surface water to which the receiving water is tributary. Wastewater facility is defined at RSA 485-A:2XIX as the structures, equipment, and processes required to collect, convey, and treat domestic and industrial wastes, and dispose of the effluent and sludge. The Permittee shall maintain a list of persons, and their telephone numbers, who are to be notified immediately by telephone. In addition, written notification, which shall be postmarked within 3 days of the bypass or upset, shall be sent to such persons.

5. The pH range of 6.5 to 8.0 Standard Units (S.U.) must be achieved in the final effluent unless the Permittee can demonstrate to NHDES-WD: 1) that the range should be widened due to naturally occurring conditions in the receiving water; or 2) that the naturally occurring receiving water pH is not significantly altered by the Permittee's discharge. The scope of any demonstration project must receive prior approval from NHDES-WD. In no case, shall the above procedure result in pH limits outside the range of 6.0 to 9.0 S.U., which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 C.F.R. § 133.102(c).

6. Pursuant to New Hampshire Code of Administrative Rules, Env-Wq 703.07(a):

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

      (1) Any extension of a collector or interceptor, whether public or private, regardless of flow;
      (2) Any wastewater connection or other discharge in excess of 5,000 gpd;

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(3) Any wastewater connection or other discharge to a WWTP operating in excess of 80 percent design flow capacity based on actual average flow for 3 consecutive months;
(4) Any industrial wastewater connection or change in existing discharge of industrial wastewater, regardless of quality or quantity; and
(5) Any sewage pumping station greater than 50 gpm or serving more than one building.
(6) Any proposed sewer that serves more than one building or that requires a manhole at the connection.

7. For each new or increased discharge of industrial waste to the POTW, the Permittee shall submit, in accordance with Env-Wq 305.10(b) an "Industrial Wastewater Discharge Request."

8. Pursuant to Env-Wq 305.15(d) and 305.16(f), the Permittee shall not allocate or accept for treatment more than 90 percent of the headworks loading limits of the facility.

9. Pursuant to Env-Wq 305.21, at a frequency no less than every five years, the Permittee shall submit to NHDES:

   a. A copy of its current sewer use ordinance if it has been revised without department approval subsequent to any previous submittal to the department or a certification that no changes have been made.

   b. A current list of all significant indirect dischargers to the POTW. At a minimum, the list shall include for each significant indirect discharger, its name and address, the name and daytime telephone number of a contact person, products manufactured, industrial processes used, existing pretreatment processes, and discharge permit status.

   c. A list of all permitted indirect dischargers; and

   d. A certification that the municipality is strictly enforcing its sewer use ordinance and all discharge permits it has issued.

10. When the effluent discharged for a period of three (3) consecutive months exceeds 80 percent of the 1.3 MGD design flow (1.04) or design loading capacity, the permittee shall submit to the permitting authorities a projection of flows and loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans. Before the design flow will be reached, or whenever treatment necessary to achieve permit limits cannot be assured, the permittee may be required to submit plans for facility improvements.

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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°C.

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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:

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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 (^oC)	20 $\pm$ 1^oC or 25 $\pm$ 1^oC
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

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		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.

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EPA NEW ENGLAND TEST CONDITIONS FOR THE FATHEAD MINNOW (PIMEPHALES PROMELAS) 48 HOUR ACUTE TEST[1]

1.	Test Type	Static, non-renewal
2.	Temperature (^oC)	20 $\pm$ 1 ^{o} C or 25 $\pm$ 1°C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hr light, 8 hr dark
5.	Size of test vessels	250 mL minimum
6.	Volume of test solution	Minimum 200 mL/replicate
7.	Age of fish	1-14 days old and age within 24 hrs of each other
8.	No. of fish per chamber	10
9.	No. of replicate test vessels per treatment	4
10.	Total no. organisms per concentration	40
11.	Feeding regime	As per manual, lightly feed test age larvae using concentrated brine shrimp nauplii while holding prior to initiating test
12.	Aeration	None, unless dissolved oxygen (D.O.) concentration falls below 4.0 mg/L, at which time gentle single bubble aeration should be started at a rate of less than 100 bubbles/min. (Routine D.O. check is recommended.)
13.	dilution water[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

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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.

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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.

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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.

DOVER 005835

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 (and modified acute) 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 and modified acute toxicity data shall be reported as outlined in Section VIII. The chronic fathead minnow and daphnid test data can be used to calculate an LC50 at the end of 48 hours of exposure when both acute (LC50) and chronic (C-NOEC) test endpoints are specified in the permit.

II. METHODS

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

III. SAMPLE COLLECTION AND USE

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

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

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

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

IV. DILUTION WATER

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

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

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

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

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

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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-New England
One Congress St., Suite 1100
Boston, MA 02114-2023

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
One Congress Street, Suite 1100
Boston, MA 02114-2023

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 IC25s and LC50 values and ≥ two concentration intervals for NOECs or NOAECs, 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://www.epa.gov/waterscience/methods/wet/pdf/wetguide.pdf . 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

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VIII. TOXICITY TEST REPORTING

A report of results must include the following:

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

In addition to the summary sheets the report must include:

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

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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. <u>Upset</u>

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

DOVER 005863

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: NH0100200

PUBLIC NOTICE START AND END DATES: March 5, 2020 – April 3, 2020

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Newport
15 Sunapee Street
Newport, NH 03773

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Newport Wastewater Treatment Facility
20 Putnam Road
Newport, NH 03773

RECEIVING WATER AND CLASSIFICATION:

Connecticut River Watershed- USGS Code: 01080104
Sugar River (NHRIV801060405-29): Class B

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Figure 1: Location of the Newport WWTF Attached

Figure 2: Newport Wastewater Treatment Facility Flow Diagram Attached

APPENDICES

Appendix A – Effluent and Ambient Data

Appendix B – Statistical Approach to Characterizing the Effluent

Appendix C - NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

1 Proposed Action

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

The permit currently in effect was issued on April 18, 2007 with an effective date of July 1, 2007 and expired on June 30, 2012 (the "2007 Permit"). The Permittee filed an application for permit reissuance with EPA dated November 30, 2011, as required by 40 Code of Federal Regulations (C.F.R.) § 122.6. Since the permit application was deemed timely and complete by EPA on September 19, 2013, the Facility's 2007 Permit has been administratively continued pursuant to 40 C.F.R. § 122.6 and § 122.21(d).

2 Statutory and Regulatory Authority

Congress enacted the Clean Water Act (CWA), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." *See* CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specific permitting sections of the CWA, one of which is § 402. *See* CWA §§ 303(a), 402(a). Section 402(a) established one of the CWA's principal permitting programs, the NPDES Permit Program. Under this section, EPA may "issue a permit for the discharge of any pollutant or combination of pollutants" in accordance with certain conditions. *See* CWA § 402(a). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA's NPDES permit program are generally found in 40 C.F.R. §§ 122, 124, 125, and 136.

Section 301 of the CWA provides for two types of effluent limitations to be included in NPDES permits: "technology-based" effluent limitations (TBELs) and "water quality-based" effluent limitations (WQBELs). *See* CWA §§ 301, 304(b); 40 C.F.R. §§ 122, 125, and 131.

2.1 Technology-Based Requirements

Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted. *See* CWA § 301(b). As a class, publicly owned treatment works (POTWs) must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 301(b)(1)(B). The performance level for POTWs is referred to as "secondary treatment." Secondary treatment is comprised of technology-based requirements expressed in terms of BOD_5, TSS and pH. *See* 40 C.F.R. § 133.

Under § 301(b)(1) of the CWA, POTWs must have achieved effluent limits based upon secondary treatment technology by July 1, 1997. Since all statutory deadlines for meeting various treatment technology-based effluent limitations established pursuant to the CWA have expired, when technology-based effluent limits are included in a permit, compliance with those limitations is from the date the issued permit becomes effective. *See* 40 C.F.R. § 125.3(a)(1).

2.2 Water Quality Based Requirements

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

2.2.1 Water Quality Standards

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the State. *See* CWA § 303 and 40 C.F.R. § 131.10-12. Generally, WQSs consist of three parts: 1) beneficial designated use or uses for a water-body or a segment of a water-body; 2) numeric or narrative water quality criteria sufficient to protect the assigned designated use(s); and 3) antidegradation requirements to ensure that once a use is attained it will not be degraded and to protect high quality and National resource waters. *See* CWA § 303(c)(2)(A) and 40 C.F.R. § 131.12. The applicable State WQSs can be found in the New Hampshire Code of Administrative Rules, Surface Water Quality Regulations, Chapter Env-Wq 1700 et seq. Also *See* generally, Title 50, Water Management and Protection, Chapters 485-A, Water Pollution and Waste Disposal Section.

Receiving water requirements are established according to numerical and narrative standards in WQSs adopted under State law for each water body classification. When using chemical-specific numeric criteria to develop permit limits, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and are therefore typically applicable to monthly average limits.

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

2.2.2 Antidegradation

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

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

This permit is being reissued with effluent limitations sufficiently stringent to protect the existing uses of the receiving water.

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

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

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

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

2.2.4 Reasonable Potential

Pursuant to 40 C.F.R. § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs necessary to achieve water quality standards established under § 303 of the CWA. In

addition, limitations "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality". *See* 40 C.F.R. § 122.44(d)(1)(i). There is reasonable potential to cause or contribute to an excursion if the projected or actual in-stream concentration exceeds the applicable criterion. If the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to such an excursion, the permit must contain WQBELs for the pollutant. *See* 40 C.F.R. 122.44(d)(1)(iii).

In determining reasonable potential, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent in the receiving water. EPA typically considers the statistical approach outlined in *Technical Support Document for Water Quality-based Toxics Control (TSD)*[1] to determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS. *See* 40 C.F.R. § 122.44(d). EPA's quantitative approach statistically projects effluent concentrations based on available effluent data, which are then compared to the applicable WQC.

2.2.5 State Certification

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

If the State believes that any conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either the CWA §§ 208(e), 301, 302, 303, 306 and 307 or the appropriate requirements of State law, the State should include such conditions and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. The only exception to this is that the sludge conditions/requirements implementing § 405(d) of the CWA are not subject to the § 401 State Certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through the applicable procedures of 40 C.F.R. § 124.

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

It should be noted that under CWA § 401, EPA's duty to defer to considerations of state law is

[1] March 1991, EPA/505/2-90-001

intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by state law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." *See* 40 C.F.R. § 124.55(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." *Id.* EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 C.F.R. § 122.4 (d) and 40 C.F.R. § 122.44(d).

2.3 Effluent Flow Requirements

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

Generally, EPA uses effluent flow both to determine whether and 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 limits 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[2]. In this regard, the effluent flow limitation is a component of WQBELs because WQBELs are premised on a maximum level of 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 in order to carry out the objectives of the Act. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 C.F.R. §§ 122.4(a) and (d); 122.43 and 122.44(d). A condition on the discharge designed to 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 anti-degradation. Regulating the quantity of pollutants in the discharge through a restriction on the quantity of wastewater effluent is consistent with the overall structure and purposes of the CWA.

In addition, as provided in Part II.B.1 of this permit and 40 C.F.R. § 122.41(e), the permittee is required to properly operate and maintain all facilities and systems of treatment and control.

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

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 C.F.R. §§ 122.41(d) and (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 C.F.R. Parts 122, 124, 125, and 136 authorize EPA to include monitoring and reporting requirements in NPDES permits.

The monitoring requirements included in this permit have been established to yield data representative of the discharges under the authority of §§ 308(a) and 402(a)(2) of the CWA, and consistent with 40 C.F.R. §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The monitoring requirements included in this permit specify routine sampling and analysis, which will provide ongoing, representative information on the levels of regulated constituents in the wastewater discharge streams. The monitoring program is needed to assess effluent characteristics, evaluate permit compliance, and determine if additional permit conditions are necessary to ensure compliance with technology-based and water quality-based requirements, including WQSs. EPA and/or the state may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to § 304(a)(1) of the CWA, state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 C.F.R. § 122. Therefore, the monitoring requirements in this permit are included for specific regulatory use in carrying out the CWA.

NPDES permits require that the approved analytical procedures found in 40 C.F.R. § 136 be used for sampling and analysis unless other procedures are explicitly specified. Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System*

(NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule.[3] This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 C.F.R. § 122.21(e)(3) (completeness), 40 C.F.R. § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 C.F.R. § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

- The method minimum level[4] (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 C.F.R. Part 126 or required under 40 C.F.R. chapter I, subchapter N or O for 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 that 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.

NetDMR is a national web-based tool enabling regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has eliminated the need for participants to mail in paper forms to EPA under 40 C.F.R. §§ 122.41 and 403.12. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/ . Further information about NetDMR can be found on the EPA Region 1 NetDMR website.[5]

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

[3] Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.
[4] The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL). Minimum levels may be obtained in several ways: They may be published in a method; they may be sample concentrations equivalent to the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a lab, by a factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." *See* Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.
[5] https://netdmr.zendesk.com/hc/en-us/articles/209616266-EPA-Region-1-NetDMR-Information.

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 Cod of Federal Regulations. *See generally* 40 C.F.R. Part 122.

2.6 Anti-backsliding

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

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2007 Permit unless specific conditions exist to justify relation 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 Description of Facility and Discharge

3.1 Location and Type of Facility

The location of the treatment plant and the outfall 001 to the Sugar River are shown in Figure 1. The latitude and longitude of the outfall is N 43° 23' 00", W 72° 11' 00".

The Newport Wastewater Treatment Facility (WWTF) is a secondary wastewater treatment facility that is engaged in the collection and treatment of municipal wastewater. Currently, the Facility serves approximately 1,200 residents in the Town of Newport.

The Facility has a design flow of 1.3 MGD, the annual average daily flow reported in the 2011 application was 0.66 MGD and the average for the review period has been 0.57 MGD. The system is a separate system with no combined sewers. According to the application, the permittee estimates 200,000 gallons per day (gpd) of average inflow and infiltration (I/I). Wastewater is comprised of mostly domestic sewage with some commercial sewage and some septage.

There is one significant industrial user (SIU), Sturm, Ruger & Company, Inc., which according to the 2011 application, contributes an average intermittent flow of approximately 75,000 gpd of process wastewater and an average intermittent flow of 74,000 gpd of non-process wastewater. The SIU is subject to local limits and categorical pretreatment standards at 40 C.F.R. § 433 – Metal Finishing. Pollutants introduced into POTWs by a non-domestic source shall not pass through the POTW or interfere with the operation or performance of the treatment works.

