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 Exeter, New Hampshire

is authorized to discharge from the facility located at

Exeter Wastewater Treatment Plant **and** **1 Combined Sewer Overflow (CSO)**
13 Newfields Road
Exeter, NH 03833

to receiving water named

Squamscott River – Outfall 001
Clemson Pond – CSO Outfall 003
Exeter – Squamscott 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 December 12, 2012.

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

Signed this day of

KENNETH MORAFF Digitally signed by KENNETH MORAFF Date: 2022.08.05 15:22:06 -04'00'

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

[1] Procedures for appealing EPA's Final Permit decision may be found at 40 CFR § 124.19.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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

Effluent Characteristic	**Effluent Limitation**			**Monitoring Requirements**[1,2,3]	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type**[4]
Rolling Average Effluent Flow[5]	3.0 MGD[5]	---	---	Continuous	Recorder
Effluent Flow[5]	Report MGD	---	Report MGD	Continuous	Recorder
BOD_5	30 mg/L 751 lb/day	45 mg/L 1,126 lb/day	50 mg/L 1,251 lb/day	2/Week	Composite
BOD_5 Removal	≥ 85 %	---	---	1/Month	Calculation
TSS	30 mg/L 751 lb/day	45 mg/L 1,126 lb/day	50 mg/L 1,251 lb/day	2/Week	Composite
TSS Removal	≥ 85 %	---	---	1/Month	Calculation
pH Range[6]	6.5 – 8.0 S.U.			1/Day	Grab
Enterococci Bacteria[7]	35/100 mL	---	104/100 mL	1/Day	Grab
Fecal Coliform[7, 8, 9]	14/100 mL	---	Report/100 mL	1/Day	Grab
Fecal Coliform[7, 8, 9] (% of samples > 28/100 mL)	---	---	≤ 10%	1/Day	Grab
Total Arsenic[10]	---	---	Report µg/L	2/Year	Grab
Inorganic Arsenic[10]	---	---	Report µg/L	2/Year	Grab
Perfluorohexanesulfonic acid (PFHxS)[11]	---	---	Report ng/L	1/Quarter	Composite
Perfluorononanoic acid (PFNA)[11]	---	---	Report ng/L	1/Quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[11]	---	---	Report ng/L	1/Quarter	Composite
Perfluorooctanoic acid (PFOA)[11]	---	---	Report ng/L	1/Quarter	Composite

Effluent Characteristic	**Effluent Limitation**			**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
Whole Effluent Toxicity (WET) Testing[12, 13]					
LC_{50}	---	---	≥ 100 %	2/Year	Composite
Salinity	---	---	Report ppt	2/Year	Composite
Ammonia Nitrogen	---	---	Report mg/L	2/Year	Composite
Total Cadmium	---	---	Report mg/L	2/Year	Composite
Total Copper	---	---	Report mg/L	2/Year	Composite
Total Nickel	---	---	Report mg/L	2/Year	Composite
Total Lead	---	---	Report mg/L	2/Year	Composite
Total Zinc	---	---	Report mg/L	2/Year	Composite
Total Organic Carbon	---	---	Report mg/L	2/Year	Composite

Ambient Characteristic[14]	**Reporting Requirements**			**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
Salinity	---	---	Report ppt	2/Year	Grab
Ammonia Nitrogen	---	---	Report mg/L	2/Year	Grab
Total Cadmium	---	---	Report mg/L	2/Year	Grab
Total Copper	---	---	Report mg/L	2/Year	Grab
Total Nickel	---	---	Report mg/L	2/Year	Grab
Total Lead	---	---	Report mg/L	2/Year	Grab
Total Zinc	---	---	Report mg/L	2/Year	Grab
Total Organic Carbon	---	---	Report mg/L	2/Year	Grab
pH[15]	---	---	Report S.U.	2/Year	Grab
Temperature[15]	---	---	Report °C	2/Year	Grab
Total Arsenic[10]	---	---	Report µg/L	2/Year	Grab
Inorganic Arsenic[10]	---	---	Report µg/L	2/Year	Grab

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

Sludge Characteristic	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Perfluorohexanesulfonic acid (PFHxS)[16]	---	---	Report ng/g	1/Quarter	Composite[17]
Perfluorononanoic acid (PFNA)[16]	---	---	Report ng/g	1/Quarter	Composite[17]
Perfluorooctanesulfonic acid (PFOS)[16]	---	---	Report ng/g	1/Quarter	Composite[17]
Perfluorooctanoic acid (PFOA)[16]	---	---	Report ng/g	1/Quarter	Composite[17]

2. During the period beginning on the effective date of this permit and lasting through the expiration date, the Permittee is authorized to discharge stormwater and wastewaters from Combined Sewer Outfall Number 003 into Clemson Pond. These discharges are authorized only during wet weather. Such discharges shall be limited to the outfall listed and shall be monitored by the Permittee as specified below. Samples specified below shall be taken at a location that provides a representative analysis of the effluent. Additionally, monitoring results based on Parts I.H.5 and 6 below shall be reported in the monthly Discharge Monitoring Report (DMR) for Outfall 003.

Effluent Characteristic	Discharge Limitation	Monitoring Requirement	
	Wet Weather Event Maximum	Measurement Frequency	Sample Type
Escherichia coli Bacteria[18]	1,000/100 mL	1/Year	Grab

Footnotes:

1. All samples shall be collected in a manner to yield representative data. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented as an electronic attachment to the applicable discharge monitoring report. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and the State of any additional testing above that required herein, if testing is in accordance with 40 CFR Part 136.

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

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

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

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

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

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). See Part I.G.1 and Part I.J.5 below for a provision to modify the pH range.

7. The monthly average limits for *enterococci* and Fecal Coliform are expressed as geometric mean using the daily sample results.

8. The Daily Maximum limit is expressed as not more than 10% of the collected samples (over a monthly period) shall exceed a Most Probable Number (MPN) of 28 per 100 mL. Each month the percentage of collected samples that exceed an MPN of 28 per 100 mL shall be reported as the Daily Maximum value. Furthermore, all Fecal Coliform data collected must be submitted with the monthly Discharge Monitoring Reports (DMRs).

9. See Part I.J.12 below for additional fecal coliform State 401 Certification Conditions.

10. Total arsenic and inorganic arsenic monitoring of the effluent and ambient shall be conducted twice per year on the same day as the Whole Effluent Toxicity testing in the calendar quarters ending June 30th and September 30th. Total arsenic shall be measured using EPA Method 200.8. Inorganic arsenic shall be measured using EPA Method 1632.

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

12. The Permittee shall conduct acute toxicity tests (LC50) in accordance with test procedures and protocols specified in **Attachment A** of this permit. LC50 is defined in Part II.E. of this permit. The Permittee shall use the mysid shrimp (*Mysidopsis bahia*) and inland silverside (*Menidia beryllina*) as the test species. Toxicity test samples shall be collected during the same weeks each time of calendar quarters ending June 30th and September 30th. 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.

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

14. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately outside of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A**. Minimum

levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

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

16. Report in nanograms per gram (ng/g). This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following 6 months after EPA notifies the Permittee that an EPA multi-lab validated method for sludge is available.

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

18. The Permittee shall sample the discharge from Combined Sewer Outfall 003 at least once per calendar year. All attempts must be made to begin sampling during the first half hour after the outfall starts discharging. If this is not possible, a sample shall be collected as soon as possible after the discharge commences. The "event maximum" value for *Escherichia coli* shall be reported on the appropriate DMR for the month sampled. Report the appropriate No Data Indicator (NODI) code on the DMR for all other months.

    The Permittee shall also perform CSO and receiving water (Clemson Pond) sampling as described in Part I.H.5 and 6 below. All CSO and receiving water (Clemson Pond) data shall be reported for each DMR and submitted with the annual report required by Part I.H.4. of this permit.

Part I.A., continued.

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

4. 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.

5. 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.

6. 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.

7. 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.

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

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

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

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

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

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

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

10. 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 outfalls listed in Part I.A.1, and Part I.A.2 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. The Permittee must provide verbal notification to EPA within 24 hours of becoming aware of any unauthorized discharge and a report within 5 days, in accordance with Part II.D.1.e (24-hour reporting). See Part I.I below for reporting requirements.

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

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

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

1. Maintenance Staff

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

2. Preventive Maintenance Program

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

3. Infiltration/Inflow

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

4. Collection System Mapping

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

a. All sanitary sewer lines and related manholes;

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

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

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

e. All pump stations and force mains;

f. The wastewater treatment facility(ies);

g. All surface waters (labeled);

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

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

j. The scale and a north arrow; and

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

5. Collection System O&M Plan

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

a. A description of the collection system management goals, staffing, information management, and legal authorities;

b. A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and

c. A preventive maintenance and monitoring program for the collection system;

d. Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;

e. Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;

f. Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;

g. A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts;

h. An educational public outreach program for all aspects of I/I control, particularly private inflow; and

i. An <u>Overflow Emergency Response Plan</u> to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

6. Annual Reporting Requirement

The Permittee shall submit a summary report of activities related to the implementation of its Collection System O&M Plan during the previous calendar year. The report shall be submitted to EPA and the State annually by March 31. The summary report shall, at a minimum, include:

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

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

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

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

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

f. If the monthly average flow exceeded 80 percent of the facility's 3.0 MGD design flow (2.4 MGD) for three consecutive months in the previous calendar year, or there have been capacity related overflows, the report shall include:

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

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

D. ALTERNATE POWER SOURCE

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

E. INDUSTRIAL USERS

1. The Permittee shall submit to EPA and the State the name of any Industrial User (IU) subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR chapter I, subchapter N (Parts 405-415, 417-430, 432, 447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended) who commences discharge to the facility after the effective date of this permit.

   This reporting requirement also applies to any other IU who is classified as a Significant Industrial User which discharges an average of 25,000 gallons per day or more of process wastewater into the facility (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastewater which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the facility; or is designated as such by the Control Authority as defined in 40 CFR § 403.3(f) on the basis that the industrial user has a reasonable potential to adversely affect the wastewater treatment facility's operation, or for violating any pretreatment standard or requirement (in accordance with 40 CFR § 403.8(f)(6)).

2. In the event that the Permittee receives originals of reports (baseline monitoring reports, 90-day compliance reports, periodic reports on continued compliance, etc.) from industrial users subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR chapter I, subchapter N (Parts 405-415, 417-430, 432-447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended), or from a Significant Industrial User, the Permittee shall forward the originals of these reports within ninety (90) days of their receipt to EPA, and copy the State.

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

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

Sampling shall be for the following PFAS chemicals:

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

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

F. SLUDGE CONDITIONS

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

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

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

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

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

   c. Sewage sludge incineration in a sludge only incinerator

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

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

   a. General requirements

   b. Pollutant limitations

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

   d. Management practices

   e. Record keeping

   f. Monitoring

   g. Reporting

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

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

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

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

7. Under 40 CFR § 503.9(r), the Permittee is a "person who prepares sewage sludge" because it "is … the person who generates sewage sludge during the treatment of

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

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

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

G. SPECIAL CONDITIONS

1. Provision to Modify pH Range

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

H. COMBINED SEWER OVERFLOWS (CSOs)

1. During wet weather (including snowmelt), the Permittee is authorized to discharge storm water/wastewater from CSO Outfall 003.

2. The effluent discharged from the CSO is subject to the following limitations:

   a. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available ("BPT"), Best Conventional Pollutant Control Technology ("BCT") to control and abate conventional pollutants and Best Available Technology Economically Achievable ("BAT") to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgment (BPJ) determination that BPT, BCT, and BAT for combined sewer overflow (CSO) control includes the implementation of Nine Minimum Controls (NMC) specified below. These Nine Minimum Controls and the Nine Minimum Controls Minimum Implementation Levels which are detailed further in Part I.H.3. are requirements of this permit.

(1) Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows;

(2) Maximum use of the collection system for storage;

(3) Review and modification of the pretreatment program to assure CSO impacts are minimized;

(4) Maximization of flow to the POTW for treatment;

(5) Prohibition of dry weather overflows from CSOs;

(6) Control of solid and floatable materials in CSOs;

(7) Pollution prevention programs that focus on contaminant reduction activities;

(8) Public notification to ensure that the public receives adequate notification of CSO occurrences and impacts;

(9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

b. The discharges shall not cause or contribute to violations of federal or state Water Quality Standards.

3. Nine Minimum Controls Minimum Implementation Levels

a. The Permittee must implement the nine minimum controls in accordance with the documentation provided to EPA and NHDES or as subsequently modified to enhance the effectiveness of the controls. This implementation must include the controls identified in Part I.H.3.b-g of this permit plus other controls the Permittee can reasonably undertake as set forth in the documentation.

b. Each CSO structure/regulator, pumping station and/or tidegate shall be routinely inspected, at a minimum of once per month, to ensure that they are in good working condition and adjusted to minimize combined sewer discharges (NMC # 1, 2 and 4). The following inspection results shall be recorded: the date and time of inspection, the general condition of the facility, and whether the facility is operating satisfactorily. If maintenance is necessary, the Permittee shall record: the description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The Permittee shall maintain all records of inspections for at least three years.

c. **Annually, by March 31st,** the Permittee shall submit a certification to NHDES and EPA which states that the previous calendar year's monthly inspections were conducted, results recorded, and records maintained. NHDES and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the Permittee.

Discharges to the combined system of septage, holding tank wastes, or other material which may cause a visible oil sheen or containing floatable material are prohibited during wet weather when CSO discharges may be active (NMC # 3, 6, and 7).

d. Dry weather overflows ("DWOs") are prohibited (NMC # 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and NHDES orally within 24 hours of the time the Permittee becomes aware of the circumstances and a report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances using "NeTSewerOverflow" as described in Part I.I.5 below. See also Paragraph D.1.e. of Part II of this permit.

e. The Permittee shall quantify and record all discharges from combined sewer outfalls (NMC # 9). Quantification shall be through direct measurement. The following information must be recorded for each combined sewer outfall for each discharge event, as set forth in Part I.H.4.:

- Duration (hours) of discharge;
- Volume (gallons) of discharge;
- National Weather Service precipitation data from the nearest gage where precipitation is available at daily (24-hour) intervals and the nearest gage where precipitation is available at one-hour intervals. Cumulative precipitation per discharge event shall be calculated.

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

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

TOWN OF EXETER
WET WEATHER
SEWAGE DISCHARGE
OUTFALL 003

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

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

g. Public Notification Plan

(1) Within 180 days of the effective date of the permit, the Permittee shall submit to EPA and NHDES a Public Notification Plan describing the measures that will be taken to meet NMC#8 in Part I.H.2 of this permit (NMC #8). The Public Notification Plan shall include the means for disseminating information to the public, including communicating the initial, supplemental, and annual notifications required in Part I.H.3.g.(2), (3) and (4) of this permit, as well as procedures for communicating with public health departments, including downstream communities, whose waters may be affected by discharges from the Permittee's CSOs.

(2) Initial notification of a probable CSO activation shall be provided to the public as soon as practicable, but no later than, two (2) hours after becoming aware by monitoring, modeling or other means that a CSO discharge may have occurred. In addition to posting this notification to a website, this information may also be communicated using other electronic means. The initial notification shall include the following information:

- Date and time of probable CSO discharge
- CSO number and location

(3) Supplemental notification shall be provided to the public as soon as practicable, but no later than, twenty-four (24) hours after becoming aware of the termination of any CSO discharge(s). In addition to posting this notification to a website, this information may also be communicated using other electronic means. The supplemental notification shall include the following information:

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

(4) Annual notification - **Annually, by March 31st**, the Permittee shall post the annual report for the previous calendar year described in Part I.H.4 below on a publicly available website, and it shall remain on the website for a minimum of 24 months.

(5) The Public Notification Plan shall be implemented no later than 12 months following the effective date of the Permit.

4. Nine Minimum Controls Reporting Requirement

Annually, by March 31st, the Permittee shall submit a report summarizing activities during the previous calendar year relating to compliance with the nine minimum controls. The annual report shall include information on the locations of CSOs, a summary of CSO outfall monitoring data required by Part I.H.5 of this permit, status and progress of CSO abatement work, and the impacts of CSOs on water quality of the receiving water.

5. Combined Sewer Overflow Outfall Monitoring

For combined sewer overflow Outfall 003, the Permittee must monitor the following:

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

a. For Total Flow, measure the total flow discharged from each CSO outfall during the month. For Total Flow Duration, report the total duration (hours) of discharges for each CSO outfall during the month.

b. For those months when a CSO discharge does not occur, the Permittee must indicate "no discharge" for the outfall for which data was not collected.

c. This information shall be reported for each monthly DMR and submitted with the annual report required by Part I.H.4. of this permit.

6. Clemson Pond Monitoring

The Permittee shall sample at the outlet of Clemson Pond once per quarter for a CSO event of at least 40,000 gallons. The sample at the outlet of Clemson Pond shall be collected just inside the tide gate at NHDES Shellfish Monitoring Station SQMPS010 (42° 59' 12.9" N, 70° 57' 1.98" W). The sample shall be taken within 24 to 48 hours from the start of the event and shall be tested for Fecal Coliform bacteria, *Enterococci* bacteria, and temperature as presented below.

Parameters	**Reporting Requirements**	**Monitoring Requirements**	
	Total Monthly	**Measurement Frequency**	**Sample Type**
Fecal Coliform	Report #/100 mL	Quarterly	Grab
Enterococci	Report #/100 mL	Quarterly	Grab
Temperature	Report °C	Quarterly	Grab

a. For those quarters when a CSO discharge does not occur, the Permittee must indicate "no discharge" for the outfall for which data was not collected.

b. This information shall be reported for each DMR and submitted with the annual report required by Part I.H.4. of this permit.

I. REPORTING REQUIREMENTS

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

1. Submittal of DMRs Using NetDMR

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

2. Submittal of Reports as NetDMR Attachments

   Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. This includes the NHDES Monthly Operating Reports (MORs). See Part I.I.6 for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

3. Submittal of Biosolids/Sewage Sludge Reports

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

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

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

      (1) Transfer of permit notice;

      (2) Request for changes in sampling location;

      (3) Request for reduction in testing frequency;

      (4) Report on unacceptable dilution water / request for alternative dilution water for WET testing.

(5) Report of new industrial user commencing discharge

(6) Report received from existing industrial user

b. These reports, information, and requests shall be submitted to EPA WD electronically at R1NPDESReporting@epa.gov.

5. Submittal of Sewer Overflow and Bypass Reports and Notifications:

The Permittee shall submit required reports and notifications under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows (SSOs) electronically using EPA's NPDES Electronic Reporting Tool for Sewer Overflows ("NeTSewerOverflow"), which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

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.I.3 through I.I.5 shall also be submitted to the New Hampshire Department of Environmental Services, Water Division (NHDES–WD) electronically to the Permittee's assigned NPDES inspector at NHDES-WD or as a hardcopy to the following addresses:

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

7. Verbal Reports and Verbal Notifications

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

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

EPA ECAD at 617-918-1510
and
NHDES Assigned NPDES Inspector at 603-271-1493

J. STATE 401 CERTIFICATION CONDITIONS

1. The Permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water

unless it has been treated in such a manner as will not lower the legislated water quality classification of, or interfere with the uses assigned to, said water by the New Hampshire Legislature (RSA 485-A:12).

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

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

4. Pursuant to New Hampshire Statute RSA 485-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 CFR § 133.102(c).

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

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

   a. Any extension of a collector or interceptor, whether public or private, regardless of flow;

   b. Any wastewater connection or other discharge in excess of 5,000 gpd;

   c. Any wastewater connection or other discharge to a WWTP operating in excess of 80 percent design flow capacity or design loading capacity based on actual average flow or loading for 3 consecutive months;

d. Any industrial wastewater connection or change in existing discharge of industrial wastewater, regardless of quality or quantity;

e. Any sewage pumping station greater than 50 gpm or serving more than one building; or

f. Any proposed sewer that serves more than one building or that requires a manhole at the connection.

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

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

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

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

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

   c. A list of all permitted indirect dischargers; and

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

10. When the effluent discharged for a period of three (3) consecutive months exceeds 80 percent of the 3.0 MGD design flow (2.4 MGD) or design loading capacity, the Permittee shall submit to the permitting authorities a projection of flows and loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans. Before the design flow will be reached, or whenever treatment necessary to achieve permit limits cannot be assured, the Permittee may be required to submit plans for facility improvements.

11. Outfall Maintenance and Inspection

    a. Effluent diffusers shall be maintained as necessary to ensure proper operation. Proper operation means that the plumes from each port will be balanced relative to each other and that they all have unobstructed flow. Maintenance may include dredging in the vicinity of the diffuser, clean out of solids in the diffuser header pipe, removal of debris and repair/replacement of riser ports and duckbill valves.

    b. Any necessary maintenance dredging must be performed only after receiving all necessary permits from the NHDES Wetlands Bureau and other appropriate agencies.

    c. To determine if maintenance will be required, the Permittee shall have a licensed diver or licensed marine contractor inspect and videotape the operation of the diffuser. The inspections and videotaping shall be performed in accordance with the following schedule:

        (1) Every year if no duckbill valves have been installed on the riser ports; or

        (2) Every 2 years if duckbill valves have been installed on the riser ports.

    d. The video of the diffuser inspection and a copy of a report summarizing the results of the inspection shall be submitted to EPA and NHDES-WD on a USB drive within 60 days of each inspection. A schedule for cleaning, repairs, or other necessary maintenance shall be included in the report if the inspection indicates that it is necessary. Necessary cleaning, repairs, or other maintenance should be documented with a photo or video taken after the action is completed.

12. NHDES Shellfish Notification Procedures

    The Permittee shall immediately notify the Shellfish Section of NHDES-WD of possible high bacteria/virus loading events from the facility or its sewage collection infrastructure. Such events include:

    a. Any lapse or interruption of normal operation of the POTW disinfection system, or other event that results in discharge of sewage from the POTW or sewage collection infrastructure (pump stations, sewer lines, manholes, etc.) that has not undergone full disinfection as specified in this permit;

    b. Total daily flows in excess of the POTW's average daily design flow of 3.0 MGD; and

    c. Daily post-disinfection effluent sample result of 43 fecal coliform/100 mL or greater. Notification shall also be made for instances where NPDES-required bacteria sampling is not completed, or where the results of such sampling are invalid.

Notification shall be made using the program's cell phone number. If Shellfish Program staff are not available to answer the phone, leave a message describing the issue or situation and provide your contact information, including phone number. Then, call the Shellfish Program's pager and enter a call back number. Upon initial notification of a possible high bacteria/virus loading event, Shellfish Program staff will determine the most suitable interval for continued notification and updates on an event-by-event basis.

NHDES - Shellfish Program
Cell Phone: 603-568-6741
Pager: 603-771-9826

ATTACHMENT A

MARINE 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:

- **2007.0 - Mysid Shrimp (Americamysis bahia) definitive 48 hour test.**
- **2006.0 - Inland Silverside (Menidia beryllina) definitive 48 hour test.**

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

II. METHODS

The permittee shall use the most recent 40 CFR Part 136 methods. Whole Effluent Toxicity (WET) Test Methods and guidance may be found at:

http://water.epa.gov/scitech/methods/cwa/wet/index.cfm#methods

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 and receiving water sample shall be collected. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. 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 holding time extension. 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[1] (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

[1] For this protocol, total residual chlorine is synonymous with total residual oxidants.

prior to sample use for toxicity testing. If performed on site the results should be included on the chain of custody (COC) presented to WET laboratory.

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 mg/L chlorine. If dechlorination is necessary, a thiosulfate control consisting of the maximum concentration of thiosulfate used to dechlorinate the sample in the toxicity test control water must also be run in the WET test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6^{o} C.

IV. DILUTION WATER

Samples of receiving water must be collected from a reasonably accessible location in the receiving water body immediately upstream of the permitted discharge's zone of influence. 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 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 is found to be, or suspected to be toxic or unreliable, 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 case is when repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use by the permittee and toxicity testing laboratory. The second is when two of the most recent documented incidents of unacceptable site dilution water toxicity require ADW use in future WET testing.

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

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

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

and

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

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

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA Region 1 requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Americamysis and Menidia toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE MYSID, AMERICAMYSIS BAHIA 48 HOUR TEST[1]

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1. Test type	48hr Static, non-renewal
2. Salinity	25ppt ± 10 percent for all dilutions by adding dry ocean salts
3. Temperature (^{o}C)	20^{o}C ± 1^{o}C or 25^{o}C ± 1^{o}C, temperature must not deviate by more than 3^{o}C during test
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml (minimum)
7. Test solution volume	200 ml/replicate (minimum)
8. Age of test organisms	1-5 days, ≤ 24 hours age range
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated *Artemia* nauplii while holding prior to initiating the test
13. Aeration [2]	None
14. Dilution water	5-30 ppt, +/- 10%; Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	≥ 0.5
16. Number of dilutions [3]	5 plus a control. An additional dilution at the permitted effluent concentration (%

	effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality - no movement of body appendages on gentle prodding
18. Test acceptability	90% or greater survival of test organisms in control solution
19. Sampling requirements	For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters

Footnotes:

[1] Adapted from EPA 821-R-02-012.

[2] If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.

[3] When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

EPA NEW ENGLAND TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST[1]

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1. Test Type	48 hr Static, non-renewal
2. Salinity	25 ppt $\pm$ 10 % by adding dry ocean salts
3. Temperature	$20^{o}C \pm 1^{o}C$ or $25^{o}C \pm 1^{o}C$, temperature must not deviate by more than $3^{o}C$ during test
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. Total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated Artemia nauplii while holding prior to initiating the test
13. Aeration[2]	None
14. Dilution water	5-32 ppt, +/- 10% ; Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	$\geq$ 0.5
16. Number of dilutions[3]	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

Footnotes:

[1] Adapted from EPA 821-R-02-012.

[2] If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.

[3] When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

V.1. Test Acceptability Criteria

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.2. Use of Reference Toxicity Testing

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

In general, 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 as prescribed below.

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.2.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. $\geq$3 standard deviations for IC25s and LC50 values and $\geq$ 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.

VI. CHEMICAL ANALYSIS

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

Parameter	Effluent	Diluent	Minimum Level for effluent[*1] (mg/L)
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine [*2]	x	x	0.02
Total Solids and Suspended Solids	x	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

Superscript:

[*1] These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

[*2] Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

-Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
-Method 4500-CL G DPD Photometric Method.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

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

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) 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
    - Permit limit and toxicity test results
    - Summary of any test sensitivity and concentration response evaluation that was conducted

Please note: The NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) are available on EPA's website at http://www.epa.gov/NE/enforcementandassistance/dmr.html

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 levels (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; and
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint.

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

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

A. GENERAL REQUIREMENTS

1. Duty to Comply

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

a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L.114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

(a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than 2 years, or both.

(b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

(c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

(d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(2) *Civil Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(3) *Administrative Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:

(a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

2. <u>Permit Actions</u>

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. <u>Monitoring and Records</u>

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;
(2) The individual(s) who performed the sampling or measurements;
(3) The date(s) analyses were performed;
(4) The individual(s) who performed the analyses;
(5) The analytical techniques or methods used; and
(6) The results of such analyses.

d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.

e. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

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

a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. *Planned Changes*. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).

(3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. *Anticipated noncompliance*. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. *Transfers*. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.

d. *Monitoring reports*. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.

(2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. *Twenty-four hour reporting.*

(1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

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

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
(b) Any upset which exceeds any effluent limitation in the permit.
(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).

(3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.

f. *Compliance Schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.

h. *Other information.* Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

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

2. Signatory Requirement

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

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. Availability of Reports.

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

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

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

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

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

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

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

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

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

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

Bypass see B.4.a.1 above.

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

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

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

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

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

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

Daily Discharge means the "discharge of a pollutant" measured during a calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Direct Discharge means the "discharge of a pollutant."

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

Discharge

(a) When used without qualification, *discharge* means the "discharge of a pollutant."

(b) As used in the definitions for "interference" and "pass through," *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

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

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or

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

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

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

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

Environmental Protection Agency ("EPA") means the United States Environmental Protection

Agency.

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

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

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

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

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

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

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

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

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

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

LC_{50} means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.

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

Municipal solid waste landfill (MSWLF) unit means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

(a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.

(b) As related to sludge use and disposal, *municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

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

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

(a) From which there is or may be a "discharge of pollutants;"

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source;" and

(d) Which has never received a finally effective NPDES permit for discharges at that "site."

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

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

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

(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

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

NPDES means "National Pollutant Discharge Elimination System."

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

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

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

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

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

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

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

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

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

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

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

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

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

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

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

Secondary industry category means any industry which is not a "primary industry category."

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

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

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

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 C.F.R. § 122.2.

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

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

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

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

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

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

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

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

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

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

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

For purposes of this definition, "domestic sewage" includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Director may designate any person subject to the standards for sewage sludge use and disposal in 40 C.F.R. Part 503 as a "treatment works treating domestic sewage," where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

Upset see B.5.a. above.

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

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

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

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(b) All interstate waters, including interstate "wetlands;"

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

  (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;

  (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

  (3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

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

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

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

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

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

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen

kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	"Whole effluent toxicity"
ZID	Zone of Initial Dilution

RESPONSE TO COMMENTS
NPDES PERMIT NO. NH0100871
EXETER WASTEWATER TREATMENT FACILITY
EXETER, NEW HAMPSHIRE

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

In accordance with the provisions of 40 Code of Federal Regulations (CFR) §124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit # NH0100871 ("Draft Permit"). The Response to Comments explains and supports EPA's determinations that form the basis of the Final Permit. From March 22, 2022, through April 20, 2020, solicited public comments on the Draft Permit.

EPA received comments from:

- Conservation Law Foundation, dated April 20, 2022

Although EPA's knowledge of the facility has benefited from the various comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit that warranted a reopening of the public comment period.

A copy of the Final Permit and this response to comments document will be posted on the EPA Region 1 website: https://www.epa.gov/npdes-permits/new-hampshire-final-individual-npdes-permits.

A copy of the Final Permit may be also obtained by writing or calling Michael Cobb, USEPA, 5 Post Office Square, Suite 100 (Mail Code: 06-4), Boston, MA 02109-3912; Telephone: (617) 918-1369; Email cobb.michael@epa.gov.

I. Responses to Comments

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

A. Comments from Conservation Law Foundation, on April 20, 2022:

Comment 1

Brief Overview

The Squamscott River is an important part of the Great Bay estuary. As EPA's Fact Sheet describes, the river is impaired as a result of numerous pollutants, including nitrogen and chlorophyll-a, and inadequate dissolved oxygen, and is not supporting several designated uses (aquatic life, primary contact recreation, secondary contact recreation, and fish consumption). *See* Fact Sheet at 13-14. With specific regard to nitrogen, "EPA has determined that the nitrogen load [in the estuary] is exceeding the assimilative capacity of the estuary and is causing or contributing, or has the reasonable potential to cause or contribute, to pervasive nutrient-related impairments and violations of water quality standards." *Id.* at 20. Since issuance of the current NPDES permit, the Town of Exeter has constructed a new wastewater treatment facility which has dramatically reduced total nitrogen effluent concentrations and loads, as well as total suspended solids (TSS) and biological oxygen demand (BOD_5).

The Draft Permit Violates the Clean Water Act's Prohibition Against Backsliding

The current NPDES permit for the Exeter wastewater treatment facility contains effluent limitation, on an average monthly basis, of 3 milligrams per liter and 75 pounds per day. See NPDES Permit No. NH0100871. The draft permit eliminates that effluent limitation for total nitrogen, on the assumption that total nitrogen discharges from the Exeter wastewater treatment facility will be regulated under the Total Nitrogen General Permit. However, because the Total Nitrogen General Permit contains a less stringent effluent limitation for total nitrogen, the draft permit's elimination of the current effluent limitations of 3 mg/l and 75 lbs/day and its reliance on that less stringent standard in its place violates the Clean Water Act's prohibition against backsliding.

The Clean Water Act's "Anti-backsliding" provision generally prohibits the adoption of an effluent limitation in a new NPDES permit that is less stringent than a comparable effluent limitation in a prior NPDES permit. 33 U.S.C. §1314(o)(1). While the Act provides specific exceptions to this general prohibition against backsliding, such exceptions cannot be relied upon where the implementation of a less stringent effluent limitation would result in a violation of a water quality standard.[1] 33 U.S.C. §1314(o)(3). Because the Squamscott River (and the larger Great Bay estuarine system of which it is a part) is violating state water quality standards – including but not limited to standards related to nitrogen, chlorophyll-a, and failure to support designated aquatic life uses – the Clean Water Act's general prohibition against backsliding applies. For the foregoing reasons, and for the additional reason that EPA has provided no anti-backsliding analysis to support its approach,[2] the draft permit fails to comply with the Clean Water Act.

Conclusion

For the reasons stated above, the draft permit's elimination of the current Exeter NPDES permit's effluent limitations for total nitrogen violates the Clean Water Act's prohibition against backsliding. CLF urges EPA to correct this legal deficiency in its final permit.

[1] This provision, codified at 33 U.S.C. §1314(o)(3), is described by EPA, in its NPDES Permit Writers' Manual, as a "safety clause that provides an absolute limitation on backsliding." U.S. Envt'l Prot. Agency NPDES Permit Writers' Manual (Sept. 2010) at 7-4. The Permit Writers' Manual goes on to describe this safety clause as follows:

> This section of the CWA prohibits the relaxation of effluent limitations in all cases if the revised effluent limitation would result in a violation of applicable effluent guidelines or water quality standards, including antidegradation requirements. Thus, even if one or more of the backsliding exceptions outlined in the statute is applicable and met, CWA section 402(o)(3) acts as a floor and restricts the extent to which effluent limitations may be relaxed. The requirement affirms existing provisions of the CWA that require effluent limitations, standards, and conditions to *ensure compliance with applicable technology and water quality standards*.

Id. (emphasis added).

[2] Section 2.6 of the draft permit Fact Sheet includes general statements about anti-backsliding, but neither that section, nor any other section, provides an anti-backsliding analysis addressing the elimination of the current 3 mg/l, 75 lbs/day effluent limitations for total nitrogen. *See* Fact Sheet § 2.6 at 11 and the Fact Sheet, generally. Nor did EPA engage in such analysis in the context of the Total Nitrogen General Permit. *See* EPA Response to Comments, Total Nitrogen General Permit, at 49 (noting that it was not necessary to address the backsliding issue in relation to Exeter until issuance of the next Exeter NPDES permit). The NPDES Permit Writers' Manual makes clear that an anti-backsliding analysis is necessary. U.S. Envt'l Prot. Agency NPDES Permit Writers' Manual (Sept. 2010) at 7-2 ("[T]he permit writer should clearly explain in the fact sheet for the permit how the final limitations in the permit were determined and how those limitations meet both technology and water quality standards (including antidegradation) and, where appropriate, how an anti-backsliding analysis was applied to the final effluent limitations.").

Response 1

EPA acknowledges that the 2012 individual NPDES permit for Exeter established total nitrogen limits of 3 mg/L and 75 lbs/day as described in this comment and that the 2021 Great Bay Total Nitrogen General Permit (GBTN GP) establishes a total nitrogen limit of 106 lbs/day. All of these limits are established as rolling seasonal average limits, applicable from April 1 through October 31 of each year. As specified on page 20 of the Exeter's 2022 Fact Sheet, EPA's intention is to renew the individual permit without any nitrogen limitations and simultaneously authorize Exeter's discharge of nitrogen under the GBTN GP. Contrary to the comment, transferring nitrogen coverage from their individual permit to the GBTN GP does not violate anti-backsliding regulations for the reasons described below.

Once a NPDES permit has been issued for a particular facility (*e.g.*, Exeter's 2012 individual permit), the Clean Water Act (CWA) seeks to preserve improvements made to water quality by expressly prohibiting "backsliding" under CWA section 402(o). 33 U.S.C. § 1342(o). Backsliding "occurs when a renewed, reissued, or modified permit contains effluent limitations [that are] less stringent than those in the previous permit." *In re City of Tulsa*, 3 E.A.D. 505, 506 (CJO 1991) (citing CWA § 402(o), 33 U.S.C. § 1342(o)). The CWA's anti-backsliding provision in section 402(o) consists of three main parts: (1) a prohibition on specific forms of backsliding; (2) exceptions to the prohibition; and (3) a safety clause that provides an absolute limitation (also referred to as a "backstop") on backsliding if the revised effluent limit would result in a violation of water quality standards. 2010 Permit Writers' Manual § 7.2.1, at 7-2.

As to the first part of CWA section 402(o), the prohibition on backsliding, the statute generally provides that "a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with section 1313(d)(4) of this title." CWA § 402(o)(1), 33 U.S.C. § 1342(o)(1). Notably, this prohibition itself includes an exception indicating that it does not apply if the limit is in accordance with 33 U.S.C. § 1313(d)(4) which describes limits "based on a total maximum daily load or other waste load allocation." *See* CWA § 303(d)(4), CWA § 402(o)(1), 33 U.S.C. § 1342(o)(1). Section 303(d)(4) provides, in relevant part, that (1) "where the applicable water quality standard has not yet been attained" (2) "any effluent limitation based on a [TMDL]…may be revised" so long as (3) attainment of water quality standards is assured. *See* CWA § 303(d)(4)(A)(i), 33 U.S.C. § 1313(d)(4)(A)(i). This exception, referring to § 303(d)(4), is applicable here.

First, § 303(d)(4)(A) generally applies because the nitrogen standard has not been attained in the downstream waterbody (*i.e.*, Great Bay).

Second, the effluent limitation set in Exeter's 2012 individual permit meets the standard of an "effluent limitation based on a total maximum daily load or other waste load allocation." The 2012 nitrogen limits constituted an "other waste load allocation" and were established with broader watershed-wide nitrogen reductions in view including a TMDL-like analysis that considered all sources and the overall assimilative capacity of the waterbody. Page 20 of Exeter's 2012 Response to Comments indicates "EPA also weighed the environmental policy risk that immediate default to a more stringent effluent limitation would not give sufficient opportunity, or incentive, for Exeter and others in the watershed to pursue necessary nonpoint source controls, and indeed might frustrate ongoing efforts by NHDES to develop a framework to address nitrogen loading on a watershed basis." Along these same lines, the 2021 GBTN GP implements an adaptive management permitting approach designed to meet water quality standards by addressing both point sources and nonpoint sources of nitrogen, including a wasteload allocation (WLA) for each eligible WWTF, including Exeter. In other words, the 2012 nitrogen limit went beyond a traditional, facility-specific water-quality based effluent limitation and fits within the meaning of "other waste load allocation" of § 303(d)(4)(A).

Third, the Region's approach to nitrogen limits for this Facility through the GBTN GP satisfies the final requirement of § 303(d)(4)(A) that the "cumulative effect of [the] revised effluent limitations based on such total maximum daily load or waste load allocation will assure the attainment of such water quality standard." EPA acknowledges that given the complex nature of the Great Bay estuary and the substantial nitrogen load from stormwater and non-point sources, any permitting strategy in Great Bay would include inherent uncertainty. However, EPA maintains its view that the most expeditious pathway to achieving water quality standards in Great Bay is through an adaptive management approach that allows municipalities the flexibility to direct resources to a combination of point source and non-point source nitrogen reductions. Accordingly, for nearly 10 years EPA has implemented a similar approach on a much smaller scale by issuing an Administrative Order-on-Consent (AOC docket number 13-010) under Exeter's 2012 individual permit, allowing Exeter to achieve a less stringent limit of 8 mg/L in exchange for efforts to track and reduce nitrogen from stormwater and non-point sources. Based on their median effluent flow of 1.6 MGD from April through October over the 5-year review period, this AOC required an average effluent load below approximately 107 lbs/day (*i.e.*, 1.6 MGD x 8 mg/L x 8.345). Comparably, the GBTN GP implements a similar approach on a much broader watershed-wide scale and, for Exeter, results in an effluent load limit of 106 lbs/day. Notably, Exeter is already a member of the Municipal Alliance for Adaptive Management (MAAM) that currently includes 7 of the 12 municipalities covered by the GBTN GP. Additionally, in July 2021, Exeter voluntarily submitted an Adaptive Management Framework Proposal in accordance with Part 3 of the GBTN GP. Both of these actions indicate Exeter's serious commitment to reduce stormwater and non-point source nitrogen loads under the GBTN GP's flexible framework even before they are authorized under the GBTN GP. Beyond the actions of Exeter, EPA's confidence regarding the success of this adaptive management strategy is also supported by the Settlement Agreement (SA) between CLF and the Cities of Dover, Rochester and Portsmouth, dated March 26, 2021, demonstrating a broad commitment from other major municipalities in the watershed to pursue nitrogen reductions outside the scope of the effluent limits in the GBTN GP.

The third part of CWA section 402(o) – the safety clause – provides that "[i]n no event may…a permit…be renewed, reissued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 1313…." CWA § 402(o)(3), 33 U.S.C. § 1342(o)(3) (emphasis added). Therefore, even if one of the exceptions to the backsliding prohibition, such as that supplied by section 303(d)(4), is applicable and its conditions met, section 402(o)(3) acts as a floor on the extent to which effluent limits may be relaxed. Thus, under both CWA sections 303(d)(4) and 402(o)(3), a principal question when evaluating the permissibility of less stringent permit limits is whether the water quality standards will be met. As described above regarding the final requirement of § 303(d)(4)(A), the Region's approach in the GBTN GP will assure the attainment of such water quality standards and thus satisfies the safety clause at § 402(o)(3). However, if it is determined in the future that the Exeter WWTF nitrogen load has increased without necessary corresponding and anticipated nitrogen reductions from stormwater and NPS, EPA reserves the right to impose a more stringent TN limit through a subsequent permitting action at that time.

In summary, EPA agrees that the objective of any NPDES permit is to attain and maintain water quality standards in the most expeditious manner and considers that authorizing Exeter under the GBTN GP supports that goal and is, therefore, in accordance with anti-backsliding regulations. The Final Permit has not been changed.

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 Exeter, New Hampshire

is authorized to discharge from the facility located at

Exeter Wastewater Treatment Plant **and** **1 Combined Sewer Overflow (CSO)**
13 Newfields Road
Exeter, NH 03833

to receiving water named

Squamscott River – Outfall 001
Clemson Pond – CSO Outfall 003
Exeter – Squamscott 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 December 12, 2012.

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

Signed this day of

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

[1] Pursuant to 40 Code of Federal Regulations (CFR) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, the permit will become effective upon the date of signature. Procedures for appealing EPA's Final Permit decision may be found at 40 CFR § 124.19.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Rolling Average Effluent Flow[5]	3.0 MGD[5]	---	---	Continuous	Recorder
Effluent Flow[5]	Report MGD	---	Report MGD	Continuous	Recorder
BOD_5	30 mg/L 751 lb/day	45 mg/L 1,126 lb/day	50 mg/L 1,251 lb/day	2/Week	Composite
BOD_5 Removal	≥ 85 %	---	---	1/Month	Calculation
TSS	30 mg/L 751 lb/day	45 mg/L 1,126 lb/day	50 mg/L 1,251 lb/day	2/Week	Composite
TSS Removal	≥ 85 %	---	---	1/Month	Calculation
pH Range[6]	6.5 – 8.0 S.U.			1/Day	Grab
Enterococci Bacteria[7]	35/100 mL	---	104/100 mL	1/Day	Grab
Fecal Coliform[7, 8, 9]	14/100 mL	---	Report/100 mL	1/Day	Grab
Fecal Coliform[7, 8, 9] (% of samples > 28/100 mL)	---	---	≤ 10%	1/Day	Grab
Total Arsenic[10]	---	---	Report µg/L	2/Year	Grab
Inorganic Arsenic[10]	---	---	Report µg/L	2/Year	Grab
Perfluorohexanesulfonic acid (PFHxS)[11]	---	---	Report ng/L	1/Quarter	Composite
Perfluorononanoic acid (PFNA)[11]	---	---	Report ng/L	1/Quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[11]	---	---	Report ng/L	1/Quarter	Composite
Perfluorooctanoic acid (PFOA)[11]	---	---	Report ng/L	1/Quarter	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Whole Effluent Toxicity (WET) Testing[12, 13]					
LC_{50}	---	---	≥ 100 %	2/Year	Composite
Salinity	---	---	Report ppt	2/Year	Composite
Ammonia Nitrogen	---	---	Report mg/L	2/Year	Composite
Total Cadmium	---	---	Report mg/L	2/Year	Composite
Total Copper	---	---	Report mg/L	2/Year	Composite
Total Nickel	---	---	Report mg/L	2/Year	Composite
Total Lead	---	---	Report mg/L	2/Year	Composite
Total Zinc	---	---	Report mg/L	2/Year	Composite
Total Organic Carbon	---	---	Report mg/L	2/Year	Composite

Ambient Characteristic[14]	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Salinity	---	---	Report ppt	2/Year	Grab
Ammonia Nitrogen	---	---	Report mg/L	2/Year	Grab
Total Cadmium	---	---	Report mg/L	2/Year	Grab
Total Copper	---	---	Report mg/L	2/Year	Grab
Total Nickel	---	---	Report mg/L	2/Year	Grab
Total Lead	---	---	Report mg/L	2/Year	Grab
Total Zinc	---	---	Report mg/L	2/Year	Grab
Total Organic Carbon	---	---	Report mg/L	2/Year	Grab
pH[15]	---	---	Report S.U.	2/Year	Grab
Temperature[15]	---	---	Report °C	2/Year	Grab
Total Arsenic[10]	---	---	Report µg/L	2/Year	Grab
Inorganic Arsenic[10]	---	---	Report µg/L	2/Year	Grab

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

Sludge Characteristic	**Reporting Requirements**			**Monitoring Requirements**[1,2,3]	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type**[4]
Perfluorohexanesulfonic acid (PFHxS)[16]	---	---	Report ng/g	1/Quarter	Composite[17]
Perfluorononanoic acid (PFNA)[16]	---	---	Report ng/g	1/Quarter	Composite[17]
Perfluorooctanesulfonic acid (PFOS)[16]	---	---	Report ng/g	1/Quarter	Composite[17]
Perfluorooctanoic acid (PFOA)[16]	---	---	Report ng/g	1/Quarter	Composite[17]

2. During the period beginning on the effective date of this permit and lasting through the expiration date, the Permittee is authorized to discharge stormwater and wastewaters from Combined Sewer Outfall Number 003 into Clemson Pond. These discharges are authorized only during wet weather. Such discharges shall be limited to the outfall listed and shall be monitored by the Permittee as specified below. Samples specified below shall be taken at a location that provides a representative analysis of the effluent. Additionally, monitoring results based on Parts I.H.5 and 6 below shall be reported in the monthly Discharge Monitoring Report (DMR) for Outfall 003.

Effluent Characteristic	**Discharge Limitation**	**Monitoring Requirement**	
	Wet Weather Event Maximum	**Measurement Frequency**	**Sample Type**
Escherichia coli Bacteria[18]	1,000/100 mL	1/Year	Grab

Footnotes:

1. All samples shall be collected in a manner to yield representative data. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented as an electronic attachment to the applicable discharge monitoring report. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and the State of any additional testing above that required herein, if testing is in accordance with 40 CFR Part 136.

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

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

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

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

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

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). See Part I.G.1 and Part I.J.5 below for a provision to modify the pH range.

7. The monthly average limits for *enterococci* and Fecal Coliform are expressed as geometric mean using the daily sample results.

8. The Daily Maximum limit is expressed as not more than 10% of the collected samples (over a monthly period) shall exceed a Most Probable Number (MPN) of 28 per 100 mL. Each month the percentage of collected samples that exceed an MPN of 28 per 100 mL shall be reported as the Daily Maximum value. Furthermore, all Fecal Coliform data collected must be submitted with the monthly Discharge Monitoring Reports (DMRs).

9. See Part I.J.12 below for additional fecal coliform State 401 Certification Conditions.

10. Total arsenic and inorganic arsenic monitoring of the effluent and ambient shall be conducted twice per year on the same day as the Whole Effluent Toxicity testing in the calendar quarters ending June 30th and September 30th. Total arsenic shall be measured using EPA Method 200.8. Inorganic arsenic shall be measured using EPA Method 1632.

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

12. The Permittee shall conduct acute toxicity tests (LC50) in accordance with test procedures and protocols specified in **Attachment A** of this permit. LC50 is defined in Part II.E. of this permit. The Permittee shall use the mysid shrimp (*Mysidopsis bahia*) and inland silverside (*Menidia beryllina*) as the test species. Toxicity test samples shall be collected during the same weeks each time of calendar quarters ending June 30th and September 30th. 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.

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

14. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately outside of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A**. Minimum

levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

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

16. Report in nanograms per gram (ng/g). This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following 6 months after EPA notifies the Permittee that an EPA multi-lab validated method for sludge is available.