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

3.1.1 Treatment Process Description

The Newport Wastewater Treatment Facility (WWTF) is a secondary wastewater treatment facility. The facility uses two aerated lagoons in a series. Effluent flows through the ultraviolet light (UV) disinfection system, followed by a Parshall flume, and then discharges to the Sugar River. A flow diagram of the Treatment Facility is shown in Figure 2.

Settled solids from the lagoons are removed and pumped into sludge drying bags and allowed to dewater onsite before being removed for disposal by a contracted firm. The final sludge, approximately 50 dry metric tons annually, is disposed of in a municipal solid waste landfill not owned or operated by the permittee.

3.1.2 Collection System Description

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

3.1.3 Compliance History Since issuance of the 2007 Permit

Due to violations of the total phosphorus and whole effluent toxicity limits in the 2007 Permit, EPA issued Administrative Order No. 09-015 effective on March 6, 2009. The EPA AO was superseded by the DES Administrative Consent Order (ACO) No. 15-020 WD effective September 1, 2015 and was amended on April 25, 2018. EPA AO was closed out by letter dated September 8, 2015.

4 Description of Receiving Water and Dilution

The Newport WWTF discharges through outfall 001 into the Sugar River within segment NHRIV801060405-29. This segment is 1.75 miles in length and begins just upstream of the Newport WWTF discharge, adjacent to the end of Putnam Road, and continues to the confluence with the North Branch of the Sugar River. The Sugar River flows into the Connecticut River which eventually discharges to Long Island Sound.

The Sugar River has been classified as a Class B water by the State of New Hampshire. According to New Hampshire's WQS (RSA 485-A:8), "Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics and shall contain not more than either a geometric mean based on at least 3 samples obtained over a 60-day period of 126 Escherichia coli per 100 milliliters, or greater than 406 Escherichia coli per 100 milliliters in any one sample; and for designated beach areas shall contain not more than a geometric mean based on at least 3 samples obtained over a 60-day period of 47 Escherichia coli per 100 milliliters, or 88 Escherichia coli per 100 milliliters in any one sample; unless naturally occurring. There shall be no disposal of sewage or waste into said waters except those which have received adequate treatment to prevent the lowering of the biological, physical, chemical or bacteriological characteristics below those given above, nor shall such disposal of sewage or waste be inimical to aquatic life or to the maintenance

of aquatic life in said receiving waters. The pH range for said waters shall be 6.5 to 8.0 except when due to natural causes. The commissioner shall adopt rules, under RSA 541-A, relative to dissolved oxygen water quality standards in a manner consistent with Environmental Protection Agency guidance on dissolved oxygen water criteria published pursuant to section 304(a) of the Clean Water Act, and other relevant scientific information. Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water, water diversions, or releases shall not be such as to appreciably interfere with the uses assigned to this class. The waters of this classification shall be considered as being acceptable for fishing, swimming and other recreational purposes and, after adequate treatment, for use as water supplies. Where it is demonstrated to the satisfaction of the department that the class B criteria cannot reasonably be met in certain surface waters at all times as a result of combined sewer overflow events, temporary partial use areas shall be established by rules adopted under RSA 485-A:6, XI-c, which meet, as a minimum, the standards specified in paragraph III. The commissioner shall not calculate nutrient discharge limits for aquatic life and human health criteria based on 7Q10 flow or such other flow criteria more restrictive than 7Q10" The following designated uses are assigned to Class B waters: fishing, swimming and other recreational purposes and, after adequate treatment, for use as water supplies.

EPA notes that the State of New Hampshire adopted new criteria into their state water quality standard regulations in December 2016 and submitted them to EPA for review and approval. Although the new criteria have not yet been approved by EPA, the Draft Permit is being proposed with effluent limits derived to meet the new criteria in anticipation of a state certification to do so.

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

The NHDES 2016 List of Threatened or Impaired Waters That Require a TMDL[6] (2016 303(d) List), includes the Sugar River segment NHRIV801060405-29 as a Category 5 Water and in need of a total maximum daily load (TMDL) assessment due to dissolved oxygen. The listed sources are an industrial point source discharge and municipal point sources discharges. To date no TMDL has been developed for this segment for the listed impairments and the TMDL priority remains categorized as low.

Based on the most current information available, EPA believes that the limitations and conditions contained in the Draft Permit represent the minimum level of control necessary to ensure protection of all designated uses in the receiving waters.

4.1 Available Dilution

7 Day, 10 Year Low Flow

To ensure that discharges do not cause or contribute to violations of WQS under all expected circumstances, WQBELs are derived assuming critical conditions for the receiving water (*See* EPA Permit Writer's Manual, Section 6.2.4). For most pollutants and criteria, the critical flow in rivers and streams is some measure of the low flow of that river or stream. In accordance with New

[6] https://www.epa.gov/sites/production/files/2018-06/documents/2016-nh-303d-list-report.pdf

Hampshire's Water Quality Standards (RSA-A:8, VI, Env-Wq 1705.02 (d)), the available dilution for non-tidal rivers and streams is based on a known or estimated value of the lowest average flow which occurs for seven (7) consecutive days with a recurrence interval of once in ten (10) years (7Q10 flow). The 7Q10 is used for aquatic life and human health criteria for non-carcinogens, while the long-term harmonic mean flow is used for human health (for carcinogens only) in the receiving water. Furthermore, ten percent of the receiving water's assimilative capacity is held in reserve for future needs in accordance with New Hampshire's Surface Water Quality Regulations Env-Wq 1705.01.

The 7Q10 flow used in the Draft Permit has been extrapolated by adjusting the 7Q10 at the upstream Sunapee Dam and the downstream USGS Sugar River at West Claremont Gage (1152500) based on the Dingman ratio proration method (Dingman Scenario III)[7]. The 7Q10 was updated using the following data:

- analysis of last 30 years of stream flow data (2/26/1989-2/26/2019) at the downstream USGS Sugar River at West Claremont Gage (01152500), excluding the provisional stream flow data from 10/4/2017 – 2/26/2019
- evaluation of Lake Sunapee Dam operations on Sugar River upstream of the Newport WWTF, and the impacts to stream 7Q10 flow
- estimation of watershed flow contributions to the river segment between the Lake Sunapee Dam and the WWTP outfall (Dingman Area 1) using the Dingman equation and Dingman Ratio proration method
- estimation of the watershed flow contributions to the river segment between the Lake Sunapee Dam and the USGS Sugar River at West Claremont Gage (01152500) (Dingman Area 2)

Table 1 shows the 7Q10 calculation for the Newport WWTP.

[7] Memo to File From Hayley Franz, P.E., NHDES WD WEB, February 27, 2019, "Subject: Newport NPDES Permit (NH0100200), 7Q10 Flow Analysis and Dilution Factor Calculation"

Table 1: Stream gaging areas used in the 7Q10 flow calculation

Stream Flow Component	Flow (cfs)	Comments
A. 7Q10 flow at upstream Lake Sunapee Dam on Sugar River (below dam)	7.0	2006 Lake Sunapee Dam Operation and Maintenance Plan guidance to maintain summer discharge from the dam at 7.0 cfs or higher. This is the assumed 7Q10 stream flow immediately below the dam.
B. 7Q10 flow at downstream Sugar River at West Claremont Gage (01153500)	26.0	Period of record: 2/26/1989 to 2/26/2019 Excludes provisional data from 10/4/2017 to 2/26/2019 7Q10 calculated from USEPA Dflow program (v3.1b)
C. Estimating Intervening Area 7Q10 flow from Lake Sunapee Dam to WWTP Outfall (Dingman A1)	5.79	Calculated from Dingman[1] equation and Dingman Ratio Proration Method
D. Estimated Intervening Area 7Q10 flow from WWTP outfall to downstream Sugar River at West Claremont Gage (01152500) (Dingman A2)	19.9	Calculated from Dignman[1] equation and Dingman Ratio Proration Method
7Q10 Just Downstream of WWTP Outfall	**12.5**	**7Q10 Newport WWTP = ((B-A)*(C/D))+A**
1. Dingman, S.L., and S.C. Lawlor, 1995, Estimating Low-Flow Quantiles from Drainage-Basin Characteristics in New Hampshire and Vermont, American Water Resources Association, Water Resources Bulletin, pp 243-256.		

DILUTION FACTOR

The dilution factor was calculated from a stream mass balance as follows:

7Q10 Dilution Factor = $(0.9*Q_S)/(Q_D)$

where:

Q_S = 7Q10 flow of Sugar River just downstream of WWTP outfall = 12.5 cfs
Q_D = design flow for WWTP = 1.3 MGD = 2.01 cfs
0.9 = Factor to reserve 10% assimilative capacity.

7Q10 Dilution factor = (0.9)(12.5)/(2.01) = **5.6**

Since a majority of the WWTP discharge (Q_D) is derived from water sources (groundwater/surface water withdrawals) from within the Newport WWTP watershed, the 7Q10 flow upstream of the WWTP can be assumed to be the 7Q10 downstream of the WWTP (12.5 cfs) less the WWTP flow, Therefore, at the design flow of 2.01 cfs,

7Q10 upstream of the WWTP = 12.5 cfs – 2.01 cfs = 10.49 cfs.

5 Proposed Effluent Limitations and Conditions

The proposed effluent limitations and conditions derived under the CWA and State WQSs are

described below. The 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.

EPA notes that the State of New Hampshire adopted new criteria into their WQSs in December 2016 and submitted them to EPA for review and approval. Although the new criteria have not yet been approved by EPA, the Draft Permit is being proposed with effluent limits derived to meet the new criteria in anticipation of a state certification to do so.

5.1 Effluent Limitations and Monitoring Requirements

In addition to the State and Federal regulations described in Section 2, data submitted by the permittee in their permit application as well as in monthly discharge monitoring reports (DMRs) and in WET test reports from January 2014 to December 2018 (the "review period") were used to identify the pollutants of concern and to evaluate the discharge during the effluent limitations development process (*See* **Appendix A)**.

5.1.1 Effluent Flow

The 2007 permit has report only requirements for effluent flow on an average monthly and maximum daily basis.

The Draft Permit includes an effluent flow limit based on the average daily design flow of 1.3 MGD. The Draft Permit requires that flow be measured continuously and that the rolling annual average flow, as well as the average monthly and maximum daily flow for each month be reported. The rolling annual average flow is calculated as the average of the flow for the reporting month and 11 previous months. Additionally, if the effluent flow rate exceeds 80 percent of the 1.3 MGD design flow (1.04 MGD) for a period of three (3) consecutive months then the Permittee must notify EPA and NHDES-WD and implement a program for maintaining satisfactory treatment levels.

5.1.2 Biochemical Oxygen Demand (BOD_5)

5.1.2.1 BOD_5 Concentration Limits

BOD_5 concentrations limits in the 2007 Permit are 30 mg/L, 45 mg/L and 50 mg/L for average monthly, average weekly and maximum daily, respectively. These were based on secondary treatment regulations for POTWs found at 40 C.F.R. §133.102(a).

There have been two permit violations of BOD_5 concentration limits in July 2014 with a reported weekly average and daily maximum concentrations of 55 mg/L.

The Draft Permit proposes the same BOD_5 concentration limits as in the 2007 Permit as 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 average monthly, average weekly and maximum daily mass-based limits for BOD_5 in the 2007 Permit correspond to the respective concentration limits in the 2007 Permit and the POTW's daily

design flow of 1.3 MGD. The mass limits are 325 lb/day average monthly, 488 lb/day average weekly and 542 lb/day daily maximum. Mass limits are required by the secondary treatment standards at 40 CFR 122.45(f).

There have been no violations of the BOD_5 mass limits.

Derivation of the mass limits are as follows:

BOD Mass Loading Calculations:

Calculations of maximum allowable loads for average monthly and average weekly BOD_5 are based on the following equation:

$$L = C_d * Q_d * 8.34$$

Where:

L = Maximum allowable load in lb/day.
C_d = Maximum allowable effluent concentration for reporting period in mg/L (reporting periods are average monthly and average weekly)
Q_d = Annual average design flow of Facility of 1.3 MGD.
8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day.

Average Monthly: 30 mg/L x 8.34 x 1.3 MGD = 325 lb/day
Average Weekly: 45 mg/L x 8.34 x 1.3 MGD = 488 lb/day
Daily Maximum: 50 mg/L x 8.34 x 1.3 MGD = 542 lb/day

The mass-based limits for BOD_5 proposed in the Draft Permit are the same as in the 2007 Permit and the monitoring frequency remains once per week in the Draft Permit.

5.1.3 Total Suspended Solids (TSS)

5.1.3.1 TSS Concentration Limits

The concentration limits for TSS in the 2007 Permit were based on the requirements under Section 301(b)(1)(B) of the CWA as defined in the Secondary Treatment Standards in 40 CFR Section 133.102(b). The average monthly limit was 30 mg/L, average weekly was 45 mg/L and the daily maximum was 50 mg/L.

There have been seven permit violations of TSS concentration limits: three of the average monthly limit of 30 mg/L (6/2014, 37 mg/L; 7/2014, 108 mg/L, 10/2018, 33 mg/L); two of the average weekly limit of 45 mg/L (6/2014, 85 mg/L; 7/2014, 218 mg/L) and two of the maximum daily limit of 50 mg/L (6/2014, 85 mg/L; 7/2014, 218 mg/L).

The Draft Permit proposes the same TSS concentration limits as in the 2007 Permit as 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 average monthly, average weekly and maximum daily mass-based limits for TSS in the 2007 Permit correspond to the respective concentration limits in the 2007 Draft Permit and the POTW's daily design flow of 1.3 MGD. The mass limits are 325 lb/day average monthly, 488 lb/day average weekly and 542 lb/day daily maximum. Mass limits are required by the secondary treatment standards at 40 CFR 122.45(f).

There have been four permit violations of the TSS mass limits: two of the average monthly limit of 325 lb/day (6/2014, 336 lb/day; 7/2014, 733 lb/day) and two of the daily maximum limit of 542 lb/day (6/2014, 733 lb/day; 7/2014, 2000).

Derivation of the mass limits are as follows:

TSS Mass Loading Calculations:

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

$$L = C_d * Q_d * 8.34$$

Where:

L = Maximum allowable load in lb/day.
C_d = Maximum allowable effluent concentration for reporting period in mg/L (reporting periods are average monthly and average weekly)
Q_d = Annual average design flow of Facility of 1.3 MGD.
8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day.

Average Monthly: 30 mg/L x 8.34 x 1.3 MGD = 325 lb/day
Average Weekly: 45 mg/L x 8.34 x 1.3 MGD = 488 lb/day
Daily Maximum: 50 mg/L x 8.34 x 1.3 MGD = 542 lb/day

The mass-based limits for TSS proposed in the Draft Permit are the same as in the 2007 Permit and the monitoring frequency remains once per week in the draft permit.