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

18. The Permittee shall sample the discharge from Combined Sewer Outfall 003 at least once per calendar year. All attempts must be made to begin sampling during the first half hour after the outfall starts discharging. If this is not possible, a sample shall be collected as soon as possible after the discharge commences. The “event maximum” value for *Escherichia coli* shall be reported on the appropriate DMR for the month sampled. Report the appropriate No Data Indicator (NODI) code on the DMR for all other months.

    The Permittee shall also perform CSO and receiving water (Clemson Pond) sampling as described in Part I.H.5 and 6 below. All CSO and receiving water (Clemson Pond) data shall be reported for each DMR and submitted with the annual report required by Part I.H.4. of this permit.

Part I.A., continued.

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

4. 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.

5. 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.

6. 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.

7. 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.

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

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

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

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

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

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

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

10. 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 outfalls listed in Part I.A.1, and Part I.A.2 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. The Permittee must provide verbal notification to EPA within 24 hours of becoming aware of any unauthorized discharge and a report within 5 days, in accordance with Part II.D.1.e (24-hour reporting). See Part I.I below for reporting requirements.

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

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

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

1. Maintenance Staff

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

2. Preventive Maintenance Program

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

3. Infiltration/Inflow

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

4. Collection System Mapping

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

a. All sanitary sewer lines and related manholes;

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

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

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

e. All pump stations and force mains;

f. The wastewater treatment facility(ies);

g. All surface waters (labeled);

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

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

j. The scale and a north arrow; and

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

5. Collection System O&M Plan

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

a. A description of the collection system management goals, staffing, information management, and legal authorities;

b. A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and

c. A preventive maintenance and monitoring program for the collection system;

d. Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;

e. Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;

f. Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;

g. A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts;

h. An educational public outreach program for all aspects of I/I control, particularly private inflow; and

i. An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

6. Annual Reporting Requirement

The Permittee shall submit a summary report of activities related to the implementation of its Collection System O&M Plan during the previous calendar year. The report shall be submitted to EPA and the State annually by March 31. The summary report shall, at a minimum, include:

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

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

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

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

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

f. If the monthly average flow exceeded 80 percent of the facility's 3.0 MGD design flow (2.4 MGD) for three consecutive months in the previous calendar year, or there have been capacity related overflows, the report shall include:

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

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

D. ALTERNATE POWER SOURCE

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

E. INDUSTRIAL USERS

1. The Permittee shall submit to EPA and the State the name of any Industrial User (IU) subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR chapter I, subchapter N (Parts 405-415, 417-430, 432, 447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended) who commences discharge to the facility after the effective date of this permit.

   This reporting requirement also applies to any other IU who is classified as a Significant Industrial User which discharges an average of 25,000 gallons per day or more of process wastewater into the facility (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastewater which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the facility; or is designated as such by the Control Authority as defined in 40 CFR § 403.3(f) on the basis that the industrial user has a reasonable potential to adversely affect the wastewater treatment facility's operation, or for violating any pretreatment standard or requirement (in accordance with 40 CFR § 403.8(f)(6)).

2. In the event that the Permittee receives originals of reports (baseline monitoring reports, 90-day compliance reports, periodic reports on continued compliance, etc.) from industrial users subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR chapter I, subchapter N (Parts 405-415, 417-430, 432-447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended), or from a Significant Industrial User, the Permittee shall forward the originals of these reports within ninety (90) days of their receipt to EPA, and copy the State.

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

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

Sampling shall be for the following PFAS chemicals:

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

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

F. SLUDGE CONDITIONS

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

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

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

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

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

   c. Sewage sludge incineration in a sludge only incinerator

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

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

   a. General requirements

   b. Pollutant limitations

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

   d. Management practices

   e. Record keeping

   f. Monitoring

   g. Reporting

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

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

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

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

7. Under 40 CFR § 503.9(r), the Permittee is a "person who prepares sewage sludge" because it "is … the person who generates sewage sludge during the treatment of

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

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

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

G. SPECIAL CONDITIONS

1. Provision to Modify pH Range

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

H. COMBINED SEWER OVERFLOWS (CSOs)

1. During wet weather (including snowmelt), the Permittee is authorized to discharge storm water/wastewater from CSO Outfall 003.

2. The effluent discharged from the CSO is subject to the following limitations:

   a. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available ("BPT"), Best Conventional Pollutant Control Technology ("BCT") to control and abate conventional pollutants and Best Available Technology Economically Achievable ("BAT") to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgment (BPJ) determination that BPT, BCT, and BAT for combined sewer overflow (CSO) control includes the implementation of Nine Minimum Controls (NMC) specified below. These Nine Minimum Controls and the Nine Minimum Controls Minimum Implementation Levels which are detailed further in Part I.H.3. are requirements of this permit.

(1) Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows;

(2) Maximum use of the collection system for storage;

(3) Review and modification of the pretreatment program to assure CSO impacts are minimized;

(4) Maximization of flow to the POTW for treatment;

(5) Prohibition of dry weather overflows from CSOs;

(6) Control of solid and floatable materials in CSOs;

(7) Pollution prevention programs that focus on contaminant reduction activities;

(8) Public notification to ensure that the public receives adequate notification of CSO occurrences and impacts;

(9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

b. The discharges shall not cause or contribute to violations of federal or state Water Quality Standards.

3. Nine Minimum Controls Minimum Implementation Levels

a. The Permittee must implement the nine minimum controls in accordance with the documentation provided to EPA and NHDES or as subsequently modified to enhance the effectiveness of the controls. This implementation must include the controls identified in Part I.H.3.b-g of this permit plus other controls the Permittee can reasonably undertake as set forth in the documentation.

b. Each CSO structure/regulator, pumping station and/or tidegate shall be routinely inspected, at a minimum of once per month, to ensure that they are in good working condition and adjusted to minimize combined sewer discharges (NMC # 1, 2 and 4). The following inspection results shall be recorded: the date and time of inspection, the general condition of the facility, and whether the facility is operating satisfactorily. If maintenance is necessary, the Permittee shall record: the description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The Permittee shall maintain all records of inspections for at least three years.

c. **Annually, by March 31st,** the Permittee shall submit a certification to NHDES and EPA which states that the previous calendar year's monthly inspections were conducted, results recorded, and records maintained. NHDES and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the Permittee.

Discharges to the combined system of septage, holding tank wastes, or other material which may cause a visible oil sheen or containing floatable material are prohibited during wet weather when CSO discharges may be active (NMC # 3, 6, and 7).

d. Dry weather overflows ("DWOs") are prohibited (NMC # 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and NHDES orally within 24 hours of the time the Permittee becomes aware of the circumstances and a report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances using "NeTSewerOverflow" as described in Part I.I.5 below. See also Paragraph D.1.e. of Part II of this permit.

e. The Permittee shall quantify and record all discharges from combined sewer outfalls (NMC # 9). Quantification shall be through direct measurement. The following information must be recorded for each combined sewer outfall for each discharge event, as set forth in Part I.H.4.:

- Duration (hours) of discharge;
- Volume (gallons) of discharge;
- National Weather Service precipitation data from the nearest gage where precipitation is available at daily (24-hour) intervals and the nearest gage where precipitation is available at one-hour intervals. Cumulative precipitation per discharge event shall be calculated.

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

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

TOWN OF EXETER
WET WEATHER
SEWAGE DISCHARGE
OUTFALL 003

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

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

g. Public Notification Plan

(1) Within 180 days of the effective date of the permit, the Permittee shall submit to EPA and NHDES a Public Notification Plan describing the measures that will be taken to meet NMC#8 in Part I.H.2 of this permit (NMC #8). The Public Notification Plan shall include the means for disseminating information to the public, including communicating the initial, supplemental, and annual notifications required in Part I.H.3.g.(2), (3) and (4) of this permit, as well as procedures for communicating with public health departments, including downstream communities, whose waters may be affected by discharges from the Permittee's CSOs.

(2) Initial notification of a probable CSO activation shall be provided to the public as soon as practicable, but no later than, two (2) hours after becoming aware by monitoring, modeling or other means that a CSO discharge may have occurred. In addition to posting this notification to a website, this information may also be communicated using other electronic means. The initial notification shall include the following information:

- Date and time of probable CSO discharge
- CSO number and location

(3) Supplemental notification shall be provided to the public as soon as practicable, but no later than, twenty-four (24) hours after becoming aware of the termination of any CSO discharge(s). In addition to posting this notification to a website, this information may also be communicated using other electronic means. The supplemental notification shall include the following information:

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

(4) Annual notification - **Annually, by March 31st**, the Permittee shall post the annual report for the previous calendar year described in Part I.H.4 below on a publicly available website, and it shall remain on the website for a minimum of 24 months.

(5) The Public Notification Plan shall be implemented no later than 12 months following the effective date of the Permit.

4. Nine Minimum Controls Reporting Requirement

Annually, by March 31st, the Permittee shall submit a report summarizing activities during the previous calendar year relating to compliance with the nine minimum controls. The annual report shall include information on the locations of CSOs, a summary of CSO outfall monitoring data required by Part I.H.5 of this permit, status and progress of CSO abatement work, and the impacts of CSOs on water quality of the receiving water.

5. Combined Sewer Overflow Outfall Monitoring

For combined sewer overflow Outfall 003, the Permittee must monitor the following:

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

a. For Total Flow, measure the total flow discharged from each CSO outfall during the month. For Total Flow Duration, report the total duration (hours) of discharges for each CSO outfall during the month.

b. For those months when a CSO discharge does not occur, the Permittee must indicate "no discharge" for the outfall for which data was not collected.

c. This information shall be reported for each monthly DMR and submitted with the annual report required by Part I.H.4. of this permit.

6. Clemson Pond Monitoring

The Permittee shall sample at the outlet of Clemson Pond once per quarter for a CSO event of at least 40,000 gallons. The sample at the outlet of Clemson Pond shall be collected just inside the tide gate at NHDES Shellfish Monitoring Station SQMPS010 (42° 59' 12.9" N, 70° 57' 1.98" W). The sample shall be taken within 24 to 48 hours from the start of the event and shall be tested for Fecal Coliform bacteria, *Enterococci* bacteria, and temperature as presented below.

Parameters	**Reporting Requirements**	**Monitoring Requirements**	
	Total Monthly	**Measurement Frequency**	**Sample Type**
Fecal Coliform	Report #/100 mL	Quarterly	Grab
Enterococci	Report #/100 mL	Quarterly	Grab
Temperature	Report °C	Quarterly	Grab

a. For those quarters when a CSO discharge does not occur, the Permittee must indicate "no discharge" for the outfall for which data was not collected.

b. This information shall be reported for each DMR and submitted with the annual report required by Part I.H.4. of this permit.

I. REPORTING REQUIREMENTS

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

1. Submittal of DMRs Using NetDMR

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

2. Submittal of Reports as NetDMR Attachments

   Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. This includes the NHDES Monthly Operating Reports (MORs). See Part I.I.6 for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

3. Submittal of Biosolids/Sewage Sludge Reports

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

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

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

      (1) Transfer of permit notice;

      (2) Request for changes in sampling location;

      (3) Request for reduction in testing frequency;

      (4) Report on unacceptable dilution water / request for alternative dilution water for WET testing.

(5) Report of new industrial user commencing discharge

(6) Report received from existing industrial user

b. These reports, information, and requests shall be submitted to EPA WD electronically at R1NPDESReporting@epa.gov.

5. Submittal of Sewer Overflow and Bypass Reports and Notifications:

The Permittee shall submit required reports and notifications under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows (SSOs) electronically using EPA's NPDES Electronic Reporting Tool for Sewer Overflows ("NeTSewerOverflow"), which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

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.I.3 through I.I.5 shall also be submitted to the New Hampshire Department of Environmental Services, Water Division (NHDES–WD) electronically to the Permittee's assigned NPDES inspector at NHDES-WD or as a hardcopy to the following addresses:

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

7. Verbal Reports and Verbal Notifications

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

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

EPA ECAD at 617-918-1510
and
NHDES Assigned NPDES Inspector at 603-271-1493

J. STATE 401 CERTIFICATION CONDITIONS

1. The Permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water

unless it has been treated in such a manner as will not lower the legislated water quality classification of, or interfere with the uses assigned to, said water by the New Hampshire Legislature (RSA 485-A:12).

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

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

4. Pursuant to New Hampshire Statute RSA 485-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 CFR § 133.102(c).

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

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

   a. Any extension of a collector or interceptor, whether public or private, regardless of flow;

   b. Any wastewater connection or other discharge in excess of 5,000 gpd;

   c. Any wastewater connection or other discharge to a WWTP operating in excess of 80 percent design flow capacity or design loading capacity based on actual average flow or loading for 3 consecutive months;

d. Any industrial wastewater connection or change in existing discharge of industrial wastewater, regardless of quality or quantity;

e. Any sewage pumping station greater than 50 gpm or serving more than one building; or

f. Any proposed sewer that serves more than one building or that requires a manhole at the connection.

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

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

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

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

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

   c. A list of all permitted indirect dischargers; and

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

10. When the effluent discharged for a period of three (3) consecutive months exceeds 80 percent of the 3.0 MGD design flow (2.4 MGD) or design loading capacity, the Permittee shall submit to the permitting authorities a projection of flows and loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans. Before the design flow will be reached, or whenever treatment necessary to achieve permit limits cannot be assured, the Permittee may be required to submit plans for facility improvements.

11. Outfall Maintenance and Inspection

    a. Effluent diffusers shall be maintained as necessary to ensure proper operation. Proper operation means that the plumes from each port will be balanced relative to each other and that they all have unobstructed flow. Maintenance may include dredging in the vicinity of the diffuser, clean out of solids in the diffuser header pipe, removal of debris and repair/replacement of riser ports and duckbill valves.

    b. Any necessary maintenance dredging must be performed only after receiving all necessary permits from the NHDES Wetlands Bureau and other appropriate agencies.

    c. To determine if maintenance will be required, the Permittee shall have a licensed diver or licensed marine contractor inspect and videotape the operation of the diffuser. The inspections and videotaping shall be performed in accordance with the following schedule:

       (1) Every year if no duckbill valves have been installed on the riser ports; or

       (2) Every 2 years if duckbill valves have been installed on the riser ports.

    d. The video of the diffuser inspection and a copy of a report summarizing the results of the inspection shall be submitted to EPA and NHDES-WD on a USB drive within 60 days of each inspection. A schedule for cleaning, repairs, or other necessary maintenance shall be included in the report if the inspection indicates that it is necessary. Necessary cleaning, repairs, or other maintenance should be documented with a photo or video taken after the action is completed.

12. NHDES Shellfish Notification Procedures

    The Permittee shall immediately notify the Shellfish Section of NHDES-WD of possible high bacteria/virus loading events from the facility or its sewage collection infrastructure. Such events include:

    a. Any lapse or interruption of normal operation of the POTW disinfection system, or other event that results in discharge of sewage from the POTW or sewage collection infrastructure (pump stations, sewer lines, manholes, etc.) that has not undergone full disinfection as specified in this permit;

    b. Total daily flows in excess of the POTW's average daily design flow of 3.0 MGD; and

    c. Daily post-disinfection effluent sample result of 43 fecal coliform/100 mL or greater. Notification shall also be made for instances where NPDES-required bacteria sampling is not completed, or where the results of such sampling are invalid.

Notification shall be made using the program's cell phone number. If Shellfish Program staff are not available to answer the phone, leave a message describing the issue or situation and provide your contact information, including phone number. Then, call the Shellfish Program's pager and enter a call back number. Upon initial notification of a possible high bacteria/virus loading event, Shellfish Program staff will determine the most suitable interval for continued notification and updates on an event-by-event basis.

NHDES - Shellfish Program
Cell Phone: 603-568-6741
Pager: 603-771-9826

ATTACHMENT A

MARINE 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:

- **2007.0 - Mysid Shrimp (Americamysis bahia) definitive 48 hour test.**
- **2006.0 - Inland Silverside (Menidia beryllina) definitive 48 hour test.**

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

II. METHODS

The permittee shall use the most recent 40 CFR Part 136 methods. Whole Effluent Toxicity (WET) Test Methods and guidance may be found at:

http://water.epa.gov/scitech/methods/cwa/wet/index.cfm#methods

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 and receiving water sample shall be collected. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. 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 holding time extension. 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[1] (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

[1] For this protocol, total residual chlorine is synonymous with total residual oxidants.

prior to sample use for toxicity testing. If performed on site the results should be included on the chain of custody (COC) presented to WET laboratory.

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 mg/L chlorine. If dechlorination is necessary, a thiosulfate control consisting of the maximum concentration of thiosulfate used to dechlorinate the sample in the toxicity test control water must also be run in the WET test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6^{o} C.

IV. DILUTION WATER

Samples of receiving water must be collected from a reasonably accessible location in the receiving water body immediately upstream of the permitted discharge's zone of influence. 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 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 is found to be, or suspected to be toxic or unreliable, 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 case is when repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use by the permittee and toxicity testing laboratory. The second is when two of the most recent documented incidents of unacceptable site dilution water toxicity require ADW use in future WET testing.

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

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

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

and

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

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

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA Region 1 requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Americamysis and Menidia toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE MYSID, AMERICAMYSIS BAHIA 48 HOUR TEST[1]

1. Test type	48hr Static, non-renewal
2. Salinity	25ppt ± 10 percent for all dilutions by adding dry ocean salts
3. Temperature (^{o}C)	20^{o}C ± 1^{o}C or 25^{o}C ± 1^{o}C, temperature must not deviate by more than 3^{o}C during test
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml (minimum)
7. Test solution volume	200 ml/replicate (minimum)
8. Age of test organisms	1-5 days, < 24 hours age range
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated Artemia naupli while holding prior to initiating the test
13. Aeration [2]	None
14. Dilution water	5-30 ppt, +/- 10%; Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	≥ 0.5
16. Number of dilutions [3]	5 plus a control. An additional dilution at the permitted effluent concentration (%

	effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality - no movement of body appendages on gentle prodding
18. Test acceptability	90% or greater survival of test organisms in control solution
19. Sampling requirements	For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters

Footnotes:

[1] Adapted from EPA 821-R-02-012.

[2] If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.

[3] When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

EPA NEW ENGLAND TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST[1]

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1. Test Type	48 hr Static, non-renewal
2. Salinity	25 ppt ± 10 % by adding dry ocean salts
3. Temperature	$20^oC \pm 1^oC$ or $25^oC \pm 1^oC$, temperature must not deviate by more than 3^oC during test
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. Total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated Artemia nauplii while holding prior to initiating the test
13. Aeration[2]	None
14. Dilution water	5-32 ppt, +/- 10% ; Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	≥ 0.5
16. Number of dilutions[3]	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

Footnotes:

[1] Adapted from EPA 821-R-02-012.

[2] If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.

[3] When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

V.1. Test Acceptability Criteria

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.2. Use of Reference Toxicity Testing

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

In general, 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 as prescribed below.

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.2.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. $\geq$3 standard deviations for IC25s and LC50 values and $\geq$ 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.

VI. CHEMICAL ANALYSIS

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

Parameter	Effluent	Diluent	Minimum Level for effluent*1 (mg/L)
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine *2	x	x	0.02
Total Solids and Suspended Solids	x	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

Superscript:

*1 These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

*2 Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

-Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
-Method 4500-CL G DPD Photometric Method.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

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

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) 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
    - Permit limit and toxicity test results
    - Summary of any test sensitivity and concentration response evaluation that was conducted

Please note: The NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) are available on EPA's website at http://www.epa.gov/NE/enforcementandassistance/dmr.html

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 levels (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; and
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint.

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

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

A. GENERAL REQUIREMENTS

1. Duty to Comply

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

a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L.114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

(a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than 2 years, or both.

(b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

(c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

(d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(2) *Civil Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(3) *Administrative Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:

(a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

4. Oil and Hazardous Substance Liability

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

5. Property Rights

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

6. Confidentiality of Information

   a. In accordance with 40 C.F.R. Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 C.F.R. Part 2 (Public Information).

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

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

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

7. Duty to Reapply

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit. The Permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

9. Other Laws

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

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate

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

4. Bypass

a. Definitions

(1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.

(2) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. *Bypass not exceeding limitations.* The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c) and (d) of this Section.

c. Notice

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

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

d. *Prohibition of bypass.*

(1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and

(c) The Permittee submitted notices as required under paragraph 4.c of this Section.

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 4.d of this Section.

5. Upset

a. *Definition*. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this Section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. *Conditions necessary for a demonstration of upset.* A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated; and
(3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
(4) The Permittee complied with any remedial measures required under B.3. above.

d. *Burden of proof.* In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

C. MONITORING REQUIREMENTS

1. Monitoring and Records

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;
(2) The individual(s) who performed the sampling or measurements;
(3) The date(s) analyses were performed;
(4) The individual(s) who performed the analyses;
(5) The analytical techniques or methods used; and
(6) The results of such analyses.

d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.

e. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

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

a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. *Planned Changes*. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).

(3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. *Anticipated noncompliance*. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. *Transfers*. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.

d. *Monitoring reports*. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.

(2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. *Twenty-four hour reporting.*

(1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

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

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
(b) Any upset which exceeds any effluent limitation in the permit.
(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).

(3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.

f. *Compliance Schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.

h. *Other information.* Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

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

2. Signatory Requirement

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

   b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. Availability of Reports.

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

E. DEFINITIONS AND ABBREVIATIONS

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

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

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

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

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

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

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

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

Bypass see B.4.a.1 above.

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

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

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

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

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

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

Daily Discharge means the "discharge of a pollutant" measured during a calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Direct Discharge means the "discharge of a pollutant."

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

Discharge

(a) When used without qualification, *discharge* means the "discharge of a pollutant."

(b) As used in the definitions for "interference" and "pass through," *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

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

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or

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

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

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

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

Environmental Protection Agency ("EPA") means the United States Environmental Protection

Agency.

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

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

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

Indirect discharger means a nondomestic discharger introducing "pollutants" to a "publicly owned treatment works."

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

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

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

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

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

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

LC_{50} means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.

Maximum daily discharge limitation means the highest allowable "daily discharge."

Municipal solid waste landfill (MSWLF) unit means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

(a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.

(b) As related to sludge use and disposal, *municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

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

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

(a) From which there is or may be a "discharge of pollutants;"

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source;" and

(d) Which has never received a finally effective NPDES permit for discharges at that "site."

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

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

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

(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

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

NPDES means "National Pollutant Discharge Elimination System."

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

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

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

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

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

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

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

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

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq*.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

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

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

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

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

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

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

Secondary industry category means any industry which is not a "primary industry category."

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

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

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

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 C.F.R. § 122.2.

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

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

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

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

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

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

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

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

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

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

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

For purposes of this definition, "domestic sewage" includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Director may designate any person subject to the standards for sewage sludge use and disposal in 40 C.F.R. Part 503 as a "treatment works treating domestic sewage," where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

Upset see B.5.a. above.

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

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

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

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(b) All interstate waters, including interstate "wetlands;"

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

   (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;

   (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

   (3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

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

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

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

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

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

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen

kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	“Whole effluent toxicity”
ZID	Zone of Initial Dilution

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: NH0100871

PUBLIC NOTICE START AND END DATES: March 22, 2022 – April 20, 2022

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Exeter
Exeter Wastewater Treatment Plant
10 Front Street
Exeter, New Hampshire 03833-2792

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Exeter Wastewater Treatment Plant
13 Newfields Road
Exeter, New Hampshire 03833

RECEIVING WATER AND CLASSIFICATION:

Squamscott River (Hydrologic Unit Code: 01060003)
Exeter-Squamscott River Watershed
Class B

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Appendices

Appendix A – Monitoring Data Summary

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Appendix C – CORMIX Report

1.0 Proposed Action

The above-named applicant (the Permittee) has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge from the Exeter Wastewater Treatment Plant (the Facility, or Plant) into the Squamscott River.

The permit currently in effect (the "2012 Permit") was issued on December 12, 2012 with an effective date of March 1, 2013 and expired on February 28, 2018. The Permittee filed an application for permit reissuance with EPA dated September 1, 2017, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on November 21, 2017, the Facility's 2012 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d).

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

2.0 Statutory and Regulatory Authority

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

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

2.1 Technology-Based Requirements

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

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

2.2 Water Quality-Based Requirements

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

2.2.1 Water Quality Standards

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

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

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

2.2.2 Antidegradation

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

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

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

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

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

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

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

2.2.4 Reasonable Potential

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

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

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQSs, the State waives, or is deemed to have waived, its right to certify. *See* 33 U.S.C. §

1341(a)(1). Regulations governing state certification are set forth in 40 CFR § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

If the State believes that conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307, or applicable requirements of State law, the State should include such conditions in its certification and, in each case, cite the CWA or State law provisions upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. EPA includes properly supported State certification conditions in the NPDES permit. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through EPA's permit appeal procedures of 40 CFR Part 124.