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

In accordance with the provisions of 40 C.F.R. § 133.102(a)(3), (4) and (b)(3), the 2007 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 BOD_5 and TSS removal percentages averaged 96% and 94%, respectively. There was one violation of the 85% removal requirement for TSS during that period for the month of July 2014.

The requirement to achieve 85% BOD_5 and TSS removal has been carried forward into the Draft Permit.

5.1.5 pH

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

The pH requirements in the 2007 Permit are carried forward into the Draft Permit as there has been no change in the WQS with regards to pH.

5.1.6 Bacteria

The 2007 Permit includes effluent limitations for bacteria using *Escherichia coli* (E. coli) bacteria as the indicator bacteria to protect recreational uses in the receiving water.

The DMR data during the review period shows that the permittee has had one violation of the monthly geometric mean of 126 cfu/100 mL (1/2014, 131 cfu/100 mL) and one violation of the maximum limit of 406 cfu/100 mL (1/2018, 410 cfu/100 mL).

The Draft Permit proposes the same bacteria limits as in the 2007 Permit. The proposed monitoring frequency is two times per week, which is also the same as in the 2007 Permit.

5.1.7 Ammonia

Nitrogen in the form of ammonia can reduce the receiving stream's dissolved oxygen concentration through nitrification and can be toxic to aquatic life, particularly at elevated temperatures. The toxicity level of ammonia depends on the temperature and pH of the receiving water (USEPA 1999). The applicable ammonia water quality criteria are pH and, for chronic criteria, temperature dependent and can be derived using New Hampshire Surface Water Quality Regulations at Env-Wq 1703.25. The chronic criteria are also dependent on whether early life stages of fish are present. The Sugar River in the vicinity of the Newport WWTF is within Essential Fish Habitat (EFH) for Atlantic Salmon (*Salmo salar)*, so EPA has assumed that salmonids could be present in the receiving waters.

The 2007 Permit does not include ammonia limits, but it does require the permittee to monitor and report effluent ammonia concentrations two times per month and ambient ammonia concentrations on a quarterly basis as part of Whole Effluent Toxicity (WET) testing. Ambient data collected upstream of the Newport outfall in the Sugar River, is presented in Appendix A and shows maximum daily ammonia concentrations that range from <0.5-0.22 mg/L (an outlier of 61 mg/L was removed from the dataset). The median for the warm weather season (May 1- October 31) is 0.075mg/L and for the cold weather period (November 1 – April 30) is 0.055 mg/L. Ambient data sampling conducted in 2016[8] by the Permittee's consultant indicates that the median summer pH for the Sugar River upstream of the Newport outfall was 7.2 S.U. and the median winter pH was 7.0

[8] Diane Mas and Douglas Brisee, Fuss & O'Neil, Inc. to Michele Barden and Ellen Weitzler, EPA, February 22, 2017, Memorandum, RE: Sugar River Sampling Results, Newport, NH.

S.U. (*See* Table 2). Ambient temperature data is not available, so EPA has used a warm weather temperature of 25°C and a cold weather temperature of 5°C.

Table 2: Upstream pH Data from 2016 Sampling

Date	Summer pH	Winter pH
8/24/2016	7.19	
8/30/2016	6.99	
9/6/2016	7.19	
9/22/2016	7.26	
10/5/2016	7.6	
10/17/2016	7.15	
11/1/2016		6.65
11/15/2016		7.21
12/6/2016		6.96
12/22/2016		6.97
Median	**7.2**	**7.0**

As previously discussed, in 2016, the State of New Hampshire adopted revised WQS, which have been submitted to EPA for review and approval. Although those standards have yet to be approved by EPA, NHDES has informed EPA that meeting the revised ammonia criteria will be a state certification requirement. Therefore, EPA has evaluated the reasonable potential for ammonia using the 2016 NH adopted ammonia criteria which are more stringent than the previous criteria.

The applicable 2016 NH adopted criteria are summarized in Table 3.

Table 3: Applicable Ammonia Criteria

Season	NH adopted Criteria	
	Acute Criteria (CMC) (mg/L)	**Chronic Criteria (CCC) (mg/L)**
Summer	9.1	1.2
Winter	24.1	4.4

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

$$Q_dC_d + Q_sC_s = Q_rC_r$$

Solving for the downstream pollutant concentration (C_r) gives:

$$C_r = \frac{Q_dC_d + Q_sC_s}{Q_r}$$

Where:

Q_s = upstream 7Q10 low flow (10.49 cfs)
Q_d = effluent flow (design flow = 1.3 MGD =2.01 cfs)
Q_r = streamflow downstream, after discharge (12.5 cfs)
C_s = median upstream ammonia concentration
= 0.07 mg/L in warm weather
= 0.06mg/L in cold weather
C_d = effluent ammonia concentration
= 95th percentile of the warm weather monthly averages (N=30) = 29.23 mg/L
= 95th percentile of the warm weather daily maximums (N=30) = 31.63 mg/L
= 95th percentile of the cold weather monthly averages (N=30) = 27.58 mg/L
= 95th percentile of the cold weather daily maximums (N=30) = 29.1 mg/L

Reasonable potential is then determined by comparing the resultant in-stream concentration with the relevant ammonia criteria multiplied by the factor of 0.9 to reserve 10% of the assimilative capacity of the receiving water in accordance with the requirements of Env-Wq 1705.01. The discharge is determined to have reasonable potential to cause or contribute to a violation of water quality standards if both the effluent concentration (C_d) and the downstream concentration (C_r) exceed the criteria. In EPA's Technical Support Document for Water Quality Based Toxics Control, EPA/505/2-90-001, March 1991, commonly known as the "TSD", box 3-2 describes the statistical approach in determining if there is reasonable potential for an excursion above the maximum allowable concentration. If there is reasonable potential (the projected downstream concentration is greater than either the acute or chronic criterion multiplied by 0.9), the appropriate limit is then calculated by rearranging the above mass balance equation to solve for the effluent concentration (Cd) using the criterion multiplied by 0.9 as the resultant in-stream concentration (Cr).
.
Table 4 shows the results of the reasonable potential analysis and the resulting limits, if necessary.

Table 4: Ammonia Reasonable Potential Analysis and Limit Derivation

Season	Q_s	C_s	Q_d	C_d	Q_r	C_r	Criteria * 0.9	Reasonable Potential	Limits
	cfs	mg/L	cfs	mg/L	cfs	mg/L	mg/L	C_d & C_r > Criteria	mg/L
Warm Weather – Chronic	10.49	0.07	2.01	29.23	12.5	4.76	1.08	Y	6.4
Warm Weather – Acute		0.07		31.63		5.14	8.19	N	N/A
Cold Weather – Chronic		0.06		27.58		4.49	3.96	Y	24.3
Cold Weather – Acute		0.06		29.1		4.73	21.69	N	N/A

As the calculations in Table 4 show, there is reasonable potential for ammonia nitrogen in the effluent to cause or contribute to exceedances of the more stringent, chronic criteria during both the warm and cold weather seasons.

Chronic Ammonia Nitrogen, Warm Weather

$$C_d = \frac{Q_r C_r * 0.9 - Q_s C_s}{Q_d}$$

$$C_d = \frac{(12.5 \text{ cfs} * (1.2 \text{ mg/L} * 0.9)) - (10.49 \text{ cfs} * 0.07 \text{ mg/L})}{2.01 \text{ cfs}}$$

$$C_d = 6.4 \text{ mg/L}$$

Chronic Ammonia Nitrogen, Cold Weather

$$C_d = \frac{Q_r C_r * 0.9 - Q_s C_s}{Q_d}$$

$$C_d = \frac{(12.5 \text{ cfs} * (4.4 \text{ mg/L} * 0.9)) - (10.49 \text{ cfs} * 0.06 \text{ mg/L})}{2.01 \text{ cfs}}$$

$$C_d = 24.3 \text{ mg/L}$$

The Draft Permit proposes a chronic ammonia warm weather limit of 6.4 mg/L and a chronic ammonia cold weather limit of 24.3 mg/L. EPA has revised the definition of warm and cold weather seasons. The warm weather season effluent limit now applies from May 1st through October 31st and the cold weather season effluent limits applies from November 1st through April 30th. The sampling frequency has been increased to weekly which is consistent with the NHDES effluent monitoring guidance for lagoons. Effluent and ambient monitoring for ammonia will continue to be required in quarterly WET tests.

5.1.8 Nutrients

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

5.1.8.1 Total Nitrogen

The Newport WWTP discharges to the Sugar River, which drains to Long Island Sound. In

December 2000, the Connecticut Department of Energy and Environmental Protection (CT DEEP) and the New York State Department of Environmental Conservation (NYSDEC) completed a Total Maximum Daily Load (TMDL) for addressing nitrogen-driven eutrophication impacts in Long Island Sound. The TMDL included a Waste Load Allocation (WLA) for point sources and a Load Allocation (LA) for non-point sources. The point source WLA for out-of-basin sources (Massachusetts, New Hampshire and Vermont point sources discharging to the Connecticut, Housatonic and Thames River watersheds below) 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 5: 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. Estimated point source maximum annual average total nitrogen loadings for the Connecticut, Housatonic, and Thames Rivers for 2013 through 2018 are summarized in Appendix C

Table 5: Estimated Out-of-Basin Point Source Nitrogen Loadings to the Connecticut, Housatonic and Thames Rivers Watersheds

Basin	1998 Baseline Loadings[1] (lb/day)	TMDL WLA[2] (lb/day)	Maximum Loading 2014 to 2018 (lb/day)[3]
Connecticut River	21,672	16,254	12,120[4]
Housatonic River	3,286	2,464	1,707[5]
Thames River	1,253	939	677[6]
Totals	**26,211**	**19,657**	**14,504**

[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 annual average load from the Connecticut River occurred in 2014
[5]Highest annual average load from the Housatonic River occurred in 2018
[6]Highest annual average load from the Thames River occurred in 2014

As can be seen in Table 5, 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 less than the TMDL wasteload allocation and the combined out-of-basin loadings from MA, NH, and VT are below the TMDL wasteload allocation.

Although the 2007 Permit did not include total nitrogen effluent limits or monitoring requirements, it did require semi-monthly monitoring for ammonia nitrogen. Using effluent ammonia nitrogen

concentration and monthly flow data, the calculated[9] annual average[10] total ammonia loading from the Newport facility ranged from 63 to 97 lb/day from 2014 to 2018 and average 80 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[11] 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 loadings 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 State of Connecticut and the public. As discussed in Section 2 of the Fact Sheet, statutory and regulatory requirements regarding the development of water quality-based effluent limits include provisions to ensure implementation of any available WLAs[12], provisions to prevent further degradation of receiving waters that are already impaired[13] and consideration of applicable water quality requirements of downstream states[14].

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 in permits 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 degradations of LIS.

Therefore, EPA intends to include a total nitrogen rolling annual average mass-based loading limit (in lb/day) and requirements to optimize current treatment systems to minimize the effluent nitrogen in all permits issued to wastewater treatment plants with design flow greater than or equal to 1.5 MGD that discharge to the LIS watershed in New Hampshire. Table 6 summarizes the approach to update TN requirements for this and future permits in the LIS watershed in New Hampshire. EPA is working with the States of Massachusetts and Vermont to ensure that comparable requirements are included in NPDES permits in those states.

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[9] Monthly Average TN (mg/L) * Monthly Average Flow * 8.345 = Monthly Average TN (lb/day)
[10] Sum of Monthly Average TN (lb/day) in a year ÷12 months = Annual Average
[11] 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 data February 18, 2018.
[12] *See* 40 C.F.R. §122.44(d)(1)(vii)(B)
[13] *See* 40 C.F.R. §122.44(d)(1)(vii)(B), 40 C.F.R. §131.12(a)(1), and NH Env-Wq 1708.03
[14] *See* 40 C.F.R. §122.44(d)(4) and CWA section 401(a)(2)

Table 6: Annual Average Total Nitrogen Effluent Limits for New Hampshire WWTP Dischargers to Long Island Sound Watershed

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

As the Newport facility design flow is greater than 0.1 MGD and less than 1.5 MGD, the Draft Permit that requires the Permittee to optimize the removal of nitrogen, consistent with the new out-of-basin permitting approach to implementing the 2000 TMDL described above. 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 NHDES 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 summarizes progress and activities related to optimizing nitrogen removal efficiencies and track trends relative to previous years.

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

Future Nitrogen Limits

The optimization requirement 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[15]. In December 2015, EPA signed a letter detailing a post-TMDL EPA nitrogen reduction strategy for waters in the LIS watershed. The strategy recognizes that more work may need to be done to reduce nitrogen levels, further improve DO conditions, and attain other related water quality standards in LIS, particularly in coastal embayments and the estuarine portions of rivers that flow into the Sound. EPA is working to establish nitrogen thresholds for Western LIS and several coastal embayments, including the mouth of the Connecticut River. Documents regarding the EPA Nitrogen Reduction Strategy are available for public review on EPA's Long Island Sound website (http://longislandsoundstudy,net/issues-actions/water-quality/nitrogen-strategy/). Upon completion of establishing thresholds and assessing water quality conditions of the estuarine waters of the Connecticut River, allocation of total nitrogen loadings may be lowered if further reductions are necessary. If reductions are needed for the Newport discharge, a lower water quality-based effluent limit will be added in a future permit action. If so, EPA anticipates exploring possible trading approaches for nitrogen loading in the New Hampshire portion of the Connecticut River watershed.

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

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 optimization activities required in this permit.

5.1.8.2 Phosphorus

Phosphorus is an essential nutrient for the growth of aquatic plants and it can stimulate rapid plant growth in freshwater ecosystems when it is present in high quantities. The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by: 1) increasing oxygen demand within the water body to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter; 2) causing an unpleasant appearance and odor; 3) interfering with navigation and recreation; 4) reducing water clarity; 5) reducing the quality and availability of suitable habitat for aquatic life; 6) producing toxic cyanobacteria during certain algal blooms. Cultural (or accelerated) eutrophication is the term used to describe dense and excessive plant growth in a water body that results from nutrients entering the system as a result of human activities. Discharges from municipal and industrial wastewater treatment plants, agriculture runoff, and stormwater are examples of human-derived (i.e. anthropogenic) sources of nutrients in surface waters.

The 2007 Permit includes a monthly average effluent limit of 0.42 mg/L effective in the warm months (April 1 to October 31) and a monthly average effluent limit of 1.0 mg/L effective in the cold months (November 1 to March 31). As previously discussed, the facility was unable to meet these limits so EPA issued an Administrative Order (AO) on March 6, 2009 which established interim effluent limits with an average monthly concentration of 3.1 mg/L (November 1st – March 31st) and 3.7 mg/L (April 1st – October 31st). The interim limits were extended by a NHDES Administrative Order by Consent (AOC), with the approval of EPA, in 2015, and then amended in 2018 to a year-round monthly average limit of 5.0 mg/L and that limit remains in effect at the current time.

A review of total phosphorus data from January 2014 to December 2018, provided in Appendix A, shows that during the period of April 1– October 31, the monthly average total phosphorus concentration in the effluent averaged 2.71 mg/L (range 0.08 to 5.4 mg/L) and during the period of November 1 – March 31, the monthly average total phosphorus concentration averaged 02.28 mg/L (range 0.01 to 4.5 mg/L). As detailed above, there have been several applicable effluent limits for this discharge as the result of a series of enforcement actions. There were seven violations of the warm weather interim limit of 3.7 mg/L which was applicable from April 1, 2009 through April 25, 2018 (10/2017, 3.9 mg/L; 10/2016, 3.9 mg/L; 9/2016, 3.8 mg/L; 8/2016, 3.8 mg/L; 7/2016, 4.5 mg/L; 6/2016, 4.3 mg/L; 7/2014 3.8 mg/L) and eight violations of the cold weather interim limit of 3.1 mg/L, which was applicable from March 6, 2009 through March 31, 2018 (1/2018, 3.3 mg/L; 12/2017, 3.3 mg/L; 11/2017, 3.5 mg/L; 3/2017, 3.3 mg/L; 2/2017, 4.4 mg/L; 1/2017, 4.5 mg/L; 12/2016, 4.1 mg/L; 11/2016, 4.0 mg/L). Additionally, there was one violation (7/2018, 5.4 mg/L) of the interim, year-round average monthly limit of 5.0 mg/L that went into effect on April 25, 2018 and remains in effect.

The New Hampshire Surface Water Quality Regulations contain a narrative criterion, which limits phosphorus to the level that will not impair a water body's designated use. Specifically, Env-Wq

1703.14(b) states that, "Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring." Env-Wq 1703.14(c), further states that, "Existing discharges containing phosphorus or nitrogen, or both, which encourage cultural eutrophication shall be treated to remove the nutrient(s) to ensure attainment and maintenance of water quality standards." Cultural eutrophication is defined in Env-Wq 1702.15 as, "… the human-induced addition of wastes containing nutrients which results in excessive plant growth and/or decrease in dissolved oxygen."

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 Sugar 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. The Newport WWTP is located within Ecoregion VIII, Nutrient Poor Largely Glaciated Upper Midwest and Northeast. The recommended criteria for this ecoregion, found in Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion VIII (USEPA December 2001[EPA 822-B-01-015] is a total phosphorus concentration of 10 µg/L (0.010 mg/L).

EPA uses the effects-based Gold Book threshold as a general target applicable in free-flowing streams. As the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophication response to phosphorus inputs; in some waters more, stringent phosphorus reductions may be needed, while in some others a higher total phosphorus threshold could be assimilated without inducing a eutrophic response. In this case, EPA is not aware of any evidence that the Sugar 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 Sugar 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]).

Sampling data from 2016[16], summarized in Table 7, reports ten ambient phosphorus concentrations collected at Station 10-SGR located upstream of the Newport WWTP. The ambient total

[16]Memorandum from Diane Mas and Douglas Brisee, Fuss & O'Neil to Michele Barden and Ellen Weitzler, EPA Region 1, RE: Sugar River Sampling Results, Newport, NH, dated February 22, 2017.

phosphorus concentrations ranged from 0.0092 to 0.588 mg/L with a median value of 0.0135 mg/L. In this analysis, 0.0135 mg/L is used as the background total phosphorus concentration.

Table 7: Ambient total phosphorus concentrations (mg/L)

Date	10-SGR
08/24/2016	0.016
08/30/2016	0.0161
09/06/2016	0.0144
09/22/2016	0.0154
10/05/2016	0.0116
10/17/2016	0.0126
11/01/2016	0.0120
11/15/2016	0.0588
12/06/2016	0.0106
12/22/2016	0.0092
Median	**0.0135**

Water Quality-based Effluent Limit

Using the updated, hydrological and ambient total phosphorus data, the following mass balance equation can be used to evaluate whether the effluent limit continues to ensure that the downstream water quality criterion will not be exceeded.

$$Q_rC_r = Q_dC_d + Q_sC_s$$

Where

C_r = resultant downstream pollutant concentration in mg/L (must not exceed 0.09 mg/L to reserve 10% assimilative capacity)
Q_d = effluent flow (design flow = 1.3 MGD =2.01 cfs)
Q_s = upstream 7Q10 low flow (10.49 cfs)
C_s = background ambient concentration (median) (0.0135 mg/L)
Q_r = streamflow downstream, after discharge (12.5 cfs)
C_d = Effluent discharge concentration (current effluent limit of 0.42 mg/L)

Rearranging the equation to solve for C_r:

$$C_r = \frac{Q_dC_d + Q_sC_s}{Q_r}$$

$$C_r = \frac{(2.01)(0.42) + (10.49)(0.0135)}{12.5}$$

$$C_r = 0.08 \text{ mg/L}$$

Since 0.08 mg/L is less than 0.10 mg/L, the effluent limit in the current permit would continue to ensure that the discharge does not cause or contribute to a violation of the narrative phosphorus criteria.

However, EPA Region 1 and NHDES have determined that in some cases that mass-based limits for phosphorus may be appropriate and provides flexibility to the facility, particularly in situations, such as for Newport, where effluent flows are less than the design flow. To ensure a mass-based limit is protective under worst-case conditions, it is calculated using the lowest expected receiving water flow and effluent flow. Hence, the upstream 7Q10 receiving water flow and the lowest monthly average effluent flow during the review permit (0.36 MGD) are used. The numeric mass-based limit is determined based upon the following equations:

$$C_d = \frac{Q_r C_r * 0.9 - Q_s C_s}{Q_d}$$

$$QdC_d + Q_s Cs = Q_r C_r\ (0.90)$$

and

$$M_d = Q_d C_d * 8.345$$

Substituting ($Q_d C_d$) with (M_d/8.345) in the first equation and solving for M_d results in:

$$M_d = (Q_r C_r(0.90)) - Q_s C_s)*8.345$$

where:

M_d = mass-based phosphorus limit
Q_d = lowest effluent monthly average flow (April 1-October 31) = 0.36 MGD = 0.56 cfs (October 2017)
C_d = effluent phosphorus concentration in mg/L
Q_s = Upstream 7Q10 Flow (12.5 cfs – 0.56 cfs = 11.94 cfs = 7.71 MGD)[17]
C_s = upstream river phosphorus concentration (0.0135 mg/L)
Q_r = downstream 7Q10 flow = 12.5 cfs = 8.075 MGD
C_r = downstream river phosphorus concentration (Gold Book target = 0.100 mg/L)
0.90 = factor to reserve 10% assimilative capacity
8.345 = factor to convert from *mg/L* to *lb/day*

$$M_d = ((8.075)*(0.1*0.9))-((7.71)*0.0135)) * 8.345$$

$$M_d = 5.2 \text{ lb/day}$$

[17] Since the flow through the Facility is generated from within the upstream watershed, it is reasonable to assume that the flow upstream of the WWTP is the downstream flow less the WWTP effluent. See also Section 4.1.

The draft permit proposes a warm weather effluent limit of 5.2 lb/day, from April 1st through October 31st, as a monthly average limit to be monitored twice per month. The draft permit also continues the winter limit of 1 mg/L total phosphorus during the period of November 1st through March 31st. The winter period limitation is necessary to ensure that the higher levels of phosphorus discharged during the winter do not result in an accumulation of phosphorus in downstream sediments. The limitation assumes the majority of the phosphorus discharge will be in the dissolved fraction and that dissolved phosphorus will pass through the system during the winter period. The Draft Permit also includes an ambient monitoring requirement to ensure that current ambient phosphorus data are available to use in the reassessment of the total phosphorus effluent in the next permitting cycle.

5.1.9 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, chromium, copper, lead, nickel and zinc, given the updated hydrologic and chemical characteristics of the receiving water. A summary of recent metals monitoring data is provided in Appendix A.

5.1.9.1 Applicable Metals Criteria

Metals may be present in both dissolved and particulate forms in the water column. However, extensive studies suggest that it is the dissolved fraction that is biologically available, and therefore, presents the greatest risk of toxicity to aquatic life inhabiting the water column. This conclusion is widely accepted by the scientific community both within and outside of EPA (Water Quality Standards Handbook, Chapter 3, Section 3.6 and Appendix J, EPA 2012 [EPA 823-B-12-002]. Also see https://www.epa.gov/sites/production/files/2014-10/documents/handbook-chapter3.pdf). As a result, state water quality criteria for cadmium, chromium, copper, lead, nickel and zinc are established in terms of dissolved metals.

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

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

For hardness dependent metals criteria, the estimated hardness of the Sugar 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. The following mass balance equation was used to estimate the hardness of the receiving water, C_r, downstream of the discharge location.

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

$$C_r = \frac{(2.01 \text{ cfs} * 44.5 \text{ mg/L}) + (10.49 \text{ cfs} * 13.5 \text{ mg/L})}{12.5}$$

$$= 18.5 \text{ mg/L}$$

Where:

Q_s = 7Q10 river stream flow upstream of Facility = 10.49 cfs
Q_d = Design discharge flow from Facility = (1.3 MGD * 1.547) = 2.01 cfs
Q_r = Combined stream flow (7Q10 + plant flow) = 10.49 cfs + 2.01 cfs = 12.5 cfs
C_s = Median upstream hardness concentration = 13.5 mg/L
C_d = Median Facility effluent hardness concentration = 44.5 mg/L

The calculated receiving water hardness is 18.5 mg/L. Pursuant to Env-Wq 1703.23(d)(2) a hardness value of 20 shall be used when the hardness value is less than 20.

Table 8 presents the applicable water quality criteria for the selected metals according to the NH WQSs. Although water quality criteria for most metals are present in either dissolved or total recoverable, the New Hampshire water quality regulations (Env-Wq 1700) for aluminum should be applied in terms of acid-soluble aluminum (*See* Table 1703-1, Note S).

For the purpose of developing WQBELs for aluminum in NH NPDES permit, EPA assumes that all of the aluminum in the receiving water and in the effluent is acid soluble, unless there is site specific data available indicating otherwise. So far, EPA is not aware of any site specific data regarding the fraction of soluble aluminum in the Sugar River, in the vicinity of the Newport WWTF effluent. Therefore, for the purposes of this Draft Permit, EPA assumes the ratio of acid soluble to total recoverable aluminum is 1. The NH freshwater acute and chronic criteria for aluminum is 750 µg/L and 87 µg/L, respectively for the NH adopted WQS.

Table 8: Summary of Acute and Chronic Total Recoverable Fresh Water Criteria Calculation for Metals at a hardness of 20 mg/L for NH Adopted Criteria (*from* NH WQS, Table 1703.1)

	NH Adopted Criteria	
Metal*	**Acute Criteria (CMC) (µg/L)**	**Chronic Criteria (CCC) (µg/L)**
Cadmium	00.39	0.22
Chromium	482.56	23.07
Copper	3.07	2.36
Lead	10.52	0.41
Nickel	120.23	13.37
Zinc	30.64	30.64

*The aluminum water quality criteria in the NH WQSs are expressed as acid-soluble, and therefore; are not included in this table.

5.1.9.2 Reasonable Potential Analysis

To determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for each metal, the following mass balance is used to project in-stream metal concentrations downstream from the discharge.

$$Q_dC_d + Q_sCs = QrC_r$$

Solving for the receiving water metals concentration downstream of the discharge (C_r) yields:

$$C_r = \frac{Q_dC_d + Q_sC_s}{Q_r}$$

Where:

Q_d = design flow of the Facility = (1.3 MGD * 1.547) = 2.01 cfs
C_d = effluent metals concentration (95th percentile[18])
Qs = 7Q10 stream flow upstream of the Facility = (Qr – Qd) = 10.49 cfs
Cs = median upstream metals concentration
Q_r = 7Q10 stream flow downstream of the Facility = 12.5 cfs

Reasonable potential is then determined by comparing this resultant in-stream concentration (for both acute and chronic conditions) with the criteria (times 0.9 to reserve 10% of the assimilative capacity as required by Env-Wq 1705.01) for each metal. In EPA's Technical Support Document for Water Quality Based Toxics Control, EPA/505/2-90-001, March 1991, commonly known as the "TSD", box 3-2 describes the statistical approach in determining if there is reasonable potential for an excursion above the maximum allowable concentration. If there is reasonable potential (for either acute or chronic conditions), the appropriate limit is then calculated by rearranging the above mass balance to solve for the effluent concentration (C_d) using the criterion as the resultant in-

[18] The Facility's effluent concentrations (from Appendix A) were characterized assuming a lognormal distribution to determine the estimated 95th percentile of the daily maximum (*See* Appendix C).

stream concentration (C_r). The results of this analysis with respect to aluminum, cadmium, chromium, copper, lead, nickel and zinc are summarized in Table 9.

As indicated in Table 9, there is reasonable potential for the discharge of aluminum, copper, and lead to cause or contribute to an exceedance of the applicable water quality criteria.