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

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

2.3 Effluent Flow Requirements

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

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

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

In addition, as provided in Part II.B.1 of this permit and 40 CFR § 122.41(e), the Permittee is required to properly operate and maintain all facilities and systems of treatment and control. Operating the facilities wastewater treatment systems as designed includes operating within the facility’s design wastewater effluent flow.

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

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

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

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

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

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

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

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

- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high

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

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

- The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

2.4.2 Reporting Requirements

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

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

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

2.5 Standard Conditions

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

2.6 Anti-backsliding

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

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2012 Permit unless specific conditions exist to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

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

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The location of the treatment plant and Outfall 001 to the Squamscott River are shown in Figure 1. The longitude and latitude of the outfall is 42º 59’ 48” N, 70º 56’ 17” W.

The Exeter Wastewater Treatment Plant (WWTP) is a secondary wastewater treatment facility that is engaged in the collection and treatment of municipal wastewater. Currently, the Facility serves approximately 11,000 residents in the Town of Exeter (about 80% of the town’s population) with the collection system primarily focused in the town center (Route 27 and 111 corridor). The Facility has a design flow of 3.0 MGD, the annual average daily flow reported in the 2017 application was 1.8 MGD and the average flow for the last 5 years has been 1.70 MGD. The system is a combined storm and sanitary system. Wastewater is comprised of mostly domestic sewage with some commercial and industrial users, and some septage.

There are 6 industrial users that discharge to the POTW: (1) Chemtan Company, consisting of process wastewater which contributes an average of 1,770 gallons per day, (2) Continental Microwave & Tool Company, consisting of process wastewater which contributes an average of 10,727 gallons per day, (3) Exeter Hospital, consisting of process wastewater which contributes an average of 41,220 gallons per day, (4) Ledvance LLC, consisting of process wastewater which contributes an average of 1,165 gallons per day, (5) Lindt & Sprunglie, consisting of process wastewater which contributes an average of 18,140 gallons per day, (6) Osram Sylvania, consisting of process wastewater which contributes an average of 370 gallons per day. However, no pretreatment program is required.

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 September 2016 through August 2021 is provided in Appendix A of this Fact Sheet.

3.1.1 Treatment Process Description

The Exeter Wastewater Treatment Plant (WWTP) is an activated sludge treatment plant. Flow enters from 4 separate sewerage areas and goes into the main pump station, where screening and grit removal occur. The 3 lagoons, which were previously used for treatment, are now used for flow equalization and emergency storage. After leaving the headworks, the flow is split into 2 aeration tanks where the 4-stage Bardenpho process occurs, and then on to 3 secondary clarifiers, where sludge settles out and is pumped out for storage and dewatering. Approximately 1,800 dry metric tons per year of sludge is trucked for disposal at the Turnkey Landfill in Rochester, NH. The flow from the clarifiers then goes through UV disinfection and is discharged into the Squamscott River via an effluent flume. A flow diagram of the Treatment Facility is shown in Figure 2.

3.1.2 Collection System Description

The Exeter WWTF serves the Town of Exeter, as well as small portions of the Towns of Stratham and Hampton, and is served by a combined sewer system. A combined sanitary sewer conveys domestic, industrial, commercial sewage, and stormwater. There are approximately 51 miles of sewers, and less than 10% of it is combined. The draft continues to authorize discharges from CSO Outfall 003 into Clemson Pond under certain conditions.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Exeter WWTF discharges through Outfall 001 into the Squamscott River segment NHEST010600030806, and CSO 003 into Clemson Pond. The location of both discharges is shown in Figure 1, within Hydrologic Unit Code: 01060003. The discharge then travels 4.5 miles and discharges to the Great Bay Estuary.

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

This segment of the Squamscott River is listed in the final *New Hampshire Year 2018 Integrated List of Waters* ("303(d) List") as a Category 5 "Waters Requiring a TMDL.[5] The pollutants requiring a TMDL are: acenaphthene, acenaphthylene, aluminum, anthracene, arsenic, benzo(a)pyrene, benzo(a)anthracene, cadmium, chlorophyll-a, chrysene, copper, dibenz(a,h)antracene, dissolved oxygen saturation, fluoranthene, fluorene, lead, mercury, nickel, nitrogen, oxygen (dissolved), phenanthrene, pyrene, zinc, trans-nonachlor, polychlorinated biphenyls, enterococcus, and dioxin. To date no TMDL has been developed for this segment for any of the listed impairments. The status of each designated use is presented in Table 1.

[5] *New Hampshire 2018 303(d) Surface Water Quality List of Waters,* New Hampshire Dept of Environmental Services, Concord, NH, August 2019.

Table 1 – Summary of Designated Uses and Listing Status[6]

Designated Use	Status
Aquatic Life	Not supported, TMDL Needed
Primary Contact Recreation	Not supported, TMDL Needed
Secondary Contact Recreation	Not supported, TMDL Needed
Fish Consumption	Not supported, TMDL Needed

4.2 Ambient Data

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

4.3 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQS under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water[7]. The critical flow in rivers and streams is some measure of the low flow of that river or stream. State WQSs require that for tidal waters (such as this segment of the Squamscott River), the flow condition shall be equivalent to the conditions that result in a dilution that is exceeded 99% of the time.

The 2012 Permit is based on a dilution factor of 25.2. Recent CORMIX modeling by NHDES using CORMIX Version 11 resulted in a small increase in dilution to 26.0. The CORMIX session and prediction files can be found in Appendix C of this Fact Sheet.

5.0 Proposed Effluent Limitations and Conditions

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

5.1 Effluent Limitations and Monitoring Requirements

In addition to the State and Federal regulations described in Section 2, data submitted by the Permittee in its permit application, in monthly discharge monitoring reports (DMRs) and in WET test reports from September 2016 to August 2021 (the "review period") were used to identify the pollutants of concern and to evaluate the discharge during the effluent limitations development process (*See* **Appendix A)**.The reasonable potential analysis is included in Appendix B and results are discussed in the sections below.

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[6] 2018 New Hampshire Watershed Report Card, New Hampshire DES, https://www4.des.state.nh.us/onestoppub/SWQA/010600030806_2018.pdf
[7] EPA Permit Writer's Manual, Section 6.2.4

5.1.1 Effluent Flow

There is no effluent flow limit in the 2012 Permit. The facility has a design flow of 3.0 MGD for Outfall 001.

The Draft Permit implements a 3.0 MGD flow limit for Outfall 001, based on the design flow. 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.

See Section 2.3 of this Fact Sheet for justification of the proposed effluent flow limit.

5.1.2 Biochemical Oxygen Demand (BOD_5)

5.1.2.1 BOD_5 Concentration Limits

The BOD_5 limits in the 2012 Permit were based on the secondary treatment standards in 40 CFR § 133.102; the average monthly limit is 30 mg/L, the average weekly limit is 45 mg/L, and the daily maximum limit is 50 mg/L. The DMR data during the review period shows that there have been no violations of BOD_5 concentration limits.

The Draft Permit proposes the same BOD_5 concentration limits as in the 2012 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains twice (2x) per week.

5.1.2.2 BOD_5 Mass Limits

The mass-based BOD_5 limits in the 2012 Permit of 751 lb/day (average monthly), 1,126 (average weekly) and 1,251 lb/day (daily maximum) were based on EPA's secondary treatment standards and the design flow of the Facility.

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

In the derivation of limits for the Draft Permit, the mass based BOD_5 limits have been calculated at the design flow of 3.0 MGD.

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

Average Monthly: 30 mg/L * 3.0 MGD * 8.34 = 751 lb/day
Average Weekly: 45 mg/L * 3.0 MGD * 8.34 = 1,126 lb/day
Daily Maximum: 50 mg/L * 3.0 MGD * 8.34 = 1,251 lb/day

These limits are the same as the 2012 Permit and are carried forward in the Draft Permit.

5.1.3 Total Suspended Solids (TSS)

5.1.3.1 TSS Concentration Limits

The TSS limits in the 2012 Permit were based on the secondary treatment standards in 40 CFR § 133.102; the average monthly limit is 30 mg/L, the average weekly limit is 45 mg/L, and the daily maximum limit is 50 mg/L. The DMR data during the review period shows that there have been 7 violations of the TSS monthly average concentration limit, 2 violations of the TSS weekly average concentration limit, and 1 violation of the TSS daily maximum concentration limit.

The Draft Permit proposes the same TSS concentration limits as in the 2012 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains twice (2x) per week.

5.1.3.2 TSS Mass Limits

The mass-based TSS limits in the 2012 Permit of 751 lb/day (average monthly), 1,126 (average weekly) and 1,251 lb/day (daily maximum) were based on EPA's secondary treatment standards and the design flow of the Facility.

The DMR data during the review period shows that there has been 1 violation of the TSS monthly average mass limit, 0 violations of the TSS weekly average mass limit, and 2 violations of the TSS daily maximum mass limit.

In the derivation of limits for the Draft Permit, the mass based TSS limits have been calculated at the design flow of 3.0 MGD.

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

$$\mathrm{L} = \mathrm{C_d} * \mathrm{Q_d} * 8.34$$

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 in MGD

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

Average Monthly:	30 mg/L * 3.0 MGD * 8.34 = 751 lb/day
Average Weekly:	45 mg/L * 3.0 MGD * 8.34 = 1,126 lb/day
Daily Maximum:	50 mg/L * 3.0 MGD * 8.34 = 1,251 lb/day

These limits are the same as the 2012 Permit and are carried forward in the Draft Permit.

5.1.4 Percent BOD_5 and TSS Removal Requirement

The percent removal requirements for the existing permit were based upon 40 C.F.R. §133.105 (Treatment Equivalent to Secondary Treatment). The 2012 Permit requires that the 30-day average percent removal for BOD_5 be not less than 70% and percent removal for TSS be not less than 65%. The DMR data during the review period shows that the median BOD_5 and TSS removal percentages are 94% and 92%, respectively. There were no exceedances of the percent removal requirements for BOD_5 or TSS during that period.

However, the facility is no longer a lagoon facility. In accordance with the provisions of 40 C.F.R. § 133.102(a)(3), (4) and (b)(3), the BOD and TSS percent removal requirements are both raised to 85% in the Draft Permit. Based on the DMR data discussed above, the facility should not have any compliance issues with these more stringent limits.

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 show that there have been no exceedances of the pH limitations.

The pH requirements of 6.0 – 9.0 S.U. in the 2012 Permit are not carried forward into the Draft Permit. Rather, the limits in the Draft Permit are set at 6.5 – 8.0 S.U. to ensure protection of New Hampshire WQS.

However, as with the 2012 permit, if the Facility demonstrates to the satisfaction of NHDES-WD that the pH standard of the receiving water is protected when the discharge is outside the pH 6.5 – 8.0 range, then the pH limit range can be adjusted up to 6.0 – 9.0 S.U. The pH limit range cannot be less restrictive than 6.0 to 9.0 S.U. found in the applicable National Effluent Limitation Guideline (Secondary Treatment Regulations in 40 CFR Part 133) for the facility.

5.1.6 Bacteria

The 2012 Permit includes effluent limits for bacteria using Fecal Coliform bacteria as the indicator bacteria to protect shellfishing uses. These limits are 14 colonies/100 mL as a geometric mean and that no more than 10% of samples could exceed a MPN of 43 per 100 mL for a five-tube decimal dilution test. There were no exceedances of the Fecal Coliform limits during the review period.

The 2012 Permit also includes a reporting requirement for bacteria using *Enterococci* bacteria as the indicator bacteria to protect recreational uses. NH WQS at Env-Wq 1700, Appendix E require a monthly geometric mean of 35 *Enterococci*/100 mL and a maximum daily limit of 104 *Enterococci*/100 mL. The DMR data during the review period shows numerous exceedances of these water quality standards at the effluent. There were 10 exceedances of the monthly geometric mean water quality standards and 16 exceedances of the maximum daily water quality standards during the review period.

New Hampshire State statute N.H. RSA 485-A:8,V, which was recently amended[8], specifies that tidal waters utilized for swimming purposes shall contain not more than either a geometric mean based on at least 3 samples obtained over a 60-day period of 35 *enterococci* per 100 milliliters, or 104 *enterococci* per 100 milliliters in any one sample, unless naturally occurring. Tidal waters used for growing or taking of shellfish for human consumption shall not exceed a geometric mean most probable number (MPN) of 14 organisms per 100 ml for Fecal Coliform, nor shall more than 10 percent of the samples exceed an MPN of 28 per 100 ml for fecal coliform, or other values of equivalent protection based on sampling and analytical methods used by the department of environmental services shellfish program and approved in the latest revision of the National Shellfish Sanitation Program, Guide for The Control of Molluscan Shellfish. Both sets of standards apply to this WWTF and have been established as permit limits. The average monthly limit is determined by calculating the geometric mean of the daily sample values.

The sampling frequency for both bacteria is once per day, which is consistent with EPA/NHDES-WD Effluent Monitoring Guidance for facilities not using lagoons or sand filters for secondary treatment.

5.1.7 Total Residual Chlorine

The 2012 Permit includes effluent limitations for total residual chlorine (TRC) of 190 μg/L (average monthly) and 330 μg/L (maximum daily). The DMR data during the review period show that there have been no exceedances of the TRC limitations.

However, as part of their facility upgrade, the facility now uses ultraviolet disinfection and does not use chlorine. Therefore, the TRC limits and monitoring requirements are no longer applicable and are not included in the Draft Permit. If the facility plans to resume use of chlorine in the future, they must notify EPA and NHDES and allow time for a permit modification to regulate TRC before commencing with chlorine disinfection.

[8] February 2, 2022 letter from Ken Moraff, USEPA to Ted Diers, NHDES - Review and Action on New Hampshire Surface Water Quality Standards Amendment at RSA 485-A:8

5.1.8 Ammonia

The 2012 Permit does not include ammonia limits, but the Permittee was required to monitor and report effluent and ambient ammonia concentrations twice per year as part of the Whole Effluent Toxicity (WET) testing. The ambient and effluent data are presented in Appendix A.

The marine ammonia criteria in the NH WQS (Env-Wq 1703.27 through 1703.32) are dependent on pH, temperature and salinity.

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

To determine the applicable ammonia criteria, EPA assumes a warm weather temperature of 25° C and a cold weather temperature of 5° C. EPA used the ambient pH and salinity monitoring shown in Appendix A, which indicates that the median pH is 7.01 S.U. and the median salinity is 0.5 ppt (with a range of 0-22 ppt).

Based on the information and assumptions described above, Appendix B presents the applicable ammonia criteria, the details of the mass balance equation, the reasonable potential determination, and, if necessary, the limits required in the Draft Permit. As shown, there is no reasonable potential to cause or contribute to an excursion of WQS, so the Draft Permit does not propose ammonia limits. Given the wide range of ambient salinity noted above, EPA evaluated the entire range of salinities in its analysis presented in Appendix A and found that none of the potential salinities would have resulted in the need for an ammonia limit in the Draft Permit.

Effluent and ambient monitoring for ammonia will continue to be required twice per year in the WET tests.

5.1.9 Nutrients

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

5.1.9.1 Total Nitrogen

The Great Bay estuary is composed of a complex network of tidal rivers, inland bays, and coastal harbors. The estuary receives treated wastewater effluent containing nitrogen from 17 WWTFs located in New Hampshire and Maine. Additionally, the estuary receives a significant nitrogen load from a variety of nonpoint sources and stormwater point sources throughout the watershed. Upon an evaluation of years of ambient monitoring data and other relevant technical and scientific information, EPA has determined that the nitrogen load is exceeding the assimilative capacity of the estuary and is causing or contributing, or has the reasonable potential to cause or contribute, to pervasive nutrient-related impairments and violations of water quality standards.

Therefore, EPA has developed the Great Bay Total Nitrogen General Permit (permit number NHG58A000) to address this difficult environmental regulatory problem with the goal of restoring the designated uses throughout the estuary. For the Exeter facility, their authorization to discharge under the Great Bay Total Nitrogen General Permit is dependent on their coverage under this renewed individual permit which will remove the nitrogen permit limits from their existing individual permit to avoid being covered by two permits for the discharge of the same pollutant concurrently.

Therefore, this renewed individual permit does not contain nitrogen limits or monitoring requirements because this facility is eligible for coverage under the Great Bay Total Nitrogen General Permit which includes nitrogen limits and monitoring requirements applicable to this facility. EPA intends that authorization under both this reissued individual permit and the Great Bay Total Nitrogen General Permit will be done simultaneously to ensure that there is no lapse in coverage.

5.1.10 Metals

5.1.10.1 Applicable Metals Criteria

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

The criteria for cadmium, copper, lead, nickel and zinc are presented in Appendix B based on EPA's National Recommended Water Quality Criteria: 2002, as adopted by the New Hampshire Code of Administrative Rules, Env-Wq 1703.21 and Table 1703.1.

5.1.10.2 Reasonable Potential Analysis and Limit Derivation

To determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for each metal, EPA uses the mass balance equation presented in Appendix B to project the concentration downstream of the discharge and, if applicable, to determine the limit required in the permit.

Based on the information described above, the results of this analysis for each metal are presented in Appendix B.

As shown, there is no reasonable potential to cause or contribute to an excursion of WQS for cadmium, copper, lead, nickel, and zinc, so the Draft Permit does not propose any new limits for these metals.

Effluent and ambient monitoring for each of these metals will continue to be required in the WET tests.

5.1.10.3 Arsenic

Arsenic is a naturally occurring element that is found in combination with either inorganic or organic substances to form many different compounds. Inorganic arsenic compounds are found in soils, sediments, and groundwater. These compounds occur either naturally or as a result of mining, ore smelting, and industrial use of arsenic. Organic arsenic compounds are found mainly in fish and shellfish. In the past, inorganic forms of arsenic were used in pesticides and paint pigment. The NH WQS at Env-Wq 1703.21(b) contain arsenic water quality criteria for both protection of aquatic life and protection of human health. The criteria for protection of aquatic life in marine waters are 36 µg/L (chronic) and 69 µg/L (acute), expressed in the form of dissolved arsenic[9]. The criterion for protection of human health is 0.14 µg/L (fish consumption only[10]), expressed in the form of inorganic arsenic.

The 2012 Permit did not require arsenic monitoring. However, the permit application submitted in 2017 included three samples of arsenic from the effluent of the facility with a maximum value of 2.4 µg/L. EPA notes that these data were taken before the major facility upgrade completed in 2020, so they may not be representative of current effluent values from the existing upgraded facility. In any case, these data are well below the aquatic life criteria (*i.e.*, 36 and 69 µg/L) and indicate that there is no reasonable potential to cause or contribute to an excursion above the aquatic life arsenic criteria.

Regarding the human health criterion, EPA does not have any data to determine the fraction of arsenic in the discharge that may be in the inorganic form. Assuming conservatively that 100% of the effluent is inorganic, EPA divided the maximum value of 2.4 µg/L by the dilution factor of 26 to find a potential in-stream concentration of 0.09 µg/L. Notably, this value is below the

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[9] Based on Env-Wq 1703-23(e), Table 1703-2 the conversion factor from dissolved arsenic to total arsenic is 1.0 for both chronic and acute. Therefore, the aquatic life criteria may be expressed as either dissolved or total arsenic.
[10] The criterion for protection of human health by "Water & Fish Ingestion" does not apply in this case given that the receiving water is marine and not used as a drinking water source.

human health criterion of 0.14 µg/L inorganic arsenic. However, the receiving water is impaired for arsenic (as noted in Section 4.1 of this Fact Sheet) indicating that there is some uncertainty regarding the assimilative capacity (if any) for inorganic arsenic in the receiving water. Based on this uncertainty (which is due to the lack of relevant data), EPA is proposing a monitoring requirement in the Draft Permit.

Therefore, the Draft Permit includes effluent and ambient monitoring of both total arsenic and inorganic arsenic to be done twice per year, once in each 2nd and 3rd calendar quarters. Inorganic arsenic monitoring is included for direct comparison to the inorganic human health criterion. Total arsenic monitoring is included to determine the fraction of inorganic arsenic to total arsenic as this fraction may be needed to develop a limit (if necessary, in the future) in terms of "total recoverable" in accordance with 40 CFR § 122.45(c). Effluent monitoring is included to characterize the discharge. Ambient monitoring (immediately upstream of the influence of the discharge) is included to characterize the assimilative capacity of the receiving water. These data will all be used in the next permit reissuance to determine whether there is the reasonable potential to cause or contribute to an excursion above water quality standards with respect to inorganic arsenic, and if so, to establish a permit limit at that time.

5.1.11 Whole Effluent Toxicity

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

In addition, under CWA § 301(b)(1)(C), discharges are subject to effluent limitations based on WQSs. Under CWA §§ 301, 303 and 402, EPA and the States may establish toxicity-based limitations to implement the narrative water quality criteria calling for "no toxics in toxic amounts". *See also* 40 CFR § 122.44(d)(1). New Hampshire statute and regulations state that, "all surface waters shall be free from toxic substances or chemical constituents in concentrations or combination that injure or are inimical to plants, animals, humans, or aquatic life...." (N.H. RSA 485-A:8, VI and the N.H. Code of Administrative Rules, PART Env-Wq 1703.21(a)(1)). National studies conducted by EPA have demonstrated that domestic sources, as well as industrial sources, contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Some of these constituents may cause synergistic effects, even if they are present in low concentrations. Because of the source variability and contribution of toxic constituents in domestic and industrial sources, reasonable potential may exist for this discharge to cause or contribute to an exceedance of the "no toxics in toxic amounts" narrative water quality standard.

In accordance with current EPA guidance, whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the LC_{50}. This policy recommends that permits for discharges having a dilution factor between 20 and 100 require acute toxicity testing four times per year for two species. Additionally, for discharges with dilution factors between 20 and 100, the LC_{50} limit should be greater than or equal to 100%. However, in a letter dated September 11, 2003, EPA approved a reduction of the toxicity testing frequency to twice per year.

The acute WET limit in the 2012 Permit is LC_{50} greater than or equal to 100%, respectively, using the mysid shrimp (*Mysidopsis bahia*) and inland silverside (*Menidia beryllina*) as the test species. The DMR data during the review period shows 3 violations of the WET limit (*See* Appendix A).

Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the dilution factor of 26, and in accordance with EPA national and regional policy and 40 CFR § 122.44(d), the Draft Permit continues the effluent limits from the 2012 Permit including the test organisms and the testing frequency. Toxicity testing must be performed in accordance with the updated EPA Region 1 WET test procedures and protocols specified in Attachment A, Marine Acute Toxicity Test Procedure and Protocol (July 2012) of the Draft Permit.

5.1.12 Per- and polyfluoroalkyl substances (PFAS)

As explained at https://www.epa.gov/pfas, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects.[11] EPA is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

Background Information

On September 30, 2019, NH DES adopted Maximum Contaminant Levels (MCLs) and Maximum Contaminant Level Goals (MCLGs) for drinking water at Env-DW 705.06 and Ambient Groundwater Quality Standards (AGQS) at Env-Or 603 for the following PFAS:

	MCLs/AGQs	MCLGs
Perfluorohexanesulfonic acid (PFHxS)	18 ng/L	0
Perfluorononanoic acid (PFNA)	11 ng/L	0
Perfluorooctanesulfonic acid (PFOS)	15 ng/L	0
Perfluorooctanoic acid (PFOA)	12 ng/L	0

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

The September 2019 PFAS regulations were challenged in state court and are currently enjoined pending resolution of the litigation. On July 23, 2020, the New Hampshire legislature enacted legislation establishing MCLs and AGQSs for these PFAS in State statute at the identical levels as the challenged regulations. The statutory MCLs and AGQSs became effective on July 23, 2020.

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the Draft Permit requires that the Facility conduct quarterly influent, effluent and sludge sampling for PFAS chemicals[12] and annual sampling of certain industrial users, the first full calendar quarter beginning six months after EPA has notified the Permittee that appropriate, multi-lab validated test methods are made available by EPA to the public.

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

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

Since an EPA method for sampling and analyzing PFAS in wastewater and sludge is not currently available, the PFAS sampling requirement in the Draft Permit includes a compliance schedule which delays the effective date of this requirement until the first full calendar quarter

[12] EPA will require that the facility report the results of additional PFAS analytes not yet regulated by the state but included in the analytical method. The single lab-validated method (Draft Method 1633) for analyzing PFAS requires analysis of many PFAS analytes, not just the four regulated by the state. EPA anticipates that the multi-lab validated method will also require analysis of these analytes. Therefore, EPA is requiring that these additional results be reported in NetDMR given that these full results may be useful in future permit reissuances. EPA notes that this does not result in any additional cost to the Permittee as these full results will be included in the laboratory reports even if the Permittee only needed to report the four analytes listed above and the Permittee must simply report them all in their electronic DMR each monitoring period. A list of analytes to be reported in NetDMR can be found in Attachment B of the draft Permit.

beginning 6 months after EPA has notified the Permittee that a multi-lab validated method for wastewater and biosolids is made available to the public on EPA's CWA methods program websites. For wastewater see https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods. For biosolids, see https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-biosolids. EPA expects these methods will be available by the end of 2022. This approach is consistent with 40 CFR § 122.44(i)(1)(iv)(B) which states that in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters.

5.2 Sludge Conditions

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

5.3 Infiltration/Inflow (I/I)

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

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

5.4 Operation and Maintenance of the Sewer System

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

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

5.5 Combined Sewer Overflows

Description

Exeter has one CSO that remains active (Outfall 003). The location of this CSO discharge into Clemson Pond is shown in Figure 1. Attachment A includes CSO discharge *E. Coli* monitoring data for 2016-2021.The draft permit authorizes discharges from CSO Outfall 003 into Clemson Pond under certain conditions.

Regulatory Framework

CSOs are point sources subject to NPDES permit requirements for both water-quality based and technology-based requirements but are not subject to the secondary treatment regulations applicable to publicly owned treatment works in accordance with 40 CFR §133.103(a). Section 301(b)(1)(C) of the Clean Water Act of 1977 mandated compliance with water quality standards by July 1, 1977. Technology-based permit limits must be established for best conventional pollutant control technology (BCT) and best available technology economically achievable (BAT) based on best professional judgment (BPJ) in accordance with Section 301(b) and Section 402(a) of the Water Quality Act Amendments of 1987 (WQA). The framework for compliance with Clean Water Act requirements for CSOs is set forth in EPA's National CSO Control Policy, 59 Fed. Reg. 18688 (1994). It sets the following objectives:

1) To ensure that if the CSO discharges occur, they are only as a result of wet weather;

2) To bring all wet weather CSO discharge points into compliance with the technology-based requirements of the CWA and applicable federal and state water quality standards;

and

3) To minimize water quality, aquatic biota, and human health impacts from wet weather flows.

Among the elements established to achieve these objectives, the CSO Policy set forth the minimum BCT/BAT controls (i.e., technology-based limits) that represent the BPJ of the Agency on a consistent, national basis. These are the Nine Minimum Controls ("NMCs") defined in the

CSO Policy and set forth in Part I.H. of the Draft Permit: 1) proper operation and regular maintenance programs for the sewer system and the combined sewer overflows; 2) maximum use of the collection system for storage; 3) review and modification of the pretreatment programs to assure CSO impacts are minimized; 4) maximization of flow to the POTW for treatment; 5) prohibition of dry weather overflows; 6) control of solid and floatable materials in CSOs; 7) pollution prevention programs which focus on contaminant reduction activities; 8) public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and 9) monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

To reflect advances in technologies, the Draft Permit includes more specific public notification implementation level requirements to ensure that the public receives adequate notification of CSO occurrences and CSO impacts. The Draft Permit requires the permittee to develop a public notification plan to fulfill NMC #8. As part of this plan, notification shall be provided electronically to any interested party, and a posting made on the permittee's website, of a probable CSO activation within two (2) hours of the initiation of any CSO discharge(s). Subsequently, within 24 hours of the termination of any CSO discharges(s), the permittee shall provide follow-up information on their website and in a follow-up electronic communication to any interested party. EPA invites comment on this new requirement during the public comment period with a goal of a workable public notification plan.

Exeter prepared a report in April 1997 documenting compliance with the nine minimum controls and certifies yearly that NMCs are met.

The CSO Policy also recommended that each community that has a combined sewer system develop and implement a long-term CSO control plan ("LTCP") that will ultimately result in compliance with the requirements of the CWA.

Permit Requirements

In accordance with the National CSO Policy, the Draft Permit contains the following conditions for the CSO discharges:

(i) Dry weather discharges from CSO outfalls are prohibited. Dry weather discharges must be immediately reported to EPA and NHDES.

(ii) During wet weather, the discharges must not cause any exceedance of water quality standards.

(iii) The Permittee shall meet the technology-based Nine Minimum Controls described above and shall comply with the implementation levels as set forth in Part I.H. of the Draft Permit.

(iv) The Permittee shall review its entire NMC program and revise it as necessary. An annual report shall be provided by March 31 of each year which describes any revisions made to the NMC program and shall also include effluent and ambient monitoring results from CSO discharges, and the status of CSO abatement projects.

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

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

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

The Federal action being considered in this case is EPA's proposed NPDES permit for the Facility's discharges of pollutants. The Draft Permit is intended to replace the 2012 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species and initiates consultation with the Services when required under § 7(a)(2) of the ESA.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in the expected action area of the outfall to determine if EPA's proposed NPDES permit could potentially impact any such listed species in the section of the Squamscott River within Hydrologic Unit Code: 01060003 and the nearby Great Bay Estuary.

Regarding protected species under the jurisdiction of NOAA Fisheries, a number of anadromous and marine species and life stages are present in New Hampshire's waters. Various life stages of protected fish, sea turtles and whales have been documented in New Hampshire's coastal and inland waters, either seasonally or year-round. In general, adult and subadult life stages of Atlantic sturgeon (Acipenser *oxyrinchus*) and adult shortnose sturgeon (Acipenser *brevirostrom*) are present in coastal waters. These sturgeon life stages are also found in some river systems in New Hampshire, along with early life stages of protected sturgeon and juvenile sturgeon. Protected marine species, including adult and juvenile life stages of leatherback sea turtles (Dermochelys coriacea), loggerhead sea turtles (Caretta caretta), Kemp's ridley sea turtles (*Lepidochelys* kempii) and green sea turtles (Chelonia mydas) are found in coastal waters and bays. Adult and juvenile life stages of North Atlantic right whales (*Eubalaena* glacialis) and fin whales (Balaenoptera physalus) have also been documented in coastal waters and bays. Those coastal areas have been designated as critical habitat for North Atlantic right whale feeding.

In this case, the Facility's outfall and action area do not directly overlap with coastal waters where protected marine species (sea turtles and whales) are found. The Facility's discharge is located 4.5 miles downstream from the Great Bay which drains to Piscataqua River and into the Atlantic Ocean. It is highly unlikely that sea turtles or whales would travel up the Piscataqua

River into the Great Bay and subsequently enter the action area of the facility in the Squamscott River, therefore, the discharge will have no effect on protected marine species. However, two species of anadromous fish, the shortnose sturgeon (*Acipenser brevirostrom*) and atlantic sturgeon (*Acipenser oxyrhynchus*), are potentially present in the vicinity of the discharge. In general, adult shortnose sturgeon (SNS) and adult atlantic sturgeon (AS) are present in coastal waters, but various sturgeon life stages are also found in some river systems in New Hampshire. As noted previously, the Facility discharges directly into the Squamscott River. According to NOAA Fisheries,[13] an adult population of SNS seasonally forage in the nearby Piscataqua River**.** A subadult and adult population of AS are known to spawn, rear, and forage in the Piscataqua River on a year-round basis. While these species have only been confirmed to be present in the Piscataqua River and the facility discharges to the Squamscott, the Squamscott River drains to both the Piscataqua River and Great Bay. Because these species may be affected by the discharges authorized by the proposed permit, EPA has thoroughly evaluated the potential impacts of the permit action on these anadromous species through the preparation of a Biological Assessment (BA). EPA is in the process of finalizing the BA. On the basis of the evaluation, EPA's preliminary determination is that this action may affect, but is not likely to adversely affect, the life stages of shortnose and atlantic sturgeon which are expected to inhabit the Squamscott River in the vicinity of the action area of the discharge. Therefore, EPA has judged that a formal consultation pursuant to section 7 of the ESA is not required. EPA is seeking concurrence from NOAA Fisheries regarding this determination through the information in the Draft Permit, this Fact Sheet, as well as the detailed BA that will be sent to NOAA Fisheries Protected Resources Division during the Draft Permit's public comment period.

For protected species under the jurisdiction of the USFWS, one listed species, the northern long-eared bat (*Myotis septentrionalis*), was identified as potentially occurring in the action area of the Facility's discharge. Another endangered species, the small whorled pogonia (*Isotria medeoloides*), was found to be in the general vicinity of the discharge; however, the current range is North and West of the discharge location and it is unlikely to be impacted by any industrial action. According to the USFWS,[14] the small whorled pogonia is a member of the orchid family and is known to grow in older hardwood stands of beech, birch, maple, oak, and hickory that have an open understory. Since the Exeter WWTP action area discharges directly to the mainstem of the Squamscott River, it does not overlap with the habitat of the small whorled pogonia. Therefore, the proposed permit action is deemed to have no impact on this listed species and ESA consultation with USFWS for this plant is not required.

According to the USFWS, the threatened northern long-eared bat is found in the following habitats based on seasons, "winter – mines and caves; summer – wide variety of forested habitats." This species is not considered aquatic. However, because the Facility's projected action area in the Squamscott near Exeter, New Hampshire overlaps with the general statewide range of the northern long-eared bat, EPA prepared an Effects Determination Letter for the Exeter WWTP NPDES Permit Reissuance and submitted it to USFWS. Based on the information submitted by EPA, the USFWS notified EPA by letter, dated November 18, 2021, that the permit reissuance is consistent with activities analyzed in the USFWS January 5, 2016, Programmatic

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[13] See §7 resources for NOAA Fisheries at https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=1bc332edc5204e03b250ac11f9914a27.
[14] For USFWS species list see at https://ecos.fws.gov/ipac/

Biological Opinion (PBO).[15] The PBO outlines activities that are excepted from "take" prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.). The USFWS consistency letter concluded EPA's consultation responsibilities for the Exeter WWTP NPDES permitting action under ESA section 7(a)(2) with respect to the northern long-eared bat. No further ESA section 7 consultation is required with USFWS.

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

EPA finds that adoption of the proposed permit is not likely to adversely affect any threated or endangered species or its critical habitat and informal consultation with NOAA Fisheries or USFWS under Section 7 of the ESA is required. Initiation of consultation is required and shall be requested by the EPA or by USFWS/NOAA Fisheries where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the analysis; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this analysis; or (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, initiation of consultation would be required.

6.2 Essential Fish Habitat

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

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

EPA has determined that the Squamscott River is not covered by the EFH designation for riverine systems at latitude 42° 59' 59" N and longitude 70° 56' 13" W, as determined by the NOAA EFH Mapper.[16] EPA's review of available EFH information indicated that this water

[15] USFWS Event Code: 05E1NE00-2022-E-01790, November 18, 2021.
[16] NOAA EFH Mapper available at http://www.habitat.noaa.gov/protection/efh/efhmapper/

body is not designated EFH for any federally managed species. Therefore, consultation with NMFS under the Magnuson-Stevens Fishery Conservation and Management Act is not required.

6.3 Coastal Zone Management (CZM) Consistency Review

The regulation at 40 CFR § 122.49(d) states "The Coastal Zone Management Act, 16 U.S.C. 1451 et seq. section 307(c) of the Act and implementing regulations (15 CFR part 930) prohibit EPA from issuing a permit for an activity affecting land or water in the coastal zone until the applicant certifies that the proposed activity complies with the State Coastal Zone Management program, and the State or its designated agency concurs with the certification (or the Secretary of Commerce) overrides the State's nonconcurrence.

The discharge is within the defined CZM boundaries. The Permittee has submitted a letter dated August 24, 2017 to the New Hampshire Coastal Zone Management Program stating their intention to abide by the CZM water quality and habitat policies. EPA expects that CZM will find the discharge consistent with its policies.

7.0 Public Comments, Hearing Requests and Permit Appeals

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

Michael Cobb
EPA Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1369
Email: Cobb.Michael@epa.gov

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

Following the close of the comment period, and after any public hearings, if such hearings are held, EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who submitted written comments or requested notice. Within 30 days after EPA serves notice of the issuance of the Final Permit decision, an appeal of the federal NPDES permit may be commenced by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 CFR § 124.19.

8.0 Administrative Record

Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this workforce telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at the EPA Boston office. However, any documents relating to this draft can be requested from the individual listed above.

The administrative record on which this Draft Permit is based may be accessed at EPA's Boston office by appointment, Monday through Friday, excluding holidays from Michael Cobb, EPA Region1, 5 Post Office Square, Suite-100 (06-1), Boston, MA 02109-3912 or via email to Cobb.Michael@epa.gov.

March 2022
Date

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

Figure 1: Location of the Exeter WWTF

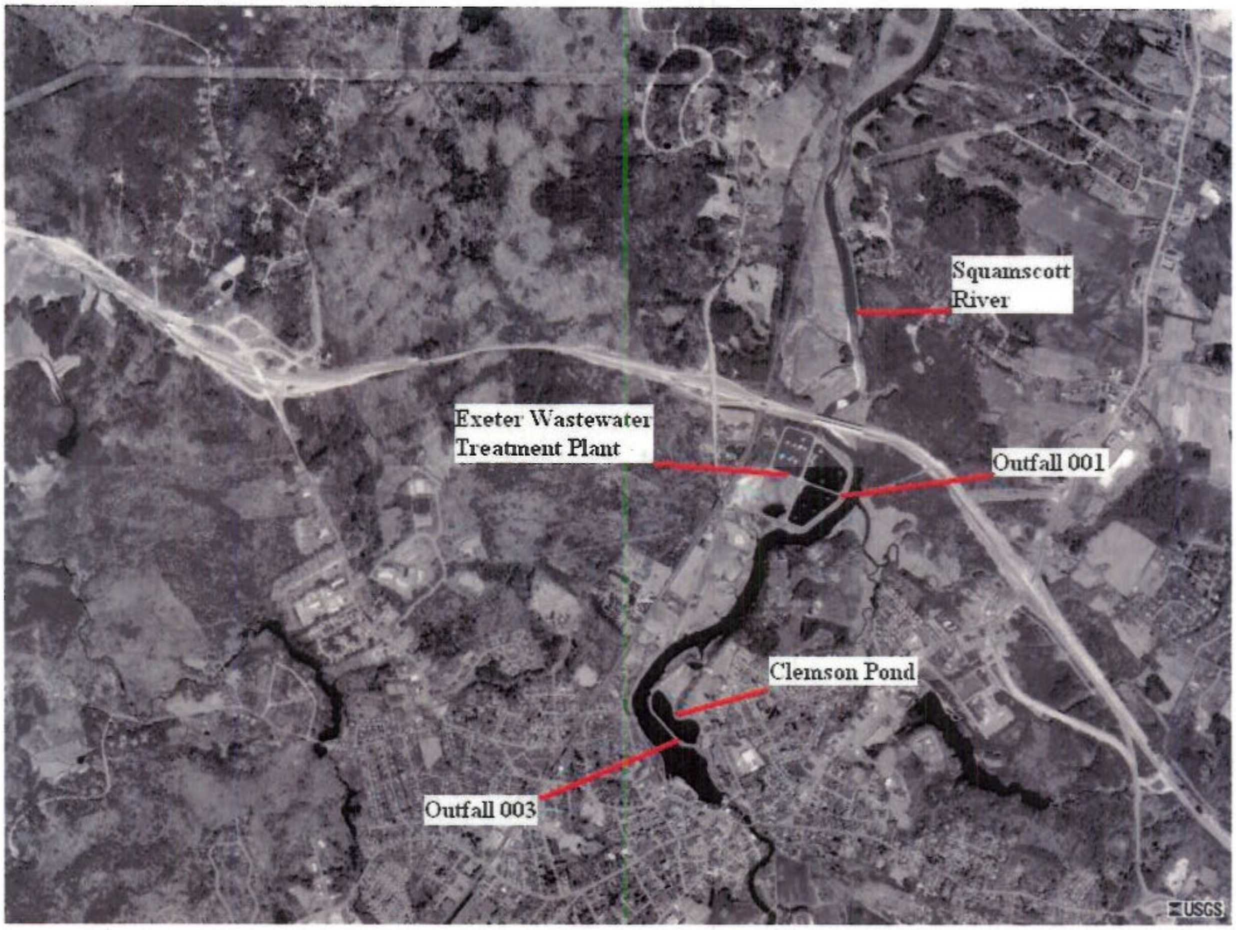
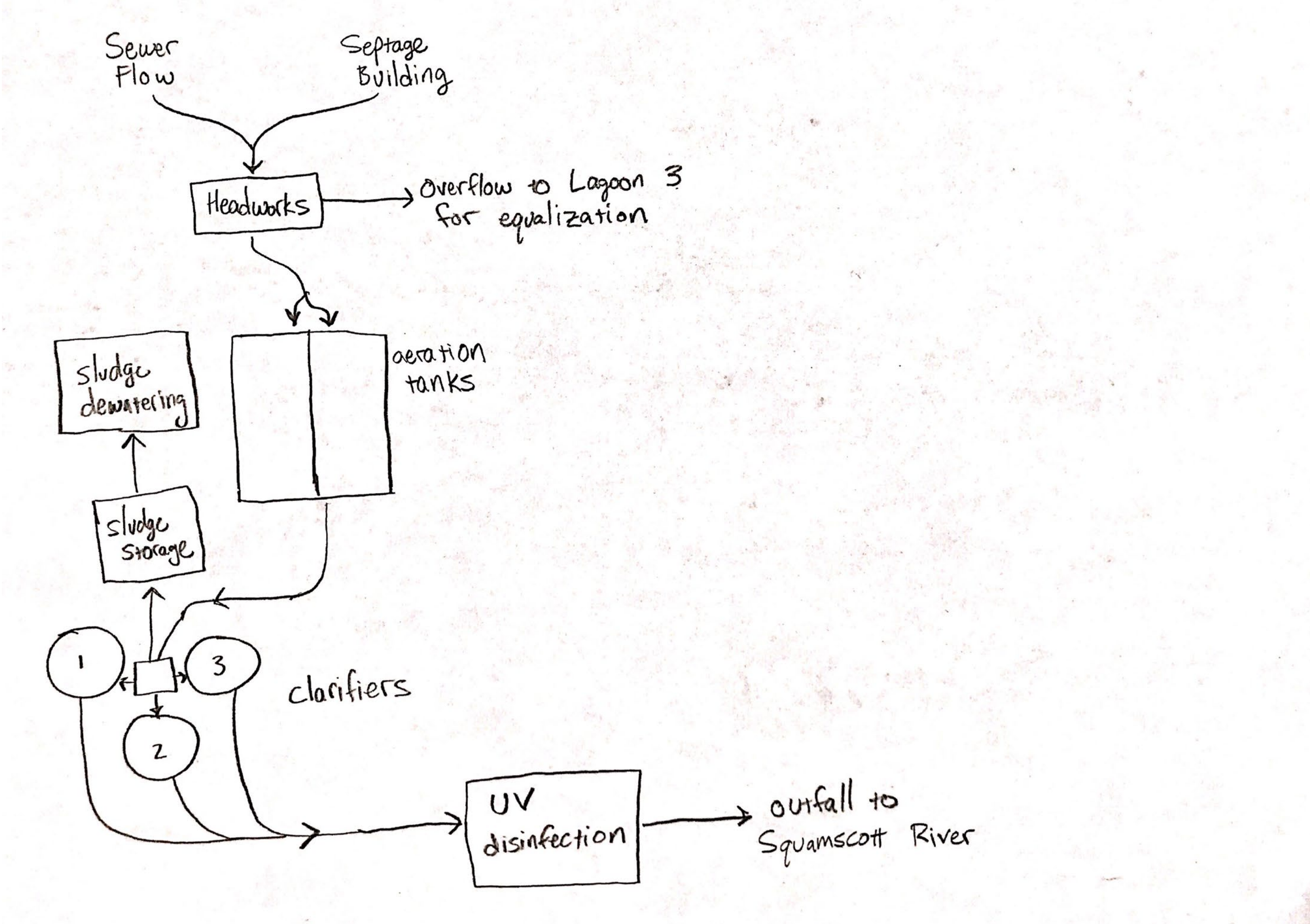


Figure 2: Flow diagram



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

Parameter	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5	BOD5
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Daily Max	Daily Max	Monthly Ave Min
Units	MGD	MGD	lb/d	mg/L	mg/L	lb/d	mg/L	%
Effluent Limit	Report	Report	751	30	45	1251	50	70
Minimum	**0.9**	**1.3**	**0**	**0**	**0**	**0**	**0**	**76**
Maximum	**3.3**	**5**	**366**	**27**	**40**	**569**	**44**	**100**
Median	**1.7**	**2.5**	**126**	**9**	**10.5**	**211**	**13.5**	**93.5**
No. of Violations	**N/A**	**N/A**	**0**	**0**	**0**	**0**	**0**	**0**
9/30/2016	1.1	2	108	12	14	128	15	93
10/31/2016	1.4	2.9	121	10	12	293	16	93
11/30/2016	1.4	2.2	90	8	9	128	11	94
12/31/2016	1.6	2.5	162	12	16	200	16	94
1/31/2017	1.9	2.5	203	12	14	307	19	90
2/28/2017	1.9	3	241	15	19	387	16	85
3/31/2017	2.1	2.9	208	11	16	387	16	91
4/30/2017	3.1	5	233	9	12	417	12	92
5/31/2017	2.6	3	174	8	10	266	11	93
6/30/2017	2	3	174	11	13	257	14	93
7/31/2017	1.6	2.5	236	18	28	514	28	87
8/31/2017	1.5	2.8	276	22	32	477	44	86
9/30/2017	1.4	2.1	338	27	32	508	36	84
10/31/2017	1	1.5	201	23	22	293	28	87
11/30/2017	1.2	1.8	124	13	30	285	32	93
12/31/2017	1.2	1.5	146	14	18	184	19	91
1/31/2018	1.7	2.7	282	20	22	396	27	81
2/28/2018	2	2.6	335	21	26	384	24	85
3/31/2018	2.3	2.8	266	14	17	350	17	88
4/30/2018	2.5	4.6	275	13	18	404	22	89
5/31/2018	1.7	2.3	206	14	16	320	24	91
6/30/2018	1.3	1.9	133	12	22	214	22	93
7/31/2018	1.4	2.4	174	14	21	301	23	92
8/31/2018	1.9	2.9	160	10	15	241	17	92
9/30/2018	1.7	3.9	159	10	15	260	18	92
10/31/2018	1.8	2.7	128	9	10	180	12	94
11/30/2018	3.3	4.9	146	6	8	227	8	95
12/31/2018	2.3	3.9	169	9	10	300	10	92

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

Parameter	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5	BOD5
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Daily Max	Daily Max	Monthly Ave Min
Units	MGD	MGD	lb/d	mg/L	mg/L	lb/d	mg/L	%
Effluent Limit	Report	Report	751	30	45	1251	50	70
1/31/2019	1.9	2.9	212	14	13	285	19	90
2/28/2019	1.9	2.3	352	22	28	494	37	76
3/31/2019	2.2	3	366	20	24	550	25	86
4/30/2019	1.7	3	274	23	40	400	41	78
5/31/2019	1.8	2.8	216	16	20	375	31	85
6/30/2019	1.6	2.5	134	9	20	208	13	93
7/31/2019	1.3	1.8	34	3	8	93	8	97
8/31/2019	1.2	1.9	31	2	3	79	6	98
9/30/2019	1.2	2.1	26	2	4	80	8	99
10/31/2019	1.3	1.8	17	2	8	170	17	100
11/30/2019	1.4	1.8	0	0	0	0	0	100
12/31/2019	2	4.2	71	3	11	569	22	98
1/31/2020	1.9	2.7	22	2	4	140	8	99
2/29/2020	2.2	2.9	0	0	0	0	0	100
3/31/2020	1.8	2.5	41	2	7	280	14	99
4/30/2020	2.3	3.7	0	0	0	0	0	100
5/31/2020	1.8	2.5	0	0	0	0	0	100
6/30/2020	1.1	1.5	0	0	0	0	0	100
7/31/2020	1.1	1.5	0	0	0	0	0	100
8/31/2020	1	1.4	0	0	0	0	0	100
9/30/2020	1	1.3	0	0	0	0	0	100
10/31/2020	1	1.4	9	1	4	75	9	100
11/30/2020	0.9	2	13	1	4	120	9	100
12/31/2020	1.9	2.6	27	2	5	125	10	98
1/31/2021	1.7	2.5	51	3	4	73	4	98
2/28/2021	1.6	2.3	60	4	4	73	6	98
3/31/2021	1.8	2.7	25	2	4	93	7	99
4/30/2021	1.8	2.2	17	1	6	138	11	100
5/31/2021	1.7	2.3	33	2	4	107	8	99
6/30/2021	1.3	2	28	3	6	110	11	99
7/31/2021	2.1	3.5	0	0	4	0	0	100
8/31/2021	1.7	2	72	5	6	85	7	98