Table 9: Metals Reasonable Potential and Limits Calculations

Metal	Q_d	C_d[1] (95th Percentile Value)	Q_s	C_s[2] (Median)	$Q_r = Q_s+Q_d$	$C_r = (Q_dC_d+Q_sC_s)/Q_r$	Criteria * 0.9		Reasonable Potential?	Limit = $(Q_r*Criteria*0.9 - Q_s*C_s)/ Q_d$	
	cfs	µg/L	cfs	µg/L	cfs	µg/L		Chronic (µg/L)	Cr>Criteria * 0.9	Acute (µg/L)	Chronic (µg/L)
Aluminum[3]	2.01	478[4]	10.49	110	12.5	179.47	675	78.3	Y (Chronic)	N/A	87[5]
Cadmium		0		0		0	0.35	0.2	N	N/A	N/A
Chromium		10.01		0		1.6096	434.3	20.76	N	N/A	N/A
Copper		30.04		0		4.8304	2.77	2.12	Y	17.16	13.18
Lead		5		0		0.8056	9.47	0.37	Y (Chronic)	N/A	2.30
Nickel		74.72		0		12.01	108.2	12.03	N	N/A	N/A
Zinc		42.89		0		6.8967	27.58	27.58	N	N/A	N/A

[1] Data from the 2014-2018 DMRs and /or Whole Effluent Toxicity testing reports (*See* Appendix A).
[2]Median upstream data taken from WET testing on Sugar River upstream from the Newport WWTP (*See* Appendix A).
[3]The water quality standard for Aluminum is acid soluble but we consider it total recoverable until such time as side by side test for acid soluble and total recoverable are done on the river upstream such that the river specific ratio can be determined.
[4]EPA did not include the aluminum data collected between 1/2014 and 4/2015 since the facility was evaluating phosphorus removal dosing and it does not reflect the normal operation of the treatment facility.
[5]The chronic aluminum limit is the chronic criteria as the upstream ambient median for Aluminum exceeds the applicable criteria

5.1.9.3 Aluminum

The 2007 Permit required quarterly monitoring for aluminum in conjunction with WET testing with the understanding that the facility had ceased the use of poly aluminum chloride (PAC) for phosphorus removal. The 2007 Permit included a requirement that if the Facility returned to the use of PAC or any other aluminum-based coagulant, then the Permittee was required to monitor twice per month. A review of DMR data from 2014 to 2018 shows that the monthly average aluminum concentration in the effluent averaged 347 µg/L (range 100 to 2,200 µg/L) and the daily maximum in the effluent averaged 725 µg/L (range 80 to 5,500 µg/L).

Table 9 shows that there is reasonable potential for aluminum to exceed the chronic criteria. Since the median ambient concentration is already in exceedance of the chronic criteria, a chronic limit of 87 µg/L has been proposed in the Draft Permit as there is no remaining assimilative capacity. The sampling frequency is twice per month in accordance with NHDES monitoring guidance for lagoon treatment facilities.

The Draft Permit includes a 3-year compliance schedule to meet the new aluminum limit in anticipation of an expected revision to the New Hampshire freshwater aluminum criteria. EPA finalized new aluminum criteria recommendations in December 2018 which are dependent on pH, dissolved organic carbon and hardness and which may be higher than New Hampshire's current criteria. Although New Hampshire is considering adopting EPA's 2018 aluminum criteria recommendations as state water quality criteria, it has not yet done so. EPA has therefore determined that it is appropriate to include a schedule of compliance, pursuant to 40 C.F.R. §122.47, in the Draft Permit which provides the permittee with a 3-year period to achieve compliance with the final aluminum effluent limit. Additionally, the permittee may apply for a permit modification to allow additional time for compliance if New Hampshire 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 New Hampshire 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 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 to become effective."]

5.1.9.4 Copper

The 2007 Permit required quarterly monitoring for copper in conjunction with WET testing. A review of DMR data from 2014-2018 shows that the monthly average copper concentration in the effluent averaged 12.9 µg/L (range 3.7-90 µg/L).

The applicable acute and chronic water quality criteria for copper, expressed as total recoverable copper, are 3.07 µg/L and 2.36 µg/L, respectively. Ambient copper levels in the Sugar River upstream of the discharge were measured in samples taken for WET testing and are provided in

Appendix A. The median of these samples is less than the detection level of 2 µg/L total copper, represented as "0" in Table 9.

Table 9 shows that there is reasonable potential for copper to exceed both the acute and chronic criteria. The draft permit proposes a chronic effluent of 13.2 µg/L and an acute effluent limit of 17.2 µg/L. The sampling frequency twice per month in accordance with NHDES monitoring guidance for the lagoon treatment facilities.

5.1.9.5 Lead

The 2007 Permit required quarterly monitoring for lead in conjunction with WET testing. A review of DMR data from 2014-2018 shows that the monthly average lead concentration in the effluent averaged 2.15 µg/L (range 0.5-5.1 µg/L).

The applicable acute and chronic water quality criteria for lead, expressed as total lead, are 10.52 µg/L and 0.41 µg/L, respectively. Ambient lead levels in the Sugar River upstream of the discharge were measured in samples taken for WET testing and are provided in Appendix A. The median of these samples was 0 µg/L total lead.

Table 9 shows that there is reasonable potential for lead to exceed the chronic criteria. The draft permit proposes a chronic effluent of 2.3 µg/L. The sampling frequency twice per month in accordance with NHDES monitoring guidance for the lagoon treatment facilities.

5.1.10 Whole Effluent Toxicity

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

In addition, under §301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on WQSs. Under certain narrative State WQSs, and §§301, 303 and 402 of the CWA, EPA and the States may establish toxicity-based limitations to implement the narrative "no toxics in toxic amounts". New Hampshire statute and regulations state that, "*all surface waters shall be free from toxic substances or chemical constituents in concentrations or combination that injure or are inimical to plants, animals, humans, or aquatic life....*" (N.H. RSA 485-A:8, VI and the N.H. Code of Administrative Rules, PART Env-Wq 1730.21(a)(1)).

National studies conducted by the EPA have demonstrated that domestic sources, as well as industrial sources, contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Some of these constituents may cause synergistic effects, even if they are present in low concentrations. Because of the source variability and contribution of toxic constituents in domestic and industrial sources, EPA assumes that there is a reasonable potential for this discharge to cause or contribute to an

exceedance of the "no toxics in toxic amounts" narrative water quality standard.

Further, EPA Region 1 current toxic policies require toxicity testing for all dischargers such as the Newport WWTF. In accordance with these policies, whole effluent chronic effects are regulated by limiting the highest measured continuous concentration of an effluent that causes no observed chronic effect on a representative standard test organism, known as the chronic No Observed Effect Concentration (C-NOEC). Whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the $LC_{50.}$ According to this policy dischargers having a dilution factor less than 10 are required to conduct acute and chronic toxicity testing four times per year for two species. Additionally, for discharges with dilution factors less than 10, the C-NOEC effluent limit should be greater than or equal to the receiving water concentration and the LC_{50} limit should be greater than or equal to 100%.

The chronic and acute WET limits in the 2007 Permit are C-NOEC greater than or equal to 13.3% and LC_{50} greater than or equal to 100%, respectively, using two species the daphnid, *Ceriodaphnia dubia (C. dubia)* as the fathead minnow, *Pimephales promelas*. The Facility has not consistently met these limits, as can be seen from the DMR summary in Appendix A. There have been 9 violations of the NOEC limit of ≥ 13.3% for *Ceriodaphnia dubia* and no violations of the *Pimephales promelas*. There have been 6 violations of the LC50 limits of 100% with two (2) violations of testing with *Ceriodaphnia dubia* and four (4) violations of testing with *Pimephales promelas*.

The C-NOEC is defined as the highest concentration to which test organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival or reproduction during a specific time of observation. The C-NOEC is determined as the receiving water concentration (RWC) and is calculated by dividing one by the dilution factor and multiplying by 100. The revised dilution factor of 5.6 causes a change in the C-NOEC limit. The C-NOEC is ((1/5.6)*100), which results in a C-NOEC of 17.8%.

Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the dilution factor of 5.6, and in accordance with EPA national and regional policy and 40 C.F.R. § 122.44(d), the Draft Permit continues the LC_{50} effluent limit of equal or greater than 100% from the 2007 Permit and a revised C-NOEC of greater or equal to 17.8%. The test organisms and the testing frequency remains the same as in the 2007 Permits. Toxicity testing must be performed in accordance with the updated EPA Region 1 test WET test procedures and protocols specified in Attachments A and B of the Draft Permit (USEPA Region 1 Freshwater Acute Toxicity Test Procedure and Protocol, February 2011 and USEPA Region 1 Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013).

5.2 Industrial Pretreatment Program

There is one significant industrial user, Strum Ruger & Company, Inc. that contributes flows to the Newport WWTP. Strum Ruger & Company, Inc. is authorized to discharge up to 75,000 gallons per day (GPD) of intermittent process wastewater and 74,000 GPD of intermittent non-process wastewater. Strum Ruger & Company, Inc. is subject to local limits and categorical pretreatment standards at 40 C.F.R. §433 – Metal Finishing.

The permittee is presently not required to administer a pretreatment program based on the authority granted under 40 C.F.R. 122.44(j), 40 C.F.R. Part 403 and Section 307 of the Act. However, the Draft Permit contains conditions which are necessary to allow EPA and the State of New Hampshire to ensure that pollutants from industrial users will not pass through the facility and cause violations of WQS in the receiving water, sludge use and disposal difficulties or cause interference with the operation of the treatment facility.

The Permittee is required to notify EPA and the State of New Hampshire whenever a process wastewater discharge to the facility from a primary industrial category is planned, (see 40 C.F.R. § 122 Appendix A for a list) or if there is any substantial change in the volume or character of pollutants being discharged into the facility by a source that was discharging at the time of permit issuance. The permit also requires the permittee to: (1) report to EPA and NHDES the names of all Industrial Users subject to Categorical Pretreatment Standards under 40 C.F.R. § 403.6 and 40 C.F.R. Chapter I, Subchapter N (Parts 405-415, 417-436, 439-440, 443, 446-447, 454-455, 457-461, 463-469 and 471 as amended) or are other Significant Industrial Users (§ 403.3(v)) who commence discharge to the POTW after the effective date of the permit, and (2) submit to EPA and NHDES copies of Baseline Monitoring Reports and other pretreatment reports submitted by industrial users.

5.3 Sludge Conditions

Section 405(d) of the Clean Water Act requires that EPA develop technical standards regarding the use and disposal of sewage sludge. On February 19, 1993, EPA promulgated technical standards. These standards are required to be implemented through permits. The conditions in the permit satisfy this requirement.

The Town of Newport periodically removes settled solids from the lagoons and pumps them into sludge drying bags which are allowed to dewater onsite before being removed for disposal by a contracted firm. The final sludge, approximately 50 dry metric tons annually, is disposed of in a municipal solid waste landfill not owned or operated by the permittee.

The Draft Permit has been conditioned to ensure that sewage sludge use and disposal practices meet the CWA Section 405(d) Technical Standards. In addition, EPA-Region 1 has prepared a document entitled "EPA Region 1 NPDES Permit Sludge Compliance Guidance" and is available at: https://www3.epa.gov/region1/Permits/generic/sludgeguidance.pdf .

5.4 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.

5.5 Operation and Maintenance of the Sewer System

The standard permit conditions for 'Proper Operation and Maintenance', found at 40 C.F.R. § 122.41(e), require the proper operation and maintenance of permitted wastewater systems and related facilities to achieve permit conditions. The requirements at 40 C.F.R. § 122.41(d) impose a 'duty to mitigate' upon the permittee, which requires that "all reasonable steps be taken to minimize or prevent any discharge violation of the permit that has a reasonable likelihood of adversity affecting human health or the environment. EPA maintains that an I/I removal program is an integral component of ensuring permit compliance with the requirements of the permit under the provisions at 40 C.F.R. § 122.41(d) and (e).

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

Several of the requirements in the Draft Permit are not included in the 2007 Permit, including collection system mapping, and preparation of a collection system operation and maintenance plan. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the collection system and has included schedules for completing these requirements in the Draft Permit.

5.6 Standard Conditions

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

6 Federal Permitting Requirements

6.1 Endangered Species Act

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

(a "critical habitat").

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

The Federal action being considered in this case is EPA's proposed NPDES permit for the Facility. The Draft Permit is intended to replace the 2007 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, when required under § 7(a)(2) of the ESA.

EPA has reviewed the federal endangered or threatened species of fish and wildlife to determine if any listed species might potentially be impacted by the re-issuance of the NPDES permit using the Information for Planning and Consultation tool.[19] The action area for this proposed action is the Sugar River in the vicinity of the Facility in Newport, NH. There is one species, the northern long-eared bat (*Myotis septentrionalis*), listed as endangered in the action area. According to the USFWS, the northern long-eared bat is found in mines and caves during the winter and in forested habitat during the summer. This species is not aquatic and will not be impacted by the proposed action. The endangered dwarf wedgemussel (*Alasmidonta heterodon*) may be present in the Connecticut River in the area of the confluence with the Sugar River.[20] However, the confluence is more than 15 river miles downstream of the authorized discharge and, as such, there will be no impact from the proposed action on dwarf wedgemussel in the Connecticut River.

EPA finds that the proposed action, authorization of discharges from the Facility to the Sugar River, will have no impact on any threatened or endangered species or its critical habitat. Consultation with USFWS or NMFS is not required. EPA has provided a copy of the draft permit and fact sheet to USFWS during the public comment period.

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 National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat". *See* 16 U.S.C. § 1855(b).

The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". *See* 16 U.S.C.

[19] https://ecos.fws.gov/ipac/
[20] *Id.*

§ 1802(10). "Adverse impact" means any impact that reduces the quality and/or quantity of EFH, 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), 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.

According to the National Marine Fisheries Service (NMFS), the Connecticut River and its tributaries, including the Sugar River, is designated EFH for Atlantic Salmon (*Salmo salar*).[21] The draft permit limits and conditions as discussed in the fact sheet have been developed to protect aquatic species, including Atlantic salmon. EPA has determined that the discharge authorized by the draft permit will minimize any adverse impacts to Atlantic salmon for the following reasons:

- The draft permit prohibits the discharge to cause a violation of State water quality standards.
- The draft permit contains technology-based numeric limitations for biochemical oxygen demand and total suspended solids.
- The draft permit contains water quality-based numeric limits for pH, bacteria, ammonia nitrogen, total aluminum, total recoverable copper, total recoverable lead, total recoverable nickel, and water quality-based numeric limits for total phosphorus.
- EPA's evaluation indicates that concentrations of cadmium, chromium, and zinc are well below allowable concentrations ad there is no reasonable potential for the discharge to cause or contribute to an excursion above water quality criteria for these metals.
- The draft permit prohibits the discharge of pollutants or combinations of pollutants in toxic amounts.
- The draft permit requires quarterly acute and chronic whole effluent toxicity limits for both fathead minnow (*Pimephales promelas*) and daphnid (*Ceriodaphnia dubia*) to ensure that the discharge does not present toxicity problems.
- The draft permit includes conditions to ensure proper maintenance and operation of the sewer system and control of inflow and infiltration within the sewer system.

EPA considers the draft permit to be sufficient to protect EFH, including for Atlantic salmon, and therefore further mitigation is not warranted at this time. If adverse effects to Atlantic salmon do occur as a result of this permit action, or if new information becomes available that changes the basis for this conclusion, then NMFS will be notified and EFH consultation will be reinitiated. EPA has provided a copy of the draft permit and fact sheet to NMFS during the

[21] The most updated descriptions of EFH for Atlantic salmon are found on pages 176-182 and Table 31 of the Final Omnibus Essential Fish Habitat Amendment 2: Volume 2 (updated October 25, 2017) available at https://www.nefmc.org/library/omnibus-habitat-amendment-2.

public comment period.