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

Parameter	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Avg	Daily Max	Daily Max	Monthly Ave Min
Units	lb/d	mg/L	mg/L	lb/day	lb/d	mg/L	%
Effluent Limit	751	30	45	1126	1251	50	65
Minimum	24	2	2	23	30	3	70
Maximum	800	38	47	1060	2282	72	99
Median	204.5	13.5	16	255	288	17.5	92
No. of Violations	1	7	2	0	2	1	0
9/30/2016	211	23	37	339	284	34	90
10/31/2016	202	19	26	304	315	29	92
11/30/2016	120	10	12	140	158	13	94
12/31/2016	186	14	16	214	292	19	92
1/31/2017	274	17	20	317	384	20	87
2/28/2017	418	26	28	444	701	29	85
3/31/2017	479	27	33	578	811	36	74
4/30/2017	800	31	41	1060	1334	42	78
5/31/2017	296	14	18	390	390	18	91
6/30/2017	229	14	14	234	304	20	93
7/31/2017	313	22	28	374	575	30	89
8/31/2017	306	26	26	325	499	33	90
9/30/2017	448	36	40	467	683	44	78
10/31/2017	322	35	40	334	575	46	83
11/30/2017	270	26	33	330	339	30	88
12/31/2017	211	20	26	260	280	24	88
1/31/2018	224	16	19	269	315	20	89
2/28/2018	210	13	15	250	326	17	91
3/31/2018	196	11	16	307	326	17	91
4/30/2018	566	23	45	938	2282	72	83
5/31/2018	269	18	20	284	427	33	90
6/30/2018	222	19	32	347	375	25	92
7/31/2018	383	31	38	444	570	41	86
8/31/2018	529	35	38	602	660	42	79
9/30/2018	540	35	47	666	781	47	82
10/31/2018	319	21	28	420	428	28	89
11/30/2018	403	15	18	495	508	21	91
12/31/2018	207	12	16	307	250	17	89

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

Parameter	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Avg	Daily Max	Daily Max	Monthly Ave Min
Units	lb/d	mg/L	mg/L	lb/day	lb/d	mg/L	%
Effluent Limit	**751**	**30**	**45**	**1126**	**1251**	**50**	**65**
1/31/2019	289	18	18	285	349	22	86
2/28/2019	301	19	22	349	400	24	83
3/31/2019	504	26	38	697	1064	44	81
4/30/2019	526	**38**	**46**	652	801	47	70
5/31/2019	311	20	32	480	716	33	86
6/30/2019	226	15	22	294	375	25	90
7/31/2019	25	2	5	54	70	6	99
8/31/2019	38	3	6	60	95	6	99
9/30/2019	49	4	6	60	105	6	99
10/31/2019	54	5	8	87	87	8	99
11/30/2019	43	4	6	70	70	7	99
12/31/2019	56	3	6	100	120	6	98
1/31/2020	59	4	6	95	92	7	99
2/29/2020	57	3	5	92	113	5	99
3/31/2020	43	3	6	90	120	7	99
4/30/2020	45	2	2	38	96	5	99
5/31/2020	67	4	8	120	140	8	98
6/30/2020	29	3	5	46	65	6	99
7/31/2020	25	3	3	28	50	4	99
8/31/2020	27	3	4	33	37	4	99
9/30/2020	27	3	4	33	40	4	99
10/31/2020	24	3	3	25	30	3	99
11/30/2020	29	3	3	23	50	3	99
12/31/2020	69	5	4	63	92	5	98
1/31/2021	66	4	5	71	83	5	98
2/28/2021	64	4	4	53	83	5	99
3/31/2021	67	4	4	60	92	5	98
4/30/2021	53	4	4	60	67	4	99
5/31/2021	63	4	6	85	96	6	99
6/30/2021	41	4	4	43	54	5	99
7/31/2021	113	6	7	123	175	7	98
8/31/2021	64	5	6	85	99	7	99

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

Parameter	pH	pH	Enterococci	Enterococci	Fecal Coliform	Fecal Coliform	TRC	TRC
	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max
Units	SU	SU	MPN/100mL	MPN/100mL	CFU/100mL	CFU/100mL	mg/L	mg/L
Effluent Limit	6	9	Report	Report	14	Report	0.19	0.33
Minimum	6.6	7	1.6	3.1	2	1	0	0
Maximum	7.5	8.1	122	200.5	12	280	0.03	0.32
Median	7	7.4	9.675	31.7	3	7	0	0.055
No. of Violations	0	0	N/A	N/A	0	N/A	0	0
9/30/2016	6.8	7.3	6	38	3	2	0	0.08
10/31/2016	6.9	7.4	10	31	3	8	0	0.16
11/30/2016	7.4	7.6	17	34	3	2	0	0.06
12/31/2016	7.5	7.6	89	200.5	3	2	0	0.06
1/31/2017	7.4	7.6	43	59.1	3	3	0	0.11
2/28/2017	7.3	7.6	91	200.5	3	1	0	0.16
3/31/2017	7.3	7.8	25.8	129.8	3	3	0	0.26
4/30/2017	7.2	7.7	5	16.4	3	4	0	0.13
5/31/2017	7.2	7.4	3.49	6.4	3	8	0	0.26
6/30/2017	7.4	7.5	11	20.7	3	1	0	0.11
7/31/2017	7.1	7.6	17	200.5	3	27	0	0.15
8/31/2017	7.4	7.6	24.2	200.5	3.4	92	0	0.22
9/30/2017	7.2	7.5	8.1	23.8	3	18	0	0.11
10/31/2017	7.4	7.6	23.8	36.4	2	3	0	0.06
11/30/2017	7.4	7.7	21.8	109.1	3	3	0	0
12/31/2017	7.4	7.8	39	88.5	3	1	0	0
1/31/2018	7.2	7.4	18.5	65.9	3	3	0	0.05
2/28/2018	7.2	7.4	14	32.4	3	2	0	0.12
3/31/2018	7.3	7.6	22.8	73.8	3	2	0	0.28
4/30/2018	7.3	7.6	30.97	94.5	3	3	0	0.2
5/31/2018	7.4	8.1	27.5	200.5	3	1	0	0.08
6/30/2018	7.4	7.7	17.55	83.1	3	1	0	0.14
7/31/2018	6.8	7.7	9.35	69.7	3	111	0	0.26
8/31/2018	6.7	7.2	10.57	88.5	5.36	58	0	0.13
9/30/2018	6.8	7.3	16	129.8	3	17	0	0.25
10/31/2018	6.8	7	36.6	200.5	3	2	0	0.12
11/30/2018	7	7.6	21.8	32.4	3	2	0.03	0.32
12/31/2018	7.2	7.6	43	161.3	3	3	0	0.08

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

Parameter	pH	pH	Enterococci	Enterococci	Fecal Coliform	Fecal Coliform	TRC	TRC
	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max
Units	SU	SU	MPN/100mL	MPN/100mL	CFU/100mL	CFU/100mL	mg/L	mg/L
Effluent Limit	6	9	Report	Report	14	Report	0.19	0.33
1/31/2019	6.9	7.7	107.2	200.5	3	2	0	0.24
2/28/2019	6.8	7.6	100.6	165.2	3	1	0	0
3/31/2019	7	7.6	122	200.5	3	2	0	0.18
4/30/2019	7.1	7.7	81	200.5	2.57	6	0	0
5/31/2019	7.2	7.6	53.01	165.2	3	3	0	0.14
6/30/2019	7	7.6	32.88	165.2	3.17	14	0	0.1
7/31/2019	6.8	7.3	10.53	30.6	4	44	0	0
8/31/2019	6.8	7.2	3.2	27.1	3	8	0	0
9/30/2019	6.9	7.4	5.1	25.4	8	196	0	0.18
10/31/2019	7	7.2	1.6	8.7	4	23	0	0
11/30/2019	6.8	7.3	2.6	13.7	4	43	0	0
12/31/2019	6.7	7.2	2.6	200.5	3	7	NODI: 9	NODI: 9
1/31/2020	6.6	7	3.4	8.7	4	108	NODI: 9	NODI: 9
2/29/2020	6.8	7.3	8.5	13.7	3	9	NODI: 9	NODI: 9
3/31/2020	6.8	7	4.1	13.7	3.1	12	NODI: 9	NODI: 9
4/30/2020	6.7	7.2	2.34	6.4	2.79	34	NODI: 9	NODI: 9
5/31/2020	6.9	7.2	3.4	6.9	2	6	NODI: 9	NODI: 9
6/30/2020	6.9	7.3	1.6	6.4	4.6	23	NODI: 9	NODI: 9
7/31/2020	7	7.4	3	7.5	12	44	NODI: 9	NODI: 9
8/31/2020	7.1	7.5	2.4	7.5	10.8	55	NODI: 9	NODI: 9
9/30/2020	6.6	7.5	1.6	4.2	10.2	29	NODI: 9	NODI: 9
10/31/2020	7.1	7.4	2.3	5.3	8.5	55	NODI: 9	NODI: 9
11/30/2020	7	7.3	2.8	7.1	6	21	NODI: 9	NODI: 9
12/31/2020	6.8	7	4.3	9.8	2.3	7	NODI: 9	NODI: 9
1/31/2021	6.8	7.2	3.7	14.6	2.3	5	NODI: 9	NODI: 9
2/28/2021	6.9	7.3	3.2	8.6	2.4	6	NODI: 9	NODI: 9
3/31/2021	6.9	7.1	2.8	13.4	2.5	5	NODI: 9	NODI: 9
4/30/2021	6.9	7.1	3.3	8.5	2.4	7	NODI: 9	NODI: 9
5/31/2021	6.9	7.2	2.7	10.7	2.2	9	NODI: 9	NODI: 9
6/30/2021	7	7.3	2.8	9.7	4	13	NODI: 9	NODI: 9
7/31/2021	6.9	7.2	3.6	6.3	9.6	280	NODI: 9	NODI: 9
8/31/2021	7	7.5	1.7	3.1	5.9	41	NODI: 9	NODI: 9

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

Parameter	TN	TN	TN	TN	TN	TN	Coliform, fecal - % sample exceeds limit	Coliform, fecal - % sample exceeds limit
	Monthly Ave	Monthly Ave	Annual Rolling Ave	Annual Rolling Ave	Daily Max	Daily Max	MO GEOMX	GEO MEAN
Units	lb/d	mg/L	mg/L	mg/L	lb/d	mg/L	%	%
Effluent Limit	Report	Report	8	Report	Report	Report	10	Report
Minimum	**35**	**5.2**	**3.8**	**6.4**	**41**	**3.3**	**0**	**0**
Maximum	**496**	**36**	**5.6**	**27**	**959**	**50**	**3**	**10**
Median	**231.5**	**22**	**4.4**	**21**	**308.5**	**18.5**	**0**	**0**
No. of Violations	N/A	N/A	0	N/A	N/A	N/A	0	N/A
9/30/2016	98			22	138	11		0
10/31/2016	198			22	300	30		0
11/30/2016	337	29			414	32		0
12/31/2016	458	36			547	41		0
1/31/2017	490	32			751	50		0
2/28/2017	438	26			605	27		0
3/31/2017	380	22			473	22		0
4/30/2017	477			22	959	23		0
5/31/2017	412			21	500	20	0	
6/30/2017	383			21	477	26	0	
7/31/2017	380			20	633	33	0	
8/31/2017	306			21	607	29	3	
9/30/2017	316			23	339	29	0	
10/31/2017	321			26	444	42	0	
11/30/2017	392	34			495	35	0	
12/31/2017	352	34			390	37	0	
1/31/2018	496	35			618	39	0	
2/28/2018	440	25			499	27	0	
3/31/2018	405	22			499	25		0
4/30/2018	450			26	697	22		0
5/31/2018	288			26	317	25		0
6/30/2018	340			27	507	38		0
7/31/2018	344			27	523	39		6
8/31/2018	185			25	238	15		6
9/30/2018	196			23	238	14		0
10/31/2018	265			20	405	19		0
11/30/2018	396	15			480	19		0
12/31/2018	312	16			450	18		0

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

Parameter	TN	TN	TN	TN	TN	TN	Coliform, fecal - % sample exceeds limit	Coliform, fecal - % sample exceeds limit
	Monthly Ave	Monthly Ave	Annual Rolling Ave	Annual Rolling Ave	Daily Max	Daily Max	MO GEOMX	GEO MEAN
Units	lb/d	mg/L	mg/L	mg/L	lb/d	mg/L	%	%
Effluent Limit	Report	Report	8	Report	Report	Report	10	Report
1/31/2019	349	22			434	26		0
2/28/2019	416	28			455	30		0
3/31/2019	443	26			585	27		0
4/30/2019	454			20	550	28		0
5/31/2019	394			21	477	30		0
6/30/2019	344			21	555	35		0
7/31/2019	109			18	180	18		3
8/31/2019	54			18	70	6		0
9/30/2019	63			17	67	6		10
10/31/2019	69			15	108	10		0
11/30/2019	60	5.2			70	6		0
12/31/2019	145.8	7.6			240	9.7		0
1/31/2020	118.8	7.8			139	9.8		6
2/29/2020	109.8	5.6			140	6.3		0
3/31/2020	116	7.2			163	9.1		0
4/30/2020	126.2			12.4	139	7.6		3
5/31/2020	84.8			9.3	102	7.5		0
6/30/2020	42			6.4	49	6.4		0
7/31/2020	48		5.6		74	5.9		3.2
8/31/2020	38		5.4		50	5.5		6.5
9/30/2020	40		5.2		44	5.1		0
10/31/2020	36		5		46	5		3.2
11/30/2020	65	5.3			142	8.5		0
12/31/2020	98	6.2			119	6.9		0
1/31/2021	112	7.4			132	8		0
2/28/2021	110	7.9			149	8.3		0
3/31/2021	98	5.8			128	6.8		0
4/30/2021	38		4.4		47	3.3		0
5/31/2021	50		4.1		67	4		0
6/30/2021	35		3.9		41	3.8		0
7/31/2021	98		3.9		128	5.1		3.2
8/31/2021	45		3.8		55	4.5		0

WET Effluent

Parameter	LC50 Acute Menidia	Ammonia	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc
	Daily Min	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
Effluent Limit	100	Report	Report	Report	Report	Report	Report	Report
Minimum	**50**	**0.051**	**0.057**	**0**	**0.0021**	**0**	**0.0017**	**0.01**
Maximum	**100**	**36**	**0.25**	**0**	**0.014**	**0.0006**	**0.0037**	**0.08**
Median	**100**	**10.25**	**0.105**	**0**	**0.00725**	**0.00015**	**0.0029**	**0.037**
No. of Violations	**3**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
9/30/2016	78.3	19	0.24	0	0.005	0	0.003	0.025
3/31/2017	100	24	0.1	0	0.011	0.0004	0.0027	0.039
9/30/2017	50	21	0.16	0	0.0039	0.0004	0.0029	0.01
3/31/2018	80.7	36	0.11	0	0.014	0.0004	0.0035	0.035
9/30/2018	100	1.5	0.19	0	0.0021	0.0003	0.0037	0.012
3/31/2019	100	21	0.25	0	0.012	0.0006	0.0029	0.029
9/30/2019	100	0.073	0.057	0	0.0079	0	0.0037	0.08
3/31/2020	100	0.051	0.076	0	0.0066	0	0.0017	0.055
9/30/2020	100	0.12	0.062	0	0.0055	0	0.0019	0.074
3/31/2021	100	0.083	0.061	0	0.009	0	0.0023	0.065

WET Effluent

Parameter	Hardness	Chromium, total recoverable	LC50 Static 48Hr Acute Mysid. Bahia	Salinity
	Daily Max	Daily Max	Daily Min	Daily Max
Units	mg/L	mg/L	%	ppt
Effluent Limit	Report	Report	100	Report
Minimum	110	0	100	0
Maximum	110	0	100	1
Median	110	0	100	Non-Detect
No. of Violations	0	N/A	0	N/A
9/30/2016		0	100	<1
3/31/2017		0	100	<1
9/30/2017		0	100	<1
3/31/2018		0	100	1
9/30/2018		0	100	<1
3/31/2019		0	100	
9/30/2019	110	0	100	<1
3/31/2020	110	0	100	<1
9/30/2020	110	0	100	<1
3/31/2021		0	100	

WET Ambient

Parameter	Ammonia	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc	Hardness	pH	Salinity
	Daily Max	Daily Max	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	SU	ppt
Effluent Lir	Report	Report	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	**0**	**0.16**	**0**	**0**	**0**	**0**	**0**	**35**	**6.64**	**0**
Maximum	**0.47**	**0.69**	**0**	**0.002**	**0.0023**	**0.0027**	**0.024**	**3500**	**7.5**	**22**
Median	**0.14**	**0.315**	**Non-Detect**	**0.00105**	**0.0003**	**Non-Detect**	**0.011**	**800**	**7.01**	**0.5**
No. of Viol	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7	N/A
9/30/2016	0.47	0.44	<0.0005	0.0018	0.0023	<0.002	0.007			16
3/31/2017	<0.1	0.16	<0.0005	0.0012	<0.0005	<0.002	0.0089		6.64	<1
9/30/2017	0.14	0.65	<0.0003	0.0014	0.0019	0.0027	0.012		7.13	<1
3/31/2018	0.35	0.22	<0.0003	0.0009	0.0006	0.001	0.012		6.72	<1
9/30/2018	0.14	0.69	<0.0003	0.002	0.0021	0.0016	0.01		6.942	1
3/31/2019										
9/30/2019	<0.05	0.2	<0.005	<0.005	<0.005	<0.005	0.024	800	7.01	5
3/31/2020	<0.05	0.23	<0.0005	<0.001	<0.0005	<0.001	<0.005	35	7.01	<1
9/30/2020	0.19	0.4	<0.005	<0.005	<0.005	<0.005	0.014	3500	7.5	22
3/31/2021										

Outfall 003

Parameter	E. coli
	Maximum
Units	MPN/100mL
Effluent Limit	1000
Minimum	7
Maximum	2420
Median	Non-Detect
No. of Violations	1
9/30/2016	NODI: 9
10/31/2016	NODI: 9
11/30/2016	NODI: 9
12/31/2016	NODI: 9
1/31/2017	NODI: 9
2/28/2017	NODI: 9
3/31/2017	NODI: 9
4/30/2017	2420
5/31/2017	NODI: 9
6/30/2017	NODI: 9
7/31/2017	NODI: 9
8/31/2017	NODI: 9
9/30/2017	NODI: 9
10/31/2017	NODI: 9
11/30/2017	NODI: 9
12/31/2017	NODI: 9
1/31/2018	NODI: 9
2/28/2018	NODI: 9
3/31/2018	NODI: 9
4/30/2018	7
5/31/2018	NODI: 9
6/30/2018	NODI: 9
7/31/2018	NODI: 9
8/31/2018	NODI: 9
9/30/2018	261
10/31/2018	NODI: 9
11/30/2018	NODI: 9
12/31/2018	NODI: 9
1/31/2019	617.5
2/28/2019	NODI: 9
3/31/2019	NODI: 9
4/30/2019	NODI: 9
5/31/2019	NODI: 9
6/30/2019	NODI: 9

Outfall 003

Parameter	E. coli
	Maximum
Units	MPN/100mL
Effluent Limit	1000
7/31/2019	NODI: 9
8/31/2019	NODI: 9
9/30/2019	NODI: 9
10/31/2019	NODI: 9
11/30/2019	NODI: 9
12/31/2019	NODI: 9
1/31/2020	NODI: 9
2/29/2020	NODI: 9
3/31/2020	NODI: 9
4/30/2020	NODI: 9
5/31/2020	NODI: 9
6/30/2020	NODI: 9
7/31/2020	NODI: 9
8/31/2020	NODI: 9
9/30/2020	NODI: 9
10/31/2020	NODI: 9
11/30/2020	NODI: 9
12/31/2020	NODI: 9
1/31/2021	NODI: 9
2/28/2021	NODI: 9
3/31/2021	NODI: 9
4/30/2021	NODI: 9
5/31/2021	NODI: 9
6/30/2021	NODI: 9
7/31/2021	583
8/31/2021	NODI: 9

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

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

$$C_sQ_s + C_eQ_e = C_dQ_d$$

Where:

C_s = upstream concentration (median value of available ambient data)
Q_s = upstream flow (7Q10 flow upstream of the outfall)
C_e = effluent concentration (95th percentile or maximum of effluent concentration)
Q_e = effluent flow of the facility (design flow)
C_d = downstream concentration
Q_d = downstream flow ($Q_s + Q_e$)

Solving for the downstream concentration results in:

$$C_d = \frac{C_sQ_s + C_eQ_e}{Q_d}$$

When both the downstream concentration (C_d) and the effluent concentration (C_e) exceed the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above the water quality standard. *See* 40 C.F.R. § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must contain WQBELs for the parameter. *See* 40 C.F.R. § 122.44(d)(1)(iii). Limits are calculated by using the criterion as the downstream concentration (C_d) and rearranging the mass balance equation to solve for the effluent concentration (C_e).

For any pollutant(s) with an existing WQBEL, EPA notes that the analysis described in 40 CFR § 122.44(d)(1)(i) has already been conducted in a previous permitting action demonstrating that there is reasonable potential to cause or contribute to an excursion of WQS. Given that the permit already contains a WQBEL based on the prior analysis and the pollutant(s) continue to be discharged from the facility, EPA has determined that there is still reasonable potential for the discharge of this pollutant(s) to cause or contribute to an excursion of WQS. Therefore, the WQBEL will be carried forward unless it is determined that a more stringent WQBEL is necessary to continue to protect WQS or that a less stringent WQBEL is allowable based on anti-backsliding regulations at CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(l). For these pollutant(s), if any, the mass balance calculation is not used to determine whether there is reasonable potential to cause or contribute to an excursion of WQS, but rather is used to determine whether the existing limit needs to be more stringent in order to continue to protect WQS.

From a technical standpoint, when a pollutant is already being controlled as a result of a previously established WQBEL, EPA has determined that it is not appropriate to use new effluent data to reevaluate the need for the existing limit because the reasonable potential to cause or contribute to an excursion of WQS for the uncontrolled discharge was already established in a previous permit. If EPA were to conduct such an evaluation and find no reasonable potential for the controlled discharge to cause or contribute to an excursion of WQS, that finding could be interpreted to suggest that the effluent limit should be removed. However, the new permit without the effluent limit would imply that existing controls are unnecessary, that controls could be removed and then the pollutant concentration could rise to a level where there is, once again, reasonable potential for the discharge to cause or contribute to an excursion of WQS. This could result in an illogical cycle of applying and removing pollutant controls with each permit reissuance. EPA's technical approach on this issue is in keeping with the Act generally and the NPDES regulations specifically, which reflect a precautionary approach to controlling pollutant discharges.

The table below presents the reasonable potential calculations and, if applicable, the calculation of the limits required in the permit. Refer to the pollutant-specific section of the Fact Sheet for a detailed discussion of these calculations, any assumptions that were made and the resulting permit requirements.

Pollutant	DF	C_s [1]	C_e [2]		C_d		Criteria * 0.9		Reasonable Potential		Limits	
	--	mg/L	Acute (mg/L)	Chronic (mg/L)	Acute (mg/L)	Chronic (mg/L)	Acute (mg/L)	Chronic (mg/L)	C_d & C_r > Acute Criteria	C_d & C_r > Chronic Criteria	Acute (mg/L)	Chronic (mg/L)
Ammonia (Warm)	26.0	0.1	21.0	21.0	0.9	0.9	39.6	5.9	N	N	N/A	N/A
Ammonia (Cold)		0.0	36.0	36.0	1.4	1.4	164.2	25.2	N	N	N/A	N/A
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L			µg/L	µg/L
Cadmium		0.0	0.0	0.0	0.0	0.0	36.2	8.0	N	N	N/A	N/A
Copper		1.1	17.5	17.5	1.7	1.7	5.2	3.4	N	N	N/A	N/A
Lead		0.3	0.6	0.6	0.3	0.3	198.7	7.7	N	N	N/A	N/A
Nickel		0.0	4.3	4.3	0.2	0.2	67.3	7.5	N	N	N/A	N/A
Zinc		11.0	113.9	113.9	15.0	15.0	85.6	77.1	N	N	N/A	N/A

[1] Median concentration for the receiving water upstream of the zone of influence of the facility's discharge taken from the WET testing data during the review period (see Appendix A).