7 Public Comments, Hearing Requests and Permit Appeals

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

Michele Barden
EPA Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, Massachusetts 02109-3912
Telephone: (617) 918-1539
Email: barden.michele@epa.gov.

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

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

8 EPA Contact

The administrative record on which this Draft Permit is based may be accessed at EPA's Boston office by appointment, Monday through Friday, excluding holidays from Michele Barden, EPA Region 1, 5 Post Office Square, Suite 100 (06-1), Boston, MA 02109-3912 or via email to barden.michele@epa.gov.

March 2020
Date

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

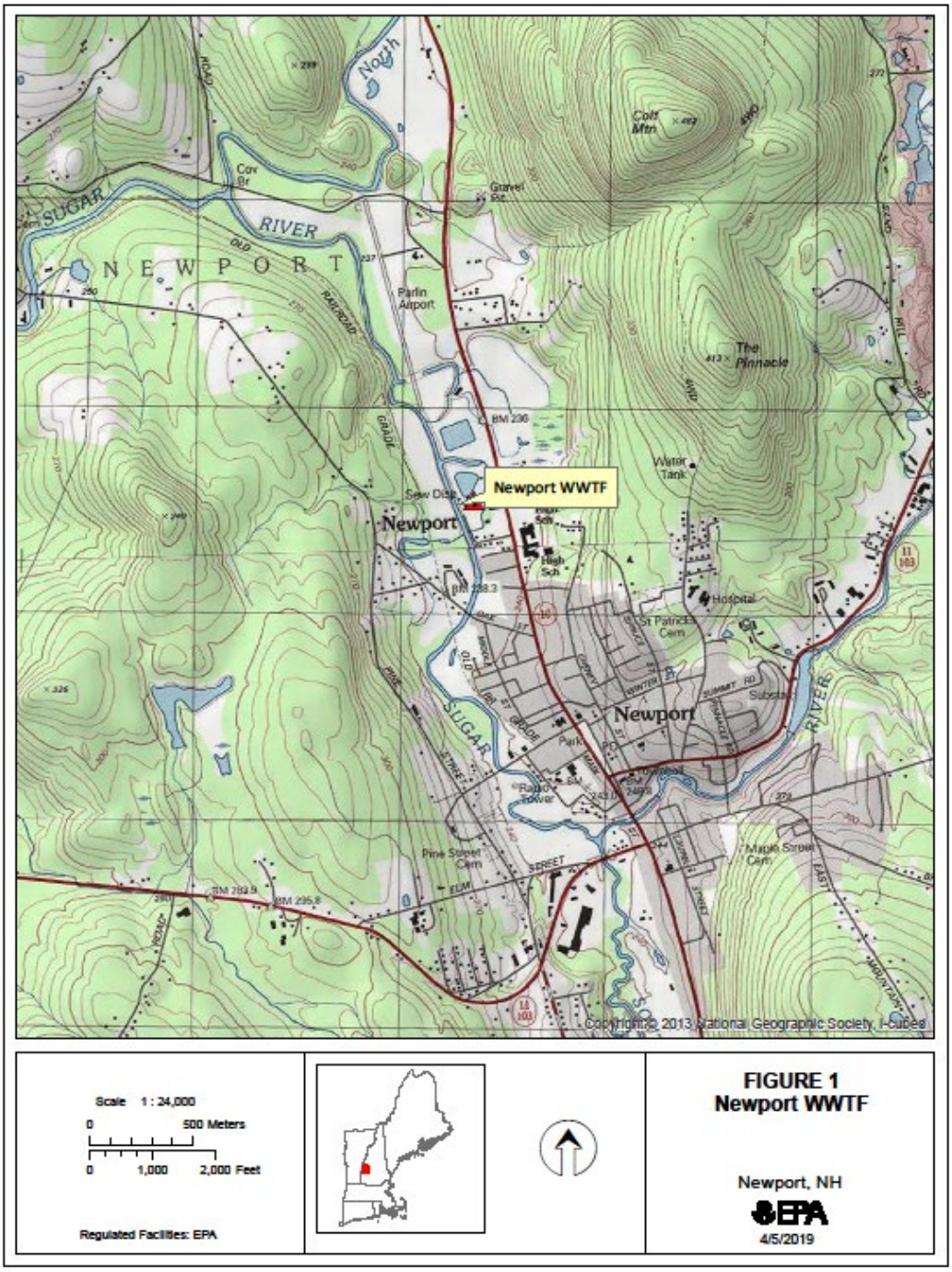

Figure 1: Location of the Newport WWTF

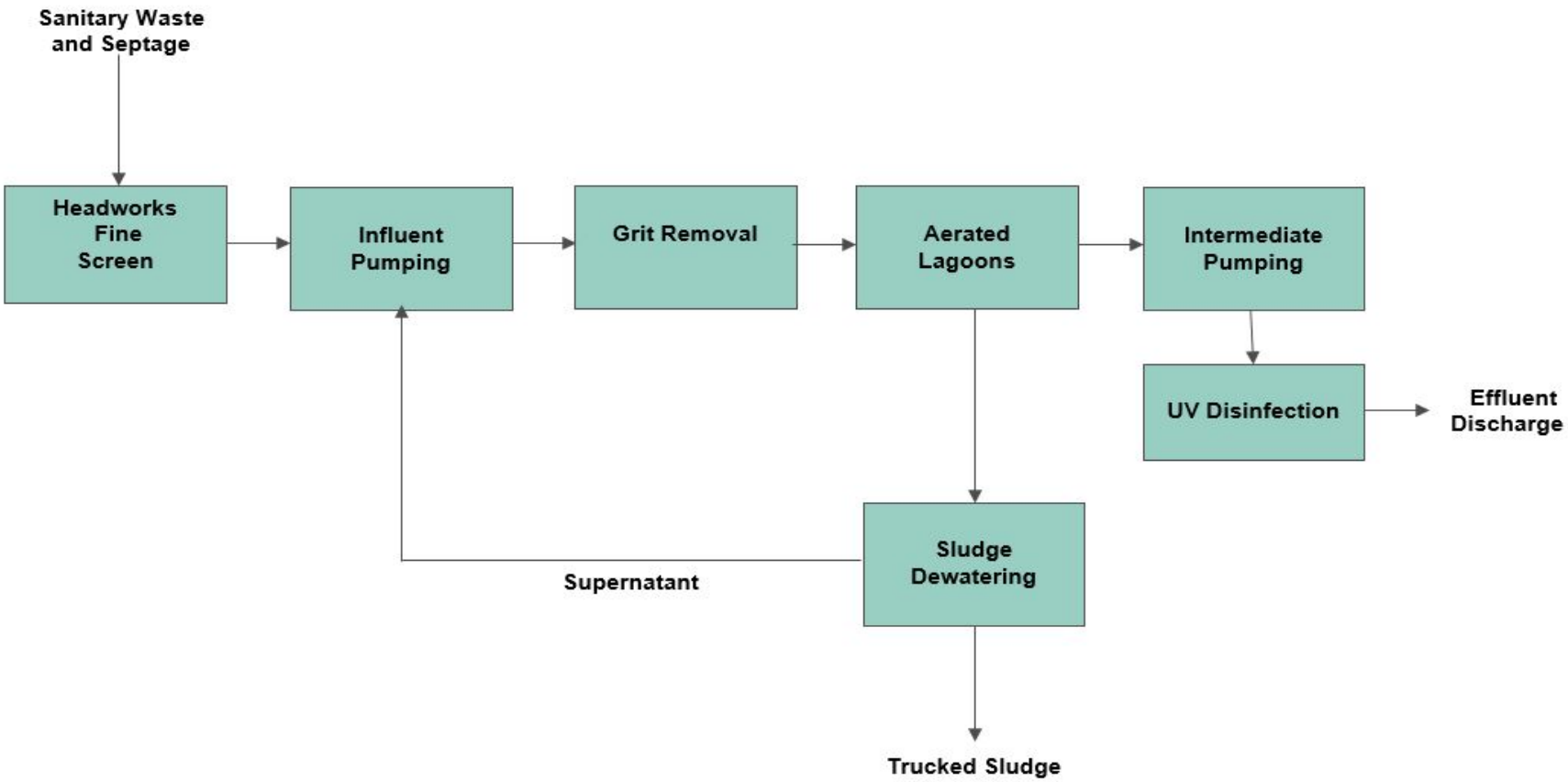

Figure 2: Newport Wastewater Treatment Facility Flow Diagram

CONFIDENTIAL/DRAFT/PRE-DECISIONAL/INTER-AGENCY DELIBERATIVE – NOT FOR RELEASE

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5	TSS
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Daily Max	Daily Max	Monthly Ave
Units	MGD	MGD	lb/d	mg/L	mg/L	lb/d	mg/L	lb/d
Effluent Limit	Report	Report	325	30	45	542	50	325
Minimum	0.35	0.46	4	1	1	7	1	21
Maximum	1.19	2	186	28	55	505	55	733
Average	0.571	0.964	49.2	9.87	13.6	83.5	13.6	96.5
No. of Violations	N/A	N/A	0	0	1	0	1	2
1/31/2014	0.69	1.6	44	9	12	66	13	101
2/28/2014	0.56	0.76	73	17	27	124	27	127
3/31/2014	0.65	1	83	16	27	131	27	59
4/30/2014	1.19	1.7	40	4	9	90	9	61
5/31/2014	0.85	2	132	18	30	275	30	198
6/30/2014	0.73	1.6	158	19	34	397	34	336
7/31/2014	0.76	1.5	186	28	55	505	55	733
8/31/2014	0.76	1.7	7	1	1	14	1	42
9/30/2014	0.61	1.3	4	1	1.4	7	1.4	26
10/31/2014	0.58	1.7	7	1	2	14	2	28
11/30/2014	0.67	1.6	9	1	1.3	13	1.3	23
12/31/2014	0.83	1.5	11	3	4	16	4	28
1/31/2015	0.73	1.3	35	6	13	76	13	36
2/28/2015	0.5	0.77	25	7	9	45	9	21
3/31/2015	0.53	0.82	33	7	10	44	10	59
4/30/2015	0.79	1	77	12	15	99	15	137
5/31/2015	0.5	0.75	38	9	12	48	11	103
6/30/2015	0.54	0.91	39	9	16	64	16	83
7/31/2015	0.51	0.83	34	8	11	44	11	71
8/31/2015	0.41	0.57	21	6	11	33	8	72
9/30/2015	0.41	0.97	13	4	4	17	4	44
10/31/2015	0.46	0.82	26	6	7	41	7	50
11/30/2015	0.45	0.59	18	5	7	26	7	39
12/31/2015	0.51	0.69	43	9	10	60	12	53
1/31/2016	0.52	0.77	66	16	17	76	17	72
2/29/2016	0.6	0.99	102	18	22	174	22	109
3/31/2016	0.68	0.8	98	17	20	113	20	122
4/30/2016	0.65	0.97	64	12	14	72	14	149

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5	TSS
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Daily Max	Daily Max	Monthly Ave
Units	MGD	MGD	lb/d	mg/L	mg/L	lb/d	mg/L	lb/d
Effluent Limit	Report	Report	325	30	45	542	50	325
5/31/2016	0.52	0.71	46	10	14	70	14	67
6/30/2016	0.46	0.75	35	9	10	66	10	78
7/31/2016	0.52	1.6	65	15	18	108	18	109
8/31/2016	0.51	0.72	24	5	6	32	6	124
9/30/2016	0.51	0.74	33	7	8.7	52	9	118
10/31/2016	0.39	0.6	15	5	4	18	5	56
11/30/2016	0.35	0.47	13	5	6	20	6	37
12/31/2016	0.41	0.63	37	10	13	43	13	52
1/31/2017	0.4	0.49	56	16	17	59	17	58
2/28/2017	0.38	0.53	57	17	20	67	20	44
3/31/2017	0.55	0.7	51	17	16	72	22	38
4/30/2017	0.82	1.2	80	11	16	147	16	63
5/31/2017	0.72	1.1	66	13	20	150	20	122
6/30/2017	0.81	1.2	44	6	10	76	10	194
7/31/2017	0.44	0.62	16	4	5	21	5	111
8/31/2017	0.38	0.64	15	5	5	41	8	67
9/30/2017	0.37	0.63	13	4	8	23	6	81
10/31/2017	0.36	0.97	8	3	3	18	3	62
11/30/2017	0.47	0.96	26	6	8	44	8	63
12/31/2017	0.38	0.54	34	12	13	44	13	50
1/31/2018	0.69	1.5	152	22	26	313	26	166
2/28/2018	0.58	0.81	81	18	20	112	20	85
3/31/2018	0.63	0.9	60	11	12	70	12	68
4/30/2018	0.7	0.88	91	15	20	113	20	143
5/31/2018	0.52	0.74	43	11	12	57	12	80
6/30/2018	0.41	0.69	36	9	10	58	10	98
7/31/2018	0.42	0.46	16	4	6	23	6	61
8/31/2018	0.43	0.62	38	9	12	62	12	114
9/30/2018	0.38	0.6	21	6	12	23	7	102
10/31/2018	0.53	0.73	30	6	11	58	11	150
11/30/2018	0.87	1.4	53	8	13	80	13	86
12/31/2018	0.68	1.2	109	24	39	185	39	59

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TSS	TSS	TSS	TSS	pH	pH	E. coli	E. coli
	Monthly Ave	Weekly Ave	Daily Max	Daily Max	Minimum	Maximum	Monthly Geometric Mean	Daily Max
Units	mg/L	mg/L	lb/d	mg/L	SU	SU	#/100mL	#/100mL
Effluent Limit	**30**	**45**	**542**	**50**	**6.5**	**8**	**126**	**406**
Minimum	**3**	**3**	**30**	**3**	**6.5**	**7.2**	**2**	**2**
Maximum	**108**	**218**	**2000**	**218**	**7.6**	**8**	**131**	**410**
Average	**19.6**	**27.4**	**168**	**27.9**	**7.15**	**7.69**	**19.6**	**101**
No. of Violations	**3**	**2**	**2**	**2**	**0**	**0**	**1**	**1**
1/31/2014	21	33	154	33	7	7.8	**131**	400
2/28/2014	29	42	165	42	7.1	7.8	83	400
3/31/2014	12	26	126	26	7.1	7.7	19	266
4/30/2014	7	11	98	11	7	7.8	4	83
5/31/2014	25	34	284	34	6.9	7.6	52	267
6/30/2014	**37**	**85**	**992**	**85**	6.7	7.8	40	400
7/31/2014	**108**	**218**	**2000**	**218**	6.9	7.6	29	400
8/31/2014	6	10	71	10	6.8	7.9	2	2
9/30/2014	7	8	34	8	6.9	7.9	2	2
10/31/2014	7	14	43	14	6.8	7.7	2	2
11/30/2014	3	3	40	3	6.8	7.7	2	2
12/31/2014	6	9	55	9	7	7.7	2	2
1/31/2015	7	12	70	12	6.8	8	6	267
2/28/2015	7	11	30	11	6.7	7.8	3	16
3/31/2015	15	21	93	21	7	7.9	7	30
4/30/2015	21	45	263	45	7	7.8	7	106
5/31/2015	23	33	157	33	6.8	7.9	2	3
6/30/2015	20	29	126	29	7.4	7.6	6	22
7/31/2015	18	24	90	24	7.3	7.7	3	6
8/31/2015	20	29	119	29	7.5	7.8	2	2
9/30/2015	13	26	89	26	7.3	7.6	2	2
10/31/2015	10	17	116	17	7.3	7.6	4	13
11/30/2015	10	12	43	12	7.4	7.7	3	14
12/31/2015	11	13	72	13	7.6	7.8	13	70
1/31/2016	17	19	78	19	7.4	7.7	25	140
2/29/2016	19	21	158	21	7.3	7.6	6	23
3/31/2016	21	24	161	28	7.4	7.9	12	56
4/30/2016	28	31	199	31	7.6	8	4	10

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TSS	TSS	TSS	TSS	pH	pH	E. coli	E. coli
	Monthly Ave	Weekly Ave	Daily Max	Daily Max	Minimum	Maximum	Monthly Geometric Mean	Daily Max
Units	mg/L	mg/L	lb/d	mg/L	SU	SU	#/100mL	#/100mL
Effluent Limit	**30**	**45**	**542**	**50**	**6.5**	**8**	**126**	**406**
5/31/2016	14	22	110	22	7.3	7.8	7	20
6/30/2016	21	23	150	23	7.3	7.7	4	59
7/31/2016	23	41	150	32	7.3	7.6	6	23
8/31/2016	28	32	152	32	7.3	7.6	3	6
9/30/2016	25	35	207	35	7.3	7.6	8	14
10/31/2016	17	20	69	19	7.2	7.5	6	64
11/30/2016	13	16	57	16	7.3	7.7	13	46
12/31/2016	13	18	86	18	7.1	8	33	142
1/31/2017	16	18	68	18	7.1	8	60	132
2/28/2017	14	15	50	15	7.4	7.7	50	188
3/31/2017	14	9	50	22	7.4	7.7	42	168
4/30/2017	10	15	90	15	7.2	7.8	34	71
5/31/2017	24	36	270	36	7.2	7.6	29	179
6/30/2017	29	40	297	40	7.2	7.3	3	52
7/31/2017	30	34	132	35	7.3	7.7	2	8
8/31/2017	26	26	140	38	7.3	7.6	6	25
9/30/2017	27	27	107	30	7.2	7.6	6	20
10/31/2017	19	22	97	22	7.3	7.6	2	4
11/30/2017	14	18	132	18	7.2	7.7	4	94
12/31/2017	17	19	72	19	7.5	7.8	36	82
1/31/2018	26	30	288	30	7.1	7.6	115	**410**
2/28/2018	19	21	99	21	6.9	7.4	71	358
3/31/2018	13	15	79	15	7	7.3	78	270
4/30/2018	24	25	156	25	7.2	7.7	10	33
5/31/2018	19	24	146	24	7.1	7.5	2	3
6/30/2018	24	26	150	26	7.2	7.5	4	10
7/31/2018	17	21	79	21	7.4	7.7	3	4
8/31/2018	29	40	150	40	7.1	7.7	3	8
9/30/2018	27	28	141	35	6.5	7.2	4	12
10/31/2018	**33**	39	195	39	7.1	7.5	4	20
11/30/2018	13	17	112	17	7.2	7.5	24	250
12/31/2018	12	13	77	13	7	7.5	28	287

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Ammonia	Ammonia	TP	TP	TP	Aluminum	Aluminum
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	0.42	1	5	Report	Report
Minimum	6.7	9.1	0.08	0.1	1.6	0.1	0.08
Maximum	33	35	3.8	1.5	5.4	2.2	5.5
Average	17	19.3	1.55	0.663	3.19	0.347	0.725
No. of Violations	N/A	N/A	10	3	1	N/A	N/A
1/31/2014	22	23		1.4		1.3	4.2
2/28/2014	17	19		1.5		0.8	2
3/31/2014	19	20		1.3		0.3	0.68
4/30/2014	12.1	17	0.08			0.9	3.4
5/31/2014	8.8	10	0.82			0.6	2.3
6/30/2014	16	17	0.9			0.5	1
7/31/2014	20	21	3.8			1.3	2.5
8/31/2014	18	20	0.5			0.6	1.3
9/30/2014	17	18	0.7			0.7	1.1
10/31/2014	15	15	0.3			0.6	2.9
11/30/2014	13	14		0.3		2.2	5.5
12/31/2014	14	14		0.1		0.7	1.6
1/31/2015	11	11		0.3		0.25	0.29
2/28/2015	14	15		0.2		1.1	2.1
3/31/2015	14	19		0.2		0.9	1.2
4/30/2015	9.5	17	1.8			0.4	1.3
5/31/2015	13	16	2.1			0.1	0.16
6/30/2015	18	21	2.5			0.3	0.59
7/31/2015	22	26	2.6			0.14	0.2
8/31/2015	17	19	2.5			0.2	0.22
9/30/2015	10	14			2.4	0.1	0.17
10/31/2015	10	13			1.8	0.2	0.17
11/30/2015	15	17			2.1	0.1	0.13
12/31/2015	20	22			2.6	0.1	0.18
1/31/2016	22	23			3	0.2	0.27
2/29/2016	20	22			2.9	0.3	0.38
3/31/2016	18	18			2.4	0.2	0.23
4/30/2016	12	15			2.3	0.1	0.11

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Ammonia	Ammonia	TP	TP	TP	Aluminum	Aluminum
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	0.42	1	5	Report	Report
5/31/2016	17	21			3.4	0.1	0.08
6/30/2016	28	35			4.3	0.3	0.51
7/31/2016	27	34			4.5	0.3	0.35
8/31/2016	20	22			3.8	0.4	0.42
9/30/2016	12.1	15			3.8	0.3	0.33
10/31/2016	9.9	12			3.8	0.3	0.39
11/30/2016	17	19			4	0.1	0.22
12/31/2016	23	25			4.1	0.1	0.12
1/31/2017	26	26			4.5	0.1	0.16
2/28/2017	27	28			4.4	0.1	0.11
3/31/2017	26.5	27			3.3	0.1	0.18
4/30/2017	22	24			2.7	0.1	0.11
5/31/2017	15	16			2.4	0.1	0.14
6/30/2017	18	18			2.6	0.5	0.64
7/31/2017	20	22			2.3	0.4	0.43
8/31/2017	14	16			2.9	0.2	0.32
9/30/2017	10.4	11			3.4	0.2	0.23
10/31/2017	13	14			3.9	0.2	0.23
11/30/2017	12	15			3.5	0.1	0.19
12/31/2017	20	23			3.3	0.1	0.12
1/31/2018	24.5	25			3.3	0.1	0.16
2/28/2018	17	18			2.4	0.1	0.15
3/31/2018	17.5	28			1.6	0.1	0.11
4/30/2018	13.5	14			2	0.1	0.19
5/31/2018	15	20			2.5	0.1	0.1
6/30/2018	28	31			4.8	0.2	0.27
7/31/2018	33	33			**5.4**	0.1	0.13
8/31/2018	18.4	22			4.4	0.1	0.15
9/30/2018	6.7	9.1			3.6	0.2	0.21
10/31/2018	12	14			3.1	0.2	0.26
11/30/2018	10	12			1.8	0.1	0.18
12/31/2018	12	15			2.4	0.1	0.12

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Phosphate, dissolved/orthophosphate (as P)
	Monthly Ave
Units	mg/L
Effluent Limit	Report
Minimum	0.01
Maximum	3.7
Average	1.73
No. of Violations	N/A
1/31/2014	0.7
2/28/2014	0.8
3/31/2014	0.9
4/30/2014	
5/31/2014	
6/30/2014	
7/31/2014	
8/31/2014	
9/30/2014	
10/31/2014	
11/30/2014	0.01
12/31/2014	0.01
1/31/2015	0.24
2/28/2015	0.01
3/31/2015	0.01
4/30/2015	
5/31/2015	
6/30/2015	
7/31/2015	
8/31/2015	
9/30/2015	
10/31/2015	
11/30/2015	1.7
12/31/2015	2.2
1/31/2016	2.2
2/29/2016	2
3/31/2016	1.6
4/30/2016	

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Phosphate, dissolved/orthophosphate (as P)
	Monthly Ave
Units	mg/L
Effluent Limit	Report
5/31/2016	
6/30/2016	
7/31/2016	
8/31/2016	
9/30/2016	
10/31/2016	
11/30/2016	3.2
12/31/2016	3.5
1/31/2017	3.7
2/28/2017	3.5
3/31/2017	2.7
4/30/2017	
5/31/2017	
6/30/2017	
7/31/2017	
8/31/2017	
9/30/2017	
10/31/2017	
11/30/2017	3
12/31/2017	2.7
1/31/2018	2.7
2/28/2018	1.7
3/31/2018	1.1
4/30/2018	
5/31/2018	
6/30/2018	
7/31/2018	
8/31/2018	
9/30/2018	
10/31/2018	
11/30/2018	1.4
12/31/2018	1.6

Outfall - Monitoring Location - Limit Set: 001 - 1 - B

Parameter	LC50 Acute Ceriodaphnia	C-NOEC Chronic Ceriodaphnia	Ammonia	Aluminum	Cadmium	Copper	Lead
	Daily Min	Daily Min	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	%	%	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	100	13.3	Report	Report	Report	Report	Report
Minimum	82.5	6.8	8.5	0.026	0	0.0037	0.0011
Maximum	100	100	38	2.3	0	0.09	0.0051
Average	98.6	26.3	17.7	0.498	0	0.0129	0.00268
No. of Violations	2	8	N/A	N/A	N/A	N/A	N/A
3/31/2014	100	13.3	17	1.4	<0.0002	0.016	0.0051
6/30/2014	100	26	8.5	2.3	<0.0003	0.004	<0.0005
9/30/2014	100	13.3	19	1.3	<0.0002	0.005	<0.0005
12/31/2014	100	100	14	0.17	<0.0002	0.018	<0.0005
3/31/2015	100	6.8	15	1.7	<0.0002	0.006	<0.001
6/30/2015	100	6.8	17	0.59	<0.0002	0.015	<0.002
9/30/2015	100	6.8	19	0.2	<0.0002	0.09	0.0016
12/31/2015	100	26	10	0.17	<0.0002	0.005	0.0012
3/31/2016	100	26	21	0.38	<0.0002	0.014	0.004
6/30/2016	100	6.8	15	0.13	<0.0002	0.005	0.004
9/30/2016	82.5	6.8	38	0.35	<0.0002	0.01	0.003
12/31/2016	100	6.8	12	0.39	<0.0002	0.016	0.0028
3/31/2017	88.8	26	27	0.11	<0.0002	0.009	0.0027
6/30/2017	100	6.8	15	0.073	<0.0002	0.005	0.0012
9/30/2017	100	6.8	14	0.25	<0.0002	0.0091	0.0024
12/31/2017	100	51	19	0.14	<0.0002	0.0085	0.004
3/31/2018	100	100	28	0.076	<0.0002	0.0053	0.0015
6/30/2018	100	13.3	13	0.026	<0.0002	0.0037	<0.001
9/30/2018	100	26	20	0.082	<0.0002	0.0093	0.0011
12/31/2018	100	51	13	0.12	<0.0002	0.005	0.0029

Outfall - Monitoring Location - Limit Set: 001 - 1 - B

Parameter	Nickel	Zinc	Hardness	Chromium, total recoverable	LC50 Static 48Hr Acute Pimephales	Noel Statre 7Day Chronic Pimephales
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Min	Daily Min
Units	mg/L	mg/L	mg/L	mg/L	%	%
Effluent Limit	Report	Report	Report	Report	100	13.3
Minimum	0.015	0.008	35	0.0053	66.1	26
Maximum	0.073	0.048	65	0.016	100	100
Average	0.0365	0.0269	46.4	0.0087	93.6	65.6
No. of Violations	N/A	N/A	N/A	N/A	5	0
3/31/2014	0.036	0.027	41	0.006	71.4	26
6/30/2014	0.031	<0.02	55	<0.005	100	100
9/30/2014	0.052	0.008	47	<0.005	100	51
12/31/2014	0.044	<0.02	36	<0.005	100	100
3/31/2015	0.032	0.025	42	<0.005	100	51
6/30/2015	0.073	0.031	54	0.016	100	51
9/30/2015	0.066	<0.02	44	0.0063	100	26
12/31/2015	0.072	<0.02	43	0.0053	100	100
3/31/2016	0.018	0.033	39	0.0081	71.3	26
6/30/2016	0.016	0.03	44	<0.005	100	51
9/30/2016	0.041	0.023	36	0.011	66.1	26
12/31/2016	0.042	0.023	35	0.011	100	100
3/31/2017	0.015	0.048	42	<0.005	71.5	51
6/30/2017	0.019	0.034	65	<0.005	100	51
9/30/2017	0.033	0.021	48	0.0059	100	100
12/31/2017	0.034	0.023	47	<0.005	100	100
3/31/2018	0.018	0.026	45	<0.005	100	51
6/30/2018	0.022	<0.02	61	<0.005	100	100
9/30/2018	0.0468	<0.02	56	<0.005	92	51
12/31/2018	0.0182	0.024	47	<0.005	100	100

Outfall - Monitoring Location - Limit Set: 001 - G - A

Parameter	BOD5	TSS
	Monthly Ave	Monthly Ave
Units	mg/L	mg/L
Effluent Limit	Report	Report
Minimum	107	138
Maximum	348	581
Average	233	306
No. of Violations	N/A	N/A
1/31/2014	245	421
2/28/2014	248	377
3/31/2014	241	431
4/30/2014	107	216
5/31/2014	183	286
6/30/2014	198	351
7/31/2014	217	393
8/31/2014	217	399
9/30/2014	250	429
10/31/2014	263	431
11/30/2014	217	311
12/31/2014	187	274
1/31/2015	181	244
2/28/2015	176	239
3/31/2015	237	354
4/30/2015	182	292
5/31/2015	228	274
6/30/2015	246	328
7/31/2015	269	414
8/31/2015	271	335
9/30/2015	288	433
10/31/2015	254	346
11/30/2015	250	321
12/31/2015	231	278
1/31/2016	196	265
2/29/2016	175	240
3/31/2016	162	181
4/30/2016	164	203
5/31/2016	234	286
6/30/2016	227	215
7/31/2016	221	226