[2] Values represent the 95th percentile (for $n \geq 10$) or maximum (for $n < 10$) concentrations from the DMR data and/or WET testing data during the review period (see Appendix A).

```
CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 12.0GTD
                       HYDRO2:Version-12.0.0.0  December,2020
SITE NAME/LABEL:                Exeter WWTF
  DESIGN CASE:                  15 min after neap
  FILE NAME:
S:\WD-Wastewater\Towns\Exeter\PermittedFacilitiesSites\NH0100871Exeter\Reissuance\DilutionCalcs\ExeterOutfallDesign.prd
  Using subsystem CORMIX2:     Multiport Diffuser Discharges
  Start of session:             09/24/2021--09:07:30
****************************************************************************
SUMMARY OF INPUT DATA:
----------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                           BS     = 37.70 m
  Channel regularity              ICHREG = 2
  Ambient flowrate                QA     = 8.33 m^3/s
  Average depth                   HA     = 1.7 m
  Depth at discharge              HD     = 2.2 m
  Darcy-Weisbach friction factor  F      = 0.0678
  Wind velocity                   UW     = 2 m/s
TIDAL SIMULATION at time          Tsim   = 0.25 hours
  Instantaneous ambient velocity  UA     = 0.13 m/s
  Maximum tidal velocity          UaMAX  = 0.26 m/s
Rate of tidal reversal          dUA/dt = 0.52 (m/s)/hour
  Period of reversal              T      = 12.4 hours
  Stratification Type             STRCND = U
  Surface density                 RHOAS  = 999.8000 kg/m^3
  Bottom density                  RHOAB  = 999.8000 kg/m^3
----------------------------------------------------------------------------
DISCHARGE PARAMETERS:             Submerged Multiport Diffuser Discharge
  Diffuser type                   DITYPE = alternating perpendicular
  Diffuser length                 LD     = 12.20 m
  Nearest bank                           = right
  Diffuser endpoints              YB1    = 8 m;    YB2 = 20.20 m
  Number of openings              NOPEN  = 8
  Number of Risers                NRISER = 8
  Ports/Nozzles per Riser         NPPERR  = 1
  Spacing between risers/openings SPAC   = 1.74 m
  Port/Nozzle diameter            D0     = 0.087 m
    with contraction ratio               = 1
  Equivalent slot width           B0     = 0.003411 m
  Total area of openings          TA0    = 0.0476 m^2
  Discharge velocity              U0     = 2.75 m/s
  Total discharge flowrate        Q0     = 0.131 m^3/s
  Discharge port height           H0     = 0.4 m
  Nozzle arrangement              BETYPE = alternating with fanning
  Diffuser alignment angle        GAMMA  = 90 deg
  Vertical discharge angle        THETA  = 90 deg
  Actual Vertical discharge angle THEAC  = 25 deg
  Horizontal discharge angle      SIGMA  = 0 deg
  Relative orientation angle      BETA   = 90 deg
  Discharge density               RHO0   = 998 kg/m^3
  Density difference              DRHO   = 1.8000 kg/m^3
  Buoyant acceleration            GP0    = 0.0177 m/s^2
  Discharge concentration         C0     = 100 %
  Surface heat exchange coeff.    KS     = 0 m/s
  Coefficient of decay            KD     = 0 /s
----------------------------------------------------------------------------
FLUX VARIABLES PER UNIT DIFFUSER LENGTH:
  Discharge (volume flux)         q0     = 0.010738 m^2/s
  Momentum flux
      (based on slot width B0)    m0 =U0^2*B0   = 0.025880 m^3/s^2
      (based on volume flux q0)   m0 =U0*q0     = 0.029578 m^3/s^2
  Buoyancy flux
      (based on slot width B0)    j0 =U0*GP0*B0 = 0.000166 m^3/s^3
      (based on volume flux q0)   j0 =q0*GP0    = 0.000190 m^3/s^3
----------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 0.00 m         Lm  = 1.75 m         LM  = 8.55 m
  lm' = 99999 m         Lb' = 99999 m         La  = 99999 m
UNSTEADY TIDAL SCALES:
  Tu  = 0.0851 hours     Lu  = 13.57 m         Lmin= 2.31 m
  (These refer to the actual discharge/environment length scales.)
----------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
Slot Froude number              FR0    = 354.96
  Port/nozzle Froude number       FRD0   = 70.28
  Velocity ratio                  R      = 21.19
----------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = no
  Regulatory mixing zone                 = no
  Region of interest                     = 1000 m downstream
****************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *------------------------*
```

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CORMIX2 PREDICTION FILE:
222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222
                       CORMIX MIXING ZONE EXPERT SYSTEM
               Subsystem CORMIX2: Multiport Diffuser Discharges
                             CORMIX Version 12.0GTD
                     HYDRO2 Version 12.0.0.0 December 2020
-----------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------
CASE DESCRIPTION
 Site name/label:   Exeter WWTF
 Design case:       15 min after neap
 FILE NAME:         S:\...\Reissuance\DilutionCalcs\ExeterOutfallDesign.prd
 Time stamp:        09/24/2021--09:06:07

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     37.70  AS    =     64.09  QA    =      8.33  ICHREG= 2
 HA    =      1.70  HD    =      2.20
 Tidal Simulation at TIME =      0.250 h
 PERIOD=    12.40 h UAmax =      0.260 dUa/dt=      0.520 (m/s)/h
 UA    =      0.130 F     =      0.068 USTAR =0.1197E-01
 UW    =      2.000 UWSTAR=0.2198E-02
 Uniform density environment
 STRCND=  U         RHOAM =  999.8000

DIFFUSER DISCHARGE PARAMETERS (metric units)
 Diffuser type:     DITYPE= alternating_perpendicular
 BANK  =  RIGHT     DISTB =     14.10  YB1   =      8.00  YB2   =     20.20
 LD    =     12.20  NOPEN =    8       NRISER=    8       SPAC  =      1.74    NPPERR =    1
 D0    =      0.087 A0    =      0.006 H0    =      0.40  SUB0  =      1.80
 D0INP =      0.087 CR0   =      1.000 B0    =0.3411E-02
 Nozzle/port arrangement:   alternating_with_fanning
 GAMMA =     90.00  THETA =     25.00  SIGMA =      0.00  BETA  =     90.00
 U0    =      2.755 Q0    =      0.131 Q0A   =0.1310E+00
 RHO0  =  998.0000  DRHO0 =0.1800E+01  GP0   =0.1766E-01
 C0    =0.1000E+03  CUNITS=  %
 IPOLL =  1         KS    =0.0000E+00  KD    =0.0000E+00

FLUX VARIABLES - PER UNIT DIFFUSER LENGTH (metric units)
 q0    =0.1074E-01         SIGNJ0=      1.0
 m0 =U0^2*B0 =0.2588E-01   j0 =U0*GP0*B0 =0.1659E-03   (based on slot width B0)
 m0 =U0*q0   =0.2958E-01   j0 =q0*GP0    =0.1896E-03   (based on volume flux q0)
 Associated 2-d length scales (meters)
 lQ=B  =      0.004 lM    =      8.55  lm    =      1.75
 lmp   =  99999.00  lbp   =  99999.00  la    =  99999.00

FLUX VARIABLES - ENTIRE DIFFUSER (metric units)
 Q0    =0.1310E+00  M0    =0.3157E+00  J0    =0.2024E-02
 Associated 3-d length scales (meters)
 LQ    =      0.08  LM    =      9.36  Lm    =      4.62  Lb    =      1.05
                                       Lmp   =  99999.00  Lbp   =  99999.00
 Tidal:             Tu    =   0.0851 h Lu    =     13.568 Lmin  =      2.310
 Tidal Cutoffs (m): lmax  =    61.983  xmax  =    18.621  ymax  =**********

NON-DIMENSIONAL PARAMETERS
 FR0   =    354.96  FRD0  =     70.28  R     =     21.19  PL    =   10.97
 (slot)             (port/nozzle)

RECOMPUTED SOURCE CONDITIONS FOR ALTERNATING JETS OR RISER GROUPS:
 Momentum fluxes:   m0    =0.1094E-01  M0    =0.1334E+00
 lQ=B  =      0.009 lM    =      3.62  lm    =      0.74  lmp   =  99999.00
 LQ    =      0.142 LM    =      4.91  Lm    =      3.00  Lmp   =  99999.00
 Properties of riser group with  1 ports/nozzles each:
 U0    =      1.164 D0    =      0.134 A0    =      0.014 THETA =     90.00
 FR0   =     97.52  FRD0  =     23.95  R     =      8.95
 (slot)             (riser group)

FLOW CLASSIFICATION
 222222222222222222222222222222222222222222222222
 2  Flow class (CORMIX2)      =    MU8          2
 2  Applicable layer depth HS =     2.20        2
 2  Limiting Dilution S=QA/Q0 + 1=    64.60     2
 222222222222222222222222222222222222222222222222

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.1000E+03  CUNITS=  %
 NTOX  =  0
 NSTD  =  0
 REGMZ =  0
 XINT  =   1000.00  XMAX  =   1000.00

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the bottom and the diffuser mid-point:
        14.10 m  from the RIGHT bank/shore.
    X-axis points downstream, Y-axis points to left, Z-axis points upward.
NSTEP = 100 display intervals per module
-----------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------
BEGIN MOD201: DIFFUSER DISCHARGE MODULE
```

Due to complex near-field motions: EQUIVALENT SLOT DIFFUSER (2-D) GEOMETRY

Profile definitions:
BV = Gaussian 1/e (37%) width, in vertical plane normal to trajectory
BH = top-hat half-width, in horizontal plane normal to trajectory
S = hydrodynamic centerline dilution
C = centerline concentration (includes reaction effects, if any)
Uc = Local centerline excess velocity (above ambient)
TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	Uc	TT
0.00	0.00	0.40	1.0	0.100E+03	0.01	6.10	2.755	.00000E+00

END OF MOD201: DIFFUSER DISCHARGE MODULE

BEGIN MOD277: UNSTABLE NEAR-FIELD ZONE OF ALTERNATING PERPENDICULAR DIFFUSER

Because of the FANNED-OUT HORIZONTAL ORIENTATION of the diffuser jets, the near-field dilution is slightly improved.

Because of the strong ambient current the diffuser plume of this crossflowing discharge gets RAPIDLY DEFLECTED.
A near-field zone is formed that is VERTICALLY FULLY MIXED over the entire layer depth. Full mixing is achieved at a downstream distance of about 2.5 times (for alternating designs) to 5 times(for unidirectional and staged designsd) the layer depth.

Profile definitions:
BV = layer depth (vertically mixed)
BH = top-hat half-width, measured horizontally in Y-direction
S = hydrodynamic average (bulk) dilution
C = average (bulk) concentration (includes reaction effects, if any)
TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	TT
0.00	0.00	0.40	1.0	0.100E+03	0.01	6.10	.00000E+00
0.06	0.00	0.41	3.9	0.256E+02	0.03	6.11	.75028E+00
0.11	0.00	0.41	5.1	0.196E+02	0.05	6.12	.15006E+01
0.17	0.00	0.42	6.0	0.166E+02	0.07	6.12	.22508E+01
0.22	0.00	0.43	6.8	0.147E+02	0.09	6.13	.30011E+01
0.28	0.00	0.44	7.5	0.134E+02	0.12	6.14	.37514E+01
0.33	0.00	0.44	8.1	0.124E+02	0.14	6.15	.45017E+01
0.39	0.00	0.45	8.6	0.116E+02	0.16	6.15	.52520E+01
0.44	0.00	0.46	9.1	0.109E+02	0.18	6.16	.60023E+01
0.50	0.00	0.46	9.6	0.104E+02	0.20	6.17	.67525E+01
0.55	0.00	0.47	10.1	0.992E+01	0.23	6.18	.75028E+01
0.61	0.00	0.48	10.5	0.951E+01	0.25	6.19	.82531E+01
0.66	0.00	0.48	10.9	0.915E+01	0.27	6.19	.90034E+01
0.72	0.00	0.49	11.3	0.883E+01	0.29	6.20	.97537E+01
0.77	0.00	0.50	11.7	0.855E+01	0.31	6.21	.10504E+02
0.83	0.00	0.50	12.1	0.829E+01	0.34	6.22	.11254E+02
0.88	0.00	0.51	12.4	0.806E+01	0.36	6.22	.12005E+02
0.94	0.00	0.52	12.8	0.784E+01	0.38	6.23	.12755E+02
0.99	0.00	0.53	13.1	0.764E+01	0.40	6.24	.13505E+02
1.05	0.00	0.53	13.4	0.746E+01	0.42	6.25	.14255E+02
1.10	0.00	0.54	13.7	0.729E+01	0.45	6.26	.15006E+02
1.15	0.00	0.55	14.0	0.714E+01	0.47	6.26	.15756E+02
1.21	0.00	0.55	14.3	0.699E+01	0.49	6.27	.16506E+02
1.26	0.00	0.56	14.6	0.685E+01	0.51	6.28	.17256E+02
1.32	0.00	0.57	14.9	0.673E+01	0.53	6.29	.18007E+02
1.37	0.00	0.57	15.1	0.661E+01	0.55	6.29	.18757E+02
1.43	0.00	0.58	15.4	0.649E+01	0.58	6.30	.19507E+02
1.48	0.00	0.59	15.7	0.638E+01	0.60	6.31	.20258E+02
1.54	0.00	0.60	15.9	0.628E+01	0.62	6.32	.21008E+02
1.59	0.00	0.60	16.2	0.619E+01	0.64	6.33	.21758E+02
1.65	0.00	0.61	16.4	0.609E+01	0.66	6.33	.22508E+02
1.70	0.00	0.62	16.7	0.601E+01	0.69	6.34	.23259E+02
1.76	0.00	0.62	16.9	0.592E+01	0.71	6.35	.24009E+02
1.81	0.00	0.63	17.1	0.584E+01	0.73	6.36	.24759E+02
1.87	0.00	0.64	17.3	0.577E+01	0.75	6.37	.25510E+02
1.92	0.00	0.64	17.6	0.569E+01	0.77	6.37	.26260E+02
1.98	0.00	0.65	17.8	0.562E+01	0.80	6.38	.27010E+02
2.03	0.00	0.66	18.0	0.556E+01	0.82	6.39	.27760E+02
2.09	0.00	0.67	18.2	0.549E+01	0.84	6.40	.28511E+02
2.14	0.00	0.67	18.4	0.543E+01	0.86	6.40	.29261E+02
2.20	0.00	0.68	18.6	0.537E+01	0.88	6.41	.30011E+02
2.25	0.00	0.69	18.8	0.531E+01	0.91	6.42	.30762E+02
2.31	0.00	0.69	19.0	0.526E+01	0.93	6.43	.31512E+02
2.36	0.00	0.70	19.2	0.520E+01	0.95	6.44	.32262E+02
2.42	0.00	0.71	19.4	0.515E+01	0.97	6.44	.33012E+02
2.47	0.00	0.71	19.6	0.510E+01	0.99	6.45	.33763E+02
2.53	0.00	0.72	19.8	0.505E+01	1.02	6.46	.34513E+02
2.58	0.00	0.73	20.0	0.501E+01	1.04	6.47	.35263E+02
2.64	0.00	0.74	20.2	0.496E+01	1.06	6.47	.36014E+02
2.69	0.00	0.74	20.3	0.492E+01	1.08	6.48	.36764E+02
2.75	0.00	0.75	20.5	0.487E+01	1.10	6.49	.37514E+02
2.81	0.00	0.76	20.7	0.483E+01	1.13	6.50	.38264E+02
2.86	0.00	0.76	20.9	0.479E+01	1.15	6.51	.39015E+02
2.92	0.00	0.77	21.0	0.475E+01	1.17	6.51	.39765E+02
2.97	0.00	0.78	21.2	0.471E+01	1.19	6.52	.40515E+02

3.03	0.00	0.79	21.4	0.468E+01	1.21	6.53	.41265E+02
3.08	0.00	0.79	21.5	0.464E+01	1.23	6.54	.42016E+02
3.14	0.00	0.80	21.7	0.461E+01	1.26	6.54	.42766E+02
3.19	0.00	0.81	21.9	0.457E+01	1.28	6.55	.43516E+02
3.25	0.00	0.81	22.0	0.454E+01	1.30	6.56	.44267E+02
3.30	0.00	0.82	22.2	0.451E+01	1.32	6.57	.45017E+02
3.36	0.00	0.83	22.3	0.448E+01	1.34	6.58	.45767E+02
3.41	0.00	0.83	22.5	0.444E+01	1.37	6.58	.46517E+02
3.47	0.00	0.84	22.7	0.441E+01	1.39	6.59	.47268E+02
3.52	0.00	0.85	22.8	0.439E+01	1.41	6.60	.48018E+02
3.58	0.00	0.86	23.0	0.436E+01	1.43	6.61	.48768E+02
3.63	0.00	0.86	23.1	0.433E+01	1.45	6.61	.49519E+02
3.69	0.00	0.87	23.3	0.430E+01	1.48	6.62	.50269E+02
3.74	0.00	0.88	23.4	0.427E+01	1.50	6.63	.51019E+02
3.80	0.00	0.88	23.5	0.425E+01	1.52	6.64	.51769E+02
3.85	0.00	0.89	23.7	0.422E+01	1.54	6.65	.52520E+02
3.91	0.00	0.90	23.8	0.420E+01	1.56	6.65	.53270E+02
3.96	0.00	0.90	24.0	0.417E+01	1.59	6.66	.54020E+02
4.02	0.00	0.91	24.1	0.415E+01	1.61	6.67	.54771E+02
4.07	0.00	0.92	24.2	0.413E+01	1.63	6.68	.55521E+02
4.13	0.00	0.93	24.4	0.410E+01	1.65	6.68	.56271E+02
4.18	0.00	0.93	24.5	0.408E+01	1.67	6.69	.57021E+02
4.24	0.00	0.94	24.6	0.406E+01	1.70	6.70	.57772E+02
4.29	0.00	0.95	24.8	0.404E+01	1.72	6.71	.58522E+02
4.35	0.00	0.95	24.9	0.401E+01	1.74	6.72	.59272E+02
4.40	0.00	0.96	25.0	0.399E+01	1.76	6.72	.60023E+02
4.45	0.00	0.97	25.2	0.397E+01	1.78	6.73	.60773E+02
4.51	0.00	0.97	25.3	0.395E+01	1.81	6.74	.61523E+02
4.56	0.00	0.98	25.4	0.393E+01	1.83	6.75	.62273E+02
4.62	0.00	0.99	25.5	0.391E+01	1.85	6.75	.63024E+02
4.67	0.00	1.00	25.7	0.390E+01	1.87	6.76	.63774E+02
4.73	0.00	1.00	25.8	0.388E+01	1.89	6.77	.64524E+02
4.78	0.00	1.01	25.9	0.386E+01	1.91	6.78	.65274E+02
4.84	0.00	1.02	26.0	0.384E+01	1.94	6.79	.66025E+02
4.89	0.00	1.02	26.2	0.382E+01	1.96	6.79	.66775E+02
4.95	0.00	1.03	26.3	0.380E+01	1.98	6.80	.67525E+02
5.00	0.00	1.04	26.4	0.379E+01	2.00	6.81	.68276E+02
5.06	0.00	1.04	26.5	0.377E+01	2.02	6.82	.69026E+02
5.11	0.00	1.05	26.6	0.375E+01	2.05	6.82	.69776E+02
5.17	0.00	1.06	26.8	0.374E+01	2.07	6.83	.70526E+02
5.22	0.00	1.06	26.9	0.372E+01	2.09	6.84	.71277E+02
5.28	0.00	1.07	27.0	0.371E+01	2.11	6.85	.72027E+02
5.33	0.00	1.08	27.1	0.369E+01	2.13	6.86	.72777E+02
5.39	0.00	1.09	27.2	0.368E+01	2.16	6.86	.73528E+02
5.44	0.00	1.09	27.3	0.366E+01	2.18	6.87	.74278E+02
5.50	0.00	1.10	27.4	0.365E+01	2.20	6.88	.75028E+02

Cumulative travel time = 75.0282 sec (0.02 hrs)

Plume centerline may exhibit slight discontinuities in transition
to subsequent far-field module.

END OF MOD277: UNSTABLE NEAR-FIELD ZONE OF ALTERNATING PERPENDICULAR DIFFUSER

** End of NEAR-FIELD REGION (NFR) **

BEGIN MOD241: BUOYANT AMBIENT SPREADING

Profile definitions:

BV = top-hat thickness, measured vertically
BH = top-hat half-width, measured horizontally in y-direction
ZU = upper plume boundary (Z-coordinate)
ZL = lower plume boundary (Z-coordinate)
S = hydrodynamic average (bulk) dilution
C = average (bulk) concentration (includes reaction effects, if any)
TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
5.50	0.00	2.20	27.3	0.366E+01	2.20	6.88	2.20	0.00	.75028E+02
5.96	0.00	2.20	27.3	0.367E+01	2.18	6.97	2.20	0.02	.78528E+02
6.42	0.00	2.20	27.2	0.368E+01	2.16	7.06	2.20	0.04	.82029E+02
6.89	0.00	2.20	27.1	0.369E+01	2.14	7.14	2.20	0.06	.85529E+02
7.35	0.00	2.20	27.1	0.370E+01	2.12	7.23	2.20	0.08	.89029E+02
7.81	0.00	2.20	27.0	0.370E+01	2.11	7.32	2.20	0.09	.92529E+02
8.27	0.00	2.20	26.9	0.371E+01	2.09	7.40	2.20	0.11	.96029E+02
8.74	0.00	2.20	26.9	0.372E+01	2.07	7.49	2.20	0.13	.99530E+02
9.20	0.00	2.20	26.8	0.373E+01	2.06	7.57	2.20	0.14	.10303E+03
9.66	0.00	2.20	26.8	0.374E+01	2.04	7.66	2.20	0.16	.10653E+03
10.12	0.00	2.20	26.7	0.375E+01	2.02	7.74	2.20	0.18	.11003E+03
10.58	0.00	2.20	26.6	0.375E+01	2.01	7.83	2.20	0.19	.11353E+03
11.05	0.00	2.20	26.6	0.376E+01	1.99	7.91	2.20	0.21	.11703E+03
11.51	0.00	2.20	26.5	0.377E+01	1.98	7.99	2.20	0.22	.12053E+03
11.97	0.00	2.20	26.5	0.378E+01	1.97	8.07	2.20	0.23	.12403E+03
12.43	0.00	2.20	26.4	0.378E+01	1.95	8.16	2.20	0.25	.12753E+03
12.89	0.00	2.20	26.4	0.379E+01	1.94	8.24	2.20	0.26	.13103E+03
13.36	0.00	2.20	26.3	0.380E+01	1.93	8.32	2.20	0.27	.13453E+03
13.82	0.00	2.20	26.3	0.380E+01	1.91	8.40	2.20	0.29	.13803E+03
14.28	0.00	2.20	26.3	0.381E+01	1.90	8.48	2.20	0.30	.14153E+03
14.74	0.00	2.20	26.2	0.381E+01	1.89	8.56	2.20	0.31	.14503E+03
15.21	0.00	2.20	26.2	0.382E+01	1.88	8.64	2.20	0.32	.14853E+03
15.67	0.00	2.20	26.2	0.382E+01	1.87	8.72	2.20	0.33	.15203E+03

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     16.13     0.00    2.20    26.1 0.383E+01   1.86     8.80    2.20    0.34   .15553E+03
     16.59     0.00    2.20    26.1 0.383E+01   1.84     8.87    2.20    0.36   .15903E+03
     17.05     0.00    2.20    26.1 0.384E+01   1.83     8.95    2.20    0.37   .16253E+03
     17.52     0.00    2.20    26.0 0.384E+01   1.82     9.03    2.20    0.38   .16603E+03
     17.98     0.00    2.20    26.0 0.385E+01   1.81     9.11    2.20    0.39   .16953E+03
     18.44     0.00    2.20    26.0 0.385E+01   1.80     9.18    2.20    0.40   .17303E+03
     18.62     0.00    2.20    26.0 0.385E+01   1.80     9.21    2.20    0.40   .17440E+03
 Cumulative travel time =         174.3975 sec  (    0.05 hrs)

 CORMIX simulation has been TERMINATED at last prediction interval.
   Limiting time due to TIDAL REVERSAL as per (xmax) has been reached.

END OF MOD241: BUOYANT AMBIENT SPREADING
---------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------
CORMIX2: Multiport Diffuser Discharges       End of Prediction File
22222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222
```

```
  | FLOW CLASS   = MU8 |
  *------------------------*
  This flow configuration applies to a layer corresponding to the full water
  depth at the discharge site.
  Applicable layer depth = water depth = 2.2 m

  Limiting Dilution S = (QA/Q0)+ 1.0 = 64.6

*****************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

-----------------------------------------------------------------------------
X-Y-Z Coordinate system:
  Origin is located at the BOTTOM below the port/diffuser center:
    14.1 m from the right bank/shore.
  Number of display steps NSTEP = 100 per module.
-----------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 3.6457 %
  Dilution at edge of NFR              s = 27.4
  NFR Location:                        x = 5.5 m
    (centerline coordinates)           y = 0 m
                                       z = 2.2 m
  NFR plume dimensions:  half-width (bh) = 6.88 m
                          thickness (bv) = 2.2 m
  Cumulative travel time:       75.0281 sec.
-----------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is less than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards
  the surface.
-----------------------------------------------------------------------------
Near-field instability behavior:
  The diffuser flow will experience instabilities with full vertical mixing
  in the near-field.
  There may be benthic impact of high pollutant concentrations.
-----------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed WITHIN NEAR-FIELD at 0 m
  downstream, but RE-STRATIFIES LATER and is not mixed in the far-field.
-----------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts one bank only at 51.72 m downstream.
-----------------------------------------------------------------------------
UNSTEADY TIDAL ASSESSMENT:
 Because of the unsteadiness of the ambient current during the tidal
  reversal, CORMIX predictions have been TERMINATED at:
                                       x = 18.62 m
                                       y = 0 m
                                       z = 2.2 m.
  For this condition AFTER TIDAL REVERSAL, mixed water from the previous
  half-cycle becomes re-entrained into the near field of the discharge,
  increasing pollutant concentrations compared to steady-state predictions.
  A pool of mixed water formed at slack tide will be advected downstream
  in this phase.
************************ TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
********************** REGULATORY MIXING ZONE SUMMARY ***********************
No RMZ and no ambient water quality standard have been specified.
********************* FINAL DESIGN ADVICE AND COMMENTS **********************
CORMIX2 uses the TWO-DIMENSIONAL SLOT DIFFUSER CONCEPT to represent
  the actual three-dimensional diffuser geometry.  Thus, it approximates
  the details of the merging process of the individual jets from each
  port/nozzle.
In the present design, the spacing between adjacent ports/nozzles
  (or riser assemblies) is of the order of, or less than, the local
  water depth so that the slot diffuser approximation holds well.

Nevertheless, if this is a final design, the user is advised to use a
  final CORMIX1 (single port discharge) analysis, with discharge data
  for an individual diffuser jet/plume, in order to compare to
  the present near-field prediction.
-----------------------------------------------------------------------------
DIFFUSER DESIGN DETAILS:  Because of the alternating arrangement
  of the opposing nozzles/ports, the AVERAGE VERTICAL ANGLE (THETA)
  has been set to 90 deg.  This represents a ZERO NET HORIZONTAL
  MOMENTUM FLUX for the entire diffuser.
-----------------------------------------------------------------------------
REMINDER:  The user must take note that HYDRODYNAMIC MODELING by any known
  technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the
  CORMIX predictions on dilutions and concentrations (with associated
  plume geometries) are reliable for the majority of cases and are accurate
  to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges
```