Outfall - Monitoring Location - Limit Set: 001 - G - A

Parameter	BOD5	TSS
	Monthly Ave	Monthly Ave
Units	mg/L	mg/L
Effluent Limit	Report	Report
8/31/2016	228	234
9/30/2016	273	308
10/31/2016	251	231
11/30/2016	257	287
12/31/2016	206	195
1/31/2017	257	261
2/28/2017	318	380
3/31/2017	157	144
4/30/2017	185	234
5/31/2017	182	158
6/30/2017	181	251
7/31/2017	258	277
8/31/2017	237	295
9/30/2017	248	354
10/31/2017	312	581
11/30/2017	265	340
12/31/2017	333	395
1/31/2018	255	276
2/28/2018	276	268
3/31/2018	237	298
4/30/2018	214	265
5/31/2018	281	382
6/30/2018	348	417
7/31/2018	261	278
8/31/2018	317	422
9/30/2018	326	422
10/31/2018	220	230
11/30/2018	133	138
12/31/2018	221	253

Outfall - Monitoring Location - Limit Set: 001 - K - A

Parameter	BOD5	TSS
	Monthly Ave Min	Monthly Ave Min
Units	%	%
Effluent Limit	85	85
Minimum	87	72
Maximum	99.6	99
Average	95.4	93.2
No. of Violations	0	1
1/31/2014	96	95
2/28/2014	93	92
3/31/2014	93	97
4/30/2014	96	97
5/31/2014	90	91
6/30/2014	90	89
7/31/2014	87	72
8/31/2014	99.5	98
9/30/2014	99.6	98
10/31/2014	99	98
11/30/2014	99	99
12/31/2014	99	98
1/31/2015	97	97
2/28/2015	96	97
3/31/2015	97	96
4/30/2015	94	93
5/31/2015	96	92
6/30/2015	96	94
7/31/2015	97	96
8/31/2015	98	94
9/30/2015	99	97
10/31/2015	98	97
11/30/2015	98	97
12/31/2015	96	96
1/31/2016	92	94
2/29/2016	90	92
3/31/2016	90	88
4/30/2016	93	86
5/31/2016	96	95
6/30/2016	96	90
7/31/2016	93	90

Outfall - Monitoring Location - Limit Set: 001 - K - A

Parameter	BOD5	TSS
	Monthly Ave Min	Monthly Ave Min
Units	%	%
Effluent Limit	85	85
8/31/2016	94	88
9/30/2016	97	92
10/31/2016	98	93
11/30/2016	98	95
12/31/2016	95	93
1/31/2017	94	94
2/28/2017	95	96
3/31/2017	89	90
4/30/2017	94	96
5/31/2017	93	85
6/30/2017	97	89
7/31/2017	98	89
8/31/2017	98	91
9/30/2017	98	92
10/31/2017	99	97
11/30/2017	98	96
12/31/2017	97	96
1/31/2018	91	91
2/28/2018	94	93
3/31/2018	95	96
4/30/2018	93	91
5/31/2018	96	95
6/30/2018	98	94
7/31/2018	98	94
8/31/2018	97	93
9/30/2018	98	93
10/31/2018	97	86
11/30/2018	94	91
12/31/2018	89	95

Outfall - Monitoring Location - Limit Set: 001 - O - A

Parameter	BOD5	TSS
	Weekly Ave	Weekly Ave
Units	lb/d	lb/d
Effluent Limit	488	488
Minimum	6	30
Maximum	505	2000
Average	83.2	166
No. of Violations	1	2
1/31/2014	56	154
2/28/2014	124	165
3/31/2014	131	126
4/30/2014	90	98
5/31/2014	275	284
6/30/2014	397	992
7/31/2014	505	2000
8/31/2014	14	71
9/30/2014	7	34
10/31/2014	6	36
11/30/2014	13	40
12/31/2014	16	55
1/31/2015	76	70
2/28/2015	45	30
3/31/2015	44	93
4/30/2015	99	263
5/31/2015	66	157
6/30/2015	64	126
7/31/2015	41	90
8/31/2015	44	119
9/30/2015	17	89
10/31/2015	41	116
11/30/2015	26	43
12/31/2015	55	72
1/31/2016	76	78
2/29/2016	174	158
3/31/2016	113	146
4/30/2016	72	199
5/31/2016	70	110
6/30/2016	39	79
7/31/2016	108	150

Outfall - Monitoring Location - Limit Set: 001 - O - A

Parameter	BOD5	TSS
	Weekly Ave	Weekly Ave
Units	lb/d	lb/d
Effluent Limit	488	488
8/31/2016	32	152
9/30/2016	45	161
10/31/2016	19	97
11/30/2016	20	57
12/31/2016	43	86
1/31/2017	59	68
2/28/2017	67	50
3/31/2017	72	44
4/30/2017	147	90
5/31/2017	150	270
6/30/2017	76	297
7/31/2017	21	153
8/31/2017	15	78
9/30/2017	41	140
10/31/2017	18	97
11/30/2017	44	132
12/31/2017	44	72
1/31/2018	313	288
2/28/2018	112	99
3/31/2018	70	79
4/30/2018	113	156
5/31/2018	57	146
6/30/2018	58	150
7/31/2018	23	79
8/31/2018	45	150
9/30/2018	62	145
10/31/2018	58	195
11/30/2018	80	112
12/31/2018	185	77

WET - Ambient Monitoring Data

Parameter	Hardness	Ammonia	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	**11**	**0.025**	**0.043**	**0**	**0.001**	**0**	**0**	**0**
Maximum	**30**	**0.22**	**0.71**	**0**	**0.011**	**0.001**	**0**	**0**
Median	**13**	**0.07**	**0.11**	**0**	**0.001**	**0**	**0**	**0**
11/26/2018	12	0.11	0.71	<0.0002	<0.0020	<0.0010	<0.0050	<0.020
8/7/2018	23	0.09	0.2	<0.0002	0.0027	<0.0010	<0.0050	<0.020
5/7/2018	12	0.22	0.11	<0.0002	<0.0020	<0.0010	<0.0050	<0.020
3/5/2018	12	<0.05	0.11	<0.0002	<0.0020	<0.0010	<0.0050	<0.020
11/27/2017	13	0.05	0.066	<0.0002	<0.0020	<0.0010	<0.0050	<0.020
11/6/2017	12	0.06	0.086	<0.0002	<0.0020	<0.001	<0.005	<0.02
8/7/2017	17	0.07	0.11	<0.0002	0.0023	<0.001	<0.005	<0.02
5/8/2017	11	<0.06	0.09	<0.0002	<0.002	<0.0005	<0.005	<0.02
2/6/2017	15	0.13	0.051	<0.0002	0.006	<0.0005	<0.005	<0.02
10/3/2016	30	<0.06	0.14	<0.0002	0.01	0.001	<0.005	<0.02
7/12/2016	20	0.11	0.1	<0.0002	<0.002	<0.0005	<0.005	<0.02
4/5/2016	12	<0.05	0.11	<0.0002	<0.002	<0.0005	<0.005	<0.02
2/1/2016	13	---	0.043	<0.0002	0.011	<0.005	<0.005	<0.02
10/12/2015	15	0.08	0.16	<0.0002	<0.002	<0.0005	<0.005	<0.02
8/24/2015	---	---	---	---	---	---	---	---
5/5/2015	14	0.07	0.12	<0.0002	0.002	<0.001	<0.005	<0.020
3/3/2015	---	---	---	---	---	---	---	---
11/4/2014	13	<0.05	0.082	<0.0002	<0.002	<0.0005	<0.005	<0.020
8/12/2014	19	0.09	0.063	<0.0002	<0.002	<0.0005	<0.005	<0.005
5/6/2014	11	0.07	0.097	<0.0003	0.005	<0.0005	<0.005	<0.020
2/4/2014	14	0.1	0.16	<0.0002	0.007	<0.0005	<0.005	<0.020

* non-detect values (<) for parameters that have not been detected in the prior 12 month period are treated at zero (0) values in calculations.

** non-detect values (<) for parameters that have been detected in the prior 12 month period are treated as one-half the detection value in calculations.

Statistical Approach to Characterizing the Effluent for Determining Reasonable Potential

EPA bases its determination of "reasonable potential" on a characterization of the upper bound of expected effluent concentrations based on a statistical analysis of the available monitoring data. As noted in the *Technical Support Document for Water Quality Based Toxics Control* (EPA 1991) ("TSD"), "[a]ll monitoring data, including results for concentrations of individual chemicals, have some degree of uncertainty associated with them. The more limited the amount of test data available, the larger the uncertainty." Thus with a limited data set, the maximum concentration that has been found in the samples may not reflect the full range of effluent concentration.

To account for this, EPA has developed a statistical approach to characterizing effluent variability when the monitoring dataset includes 10 or more samples.[1] As "experience has shown that daily pollutant discharges are generally lognormally distributed," *TSD* at App. E, EPA uses a lognormal distribution to model the shape of the observed data, unless analysis indicates a different distributional model provides a better fit to the data. The model parameters (mean and variance) are derived from the monitoring data. The model parameter μ is the mean of the natural logs of the monitoring data values, while σ is the standard deviation of the natural logs of the monitoring data values.

The lognormal distribution generally provides a good fit to environmental data because it is bounded on the lower end (i.e. you cannot have pollutant concentrations less than zero) and is positively skewed. It also has the practical benefit that if an original lognormal data set X is logarithmically transformed (i.e. Y = ln[X]) the resulting variable Y will be normally distributed. Then the upper percentile expected values of X can be calculated using the z-score of the standardized normal distribution (i.e. the normal distribution with mean = 0 and variance = 1), a common and relatively simple statistical calculation. The pth percentile of X is estimated by

$$X_p = \exp(\mu_y + z_p \times \sigma_y),$$

where μ_y = mean of Y
σ_y = standard deviation of Y
Y = ln[X]
z_p = the z-score for percentile "p"

For the 95th percentile, $z_{95} = 1.645$, so that

$$X_{95} = \exp(\mu_y + 1.645 \times \sigma_y)$$

The 95th percentile value is used to determine whether a discharge has a reasonable potential to cause or contribute to an exceedance of a water quality standard. The combination of the upper bound effluent concentration with dilution in the receiving water is calculated to determine whether the water quality criteria will be exceeded.

[1] A different statistical approach is applied where the monitoring data set includes less than 10 samples.

Datasets including non-detect values The *TSD* also includes a procedure for determine such percentiles when the dataset includes non-detect results, based on a delta-lognormal distribution. In the delta-lognormal procedures, nondetect values are weighted in proportion to their occurrence in the data. The values above the detection limit are assumed to be lognormally distributed values.

The statistical derivation of the delta-lognormal upper bounds is quite complex and is set forth in the TSD at Appendix E. Calculation of the 95th percentile of the distribution, however, involves a relatively straightforward adjustment of the equations given above for the lognormal distribution, as follows.

For the deltalognormal, the pth percentile of X, referred to here as X_p*, is given by

$$X_p^* = \exp(\mu_y^* + z_p^* \times \sigma_y^*),$$

where μ^*= mean of Y values for data points above the detection limit;
σ_y^*= standard deviation of Y for data points above the detection limit;
Y = ln[X*];
X*= monitoring data above detection limit; and
z_p^* = an adjusted z score that is given by the equation:

$$z_p^* = \text{z-score}[(p - \delta)/(1 - \delta)]$$

where δ is the proportion of nondetects in the monitoring dataset.
k = total number of dataset
r = number of nondetect values in the dataset
$\delta = r/k$

For the 95th percentile, this takes the form of $z_p^* = \text{z-score}[(.95 - \delta)/(1 - \delta)]$. The resulting values of z_p^* for various values of δ is set forth in the table below; the calculation is easily performed in excel or other spreadsheet programs.

Example calculations of z_p^* for 95th percentile

δ	(0.95 - δ)/ (1 - δ)	zp*
0	0.95	1.645
0.1	0.94	1.593
0.3	0.93	1.465
0.5	0.90	1.282
0.7	0.83	0.967

APPENDIX 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

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3) Term = Permit was terminated in that year

4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.

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

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

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 load (lb/day)	2015 load (lb/day)	2016 load (lb/day)	2017 load (lb/day)	2018 load (lb/day)	2014-2018 Avg Load (lb/day)
	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

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

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

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO THE WATERS OF THE UNITED STATES UNDER SECTIONS 301 AND 402 OF THE CLEAN WATER ACT (THE "ACT"), AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE ACT, AND ISSUANCE OF A STATE SURFACE WATER PERMIT UNDER NH RSA 485-A:13, I(a).

PUBLIC NOTICE PERIOD: March 5, 2020 – April 3, 2020

PERMIT NUMBER: **NH0100200**

PUBLIC NOTICE NUMBER: NH-003-20

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Newport
15 Sunapee Street
Newport, NH 03773

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

Newport Wastewater Treatment Facility
20 Putnam Road
Newport, NH 03773

RECEIVING WATER: Sugar River Class B

PREPARATION OF THE DRAFT PERMIT:

The U.S. Environmental Protection Agency (EPA) and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) have cooperated in the development of a draft permit for the Newport Wastewater Treatment Facility, which discharges treated domestic and industrial wastewater. Sludge from this facility is dewatered onsite before being removed for disposal by a contractor in a municipal solid waste landfill not owned or operated by the permittee. The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., Chapter 485-A of the New Hampshire Statutes: Water Pollution and Waste Disposal, and the New Hampshire Surface Water Quality Regulations, Env-Wq 1700 et seq. EPA has formally requested that the State certify the draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMIT:

The draft permit and explanatory fact sheet may be obtained at no cost at http://www.epa.gov/region1/npdes/draft_permits_listing_nh.html or by contacting:

Michele Barden
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (OEP06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1539
barden.michele@epa.gov

The administrative record containing all documents relating to this draft permit including all data submitted by the applicant may be accessed by appointment at the EPA Boston office mentioned above Monday through Friday, except holidays.

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of the draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by **April 3, 2020**, to the address or email address listed above. Any person, prior to such date, may submit a request in writing to EPA and NHDES for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

FINAL PERMIT DECISION:

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

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

KEN MORAFF, DIRECTOR
WATER DIVISION
U.S. ENVIRONMENTAL PROTECTION
AGENCY - REGION I