the design configuration as highly complex and uncertain for prediction.

```
CORMIX2 PREDICTION FILE:
22222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222
                       CORMIX MIXING ZONE EXPERT SYSTEM
               Subsystem CORMIX2: Multiport Diffuser Discharges
                             CORMIX Version 12.0GTD
                     HYDRO2 Version 12.0.0.0 December 2020
---------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------
CASE DESCRIPTION
 Site name/label:   Exeter WWTF
 Design case:       15 min after neap
 FILE NAME:         S:\...\Reissuance\DilutionCalcs\ExeterOutfallDesign.prd
 Time stamp:        09/24/2021--09:06:07

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     37.70  AS    =     64.09  QA    =      8.33  ICHREG= 2
 HA    =      1.70  HD    =      2.20
 Tidal Simulation at TIME =      0.250 h
 PERIOD=    12.40 h UAmax =      0.260 dUa/dt=      0.520 (m/s)/h
 UA    =      0.130 F     =      0.068 USTAR =0.1197E-01
 UW    =      2.000 UWSTAR=0.2198E-02
 Uniform density environment
 STRCND=  U         RHOAM =  999.8000

DIFFUSER DISCHARGE PARAMETERS (metric units)
 Diffuser type:     DITYPE= alternating_perpendicular
 BANK  =  RIGHT     DISTB =     14.10  YB1   =      8.00  YB2   =     20.20
 LD    =     12.20  NOPEN =    8       NRISER=    8       SPAC  =      1.74    NPPERR =    1
 D0    =      0.087 A0    =      0.006 H0    =      0.40  SUB0  =      1.80
 D0INP =      0.087 CR0   =      1.000 B0    =0.3411E-02
 Nozzle/port arrangement:   alternating_with_fanning
 GAMMA =     90.00  THETA =     25.00  SIGMA =      0.00  BETA  =     90.00
 U0    =      2.755 Q0    =      0.131 Q0A   =0.1310E+00
 RHO0  =  998.0000  DRHO0 =0.1800E+01  GP0   =0.1766E-01
 C0    =0.1000E+03  CUNITS=  %
 IPOLL =  1         KS    =0.0000E+00  KD    =0.0000E+00

FLUX VARIABLES - PER UNIT DIFFUSER LENGTH (metric units)
 q0    =0.1074E-01         SIGNJ0=      1.0
 m0 =U0^2*B0 =0.2588E-01   j0 =U0*GP0*B0 =0.1659E-03   (based on slot width B0)
 m0 =U0*q0   =0.2958E-01   j0 =q0*GP0    =0.1896E-03   (based on volume flux q0)
 Associated 2-d length scales (meters)
 lQ=B  =      0.004 lM    =      8.55  lm    =      1.75
 lmp   =  99999.00  lbp   =  99999.00  la    =  99999.00

FLUX VARIABLES - ENTIRE DIFFUSER (metric units)
 Q0    =0.1310E+00  M0    =0.3157E+00  J0    =0.2024E-02
 Associated 3-d length scales (meters)
 LQ    =      0.08  LM    =      9.36  Lm    =      4.62  Lb    =      1.05
                                       Lmp   =  99999.00  Lbp   =  99999.00
 Tidal:             Tu    =  0.0851 h Lu    =     13.568 Lmin  =      2.310
 Tidal Cutoffs (m): lmax  =    61.983  xmax  =    18.621  ymax  =**********

NON-DIMENSIONAL PARAMETERS
 FR0   =    354.96  FRD0  =     70.28  R     =     21.19  PL    =   10.97
 (slot)             (port/nozzle)

RECOMPUTED SOURCE CONDITIONS FOR ALTERNATING JETS OR RISER GROUPS:
 Momentum fluxes:   m0    =0.1094E-01  M0    =0.1334E+00
 lQ=B  =      0.009 lM    =      3.62  lm    =      0.74  lmp   =  99999.00
 LQ    =      0.142 LM    =      4.91  Lm    =      3.00  Lmp   =  99999.00
 Properties of riser group with  1 ports/nozzles each:
 U0    =      1.164 D0    =      0.134 A0    =      0.014 THETA =     90.00
 FR0   =     97.52  FRD0  =     23.95  R     =      8.95
 (slot)             (riser group)

FLOW CLASSIFICATION
 222222222222222222222222222222222222222222222222
 2  Flow class (CORMIX2)      =    MU8          2
 2  Applicable layer depth HS =     2.20        2
 2  Limiting Dilution S=QA/Q0 + 1=    64.60     2
 222222222222222222222222222222222222222222222222

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.1000E+03  CUNITS=  %
 NTOX  =  0
 NSTD  =  0
 REGMZ =  0
 XINT  =   1000.00  XMAX  =   1000.00

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the bottom and the diffuser mid-point:
        14.10 m  from the RIGHT bank/shore.
    X-axis points downstream, Y-axis points to left, Z-axis points upward.
NSTEP = 100 display intervals per module
---------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------------
BEGIN MOD201: DIFFUSER DISCHARGE MODULE
```

Due to complex near-field motions: EQUIVALENT SLOT DIFFUSER (2-D) GEOMETRY

Profile definitions:
BV = Gaussian 1/e (37%) width, in vertical plane normal to trajectory
BH = top-hat half-width, in horizontal plane normal to trajectory
S = hydrodynamic centerline dilution
C = centerline concentration (includes reaction effects, if any)
Uc = Local centerline excess velocity (above ambient)
TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	Uc	TT
0.00	0.00	0.40	1.0	0.100E+03	0.01	6.10	2.755	.00000E+00

END OF MOD201: DIFFUSER DISCHARGE MODULE

BEGIN MOD277: UNSTABLE NEAR-FIELD ZONE OF ALTERNATING PERPENDICULAR DIFFUSER

Because of the FANNED-OUT HORIZONTAL ORIENTATION of the diffuser jets,
the near-field dilution is slightly improved.

Because of the strong ambient current the diffuser plume of this crossflowing
discharge gets RAPIDLY DEFLECTED.
A near-field zone is formed that is VERTICALLY FULLY MIXED over the entire
layer depth. Full mixing is achieved at a downstream distance of about
2.5 times (for alternating designs) to 5 times(for unidirectional and staged designsd) the layer depth.

Profile definitions:
BV = layer depth (vertically mixed)
BH = top-hat half-width, measured horizontally in Y-direction
S = hydrodynamic average (bulk) dilution
C = average (bulk) concentration (includes reaction effects, if any)
TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	TT
0.00	0.00	0.40	1.0	0.100E+03	0.01	6.10	.00000E+00
0.06	0.00	0.41	3.9	0.256E+02	0.03	6.11	.75028E+00
0.11	0.00	0.41	5.1	0.196E+02	0.05	6.12	.15006E+01
0.17	0.00	0.42	6.0	0.166E+02	0.07	6.12	.22508E+01
0.22	0.00	0.43	6.8	0.147E+02	0.09	6.13	.30011E+01
0.28	0.00	0.44	7.5	0.134E+02	0.12	6.14	.37514E+01
0.33	0.00	0.44	8.1	0.124E+02	0.14	6.15	.45017E+01
0.39	0.00	0.45	8.6	0.116E+02	0.16	6.15	.52520E+01
0.44	0.00	0.46	9.1	0.109E+02	0.18	6.16	.60023E+01
0.50	0.00	0.46	9.6	0.104E+02	0.20	6.17	.67525E+01
0.55	0.00	0.47	10.1	0.992E+01	0.23	6.18	.75028E+01
0.61	0.00	0.48	10.5	0.951E+01	0.25	6.19	.82531E+01
0.66	0.00	0.48	10.9	0.915E+01	0.27	6.19	.90034E+01
0.72	0.00	0.49	11.3	0.883E+01	0.29	6.20	.97537E+01
0.77	0.00	0.50	11.7	0.855E+01	0.31	6.21	.10504E+02
0.83	0.00	0.50	12.1	0.829E+01	0.34	6.22	.11254E+02
0.88	0.00	0.51	12.4	0.806E+01	0.36	6.22	.12005E+02
0.94	0.00	0.52	12.8	0.784E+01	0.38	6.23	.12755E+02
0.99	0.00	0.53	13.1	0.764E+01	0.40	6.24	.13505E+02
1.05	0.00	0.53	13.4	0.746E+01	0.42	6.25	.14255E+02
1.10	0.00	0.54	13.7	0.729E+01	0.45	6.26	.15006E+02
1.15	0.00	0.55	14.0	0.714E+01	0.47	6.26	.15756E+02
1.21	0.00	0.55	14.3	0.699E+01	0.49	6.27	.16506E+02
1.26	0.00	0.56	14.6	0.685E+01	0.51	6.28	.17256E+02
1.32	0.00	0.57	14.9	0.673E+01	0.53	6.29	.18007E+02
1.37	0.00	0.57	15.1	0.661E+01	0.55	6.29	.18757E+02
1.43	0.00	0.58	15.4	0.649E+01	0.58	6.30	.19507E+02
1.48	0.00	0.59	15.7	0.638E+01	0.60	6.31	.20258E+02
1.54	0.00	0.60	15.9	0.628E+01	0.62	6.32	.21008E+02
1.59	0.00	0.60	16.2	0.619E+01	0.64	6.33	.21758E+02
1.65	0.00	0.61	16.4	0.609E+01	0.66	6.33	.22508E+02
1.70	0.00	0.62	16.7	0.601E+01	0.69	6.34	.23259E+02
1.76	0.00	0.62	16.9	0.592E+01	0.71	6.35	.24009E+02
1.81	0.00	0.63	17.1	0.584E+01	0.73	6.36	.24759E+02
1.87	0.00	0.64	17.3	0.577E+01	0.75	6.37	.25510E+02
1.92	0.00	0.64	17.6	0.569E+01	0.77	6.37	.26260E+02
1.98	0.00	0.65	17.8	0.562E+01	0.80	6.38	.27010E+02
2.03	0.00	0.66	18.0	0.556E+01	0.82	6.39	.27760E+02
2.09	0.00	0.67	18.2	0.549E+01	0.84	6.40	.28511E+02
2.14	0.00	0.67	18.4	0.543E+01	0.86	6.40	.29261E+02
2.20	0.00	0.68	18.6	0.537E+01	0.88	6.41	.30011E+02
2.25	0.00	0.69	18.8	0.531E+01	0.91	6.42	.30762E+02
2.31	0.00	0.69	19.0	0.526E+01	0.93	6.43	.31512E+02
2.36	0.00	0.70	19.2	0.520E+01	0.95	6.44	.32262E+02
2.42	0.00	0.71	19.4	0.515E+01	0.97	6.44	.33012E+02
2.47	0.00	0.71	19.6	0.510E+01	0.99	6.45	.33763E+02
2.53	0.00	0.72	19.8	0.505E+01	1.02	6.46	.34513E+02
2.58	0.00	0.73	20.0	0.501E+01	1.04	6.47	.35263E+02
2.64	0.00	0.74	20.2	0.496E+01	1.06	6.47	.36014E+02
2.69	0.00	0.74	20.3	0.492E+01	1.08	6.48	.36764E+02
2.75	0.00	0.75	20.5	0.487E+01	1.10	6.49	.37514E+02
2.81	0.00	0.76	20.7	0.483E+01	1.13	6.50	.38264E+02
2.86	0.00	0.76	20.9	0.479E+01	1.15	6.51	.39015E+02
2.92	0.00	0.77	21.0	0.475E+01	1.17	6.51	.39765E+02
2.97	0.00	0.78	21.2	0.471E+01	1.19	6.52	.40515E+02

3.03	0.00	0.79	21.4	0.468E+01	1.21	6.53	.41265E+02
3.08	0.00	0.79	21.5	0.464E+01	1.23	6.54	.42016E+02
3.14	0.00	0.80	21.7	0.461E+01	1.26	6.54	.42766E+02
3.19	0.00	0.81	21.9	0.457E+01	1.28	6.55	.43516E+02
3.25	0.00	0.81	22.0	0.454E+01	1.30	6.56	.44267E+02
3.30	0.00	0.82	22.2	0.451E+01	1.32	6.57	.45017E+02
3.36	0.00	0.83	22.3	0.448E+01	1.34	6.58	.45767E+02
3.41	0.00	0.83	22.5	0.444E+01	1.37	6.58	.46517E+02
3.47	0.00	0.84	22.7	0.441E+01	1.39	6.59	.47268E+02
3.52	0.00	0.85	22.8	0.439E+01	1.41	6.60	.48018E+02
3.58	0.00	0.86	23.0	0.436E+01	1.43	6.61	.48768E+02
3.63	0.00	0.86	23.1	0.433E+01	1.45	6.61	.49519E+02
3.69	0.00	0.87	23.3	0.430E+01	1.48	6.62	.50269E+02
3.74	0.00	0.88	23.4	0.427E+01	1.50	6.63	.51019E+02
3.80	0.00	0.88	23.5	0.425E+01	1.52	6.64	.51769E+02
3.85	0.00	0.89	23.7	0.422E+01	1.54	6.65	.52520E+02
3.91	0.00	0.90	23.8	0.420E+01	1.56	6.65	.53270E+02
3.96	0.00	0.90	24.0	0.417E+01	1.59	6.66	.54020E+02
4.02	0.00	0.91	24.1	0.415E+01	1.61	6.67	.54771E+02
4.07	0.00	0.92	24.2	0.413E+01	1.63	6.68	.55521E+02
4.13	0.00	0.93	24.4	0.410E+01	1.65	6.68	.56271E+02
4.18	0.00	0.93	24.5	0.408E+01	1.67	6.69	.57021E+02
4.24	0.00	0.94	24.6	0.406E+01	1.70	6.70	.57772E+02
4.29	0.00	0.95	24.8	0.404E+01	1.72	6.71	.58522E+02
4.35	0.00	0.95	24.9	0.401E+01	1.74	6.72	.59272E+02
4.40	0.00	0.96	25.0	0.399E+01	1.76	6.72	.60023E+02
4.45	0.00	0.97	25.2	0.397E+01	1.78	6.73	.60773E+02
4.51	0.00	0.97	25.3	0.395E+01	1.81	6.74	.61523E+02
4.56	0.00	0.98	25.4	0.393E+01	1.83	6.75	.62273E+02
4.62	0.00	0.99	25.5	0.391E+01	1.85	6.75	.63024E+02
4.67	0.00	1.00	25.7	0.390E+01	1.87	6.76	.63774E+02
4.73	0.00	1.00	25.8	0.388E+01	1.89	6.77	.64524E+02
4.78	0.00	1.01	25.9	0.386E+01	1.91	6.78	.65274E+02
4.84	0.00	1.02	26.0	0.384E+01	1.94	6.79	.66025E+02
4.89	0.00	1.02	26.2	0.382E+01	1.96	6.79	.66775E+02
4.95	0.00	1.03	26.3	0.380E+01	1.98	6.80	.67525E+02
5.00	0.00	1.04	26.4	0.379E+01	2.00	6.81	.68276E+02
5.06	0.00	1.04	26.5	0.377E+01	2.02	6.82	.69026E+02
5.11	0.00	1.05	26.6	0.375E+01	2.05	6.82	.69776E+02
5.17	0.00	1.06	26.8	0.374E+01	2.07	6.83	.70526E+02
5.22	0.00	1.06	26.9	0.372E+01	2.09	6.84	.71277E+02
5.28	0.00	1.07	27.0	0.371E+01	2.11	6.85	.72027E+02
5.33	0.00	1.08	27.1	0.369E+01	2.13	6.86	.72777E+02
5.39	0.00	1.09	27.2	0.368E+01	2.16	6.86	.73528E+02
5.44	0.00	1.09	27.3	0.366E+01	2.18	6.87	.74278E+02
5.50	0.00	1.10	27.4	0.365E+01	2.20	6.88	.75028E+02

Cumulative travel time = 75.0282 sec (0.02 hrs)

Plume centerline may exhibit slight discontinuities in transition to subsequent far-field module.

END OF MOD277: UNSTABLE NEAR-FIELD ZONE OF ALTERNATING PERPENDICULAR DIFFUSER

** End of NEAR-FIELD REGION (NFR) **

BEGIN MOD241: BUOYANT AMBIENT SPREADING

Profile definitions:

BV = top-hat thickness, measured vertically
BH = top-hat half-width, measured horizontally in y-direction
ZU = upper plume boundary (Z-coordinate)
ZL = lower plume boundary (Z-coordinate)
S = hydrodynamic average (bulk) dilution
C = average (bulk) concentration (includes reaction effects, if any)
TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
5.50	0.00	2.20	27.3	0.366E+01	2.20	6.88	2.20	0.00	.75028E+02
5.96	0.00	2.20	27.3	0.367E+01	2.18	6.97	2.20	0.02	.78528E+02
6.42	0.00	2.20	27.2	0.368E+01	2.16	7.06	2.20	0.04	.82029E+02
6.89	0.00	2.20	27.1	0.369E+01	2.14	7.14	2.20	0.06	.85529E+02
7.35	0.00	2.20	27.1	0.370E+01	2.12	7.23	2.20	0.08	.89029E+02
7.81	0.00	2.20	27.0	0.370E+01	2.11	7.32	2.20	0.09	.92529E+02
8.27	0.00	2.20	26.9	0.371E+01	2.09	7.40	2.20	0.11	.96029E+02
8.74	0.00	2.20	26.9	0.372E+01	2.07	7.49	2.20	0.13	.99530E+02
9.20	0.00	2.20	26.8	0.373E+01	2.06	7.57	2.20	0.14	.10303E+03
9.66	0.00	2.20	26.8	0.374E+01	2.04	7.66	2.20	0.16	.10653E+03
10.12	0.00	2.20	26.7	0.375E+01	2.02	7.74	2.20	0.18	.11003E+03
10.58	0.00	2.20	26.6	0.375E+01	2.01	7.83	2.20	0.19	.11353E+03
11.05	0.00	2.20	26.6	0.376E+01	1.99	7.91	2.20	0.21	.11703E+03
11.51	0.00	2.20	26.5	0.377E+01	1.98	7.99	2.20	0.22	.12053E+03
11.97	0.00	2.20	26.5	0.378E+01	1.97	8.07	2.20	0.23	.12403E+03
12.43	0.00	2.20	26.4	0.378E+01	1.95	8.16	2.20	0.25	.12753E+03
12.89	0.00	2.20	26.4	0.379E+01	1.94	8.24	2.20	0.26	.13103E+03
13.36	0.00	2.20	26.3	0.380E+01	1.93	8.32	2.20	0.27	.13453E+03
13.82	0.00	2.20	26.3	0.380E+01	1.91	8.40	2.20	0.29	.13803E+03
14.28	0.00	2.20	26.3	0.381E+01	1.90	8.48	2.20	0.30	.14153E+03
14.74	0.00	2.20	26.2	0.381E+01	1.89	8.56	2.20	0.31	.14503E+03
15.21	0.00	2.20	26.2	0.382E+01	1.88	8.64	2.20	0.32	.14853E+03
15.67	0.00	2.20	26.2	0.382E+01	1.87	8.72	2.20	0.33	.15203E+03

16.13	0.00	2.20	26.1	0.383E+01	1.86	8.80	2.20	0.34	.15553E+03
16.59	0.00	2.20	26.1	0.383E+01	1.84	8.87	2.20	0.36	.15903E+03
17.05	0.00	2.20	26.1	0.384E+01	1.83	8.95	2.20	0.37	.16253E+03
17.52	0.00	2.20	26.0	0.384E+01	1.82	9.03	2.20	0.38	.16603E+03
17.98	0.00	2.20	26.0	0.385E+01	1.81	9.11	2.20	0.39	.16953E+03
18.44	0.00	2.20	26.0	0.385E+01	1.80	9.18	2.20	0.40	.17303E+03
18.62	0.00	2.20	26.0	0.385E+01	1.80	9.21	2.20	0.40	.17440E+03

Cumulative travel time = 174.3975 sec (0.05 hrs)

CORMIX simulation has been TERMINATED at last prediction interval.
Limiting time due to TIDAL REVERSAL as per (xmax) has been reached.

END OF MOD241: BUOYANT AMBIENT SPREADING

CORMIX2: Multiport Diffuser Discharges End of Prediction File

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

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

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 22, 2022 – April 20, 2022

PERMIT NUMBER: **NH0100871**

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Exeter
Exeter Wastewater Treatment Plant
10 Front Street
Exeter, New Hampshire 03833-2792

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

Exeter Wastewater Treatment Plant
13 Newfields Road
Exeter, New Hampshire 03833

RECEIVING WATER: Squamscott River - Class B

PREPRATION 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 Exeter Wastewater Treatment Facility, which discharges treated wastewater. Sludge from this facility is trucked for disposal at the Turnkey Landfill in Rochester, NH. 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 https://www.epa.gov/npdes-permits/new-hampshire-draft-individual-npdes-permits or by contacting:

Michael Cobb
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1369
Email: Cobb.Michael@epa.gov

Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this workforce telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at the EPA Boston office. However, any electronically available documents that are part of the administrative record can be requested from the EPA contact above.

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 20, 2022**, 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.

Due to the COVID-19 National Emergency, if comments are submitted in hard copy form, please also email a copy to the EPA contact above.

FINAL PERMIT DECISION:

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

KEN MORAFF, DIRECTOR
WATER DIVISION
U.S. ENVIRONMENTAL PROTECTION
AGENCY - REGION 1

RENE PELLETIER, DIRECTOR
WATER DIVISION
NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES